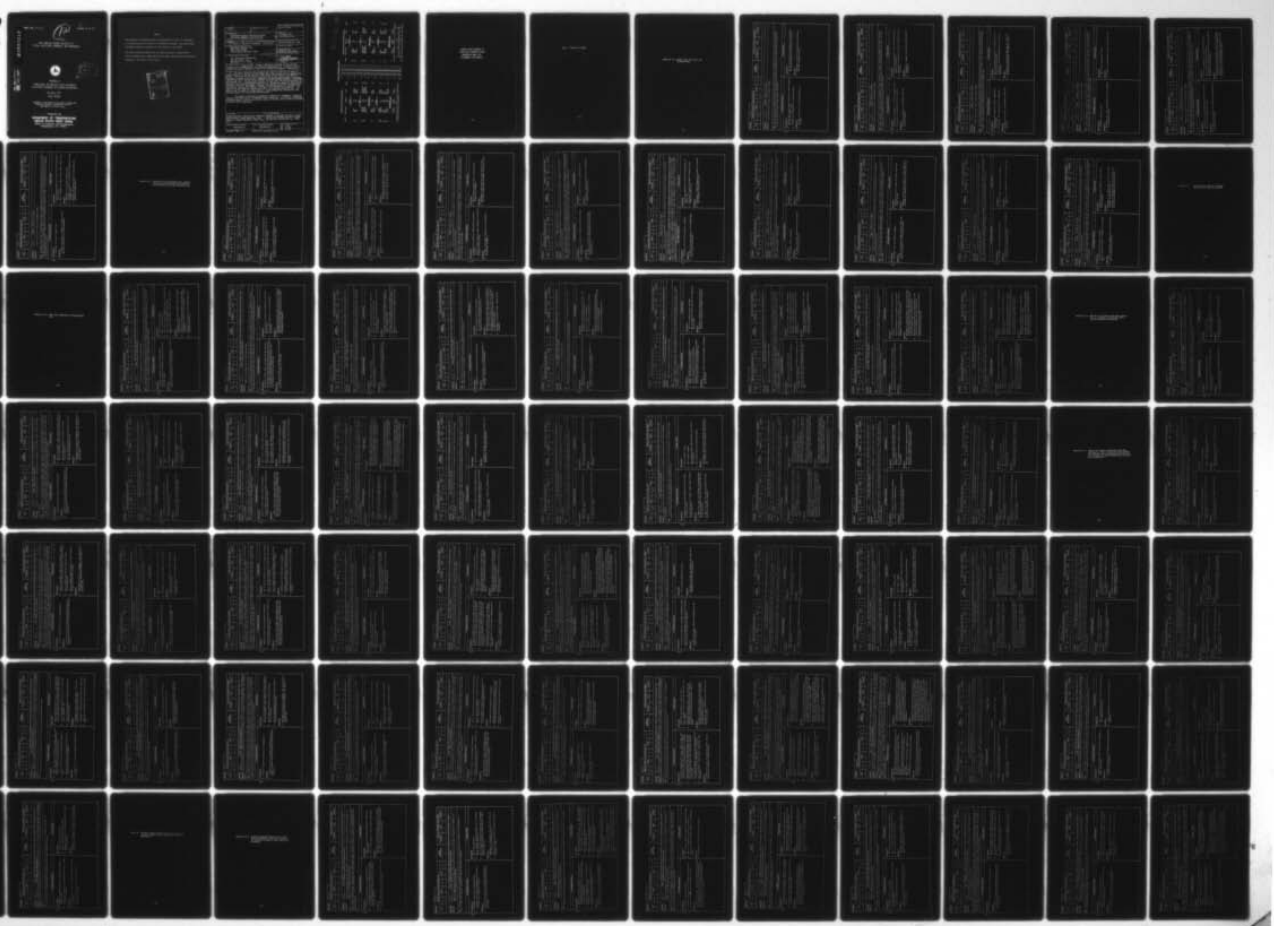
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TASK ANALYSIS REPORT RELATIVE TO VESSEL COLLISIONS, RAMMINGS, A--ETC(U)
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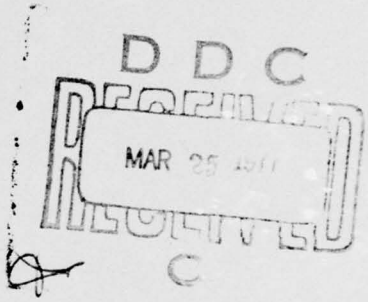
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Report No. CG-D-1-77

VOLUME II OF III

TASK ANALYSIS REPORT RELATIVE TO VESSEL COLLISIONS, RAMMINGS, AND GROUNDINGS

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APPENDIX F:

FUNCTIONAL JOB ANALYSIS TASK STATEMENTS FOR BRIDGE PERSONNEL ON TANKERS/FREIGHTERS

DECEMBER 1976

FINAL REPORT

Document is available to the public through the National Technical Information Service, Springfield, Virginia 22161

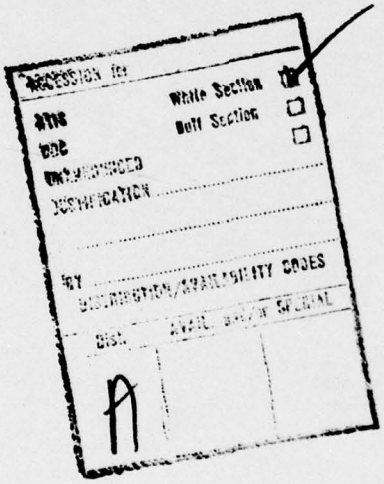
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DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD
Office of Research and Development
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15. Supplementary Notes Three volumes: Volume I contains an overview of the analysis, findings, and recommendations, plus supporting Appendices A-E. Volumes II and III contain task data in Appendices F and G (for tankers and towboats, respectively).

16. Abstract The report describes the processes and results of analysis of tasks of bridge personnel on tankers and other deep draft cargo vessels and on towboat-barge arrays. The Functional Job Analysis (FJA) method of task analysis was applied. The report provides a data base of comparable and concise descriptions of the tasks required for vessel control using currently available onboard equipment, information, and external aids. The data base includes, for each task, the action required, the expected result, equipment/materials/sources of information, degree of prescription/discretion involved, performance standards, and general educational background and job-related training requirements. Ratings of task complexity are provided. The analysis was performed at a generalized level for fleet-wide applicability. The analysis was iterated for three scenarios: mooring/unmooring, maneuvering in restricted waters, and coastal/open sea navigation.

The analytic intent was to establish a baseline for systematic, continuing research into human factors in merchant vessel casualties. In addition, recommendations were made of actions that might be taken in the near term to improve the safety of vessel control operations.

17. Key Words	18. Distribution Statement
Bridge Personnel, Human Factors, Merchant Marine Safety; Tanker Operations; Task Analysis; Towboat Operations; Vessel Control	Document is available to the U.S. public through the National Technical Information Service, Springfield, Va. 22161

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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

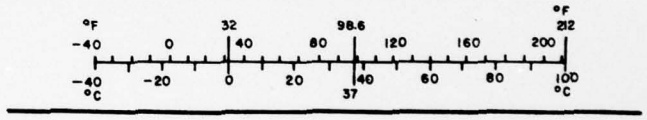
Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



CONTROL VESSEL MOVEMENT IN EXPEDITIOUS TRANSPORT WITHOUT ENDANGERING HUMAN LIFE, ENVIRONMENT, AND PROPERTY

Goal I: Prepare for voyage

Objective I.A: Select route, plot track, and estimate timing

TASK CODE:	I.A.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	80	1A	10	1A	10	3	3	3	3

TASK CODE: I.A.1	GOAL: Prepare for voyage.

OBJECTIVE: Select route, plot track, and estimate timing.

TASK: Selects from chart stowage aboard ship those charts covering an intended route, using navigational references such as the Coast Survey Catalog of Charts and Hydrographic Office publications, in order to have available the information needed to plot a safe track for the ship.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects most recent charts which are in good condition and are of adquate scale. • Ensures the accessibility of selected charts. Numerical: • In 100% of the cases, all required charts are obtained.	Functional: • How to use sources and procedures for identifying and obtaining charts for different sea routes. Specific: • Knowledge of location of navigational references and chart stowage on vessel.

TASK CODE: I.A.2									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	3A	15	3	3	3	4

TASK CODE: I.A.2	GOAL: Prepare for voyage.
OBJECTIVE: Select route, plot track, and estimate timing.	
TASK: Makes necessary corrections to navigational charts relevant to voyage, using own knowledge of chart reference guides and correction/update notices, and in accordance with company or ship correction/update procedures, in order to ensure that navigational charts are accurate and up-to-date.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately, completely, and clearly corrects charts. • Corrections are completed prior to departure. Numerical: • In 100% of the cases, all relevant charts are corrected/updated.	Functional: • How to read navigational charts and understand navigational terminology. • Knowledge of applicable correction publications and their use. Specific: • Knowledge of company or ship chart correction/update procedures.

TASK CODE: I.A.3									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	3A	20	3	3	3	4

TASK CODE: I.A.3	GOAL: Prepare for voyage.

OBJECTIVE: Select route, plot track, and estimate timing.

TASK: Procures and makes necessary corrections to navigational publications such as Coast Pilots, Sailing Directions and Light Lists, using correction/update notices, and in accordance with company or ship correction/update procedures, in order to update navigational publications used to plot intended track.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately and completely updates navigational publications. • Corrections are completed prior to departure. Numerical: • In 100% of the cases, all available corrections are made.	Functional: • How to understand navigational terminology used in navigational publications. • Knowledge of available and applicable correction publications. Specific: • Knowledge of publication updating and correction recordkeeping procedures for company or ship.

TASK CODE:	I.A.4

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	80	1A	5	1A	15	4	4	3	4

TASK CODE: I.A.4	GOAL: Prepare for voyage.

OBJECTIVE: Select route, plot track, and estimate timing.

TASK: Studies (examines and evaluates) navigational charts in order to understand and familiarize self with pertinent data shown, such as basic measurement units, geographic limits, patterns of shoal and deep water, abnormal patterns of bottom contour, land contour, variation of magnetic compass.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly examines charts. Numerical: • In 100% of the cases, understands all of the markings on navigational charts.	Functional: • How to read navigational charts. Specific: • Location of navigational charts on particular ship.

TASK CODE:	I.A.5

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	60	1A	5	3A	35	3	3	3	3

TASK CODE: I.A.5	GOAL: Prepare for voyage.

OBJECTIVE:
Select route, plot track, and estimate timing.

TASK: Draws line of intended track on charts using navigational publications such as Coast Pilots or Sailing Directions, and knowledge of speed, international/national/company routes, atmospheric conditions, sea conditions, water depth, vessel traffic, as well as own judgment and experience, in order to plot a safe route for ship to follow.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Track drawn is most expeditious, economical and safe. • Clearly and accurately draws track. Numerical: • In 100% of the cases, track drawn is most expeditious, economical and safe.	Functional: • How to use navigational charts and publications. • How to compute angles and bearings. • Knowledge of the effect of various sea and atmospheric conditions on ship movement. Specific: • Knowledge of particular water, land and atmospheric characteristics and conditions along intended route. • Knowledge of international/national/company routes appropriate to area of intended travel.

TASK CODE:	I.A.6

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	80	1A	5	3A	15	3	4	4	4

TASK CODE: I.A.6	GOAL: Prepare for voyage.

OBJECTIVE: Select route, plot track, and estimate timing.

TASK: Computes the direction and velocity (set and drift) of the current at various points along the route for the estimated duration of voyage, using tidal current charts, current diagrams, and knowledge of time of departure and estimated speed of advance, in order to determine courses and speeds throughout the voyage.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly estimates set and drift of current. Numerical: • In 100% of the cases, calculates required ship courses and speeds over the ground in order to remain on track.	Functional: • How to use current charts and current diagrams. • How to calculate set and drift. • How to compensate for set and drift. Specific: • Knowledge of time of departure and estimated speed of advance for particular voyage.

TASK CODE:	I.A.7								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	80	1A	5	3A	15	5	5	4	4

TASK CODE: I.A.7	GOAL: Prepare for voyage.

OBJECTIVE: Select route, plot track, and estimate timing.

TASK: Computes, notes, and plots along previously marked track indications of turning points, turning bearings, danger angles, danger bearings, arc of visibility of lights, light bearings, estimated times of arrival at strategic points, areas requiring reduced speed, ranges for observing ship's position, useful radar targets, radiobeacons, loran rates (if equipment to utilize them is available), using knowledge of ship navigation, own ship's characteristics, and updated navigation references.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately computes and plots information. • Information is plotted clearly and according to standard methodology. Numerical: • In 100% of the cases, computed and plotted information is accurate and complete.	Functional: • How to use navigational publications and references. • How to read navigation cnarts. • Knowledge of ship systems and capabilities. • Knowledge of the effect of various sea and atmospheric conditions on ship movement. • How to use navigational equipment and aids to navigation. • How to compute angles and bearings. Specific: • Knowledge of particular ship's characteristics, ship's systems, and equipment capabilities. • Knowledge of particular water, land and atmospheric characteristics/conditions along intended route. • Knowledge of particular aids to navigation, traffic flow, and obstacles along intended route.

TASK CODE:	I.A.8

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	90	1A	5	1A	5	3	3	1	3

TASK CODE: I.A.8	GOAL: Prepare for voyage.

OBJECTIVE: Select route, plot track, and estimate timing.

TASK: Prepares (writes out) a chronological listing of expected/significant navigational events that should occur along intended track, such as sightings, course and speed changes, time zone changes, using information from charted track and own knowledge of events of significance for navigational purposes, in order to alert bridge personnel to expected navigational occurrences.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately and neatly prepares list. Numerical: • In 100% of the cases, includes all events of navigational significance to bridge personnel.	Functional: • How to read navigational charts and track information noted thereon. • How to estimate the time at which events should occur. Specific: • Knowledge of particular intended track. • Knowledge of events of navigational significance along intended track. • Knowledge of expected speed over the ground for specific intended track.

Objective I.B: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating order

TASK CODE:	I.B.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	20	1A	5	3A	75	2	2	1	2

TASK CODE: I.B.1	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating order.

TASK: Removes from storage, inspects, and places in prominent location all plotting equipment, such as parallel rulers, compasses, protracters, dividers, pencils, erasers, etc., in order to ensure easy access to such equipment during voyage.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Ensures that equipment is in good working order. • Plotting equipment is secured for sea, but is readily accessible when needed. Numerical: • In 100% of the cases, all appropriate plotting equipment is available when needed.	Functional: • Familiarity with and knowledge of uses of equipment needed to plot course. Specific: • Knowledge of storage location of plotting equipment in particular ship.

TASK CODE:	I.B.2								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	60	1A	5	1C	35	2	2	3	3

TASK CODE: I.B.2	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating condition.

TASK: Visually inspects and records readings from magnetic compass and master gyro compass, and compares with readings on gyro repeaters, course recorder, radio direction-finder and radar repeaters, in order to ensure accuracy of these navigational aids.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately and completely makes and records readings. • Inspection, recordings are timely before departure. Numerical: • In 100% of the cases, takes readings on all equipment.	Functional: • How to use navigational direction-finding equipment. • How to calculate deviation, variation, and compass error. Specific: • Knowledge of type and location of navigational direction-finding equipment on particular ship. • Knowledge of compass deviation of own ship.

TASK CODE:	I.B.3

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	45	1A	5	2A	45	2	2	2	2

TASK CODE: I.B.3	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating condition.

TASK: Visually inventories and inspects non-electronic navigational equipment, such as binoculars, alidades, sextants, azimuth circles, and peloruses, using own knowledge of how equipment functions, in order to ensure proper functioning and ready access during voyage.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately and completely inventories and inspects equipment. • Allows sufficient time to replace missing or defective equipment before sailing. Numerical: • In 100% of the cases, inspects all non-electronic navigational equipment.	Functional: • How to identify malfunctions in non-electronic navigational equipment. Specific: • Knowledge of type, quantity, and location of non-electronic navigational equipment on particular ship.

TASK CODE:	I.B.4

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	65	1A	5	1C	30	2	2	2	2

TASK CODE: I.B.4	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating condition.

TASK: Turns on power supply of electronic navigational aids, such as radar, loran, Decca, fathometer, sonic depth-finder, gyro compass, radio direction finder, following standard procedures, and visually inspects scopes, dials, and indicators of component parts, using own knowledge of equipment, in order to ensure that equipment is functioning.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately energizes and inspects electronic navigational aids. Numerical: • In 100% of the cases, ensures that all electronic navigational aids are performing within prescribed specifications.	Functional: • *How to operate electronic navigational aids.* Specific: • Knowledge of operation of electronic navigational aids for particular ship.

TASK CODE:	I.B.5

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	30	2	30	2C	40	3	3	1	2

TASK CODE: I.B.5	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating condition.

TASK: Communicates with personnel in engine room to check out bridge/engine room interfacing equipment, such as standard and emergency steering gear and related electric and hydraulic transmission systems, throttle and COS alarms (on newer ships), engine order telegraph, bridge/engine room telephone, using own judgment of equipment and manipulation of knobs, dials, and switches representing test maneuvers, in order to ensure that equipment if functioning. (This task includes standard tests of rudder and propeller shaft.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly and accurately checks out equipment. Numerical: • In 100% of the cases, checks out all bridge/engine room interfacing equipment.	Functional: • How to use communication systems between bridge and engine room. • Knowledge of kinds of equipment linkages between bridge and engine room. Specific: • Knowledge of bridge navigational equipment and engine room equipment on particular ship.

TASK CODE: I.B.6									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	65	1A	5	1C	30	2	2	2	2

TASK CODE: I.B.6	GOAL: Prepare for voyage.
OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating order.	
TASK: Visually inspects weather instruments, such as barographs, anemometers, thermometers, hygrometers, in order to ensure that equipment is functioning.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly inspects equipment. Numerical: • In 100% of the cases, ensures that all instruments are functioning properly.	Functional: • How to use weather measurement instruments. Specific: • Knowledge of type and location of weather instruments for particular ship.

TASK CODE: I.B.7									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	10	1A	5	2A	85	1	1	1	1

TASK CODE: I.B.7	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating condition.

TASK: Tests and inspects lights and signaling equipment, such as navigation lights, searchlights, signal mast lights, aldis lamps, signal flags, day marks, ship's whistle, and bell and gong, in order to ensure that equipment is functioning.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly tests and inspects equipment. Numerical: • In 100% of the cases, ensures that all lights and signaling equipment are functioning properly.	Functional: • Knowledge of various navigation/safety lights and signal systems. Specific: • Knowledge of type and location of lights, signaling equipment and respective controls on particular ship.

TASK CODE: I.B.8									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	35	2	30	2C	35	2	2	2	2

TASK CODE: I.B.8	GOAL: Prepare for voyage.
OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating condition.	
TASK: Tests all internal and external communications equipment, such as bridge and portable VHF sets, talkback system, emergency telephones, using own knowledge of equipment, in order to ensure that equipment is functioning.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly tests communication equipment. Numerical: • In 100% of the cases, ensures that all communications equipment is functioning properly.	Functional: • How to operate ship communications systems. Specific: • Knowledge of communications systems for particular ship.

TASK CODE:	I.B.9

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	35	1A	5	2A	60	2	2	2	4

TASK CODE: I.B.9	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all navigational aids, steering, propulsion system and associated equipment are available and in proper operating condition.

TASK: Visually inspects safety equipment, including life boats, life rings, flares, dye markers, etc., using own knowledge of equipment and/or safety directives and equipment manuals, in order to ensure accessibility and good physical condition of equipment.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly inspects safety equipment. • Ensures physical condition is adequate for intended need. Numerical: • In 100% of the cases, ensures that all safety equipment is complete and operative.	Functional: • Familiarity with and knowledge of uses of ship safety equipment. Specific: • Knowledge of the types and location of all safety equipment on particular ship. • Knowledge of emergency plans and procedures for use of safety equipment on particular ship.

Objective I.C: Ensure that all required pre-voyage administrative tasks are completed

TASK CODE:	I.C.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	2	10	1	20	2	2	1	3

TASK CODE: I.C.1	GOAL: Prepare for voyage.

OBJECTIVE: Ensure that all required pre-voyage administrative tasks are completed.

TASK: Identifies and submits shipping documents, such as crew lists and shipping articles, to port authorities/company agent, in accordance with port, company, and/or Coast Guard regulations, using knowledge of the existence of such documents or sources of written or verbal information identifying these documents, in order to comply with legal/administrative documentation and recordkeeping procedures.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Identifies and submits appropriate documents. • Submission of documents is timely before departure. Numerical: • In 100% of the cases, submits all appropriate documents.	Functional: • How to identify various shipping documents from written or verbal administrative/regulatory information. Specific: • Knowledge of types and location of shipping documents to be submitted to port authorities upon departure for particular ship.

Goal II: *Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels*

Objective II.A: Make final preparations to berth/unberth ship.

TASK CODE: II.A.1									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3A	60	1A	5	18	35	2	3	3	1

TASK CODE: II.A.1	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE:
Make final preparations to berth/unberth ship.

TASK: Ascertains the forward, midships, and after drafts (visually; with draft gauges, if possible; or calculated from last known draft using Trim and Stability Book data) and calculates minimum depth of water in berth area, using Tide Tables, in order to determine the vessel's underkeel clearance at berth.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately determines drafts and water depth. • Precisely calculates underkeel clearance from drafts and water depths. Numerical: • In 100% of the cases, tidal conditions and draft determinations are made within 0.1 foot accuracy.	Functional: • How to read draft marks. • How to use Tide Tables. • How to use Trim and Stability Book to calculate draft. • How to read draft gauges (if provided). • How various conditions of "hog" and "sag" affect draft. Specific: • Knowledge of particular vessel's Trim and Stability Booklet and data. • Knowledge of particular vessel's "hog" and "sag" characteristics under various conditions of loading or ballast. • Knowledge of bottom and tidal characteristics of particular berth area.

TASK CODE: II.A.2									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	75	1A	5	1A	20	3	3	3	4

TASK CODE: II.A.2	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Make final preparations to berth/unberth ship.

TASK: Ascertains port's physical and environmental characteristics, berthing facilities, local navigation rules and practices (including those applicable to pilotage), aids to navigation potential navigational hazards, and company policy, using appropriate navigational charts and publications, in order to prepare for berthing/unberthing maneuvers.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Adequately studies charts, publications and policies. • Is thoroughly acquainted with physical characteristics of port, prevailing environmental situation, local aids to navigation, potential navigational hazards, and local navigation rules and practices. Numerical: • In 100% of the cases, all relevant data are ascertained as dictated by the particular situation.	Functional: • How to read and interpret navigational charts and publications. • How to relate these data to actual physical environment. Specific: • Knowledge of particular port, its aids to navigation and potential navigational hazards, local navigation rules and practices, physical characteristics and environmental conditions.

TASK CODE: II.A.3									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: II.A.3	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE:

Make final preparations to berth/unberth ship.

TASK: Monitors wind direction and speed indicators and local communications circuits, and obtains/reviews information on tides and currents, in order to ascertain wind speed and direction, pertinent meterological data, and current/tide conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated tide and current data in area of berth. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • Where to obtain tide and current data. • How to operate various communications circuits such as radiotelephone. Specific: • Knowledge of prevailing environmental conditions along track and seasonal variations throughout the range of expected values. • Knowledge of meteorological data provided by particular port and means to communicate with those sources. • Knowledge of particular ship's communications equipment.

TASK CODE: II.A.4									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	30	2	45	2A	25	2	2	2	2

TASK CODE: II.A.4	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Make final preparations to berth/unberth ship.

TASK: Communicates with port authorities in person or using communications equipment, in order to verify arrival/departure time, berth assignment, and readiness of pier and linehandlers, as applicable.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Communication is timely before arrival/departure. Numerical: • In 100% of the cases, all pertinent information is exchanged, understood, and acknowledged.	Functional: • What information must be communicated. • How to operate various ship-to-shore communications equipment such as telephone and radio. Specific: • Knowledge of own ship's time of arrival/departure pier requirements, and line handlers, as applicable. • Knowledge of particular port's services and means to communicate with those services, including necessary "lead times." • Knowledge of particular ship's communications equipment.

TASK CODE: II.A.5									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	2	50	1A	5	4	3	3	3

TASK CODE: II.A.5	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Make final preparations to berth/unberth ship.

TASK: Communicates to crew in person, or via internal communications equipment, the arrival/departure time and the type of moor, in order to prepare personnel for maneuvers and mooring stations.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Communication of information is clear and timely before arrival/departure. Numerical: • In 100% of the cases, all pertinent information is directed to all appropriate personnel.	Functional: • Knowledge of various types of moors (buoy, pier, starboard side to, Mediterranean, etc.). • Ability to convey information. • How to use internal communications equipment. Specific: • Knowledge of details of berthing/unberthing maneuvers for particular ship and port, including mooring station assignments. • Knowledge of arrival/departure time.

TASK CODE: II.A.6									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	55	2	35	2A	10	4	4	2	4

TASK CODE: II.A.6	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Make final preparations to berth/unberth ship.

TASK: Reads navigational publications, reviews company policy and port regulations pertaining to pilotage and tugboat assistance, in order to ascertain need and availability of such assistance for berthing/unberthing maneuvers, and to request it if necessary.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Obtains complete and accurate information on nature, amount, and availability of assistance. • Clearly communicates with port authorities. • Obtainment of information and initiation of communication are timely before berthing/unberthing. Numerical: • In 100% of the cases, obtains all necessary information and assitance.	Functional: • How to use communications equipment. • How to understand terminology used in navigational publications. Specific: • Knowledge of particular company policy and port regulations regarding pilot/tugboat assistance.

TASK CODE: II.A.7									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	50	2	35	1C	15	2	3	3	3

TASK CODE: II.A.7	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Make final preparations to berth/unberth ship.

TASK: Exchanges maneuvering information with persons-in-charge of other vessels (including tugboats, if applicable), using bridge-to-bridge radiotelephones, ship-to-shore communications equipment, whistle signals, or any combination of the three, in order to establish the communications necessary for berthing/unberthing and to ensure understanding of intended movements of all pertinent vessels.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Proper communication procedures are used. • Communications are appropriately timed and complete. Numerical: • In 100% of the cases, clarification is requested in all instances of uncertainty. • In 100% of the cases, berthing/unberthing does not proceed until all appropriate communciations have been made.	Functional: • How to operate vessel's communication equipment. • Knowledge of standard communications procedures. • Knowledge of navigational terms and phraseology. • Knowledge of required whistle signals and how to sound them. Specific: • Knowledge of radiotelephone on particular vessel (including harbor frequency). • Knowledge of communications practices/procedures used at the particular terminal.

TASK CODE: II.A.8									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	80	1A	5	1A	15	5	5	4	4

TASK CODE: II.A.8	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE:

Make final preparations to berth/unberth ship.

TASK:

Reviews standard and emergency plans for intended berthing/unberthing, using company policy appropriate navigational references, and knowledge of own ship and local conditions, in order to be familiar with shiphandling procedures associated with specific berth approach/departure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Reviews plans carefully, precisely and thoroughly. • Familiarization is timely before port arrival/departure. Numerical: • In 100% of the cases, all pertinent data are reviewed.	Functional: • How to use and read navigational charts and publications. • General knowledge of ship systems and capabilities. • General knowledge of the effect of various sea and atmospheric conditions on ship movement. Specific: • Knowledge of particular water, traffic characteristics, prevailing land and atmospheric characteristics, and conditions in berth area, including seasonal variations throughout range of expected values. • Knowledge of particular ship characteristics, ship system and equipment, and crew capabilities. • Knowledge of particular company policy concerning arrival/departure procedures.

TASK CODE: II.A.9									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	90	2	5	1	5	4	4	3	3

TASK CODE: II.A.9	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE:
Make final preparations to berth/unberth ship.

TASK: Analyzes and evaluates all pertinent information (traffic and obstacles, rules and regulations, weather and water conditions, personnel readiness, other vessel conditions), in order to decide how or whether to proceed with berthing/unberthing maneuvers.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Safety considerations are given priority in decision-making. • Appropriate factors enter into the analysis. • Decision is made quickly. Numerical: • In 100% of the cases, all pertinent variables are considered. • In 100% of the cases, all berthing/unberthing maneuvers, once initiated, are completed without casualty or other negative results, such as inappropriate interference with the movement of other vessel(s).	Functional: • Knowledge of standard procedures for berthing/unberthing. • Knowledge of rules and regulations applicable to terminal areas. • Understanding of effects of conditions on vessel handling requirements/limitations (e.g., closest point of approach in relation to vessel speeds, tides). • How to maneuver vessel of comparable size in restricted waters with high traffic density. Specific: • Knowledge of procedures, rules and regulations applicable in specific location. • Knowledge of maneuvering capabilities of particular vessel in specific locale as it may be affected by prevailing environmental conditions throughout the range of expected values.

Objective II.B: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings and groundings

TASK CODE:	II.B.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: II.B.1	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Visually scans the waters surrounding the berth area, mooring buoy, or anchorage, as applicable, utilizing the naked eye and binoculars in order to detect and identify navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various navigational hazards. Numerical: • In 100% of the cases, all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. Specific: • Knowledge of special hazards to navigation known in particular locale.

TASK CODE: II.B.2									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: II.B.2	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards. • Accurately detects various navigational hazards on radar. • Accurately detects any navigational hazards (i.e., proximity of bottom) on fathometer. Numerical: • In 100% of the cases, all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect and identify navigational hazards on radar and fathometer. Specific: • Knowledge of special hazards known in particular locale which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE: II.B.3									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: II.B.3	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Monitors wind direction and speed indicators and obtains/reviews information on tides and currents, in order to ascertain wind, current, and tide conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated tide and current data in berth vicinity. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • Where to obtain tide and current data. Specific: • Knowledge of prevailing environmental conditions in locale and seasonal variations throughout the range of expected values.

TASK CODE:	II.B.4

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: II.B.4	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. • How to recognize audio and visual failure alarms for steering and propulsion system. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE: II.B.5									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE: II.B.5	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Monitors voice radio (bridge-to-bridge, ship-to-shore, and vessel traffic system (VTS) network, as applicable) and internal communication systems in order to maintain radio watch during berthing/unberthing maneuvers.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks in particular locale. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE: II.B.6									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	4	2

TASK CODE: II.B.6	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Determines ranges to and bearings of fixed aids to navigation (reference points) when anchoring, using visual navigation equipment such as stadimeter, alidade, and pelorus, and/or electronic equipment such as radar, in order to establish navigational position for "letting go" anchor.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes visual navigation instruments. • Correctly employs electronic navigation system(s) and accurately reads system output. Numerical: • In 100% of the cases, ranges and bearings are determined and within acceptable limits commensurate with ship characteristics, the particular anchorage, and prevailing environmental situation.	Functional: • How to select reference points for ranges and bearings. • How to use visual navigation instruments such as stadimeter, alidade, or pelorus. • How to operate and take readings (ranges and bearings) from available electronic navigation systems. Specific: • Knowledge of local fixed aids to navigation. • Knowledge of availability and reliability of electronic navigation systems at particular anchorage. • Knowledge of particular ship's electronic navigation system(s).

TASK CODE: II.B.7									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: II.B.7	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, and own ship's mission (purpose and goals), in order to determine course of action to maneuver into/away from berth, mooring buoy, or anchorage, as applicable, while simultaneously avoiding rammings and groundings.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability in shallow water and alongside berth, at mooring buoy, and at anchorage, as applicable. Specific: • Knowledge of specific ship's hydrodynamic characteristics as they may be affected by prevailing environmental conditions at particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodynamics and as they may be affected by varying local environmental conditions. • Knowledge of particular berth and adjacent waters.

TASK CODE: II.B.8									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: II.B.8	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Conveys navigation orders to other bridge personnel (and tugboat operators, line handlers, buoy party, and anchor detail, as applicable) and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge, line handling, and anchor detail organization for berthing/unberthing.

TASK CODE: II.B.9									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: II.B.9	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed in maneuvering ship into/out of berth.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communication circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE: II.B.10									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: II.B.10	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain heading in maneuvering ship into/out of berth.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE: II.B.11									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	2	10	2C	45	4	4	3	2

TASK CODE: II.B.11	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Utilizes such external assistance as mooring lines, anchor(s) and anchor chain(s), and tugboat(s), as applicable, in order to provide ancilliary control in changing ship's heading and/or speed while approaching or clearing berth, mooring buoy, or anchorage.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Efficiently and correctly has ground tackle or mooring lines deployed to assist in turning ship's head and/or control its speed. • Properly has tugboat(s) apply necessary force vectors to assist in turning ship's head and/or control its speed. Numerical: • In 100% of the cases, tugboat force vectors are applied such that ship's head is turned, and/or ship's speed is regulated according to need and is commensurate with particular situation. • In 100% of the cases, ground tackle or mooring lines are deployed such that ship's head is turned, and/or ship's speed is regulated according to need and is commensurate with particular situation.	Functional: • Understanding of uses and limitations of all ground tackle, including shackles, swivels, chain stoppers, capstans, windlasses, etc. • Understanding of uses and limitations of various types of mooring lines and mooring winches. • Understanding of uses and capabilities of tugboats as they relate to assisting in overall ship controllability. • Knowledge of cause and effect between external ancilliary controls and ship response as they may be affected by environmental conditions such as wind, current, and shallow water. Specific: • Knowledge of particular tugboats and individual ship's mooring and anchoring systems and their interrelationships to ship controllability over the range of expected values for environmental variations at particular locale. • Knowledge of mooring/anchoring facilities at particular locale including bottom characteristics.

TASK CODE:	II.B.12

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	50	2	25	1C	25	2	2	1	2

TASK CODE: II.B.12	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage as applicable, while avoiding rammings and groundings.

TASK: Maintains with tugboat operators, line handlers, buoy party and/or anchor detail, using onboard communications equipment, when necessary, in order to receive information from, and to monitor status of, assisting tugboats, mooring lines, and anchor(s).

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly operates all communications equipment. • Correctly interprets all feedback data. Numerical: • In 100% of the cases, all pertinent feedback data are monitored and correctly interpreted.	Functional: • How to operate onboard communications equipment such as radiotelephone, loud hailers, intercom, telephone, etc. • How to interpret feedback communications for status of equipment. Specific: • Knowledge of own ship's communications equipment. • Knowledge of communications to be employed for various situations at particular locals.

TASK CODE: II.B.13									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: II.B.13	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Maneuver ship into/away from berth, mooring buoy, or anchorage, as applicable, while avoiding rammings, and groundings.

TASK: Sounds ship's whistle and dispalys required identification/signals/flags in accordance with Rules of the Road, in order to approach/leave berth safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to arrival/departure. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Objective II.C: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable

TASK CODE: II.C.1									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: II.C.1	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Visually scans the waters surrounding the berth area, mooring buoy, or anchorage, as applicable, utilizing the naked eye and binoculars in order to detect and identify navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various navigational hazards. Numerical: • In 100% of the cases, all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. Specific: • Knowledge of special hazards to navigation known in particular locale.

TASK CODE: II.C.2									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: II.C.2	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards. • Accurately detects various navigational hazards on radar. • Accurately detects any navigational hazards (i.e., proximity of bottom) on fathometer. Numerical: • In 100% of the cases, all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect and identify navigational hazards on radar and fathometer. Specific: • Knowledge of special hazards known in particular locale which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE: II.C.3									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: II.C.3	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Monitors wind direction and speed indicators and obtains/reviews information on tides and currents, in order to ascertain wind, current, and tide conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated tide and current data in berth vicinity. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • Where to obtain tide and current data. Specific: • Knowledge of prevailing environmental conditions in locale and seasonal variations throughout the range of expected values.

TASK CODE: II.C.4									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: II.C.4	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. • How to recognize audio and visual failure alarms for steering and propulsion system. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE: II.C.5									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE: II.C.5	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Monitors voice radio (bridge-to-bridge, ship-to-shore, and vessel traffic system (VTS) network, as applicable) and internal communication systems in order to maintain radio watch during berthing/unberthing maneuvers.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks in particular locale. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE: II.C.6									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	4	2

TASK CODE: II.C.6	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Determines ranges to and bearings of fixed aids to navigation (reference points) when anchoring, using visual navigation equipment such as stadimeter, alidade, and pelorus, and/or electronic equipment such as radar, in order to establish navigational position for "letting go" anchor.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes visual navigation instruments. • Correctly employs electronic navigation system(s) and accurately reads system output. Numerical: • In 100% of the cases, ranges and bearings are determined and within acceptable limits commensurate with ship characteristics, the particular anchorage, and prevailing environmental situation.	Functional: • How to select reference points for ranges and bearings. • How to use visual navigation instruments such as stadimeter, alidade, or pelorus. • How to operate and take readings (ranges and bearings) from available electronic navigation systems. Specific: • Knowledge of local fixed aids to navigation. • Knowledge of availability and reliability of electronic navigation systems at particular anchorage. • Knowledge of particular ship's electronic navigation system(s).

TASK CODE: II.C.7									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	50	1A	5	2B	45	2	2	2	2

TASK CODE: II.C.7	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Monitors collision avoidance system (visual and electronic) in order to detect other vessel traffic in vicinity of berth, mooring buoy, or anchorage, as applicable.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters both visually and electronically. • Promptly and accurately detects other vessel traffic in vicinity. Numerical: • In 100% of the cases, all other vessel traffic in vicinity is detected.	*Functional:* • How to visually recognize other vessel traffic. • How to operate electronic collision avoidance system. Specific: • Knowledge of prevailing traffic patterns alongside berth, mooring buoy, or anchorage, as applicable, including seasonal variations. • Knowledge of individual ship's specific electronic collision avoidance system.

TASK CODE: II.C.8									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	85	1A	5	1A	10	4	5	4	2

TASK CODE: II.C.8	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Assesses all other threatening vessel traffic in vicinity of berth, mooring buoy, or anchorage, as applicable, in order to determine the existence of any real or potential collision hazard.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately determines the course, speed, closest point of approach (CPA), time to closest point of approach (TCPA) of all other threatening traffic in vicinity. • Properly ascertains the governing Rules of the Road and considers any other restraints imposed upon own ship by local navigation rules, practices, and VTS, if applicable. • Anticipates possible actions by other threatening traffic which may dictate reassessment of situation. • Makes assessment in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent traffic data are assessed for potential collision hazard.	Functional: • Understands principles of relative motion. • How to determine course, speed, CPA, and TCPA of all other vessels. • Understands applicable Rules of the Road and the limitations they impose upon his ship in determining potential collision hazard and possible counter action. Specific: • Knowledge of prevailing traffic patterns alongside berth, mooring buoy, or anchorage, as applicable, including seasonal variations. • Knowledge of local navigation rules, practices, and VTS, if applicable

TASK CODE: II.C.9									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: II.C.9	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collison hazards, and own ship's mission (purpose and goals), in order to determine course of action to maneuver into/away from berth, mooring buoy, or anchorage, as applicable, while simultaneously avoiding collisions, rammings or groundings.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possiblities which may arise, especially other ship's intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situations changes or progresses. • Makes decision in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability in shallow water and alongside berth, at mooring buoy, and at anchorage, as applicable. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions at particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodynamics and as they may be affected by varying local environmental conditions. • Knowledge of particular berth and adjacent waters.

TASK CODE: II.C.10									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: II.C.10	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Conveys navigation orders to other bridge personnel (and tugboat operators, line handlers, buoy party, and anchor detail, as applicable) and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge, line handling, and anchor detail organization for berthing/unberthing.

TASK CODE: II.C.11									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: II.C.11	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed in maneuvering ship into/out of berth.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communication circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE: II.C.12									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: II.C.12	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain heading in maneuvering ship into/out of berth.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE: II.C.13									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	2	10	2C	45	4	4	3	2

TASK CODE: II.C.13	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Utilizes such external assistance as mooring lines, anchor(s) and anchor chain(s), and tugboat(s), as applicable, in order to provide ancilliary control in changing ship's heading and/or speed while approaching or clearing berth, mooring buoy, or anchorage.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Efficiently and correctly has ground tackle or mooring lines deployed to assist in turning ship's head and/or control its speed. • Properly has tugboat(s) apply necessary force vectors to assist in turning ship's head and/or control its speed. Numerical: • In 100% of the cases, tugboat force vectors are applied such that ship's head is turned, and/or ship's speed is regulated according to need and is commensurate with particular situation. • In 100% of the cases, ground tackle or mooring lines are deployed such that ship's head is turned, and/or ship's speed is regulated according to need and is commensurate with particular situation.	Functional: • Understanding of uses and limitations of all ground tackle, including shackles, swivels, chain stoppers, capstans, windlasses, etc. • Understanding of uses and limitations of various types of mooring lines and mooring winches. • Understanding of uses and capabilities of tugboats as they relate to assisting in overall ship controllability. • Knowledge of cause and effect between external ancilliary controls and ship response as they may be affected by environmental conditions such as wind, current, and shallow water. Specific: • Knowledge of particular tugboats and individual ship's mooring and anchoring systems and their interrelationships to ship controllability over the range of expected values for environmental variations at particular locale. • Knowledge of mooring/anchoring facilities at particular locale including bottom characteristics.

TASK CODE:	II.C.14

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	50	2	25	1C	25	2	2	1	2

TASK CODE:	II.C.14	GOAL:	Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Maintains with tugboat operators, line handlers, buoy party and/or anchor detail, using onboard communications equipment, when necessary, in order to receive information from, and to monitor status of, assisting tugboats, mooring lines, and anchor(s).

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly operates all communications equipment. • Correctly interprets all feedback data. Numerical: • In 100% of the cases, all pertinent feedback data are monitored and correctly interpreted.	Functional: • How to operate onboard communications equipment such as radiotelephone, loud hailers, intercom, telephone, etc. • How to interpret feedback communications for status of equipment. Specific: • Knowledge of own ship's communications equipment. • Knowledge of communications to be employed for various situations at particular locals.

TASK CODE: II.C.15

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: II.C.15

GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable.

TASK: Sounds ship's whistle and displays required identification/signals/flags in accordance with Rules of the Road, in order to approach/leave berth safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to arrival/departure. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Objective II.D: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises

TASK CODE: II.D.1									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: II.D.1	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Visually scans the waters surrounding the berth area, mooring buoy, or anchorage, as applicable, utilizing the naked eye and binoculars in order to detect and identify navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and timely identifies various navigational hazards. Numerical: • In 100% of the cases, all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. Specific: • Knowledge of special hazards to navigation known in particular locale.

TASK CODE:	II.D.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: II.D.2	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards. • Accurately detects various navigational hazards on radar. • Accurately detects any navigational hazards (i.e., proximity of bottom) on fathometer. Numerical: • In 100% of the cases, all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect and identify navigational hazards on radar and fathometer. Specific: • Knowledge of special hazards known in particular locale which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE: II.D.3									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: II.D.3	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Monitors wind direction and speed indicators and obtains/reviews information on tides and currents, in order to ascertain wind, current, and tide conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated tide and current data in berth vicinity. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • Where to obtain tide and current data. Specific: • Knowledge of prevailing environmental conditions in locale and seasonal variations throughout the range of expected values.

TASK CODE: II.D.4									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: II.D.4	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. • How to recognize audio and visual failure alarms for steering and propulsion system. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE: II.D.5									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE: II.D.5	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Monitors voice radio (bridge-to-bridge, ship-to-shore, and vessel traffic system (VTS) network, as applicable) and internal communication systems in order to maintain radio watch during berthing/unberthing maneuvers.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks in particular locale. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE: II.D.5									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	4	2

TASK CODE: II.D.6	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Determines ranges to and bearings of fixed aids to navigation (reference points) when anchoring, using visual navigation equipment such as stadimeter, alidade, and pelorus, and/or electronic equipment such as radar, in order to establish navigational position for "letting go" anchor.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes visual navigation instruments. • Correctly employs electronic navigation system(s) and accurately reads system output. Numerical: • In 100% of the cases, ranges and bearings are determined and within acceptable limits commensurate with ship characteristics, the particular anchorage, and prevailing environmental situation.	Functional: • How to select reference points for ranges and bearings. • How to use visual navigation instruments such as stadimeter, alidade, or pelorus. • How to operate and take readings (ranges and bearings) from available electronic navigation systems. Specific: • Knowledge of local fixed aids to navigation. • Knowledge of availability and reliability of electronic navigation systems at particular anchorage. • Knowledge of particular ship's electronic navigation system(s).

TASK CODE: II.D.7									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	50	1A	5	2B	45	2	2	2	2

TASK CODE: II.D.7	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Monitors collision avoidance system (visual and electronic) in order to detect other vessel traffic in vicinity of berth, mooring buoy, or anchorage, as applicable.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters both visually and electronically. • Promptly and accurately detects other vessel traffic in vicinity. Numerical: • In 100% of the cases, all other traffic in vicinity is detected.	Functional: • How to visually recognize other vessel traffic. • How to operate electronic collision avoidance system. Specific: • Knowledge of prevailing traffic patterns alongside berth, mooring buoy, or anchorage, as applicable, including seasonal variations. • Knowledge of individual ship's specific electronic collision avoidance system.

TASK CODE: II.D.8									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	85	1A	5	1A	10	4	5	4	2

TASK CODE: II.D.8	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Assesses all other threatening vessel traffic in vicinity of berth, mooring buoy, or anchorage, as applicable, in order to determine the existence of any real or potential collision hazard.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately determines the course, speed, closest point of approach (CPA), time to closest point of approach (TCPA) of all other threatening traffic in vicinity. • Properly ascertains the governing Rules of the Road and considers any other restraints imposed upon own ship by local navigation rules, practices, and VTS, is applicable. • Anticipates possible actions by other threatening traffic which may dictate reassessment of situation. • Makes assessment in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent traffic data are assessed for potential collision hazard.	Functional: • Understands principles of relative motion. • *How to determine* course, speed, CPA, and TCPA of all other vessels. • Understands applicable Rules of the Road and the limitations they impose upon his ship in determining potential collision hazard and possible counter action. Specific: • Knowledge of prevailing traffic patterns alongside berth, mooring buoy, or anchorage, as applicable, including seasonal variations. • Knowledge of local navigation rules, practices, and VTS, if applicable.

TASK CODE: II.D.9									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: II.D.9	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determine course of action to maneuver into/away from berth, mooring buoy, or anchorage, as applicable, while simultaneously avoiding collisions, rammings or groundings when a non-ship-control-related emergency occurs.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise especially other ships' intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. • Acts effectively and with aplomb under pressure. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability in shallow water and alongside berth, at mooring buoy, and at anchorage, as applicable. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions at the particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodyamics and as they may be affected by varying environmental conditions and other ship traffic. • Knowledge of particular ship's emergency bill organization and emergency procedures.

TASK CODE:	II.D.10								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE:	II.D.10	GOAL:	Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Examines and evaluates totat data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determine course of action to maneuver into/away from berth, mooring buoy, or anchorage, as applicable, while simultaneously avoiding collisions, ramming or groundings, when a ship-control-related emergency (such as loss of propulsive power of steering) occurs.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise, especially other ships' intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. • Acts effectively and with aplomb under pressure. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability in shallow water alongside berth, at mooring buoy, and at anchorage, as applicable. • Knowledge of procedures for various ship control emergencies. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions at the particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodynamics and as they may be affected by varying environmental conditions and other ship traffic. • Knowledge of particular ship's emergency bill organization and emergency procedures.

TASK CODE: II.D.11									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: II.D.11	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Conveys navigation orders to other bridge personnel (and tugboat operators, line handlers, buoy party, and anchor detail, as applicable) and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge, line handling, and anchor detail organization for berthing/unberthing.

TASK CODE: II.D.12									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: II.D.12	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed in maneuvering ship into/out of berth.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communication circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE: II.D.13									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: II.D.13	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain heading in maneuvering ship into/out of berth.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE: II.D.14									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	2	10	2C	45	4	4	3	2

TASK CODE: II.D.14	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Utilizes such external assistance as mooring lines, anchor(s) and anchor chain(s), and tugboat(s), as applicable, in order to provide ancilliary control in changing ship's heading and/or speed while approaching or clearing berth, mooring buoy, or anchorage.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Efficiently and correctly has ground tackle or mooring lines deployed to assist in turning ship's head and/or control its speed. • Properly has tugboat(s) apply necessary force vectors to assist in turning ship's head and/or control its speed. Numerical: • In 100% of the cases, tugboat force vectors are applied such that ship's head is turned, and/or ship's speed is regulated according to need and is commensurate with particular situation. • In 100% of the cases, ground tackle or mooring lines are deployed such that ship's head is turned, and/or ship's speed is regulated according to need and is commensurate with particular situation.	Functional: • Understanding of uses and limitations of all ground tackle, including shackles, swivels, chain stoppers, capstans, windlasses, etc. • Understanding of uses and limitations of various types of mooring lines and mooring winches. • Understanding of uses and capabilities of tugboats as they relate to assisting in overall ship controllability. • Knowledge of cause and effect between external ancilliary controls and ship response as they may be affected by environmental conditions such as wind, current, and shallow water. Specific: • Knowledge of particular tugboats and individual ship's mooring and anchoring systems and their interrelationships to ship controllability over the range of expected values for environmental variations at particular locale. • Knowledge of mooring/anchoring facilities at particular locale including bottom characteristics.

TASK CODE: II.D.15									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	50	2	25	1C	25	2	2	1	2

TASK CODE: II.D.15	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Maintains communications with tugboat operators, line handlers, buoy party and/or anchor detail, using onboard communications equipment, when necessary, in order to receive information from, and to monitor status of, assisting tugboats, mooring lines, and anchor(s).

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly operates all communications equipment. • Correctly interprets all feedback data. Numerical: • In 100% of the cases, all pertinent feedback data are monitored and correctly interpreted.	Functional: • How to operate onboard communications equipment such as radiotelephone, loud hailers, intercom, telephone, etc. • How to interpret feedback communications for status of equipment. Specific: • Knowledge of own ship's communications equipment. • Knowledge of communications to be employed for various situations at particular locals.

TASK CODE: II.D.16									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: II.D.16	GOAL: Berth/unberth ship expeditiously without damaging wharf, pier, mooring buoy, own ship, or other vessels.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maneuvering ship into/away from berth, mooring buoy, or anchorage, as applicable, when some emergency arises.

TASK: Sounds ship's whistle and displays required identification/signals/flags in accordance with Rules of the Road, in order to approach/leave berth safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to arrival/departure. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Goal III: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously

Objective III.A: Maintain designated track and speed within restricted waterway, modifying as required by conditions in order to avoid rammings and groundings

TASK CODE:	III.A.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	3	3	3	3

TASK CODE: III.A.1	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Studies intended track, using appropriate navigational charts and publications, in order to acquaint himself with local conditions of waterway limitations, prevailing environmental situation, aids to navigation, and potential navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Charts and publications are adequately studied. • Is thoroughly familiar with intended track, prevailing environmental situation, local aids to navigation, potential navigational hazards, and local navigation rules and practices. Numerical: • In 100% of the cases, all relevant data are ascertained as dictated by the particular situation.	Functional: • How to read and interpret navigational charts and publications. • How to relate charts to actual physical environment. Specific: • Knowledge of particular waterway, its aids to navigation and potential navigational hazards, local navigation rules and practices, and prevailing environmental conditions for that particular locale.

TASK CODE:	III.A.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE:	III.A.2	GOAL:	Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Visually scans the waters surrounding the intended track (course) utilizing the naked eye and binoculars in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various aids to navigation and navigational hazards. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. • How to visually recognize various aids to navigation such as fixed and floating channel markers, lighthouses, ranges, etc. Specific: • Knowledge of navigational aids along the track and their particular characteristics. • Knowledge of special hazards to navigation known in particular locale.

TASK CODE:	III.A.3

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: III.A.3	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards and aids to navigation. • Accurately detects various aids to navigation and navigational hazards on radar. • Accurately detects any navigational hazards (i.e., proximity of bottom) on fathometer. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect navigational hazards and aids to navigation on radar and fathometer. • How to identify navigational hazards and aids to navigation on radar and fathometer. Specific: • Knowledge of navigational aids along track or man-made and geophysical characteristics which present good radar tragets. • Knowledge of special hazards known in particular locale which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE:	III.A.4

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3A	60	1A	5	2A	35	3	3	4	2

TASK CODE:	III.A.4	GOAL:	Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Visually determines ranges to and bearings of fixed aids to navigation (reference points) using stadimeter and alidade, and pelorus, as appropriate, following standard procedures, and plots those readings on chart of the area, in order to establish ship's navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes instruments. • Accurately reads ranges and bearings off instruments. • Precisely transposes those readings to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and readings transposed to charts within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation at particular locale.	Functional: • How to select reference points for ranges and bearings. • How to use stadimeter, alidade, and pelorus. • How to transpose instrument readings to navigational charts. Specific: • Knowledge of local fixed aids to navigation.

TASK CODE:	III.A.5

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	3	2

TASK CODE: III.A.5	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings

TASK: Operates and takes readings from RDF, loran, Decca, and radar, from fathometer, and from Omega and Satellite Navigator, in order to determine navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum system or combination of systems for most accurate and prompt acquisition of information. • Accurately reads selected system output and precisely transposes those data to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and are within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation at particular locale.	Functional: • How to select appropriate navigational system. • How to operate and take ranges, bearings, and depth readings from selected navigational system. • How to transpose those readings to navigational charts. Specific: • Knowledge of local fixed aids to navigation or man-made and geophysical characteristics along track which present good radar targets. • Knowledge of availability and reliability of various electronic navigational systems within particular locale.

TASK CODE:	III.A.6

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: III.A.6	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Monitors wind direction and speed indicators, and obtains/reviews information on tides, currents, and wave height and direction, in order to ascertain wind, current, and tide/wave conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated tide and current data along track. • Reliably estimates wave height and direction. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • How to visually estimate wave height and direction. • Where to obtain tide and current data. Specific: • Knowledge of prevailing environmental conditions along track and seasonal variations throughout the range of expected values.

TASK CODE:	III.A.7

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: III.A.7	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator, visually scans steering and propulsion system status indicators, looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. • How to recognize audio and visual failure alarms for steering and propulsion system. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE:	III.A.8

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE:	III.A.8	GOAL:	Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Monitors voice radio (bridge-to-bridge, ship-to-shore, and vessel traffic system (VTS) network, as applicable), and internal communication systems in order to maintain radio watch.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks in particular locale. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE:	III.A.9

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE:	III.A.9	GOAL:	Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

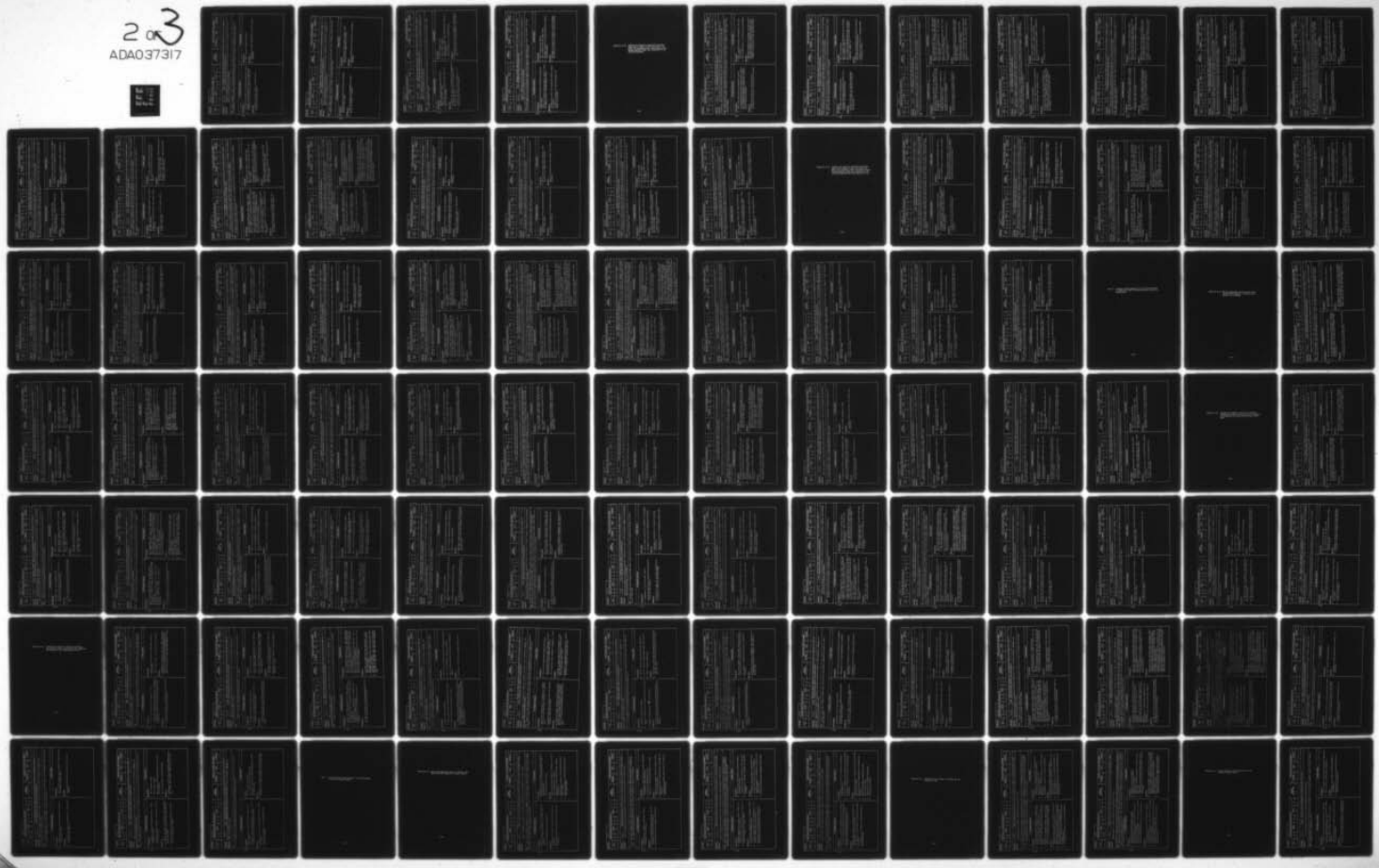
OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, and own ship's mission (purpose and goals), in order to determine course of action to maintain desired track and speed within the prescribed limits of the waterway.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before a decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability. Specific: • Knowledge of specific ship's hydrodynamic characteristics as they may be affected by prevailing environmental conditions at particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of particular ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodynamics and as they may be affected by varying local environmental conditions.

AD-A037 317 OPERATIONS RESEARCH INC SILVER SPRING MD F/G 5/9
TASK ANALYSIS REPORT RELATIVE TO VESSEL COLLISIONS, RAMMINGS, A--ETC(U)
DEC 76 J SMITH, P DANIELS, B PARAMORE DOT-CG-41903-A
UNCLASSIFIED ORI-TR-1049-VOL-2 USCG-D-1-77-VOL-2 NL

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TASK CODE:	III.A.10

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: III.A.10	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Conveys navigation orders to other bridge personnel (and tugboat operators if applicable), and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other bridge personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate bridge personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge organization for various watch conditions.

TASK CODE:	III.A.11

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: III.A.11	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communications circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE:	III.A.12

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE:	III.A.12	GOAL:	Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain course.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE:	III.A.13

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: III.A.13	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within restricted waterway, modifying as required by conditions, in order to avoid rammings and groundings.

TASK: Sounds ship's whistle and displays required identification/signal/flags in accordance with Rules of the Road, in order to maneuver in restricted waters safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to changing course or ordering engines astern. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Objective III.B: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway

TASK CODE:	III.B.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	3	3	3	3

TASK CODE: III.B.1	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Studies intended track, using appropriate navigational charts and publications, in order to acquaint self with local conditions of waterway limitations, prevailing environmental situation, aids to navigation, and potential navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Charts and publications are adequately studied. • Is thoroughly familiar with intended track, prevailing environmental situation, local aids to navigation, potential navigational hazards, and local navigation rules and practices. Numerical: • In 100% of the cases, all relevant data are ascertained as dictated by the particular situation.	Functional: • How to read and interpret navigational charts and publications. • How to relate charts to actual physical environment. Specific: • Knowledge of particular waterway, its aids to navigation and potential navigational hazards, local navigation rules and practices, and prevailing environmental conditions for that particular locale.

TASK CODE:	III.B.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: III.B.2	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Visually scans the waters surrounding the intended track (course) utilizing the naked eye and binoculars in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive</u>: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various aids to navigation and navigational hazards. <u>Numerical</u>: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected and identified.	<u>Functional</u>: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. • How to visually recognize various aids to navigation such as fixed and floating channel markers, lighthouses, ranges, etc. <u>Specific</u>: • Knowledge of navigational aids along the track and their particular characteristics. • Knowledge of special hazards to navigation known in particular locale.

TASK CODE: III.B.3									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: III.B.3	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards and aids to navigation. • Accurately detects various aids to navigation and navigational hazards on radar. • Accurately detects any navigational hazards (i.e., proximity of bottom) on fathometer. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect navigational hazards and aids to navigation on radar and fathometer. • How to identify navigational hazards and aids to navigation on radar. Specific: • Knowledge of navigational aids along track, or man-made and geophysical characteristics which present good radar targets. • Knowledge of special hazards known in particular locale which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE:	III.B.4

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3A	60	1A	5	2A	35	3	3	4	2

TASK CODE: III.B.4	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Visually determines ranges to and bearings of fixed aids to navigation (reference points) using stadimeter, alidade, and pelorus, as appropriate, following standard procedures, and plots those readings on chart of the area, in order to establish ship's navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes instruments. • Accurately reads ranges and bearings off instruments. • Precisely transposes those readings to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and readings transposed to charts within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation at particular locale.	Functional: • How to select reference points for ranges and bearings. • How to use stadimeter, alidade, and pelorus. • How to transpose instrument readings to navigational charts. Specific: • Knowledge of local fixed aids to navigation.

TASK CODE: III.B.5									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	3	2

TASK CODE: III.B.5	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Operates and takes readings from RDF, loran, Decca, and radar, from fathometer, and from Omega, in order to determine navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum system or combination of systems for most accurate and prompt acquisition of information. • Accurately reads selected system output and precisely transposes those data to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and are within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation at particular locale.	Functional: • How to select appropriate navigational system. • How to operate and take ranges, bearings, and depth readings from selected navigational system. • How to transpose those readings to navigational charts. Specific: • Knowledge of local fixed aids to navigation or man-made and geophysical characteristics along track, which present good radar targets. • Knowledge of availability and reliability of various electronic navigational systems within particular locale.

TASK CODE:	III.B.6

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: III.B.6	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Monitors wind direction and speed indicators, and obtains/reviews information on tides, currents, and wave height and direction, in order to ascertain wind, current, and tide/wave conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated tide and current data along track. • Reliably estimates wave height and direction. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • How to visually estimate wave height and direction. • Where to obtain tide and current data. Specific: • Knowledge of prevailing environmental conditions along track and seasonal variations throughout the range of expected values.

TASK CODE:	III.B.7

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: III.B.7	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. • How to recognize audio and visual failure alarms for steering and propulsion system. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE:	III.B.8								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE:	III.B.8	GOAL:	Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Monitors voice radio (bridge-to-bridge, ship-to-shore and vessel traffic system (VTS) network, as applicable) and internal communication systems in order to maintain radio watch.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks in particular locale. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE: III.B.9

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	50	1A	5	2B	45	2	2	2	2

TASK CODE: III.B.9

GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Monitors collision avoidance system (visual and electronic) in order to detect other vessel traffic in vicinity.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters both visually and electronically. • Promptly and accurately detects other vessel traffic in vicinity. Numerical: • In 100% of the cases, all other vessel traffic in vicinity is detected.	Functional: • How to visually recognize other vessel traffic. • How to operate electronic collision avoidance system. Specific: • Knowledge of prevailing traffic patterns along track, including seasonal variations. • Knowledge of individual ship's specific electronic collision avoidance system.

TASK CODE:	III.B.10

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	85	1A	5	1A	10	4	5	4	2

TASK CODE: III.B.10	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Assesses all other vessel traffic in vicinity and navigational situation in order to determine the existence of any real or potential collision hazard.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately determines the course, speed, closest point of approach (CPA), time to closest point of approach (TCPA) of all threatening traffic in vicinity. • Properly ascertains the governing rules of the road and considers any other restraints imposed upon own ship or other traffic by local navigation rules, practices, and VTS, if applicable. • Anticipates possible actions by threatening traffic which may dictate reassessment of situation. • Makes assessment in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent traffic data are assessed for potential collision hazard.	Functional: • Understands principles of relative motion. • How to determine course, speed, CPA, TCPA of all other vessels. • Understands applicable rules of the road and the limitations they impose upon his ship in determining potential collision hazard and possible counter action. Specific: • Knowledge of prevailing traffic patterns along track, including seasonal variations. • Knowledge of local navigation rules, practices and VTS, if applicable.

TASK CODE:	III.B.11

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: III.B.11	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determine course of action to maintain desired track and speed within prescribed limits of waterway, while simultaneously avoiding collisions, rammings, or groundings.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise, especially other ship's intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decisions in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability. • How to use regulations, conventions, principles, Rules of the Nautical Road (International and Inland) for navigating a ship in restricted waters. Specific: • Knowledge of own and other ship's hydrodynamic characteristics as they may be affected by prevailing environmental conditions at the particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodynamics and as they may be affected by varying environmental conditions and other ship traffic.

TASK CODE:	III.B.12

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: III.B.12	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Conveys navigation orders to other bridge personnel (and tugboat operators if applicable) and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other bridge personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate bridge personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge organization for various watch conditions.

TASK CODE:	III.B.13

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: III.B.13	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communications circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE:	III.B.14

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: III.B.14	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain course.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE:	III.B.15

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: III.B.15	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groudings, while simultaneously maintaining position within the limitations of the restricted waterway.

TASK: Sounds ship's whistle and displays required identification/signals/flags in accordance with Rules of the Road, in order to maneuver in restricted waters safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to changing course or ordering engines astern. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Objective III.C: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises

TASK CODE: III.C.1									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	3	3	3	3

TASK CODE: III.C.1	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Studies intended track, using appropriate navigational charts and publications, in order to acquaint self with local conditions of waterway limitations, prevailing environmental situation, aids to navigation, and potential navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Charts and publications are adequately studied. • Is thoroughly familiar with intended track, prevailing environmental situation, local aids to navigation, potential navigational hazards, and local navigation rules and practices. Numerical: • In 100% of the cases, all relevant data are ascertained as dictated by the particular situation.	Functional: • How to read and interpret navigational charts and publications. • How to relate charts to actual physical environment. Specific: • Knowledge of particular waterway, its aids to navigation and potential navigational hazards, local navigation rules and practices, and prevailing environmental conditions for that particular locale.

TASK CODE: III.C.2									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: III.C.2	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Visually scans the waters surrounding the intended track (course) utilizing the naked eye and binoculars in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various aids to navigation and navigational hazards. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. • How to visually recognize various aids to navigation such as fixed and floating channel markers, lighthouse, ranges, etc. Specific: • Knowledge of navigational aids along the track, and their particular characteristics. • Knowledge of special hazards to navigation known in particular locale.

TASK CODE:	III.C.3

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: III.C.3	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards and aids to navigation. • Accurately detects various aids to navigation and navigational hazards on radar. • Accurately detects any navigational hazards on fathometer. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect navigational hazards and aids to navigation on radar and fathometer. • How to identify navigational hazards and aids to navigation on radar and fathometer. Specific: • Knowledge of navigational aids along track, or man-made and geophysical characteristics which present good radar targets. • Knowledge of special hazards known along route which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE: III.C.4									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3A	60	1A	5	2A	35	3	3	4	2

TASK CODE: III.C.4	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Visually determines ranges to and bearings of fixed aids to navigation (reference points), if available, using stadimeter, alidade, and pelorus, as appropriate, following standard procedures, and plots those readings on chart of the area, in order to establish ship's navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes instruments. • Accurately reads ranges and bearings off instruments. • Precisely transposes those readings to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and readings transposed to charts within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select reference points for ranges and bearings. • How to use stadimeter, alidade, and pelorus. • How to transpose instrument readings to navigational charts. Specific: • Knowledge of local fixed aids to navigation.

TASK CODE:	III.C.5

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	3	2

TASK CODE: III.C.5	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Operates and takes readings from RDF, loran, Decca, and radar, from fathometer, and from Omega and satellite navigator, in order to determine lines of position, water depths, and navigational positions, respectively.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum system or combination of systems for most accurate and prompt acquisition of information. • Accurately reads selected system output and precisely transposes those data to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and are within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select appropriate navigational system. • How to operate and take ranges, bearings, and depth readings from selected navigational system. • How to transpose those readings to navigational charts. Specific: • Knowledge of those fixed aids to navigation or man-made and geophysical characteristics along route which present good radar targets. • Knowledge of availability and reliability of various electronic navigational systems within particular locale.

TASK CODE:	III.C.6

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: III.C.6	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Monitors wind direction and speed indicators, and obtains/reviews information on currents and wave height and direction, in order to ascertain wind, current, and wave conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated current data along track. • Reliably estimates wave height and direction. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • How to visually estimate wave height and direction. • Where to obtain current data. Specific: • Knowledge of prevailing environmental conditions along route and seasonal variations throughout the range of expected values.

TASK CODE:	III.C.7

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: III.C.7	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE: III.C.8									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE: III.C.8	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Monitors voice radio (bridge-to-bridge, ship-to-shore, and vessel traffic system (VTS) network, as applicable) and internal communication systems in order to maintain radio watch.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks in particular locale. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE:	III.C.9

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	50	1A	5	2B	45	2	2	2	2

TASK CODE: III.C.9	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK:

Monitors collision avoidance system (visual and electronic) in order to detect other vessel traffic in vicinity.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters both visually and electronically. • Promptly and accurately detects other vessel traffic in vicinity. Numerical: • In 100% of the cases, all other vessel traffic in vicinity is detected.	Functional: • How to visually recognize other vessel traffic. • How to operate electronic collision avoidance system. Specific: • Knowledge of prevailing traffic patterns along track, including seasonal variations. • Knowledge of individual ship's specific electronic collision avoidance system.

TASK CODE:	III.C.10								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	85	1A	5	1A	10	4	5	4	2

TASK CODE: III.C.10	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Assesses all other vessel traffic in vicinity and navigational situation in order to determine the existence of any real or potential collision hazard.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately determines the course, speed, closest point of approach (CPA), time to closest point of approach (TCPA) of all threatening traffic in vicinity. • Properly ascertains the governing Rules of the Road and considers any other restraints imposed upon own ship or other traffic by local navigation rules, practices, and VTS, if applicable. • Anticipates possible actions by threatening traffic which may dictate reassessment of situation. • Makes assessment in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent traffic data are assessed for potential collision hazard.	Functional: • Understands principles of relative motion. • How to determine course, speed, CPA and TCPA of all other vessels. • Understands applicable Rules of the Road and the limitations they impose upon his ship in determining potential collision hazard and possible counter action. Specific: • Knowledge of prevailing traffic patterns along track, including seasonal variations. • Knowledge of local navigation rules, practices and VTS, if applicable.

TASK CODE:	III.C.11								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: III.C.11	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determine course of action to maintain desired track and speed within prescribed limits of waterway, while simultaneously avoiding collisions, rammings, or groundings when a non-ship-control-related emergency occurs.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise, especially other ships' intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. • Acts effectively and with aplomb under pressure. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, *ancilliary equipment* (both onboard and external to the ship), and environmental factors as they relate to ship controllability. • How to use regulations, conventions, principles, Rules of the Nautical Road (International and Inland) for navigating a ship in restricted waters. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions at the particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodynamics and as they may be affected by varying environmental conditions and other ship traffic. • Knowledge of particular ship's emergency bill organization and emergency procedures.

TASK CODE:	III.C.12

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: III.C.12	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determine course of action to maintain desired track and speed within prescribed limits of waterway, while simultaneously avoiding collisions, rammings or groundings when a ship-control-related emergency (such as a loss of propulsive power or steering) occurs.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise, especially other ships' intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. • Acts effectively and with aplomb under pressure. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to ship) and environmental factors as they relate to ship controllability. • Knowledge of procedures for various ship control emergencies. • How to use regulations, conventions, principles, Rules of the Nautical Road (International and Inland) for navigating a ship in restricted waters. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions at the particular locale and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment and shoreside ancilliary equipment provided in particular locale as they affect ship hydrodynamics and as they may be affected by varying environmental conditions and other ship traffic. • Knowledge of particular ship's emergency bill organization and emergency procedures.

TASK CODE:	III.C.13								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: III.C.13	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Conveys navigation orders to other bridge personnel and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other bridge personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate bridge personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge organization for various watch conditions.

TASK CODE:	III.C.14

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: III.C.14	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communications circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE: III.C.15									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: III.C.15	GOAL: Navigate through (maneuver in) restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain course.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE:	III.C.16								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE:	III.C.16	GOAL:	*Navigate through (maneuver in)* restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings while simultaneously maintaining position within the limitations of the restricted waterway when some emergency arises.

TASK: Sounds ship's whistle and displays required identification/signals/flags in accordance with Rules of the Road, in order to maneuver in restricted waters safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to changing course or ordering engines astern. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • *How to operate ship whistle.* • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Goal IV: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

Objective IV.A: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings

TASK CODE:	IV.A.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	3	3	3	3

TASK CODE: IV.A.1	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Studies intended track, using appropriate navigational charts and publications, in order to acquaint self with conditions along route, prevailing environmental situation, aids to navigation, and potential navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Charts and publications are adequately studied. • Is thoroughly familiar with intended track, prevailing environmental situation, aids to navigation, potential navigational hazards, and applicable navigation rules and practices. Numerical: • In 100% of the cases, all relevant data are ascertained as dictated by the particular situation.	Functional: • How to read and interpret navigational charts and publications. • How to relate charts to actual physical environment. Specific: • Knowledge of particular route, its aids to navigation and potential navigational hazards, applicable navigation rules and practices, and prevailing environmental conditions for that particular segment of route.

TASK CODE:	IV.A.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: IV.A.2	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Visually scans the waters surrounding the intended track (course) utilizing the naked eye and binoculars in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various aids to navigation and navigational aids. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. • How to visually recognize various aids to navigation such as fixed and floating channel markers, lighthouse, ranges, etc. Specific: • Knowledge of navigational aids along the track, and their particular characteristics. • Knowledge of special hazards to navigation known in particular locale.

TASK CODE:	IV.A.3

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: IV.A.3	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards and aids to navigation. • Accurately detects various aids to navigation and navigational hazards on radar. • Accurately detects any navigational hazards on fathometer. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect navigational hazards and aids to navigation on radar and fathometer. • How to identify navigational hazards and aids to navigation on radar and fathometer. Specific: • Knowledge of navigational aids along track, or man-made and geophysical characteristics which present good radar targets. • Knowledge of special hazards known along route which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE: IV.A.4									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3A	60	1A	5	2A	35	3	3	4	2

TASK CODE: IV.A.4	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:
Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Visually determines ranges to and bearings of fixed aids to navigation (reference points), if available, using stadimeter, alidade, and pelorus, as appropriate, following standard procedures, and plots those readings on chart of the area, in order to establish ship's navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes instruments. • Accurately reads ranges and bearings off instruments. • Precisely transposes those readings to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and readings transposed to charts within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select reference points for ranges and bearings. • How to use stadimeter, alidade, and pelorus. • How to transpose instrument readings to navigational charts. Specific: • Knowledge of fixed aids to navigation along route.

TASK CODE:	IV.A.5

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	3	2

TASK CODE: IV.A.5	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:
Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Operates and takes readings from RDF, loran, Decca, and radar, from fathometer, and from Omega and satellite navigator, in order to determine lines of position, water depths, and navigational positions, respectively.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum system or combination of systems for most accurate and prompt acquisition of information. • Accurately reads selected system output and precisely transposes those data to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and are within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select appropriate navigational system. • How to operate and take ranges, bearings, and depth readings from selected navigational system. • How to transpose those readings to navigational charts. Specific: • Knowledge of those fixed aids to navigation or man-made and geophysical characteristics along route which present good radar targets. • Knowledge of availability and reliability of various electronic navigational systems along route.

TASK CODE:	IV.A.6								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: IV.A.6	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Monitors wind direction and speed indicators, and obtains/reviews information on currents and wave height and direction, in order to ascertain wind, current, and wave conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated current data along track. • Reliably estimates wave height and direction. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • How to visually estimate wave height and direction. • Where to obtain current data. Specific: • Knowledge of prevailing environmental conditions along route and seasonal variations throughout the range of expected values.

TASK CODE: IV.A.7									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: IV.A.7	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:

Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK:

Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE:	IV.A.8

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE: IV.A.8	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Monitors voice radio (bridge-to-bridge and/or ship-to-shore) and internal communication systems in order to maintain radio watch.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks along route. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE:	IV.A.9								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	3	6	4	3

TASK CODE: IV.A.9	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:
Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK:
Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of onboard equipment, and own ship's mission (purpose and goals), in order to determine course of action to maintain desired track and speed.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticpates any and all possibilities which may arise. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment, and environmental factors as they relate to ship controllability. Specific: • Knowledge of specific ship's hydrodynamic characteristics as they may be affected by prevailing environmental conditions along route and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of particular ship's ancilliary equipment as it affects ship hydrodynamics and as it may be affected by varying local environmental conditions.

TASK CODE:	IV.A.10

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: IV.A.10	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Conveys navigation orders to other bridge personnel and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other bridge personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate bridge personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge organization for various watch conditions.

TASK CODE:	IV.A.11								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: IV.A.11	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communications circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE:	IV.A.12

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: IV.A.12	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings and groundings.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain course.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE:	IV.A.13								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: IV.A.13	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.
OBJECTIVE: Maintain designated track and speed within non-restricted waterway in order to avoid rammings or groundings.	
TASK: Sounds ship's whistle and displays required identification/signals/flags in accordance with Rules of the Road, in order to maneuver in non-restricted waters safely and according to proper procedure.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to changing course or ordering engines astern. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Objective IV.B: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment)

TASK CODE:	IV.B.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	3	3	3	3

TASK CODE: IV.B.1	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Studies intended track, using appropriate navigational charts and publications, in order to acquaint self with conditions along route, prevailing environmental situation, aids to navigation, and potential navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Charts and publications are adequately studied. • Is thoroughly familiar with intended track, prevailing environmental situation, aids to navigation, potential navigational hazards, and applicable navigation rules and practices. Numerical: • In 100% of the cases, all relevant data are ascertained as dictated by the particular situation.	Functional: • How to read and interpret navigational charts and publications. • How to relate charts to actual physical environment. Specific: • Knowledge of particular route, its aids to navigation and potential navigational hazards, applicable navigation rules and practices, and prevailing environmental conditions for that particular segment of route.

TASK CODE:	IV.B.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: IV.B.2	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Visually scans the waters surrounding the intended track (course) utilizing the naked eye and binoculars in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various aids to navigation and navigational hazards. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. • How to visually recognize various aids to navigation such as fixed and floating channel markers, lighthouse, ranges, etc. Specific: • Knowledge of navigational aids along the track, and their particular characteristics. • Knowledge of special hazards to navigation known in particular locale.

TASK CODE:	IV.B.3

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: IV.B.3	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards and aids to navigation. • Accurately detects various aids to navigation and navigational hazards on radar. • Accurately detects any navigational hazards on fathometer. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect navigational hazards and aids to navigation on radar and fathometer. • How to identify navigational hazards and aids to navigation on radar and fathometer. Specific: • Knowledge of navigational aids along track, or man-made and geophysical characteristics which present good radar targets. • Knowledge of special hazards known along route which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE: IV.B.4									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3A	60	1A	5	2A	35	3	3	4	2

TASK CODE: IV.B.4	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Visually determines ranges to and bearings of fixed aids to navigation (reference points), if available, using stadimeter, alidade, and pelorus, as appropriate, following standard procedures, and plots those readings on chart of the area, in order to establish ship's navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes instruments. • Accurately reads ranges and bearings off instruments. • Precisely transposes those readings to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and readings transposed to charts within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select reference points for ranges and bearings. • How to use stadimeter, alidade, and pelorus. • How to transpose instrument readings to navigational charts. Specific: • Knowledge of fixed aids to navigation along route.

TASK CODE:	IV.B.5

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	3	2

TASK CODE: IV.B.5	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings and groundings (non-restricted waterway environment).

TASK: Operates and takes readings from RDF, loran, Decca, and radar, from fathometer, and from Omega and satellite navigator, in order to determine lines of position, water depths, and navigational positions, respectively.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum system or combination of systems for most accurate and prompt acquisition of information. • Accurately reads selected system output and precisely transposes those data to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and are within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select appropriate navigational system. • How to operate and take ranges, bearings, and depth readings from selected navigational system. • How to transpose those readings to navigational charts. Specific: • Knowledge of those fixed aids to navigation or man-made and geophysical characteristics along route which present good radar targets. • Knowledge of availability and reliability of various electronic navigational systems along route.

TASK CODE: IV.B.6									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: IV.B.6	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Monitors wind direction and speed indicators, and obtains/reviews information on currents and wave height and direction, in order to ascertain wind, current, and wave conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated current data along track. • Reliably estimates wave height and direction. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • How to visually estimate wave height and direction. • Where to obtain current data. Specific: • Knowledge of prevailing environmental conditions along route and seasonal variations throughout the range of expected values.

TASK CODE:	IV.B.7

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: IV.B.7	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	*Functional:* • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE:	IV.B.8

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE: IV.B.8	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Monitors voice radio (bridge-to-bridge and/or ship-to-shore) and internal communication systems in order to maintain radio watch.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks along route. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE:	IV.B.9

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	50	1A	5	2B	45	2	2	2	2

TASK CODE: IV.B.9	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Monitors collision avoidance system (visual and electronic) in order to detect other vessel traffic in vicinity.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters both visually and electronically. • Promptly and accurately detects other vessel traffic in vicinity. Numerical: • In 100% of the cases, all other vessel traffic in vicinity is detected.	Functional: • How to visually recognize other vessel traffic. • How to operate electronic collision avoidance system. Specific: • Knowledge of prevailing traffic patterns along route, including seasonal variations. • Knowledge of individual ship's specific electronic collision avoidance system.

TASK CODE:	IV.B.10

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	85	1A	5	1A	10	4	5	4	2

TASK CODE: IV.B.10	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous condtions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Assesses all other vessel traffic in vicinity and navigational situation in order to determine the existence of any real or potential collision hazard.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately determines the course, speed, closest point of approach (CPA), time to closest point of approach (TCPA) of all threatening traffic in vicinity. • Properly ascertains the governing Rules of the Road and considers any other restraints imposed upon own ship or other traffic by applicable navigation rules and practices, if provided. • Anticipates possible actions by threatening traffic which may dictate reassessment of situation. • Makes assessment in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent traffic data are assessed for potential collision hazard.	Functional: • Understands principles of relative motion. • How to determine course, speed, CPA and TCPA of all other vessels. • Understands applicable Rules of the Road and the limitations they impose upon his ship in determining potential collision hazard and possible counter action. Specific: • Knowledge of prevailing traffic patterns along route including seasonal variations. • Knowledge of applicable navigation rules and practices, if provided.

TASK CODE:	IV.B.11								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: IV.B.11	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determin course of action to maintain desired track and speed while simultaneously avoiding collisions, rammings, or groundings.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise, especially other ships' intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability. • How to use regulations, conventions, principles, Rules of the Nautical Road for navigating a ship in non-restricted waters. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions along route and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment as it affects ship hydrodynamics and as it may be affected by varying environmental conditions and other ship traffic.

TASK CODE:	IV.B.12

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: IV.B.12	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK: Conveys navigation orders to other bridge personnel and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other bridge personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate bridge personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge organization for various watch conditions.

TASK CODE:	IV.B.13								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: IV.B. 13	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.
OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collsions, rammings, and groundings (non-restricted waterway environment).	
TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communications circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE: IV.B.14									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: IV.B.14	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.
OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).	
TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain course.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE:	IV.B.15

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: IV.B.15	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings (non-restricted waterway environment).

TASK:
Sounds ship's whistle and displays required identification/signals/flags in accordance with Rules of the Road, in order to maneuver in non-restricted waters safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to changing course or ordering engines astern. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Objective IV.C: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings, when some emergency arises.

TASK CODE: IV.C.1									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	3	3	3	3

TASK CODE: IV.C.1	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK:
Studies intended track, using appropriate navigational charts and publications, in order to acquaint self with conditions along route, prevailing environmental situation, aids to navigation, and potential navigational hazards.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Charts and publications are adequately studied. • Is thoroughly familiar with intended track, prevailing environmental situation, aids to navigation, potential navigational hazards, and applicable navigation rules and practices. Numerical: • In 100% of the cases, all relevant data are ascertained as dictated by the particular situation.	Functional: • How to read and interpret navigational charts and publications. • How to relate charts to actual physical environment. Specific: • Knowledge of particular route, its aids to navigation and potential navigational hazards, applicable navigation rules and practices, and prevailing environmental conditions for that particular segment of route.

TASK CODE:	IV.C.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	70	1A	5	1A	25	3	3	1	1

TASK CODE: IV.C.2	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Visually scans the waters surrounding the intended track (course) utilizing the naked eye and binoculars in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters. • Accurately and promptly identifies various aids to navigation and navigational hazards. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected and identified.	Functional: • How to use binoculars. • How to visually recognize hazards such as floating debris, shallow water, etc. • How to visually recognize various aids to navigation such as fixed and floating channel markers, lighthouse, ranges, etc. Specific: • Knowledge of navigational aids along the track, and their particular characteristics. • Knowledge of special hazards to navigation known in particular locale.

TASK CODE: IV.C.3									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	1A	5	3A	40	3	3	3	1

TASK CODE: IV.C.3	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:
Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Operates the radar and fathometer in order to detect and identify navigational hazards and aids to navigation.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum combination of range scales, sector search, intensity, etc., for the most accurate and prompt detection of navigational hazards and aids to navigation. • Accurately detects various aids to navigation and navigational hazards on radar. • Accurately detects any navigational hazards on fathometer. Numerical: • In 100% of the cases, all necessary navigational aids and all navigational hazards are detected.	Functional: • How to manipulate radar unit, i.e., vary range scales, sector search selector, intensity, range and bearing circles and lines, true or relative motion mode, etc. • How to manipulate fathometer unit, i.e., vary depth scale, intensity, etc. • How to detect navigational hazards and aids to navigation on radar and fathometer. • How to identify navigational hazards and aids to navigation on radar and fathometer. Specific: • Knowledge of navigational aids along track, or man-made and geophysical characteristics which present good radar targets. • Knowledge of special hazards known along route which present radar targets. • Knowledge of individual ship's particular radar unit. • Knowledge of individual ship's particular fathometer unit.

TASK CODE:	IV.C.4

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3A	60	1A	5	2A	35	3	3	4	2

TASK CODE: IV.C.4	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Visually determines ranges to and bearings of fixed aids to navigation (reference points), if available, using stadimeter, alidade, and pelorus, as appropriate, following standard procedures, and plots those readings on chart of the area, in order to establish ship's navigational position.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Properly utilizes instruments. • Accurately reads ranges and bearings off instruments. • Precisely transposes those readings to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and readings transposed to charts within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select reference points for ranges and bearings. • How to use stadimeter, alidade, and pelorus. • How to transpose instrument readings to navigational charts. Specific: • Knowledge of fixed aids to navigation along route.

TASK CODE:	IV.C.5

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	45	1A	5	3A	50	3	3	3	2

TASK CODE: IV.C.5	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:

Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Operates and takes readings from RDF, loran, Decca, and radar, from fathometer, and from Omega and satellite navigator, in order to determine lines of position, water depths, and navigational positions, respectively.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Selects the optimum system or combination of systems for most accurate and prompt acquisition of information. • Accurately reads selected system output and precisely transposes those data to charts. Numerical: • In 100% of the cases, ranges and bearings are determined and are within acceptable limits commensurate with ship speed, channel configuration and limitations, and prevailing environmental situation along route.	Functional: • How to select appropriate navigational system. • How to operate and take ranges, bearings, and depth readings from selected navigational system. • How to transpose those readings to navigational charts. Specific: • Knowledge of those fixed aids to navigation or man-made and geophysical characteristics along route which present good radar targets. • Knowledge of availability and reliability of various electronic navigational systems along route.

TASK CODE: IV.C.6									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2	2	3	3

TASK CODE: IV.C.6	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Monitors wind direction and speed indicators, and obtains/reviews information on currents and wave height and direction, in order to ascertain wind, current, and wave conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads all instruments. • Routinely ascertains pre-calculated current data along track. • Reliably estimates wave height and direction. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read wind speed and direction indicators. • How to visually estimate wave height and direction. • Where to obtain current data. Specific: • Knowledge of prevailing environmental conditions along route and seasonal variations throughout the range of expected values.

TASK CODE: IV.C.7									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	85	1A	5	1A	10	2	1	2	2

TASK CODE: IV.C.7	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Reads dials of instruments such as compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator; visually scans steering and propulsion system status indicators; looks and listens for steering machinery and propulsion system audio and visual failure alarms, in order to ascertain heading, speed, rudder angle, and propeller speed, and to monitor operating conditions of steering and propulsion systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly reads and surveys all instrumentation. Numerical: • In 100% of the cases, readings and observations are within acceptable limits in accordance with particular situation.	Functional: • How to read compass, rudder angle indicator, throttle position indicator, speed indicator, and RPM indicator. • How to monitor steering and propulsion system status indicators. Specific: • Knowledge of location, arrangement, and characteristics of particular indicators, displays, and alarms on specific ship.

TASK CODE: IV.C.8									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	85	1A	5	2B	10	3	2	2	2

TASK CODE: IV.C.8	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Monitors voice radio (bridge-to-bridge and/or ship-to-shore) and internal communication systems in order to maintain radio watch.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is attentive to all voice radio traffic. • Efficiently monitors all communications applicable to own ship and situation. Numerical: • In 100% of the cases, all pertinent communications are detected, understood, and acknowledged.	Functional: • How to operate various radio frequency (rf) equipment. • Knowledge of voice radio communication procedures. Specific: • Knowledge of availability of various rf networks along route. • Knowledge of specific rf equipment provided on particular ship.

TASK CODE: IV.C.9									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	50	1A	5	2B	45	2	2	2	2

TASK CODE: IV.C.9	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Monitors collision avoidance system (visual and electronic) in order to detect other vessel traffic in vicinity.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thoroughly scans the surrounding waters both visually and electronically. • Promptly and accurately detects other vessel traffic in vicinity. Numerical: • In 100% of the cases, all other vessel traffic in vicinity is detected.	Functional: • How to visually recognize other vessel traffic. • How to operate electronic collision avoidance system. Specific: • Knowledge of prevailing traffic patterns along route, including seasonal variations. • Knowledge of individual ship's specific electronic collision avoidance system.

TASK CODE: IV.C.10									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	85	1A	5	1A	10	4	5	4	2

TASK CODE: IV.C.10	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Assesses all other vessel traffic in vicinity and navigational situation in order to determine the existence of any real or potential collision hazard.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Accurately determines the course, speed, closets point of approach (CPA), time to closets point of approach (TCPA) of all threatening traffic in vicinity. • Properly ascertains the governing rules of the road and considers any other restraints imposed upon own ship or other traffic by applicable navigation rules and practices, if provided. • Anticipates possible actions by threatening traffic which may dictate reassessment of the situation. • Makes assessment in timely manner commensurate with situation. Numerical: • In 100% of the cases, all pertinent traffic data are assessed for potential collision hazard.	Functional: • Understands principles of relative motion. • How to determine course, speed, CPA, TCPA of all other vessels. • Understands applicable rules of the road and the limitations they impose upon his ship in determining potential collision hazard and possible counter action. Specific: • Knowledge of prevailing traffic patterns along route including seasonal variations. • Knowledge of applicable navigation rules and practices, if provided.

TASK CODE:	IV.C.11

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: IV.C.11	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:

Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determine course of action to maintain desired track and speed, while simultaneously avoiding collisions, rammings, or groundings, when a non-ship-control-related emergency occurs.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possibilities which may arise, especially other ships' intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. • Acts effectively and with aplomb under pressure. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability. • How to use regulations, conventions, principles, Rules of the Nautical Road for navigationg a ship in non-restricted waters. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions along route and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment as it affects ship hydrodynamics and as it may be affected by varying environmental conditions and other ship traffic. • Knowledge of particular ship's emergency bill organisation and emergency procedures.

TASK CODE: IV.C.12									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	90	1A	5	1A	5	5	6	4	3

TASK CODE: IV.C.12	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE:

Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings and groundings when some emergency arises.

TASK: Examines and evaluates total data input concerning environmental situation, own ship's characteristics, status of both onboard and external ancilliary equipment, collision hazards, and own ship's mission (purpose and goals), in order to determine course of action to maintain desired track and speed, while simultaneously avoiding collisions, rammings, or groundings when a ship-control-related emergency (such as loss of propulsive power or steering) occurs.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Anticipates any and all possiblities which may arise, especially other ships' intentions and actions. • Continually maintains mental alertness, i.e., is vigilant. • Maintains sense of proportion among input data and various action options as situation changes or progresses. • Makes decision in timely manner commensurate with situation. • Acts effectively and with aplomb under pressure. Numerical: • In 100% of the cases, all pertinent data are examined and evaluated in accordance with the particular situation before decision is reached.	Functional: • Understands interrelationships which exist among ship, ancilliary equipment (both onboard and external to the ship), and environmental factors as they relate to ship controllability. • Knowledge of procedures for various ship controlled related emergencies. • How to use regulations, conventions, principles, Rules of the Nautical Road for navigating a ship in non-restricted waters. Specific: • Knowledge of own and other ships' hydrodynamic characteristics as they may be affected by prevailing environmental conditions along route and the seasonal variations of those environmental conditions through the range of expected values. • Knowledge of own ship's ancilliary equipment as it affects ship hydrodynamics and as it may be affected by varying environmental conditions and other ship traffic. • Knowledge of particular ship's emergency bill organization and emergency procedures.

TASK CODE: IV.C.13									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	5	5	90	1C	5	3	4	1	2

TASK CODE: IV.C.13	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Conveys navigation orders to other bridge personnel and verifies their comprehension, utilizing standard procedures and phraseology, in order to execute decisions for ship control.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is precise and timely in conveying navigational orders. • Ensures full understanding of order by other bridge personnel before, during, and after its execution. Numerical: • In 100% of the cases, orders are understood by appropriate bridge personnel.	Functional: • How to phrase navigational orders. Specific: • Knowledge of bridge organization for various watch conditions.

TASK CODE: IV.C.14									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	5	1B	50	1	1	1	1

TASK CODE: IV.C.14	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Adjusts RPM or pitch (if controllable) of ship's propeller(s) utilizing engine order telegraph, bridge throttles, or internal communications circuits, in order to change ship's speed.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Expeditiously and accurately manipulates equipment to effect speed change. Numerical: • In 100% of the cases, all adjustments are made exactly as ordered (or desired).	Functional: • How to operate engine order telegraph, bridge throttles, and communications circuits. Specific: • Special characteristics and location of own ship's equipment.

TASK CODE: IV.C.15									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	45	1A	20	1C	50	2	1	1	2

TASK CODE: IV.C.15	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Turns ship's helm and reads compasses (gyro and magnetic) and rate of turn indicators (if provided) in order to change or maintain course.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Routinely and accurately manipulates helm to change or maintain course. • Continuously monitors compass, rudder angle, and rate of turn indicator. Numerical: • In 100% of the cases, all readings of instrumentation are within acceptable limits in accordance with particular situation. • In 100% of the cases, all helm adjustments are made exactly as ordered (or desired).	Functional: • How to operate a helm. • How to read a compass. • How to read a rudder angle indicator and a rate of turn indicator. • How to detect drift off desired heading. Specific: • Knowledge of specific ship's handling characteristics, i.e., rudder rate, lateral stability, rate of turn, etc.

TASK CODE:	IV.C.16								
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
1	15	1	5	1	80	1	1	1	1

TASK CODE: IV.C.16	GOAL: Navigate through (maneuver in) non-restricted waters as required in order to reach destination safely and expeditiously.

OBJECTIVE: Identify and respond to potentially hazardous conditions in order to avoid collisions, rammings, and groundings when some emergency arises.

TASK: Sounds ship's whistle and displays required identification/signals/flags in accordance with Rules of the Road, in order to maneuver in non-restricted waters safely and according to proper procedure.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Correctly operates whistle and displays appropriate signal flags. • Operation of whistle and displaying of flags is timely to changing course or ordering engines astern. Numerical: • In 100% of the cases, all appropriate whistle signals are sounded. • In 100% of the cases, all other appropriate day signals are displayed.	Functional: • How to operate ship whistle. • How to identify and use signal flags. • Knowledge of Rules of the Road pertaining to whistle and flag signals. Specific: • Knowledge of location of whistle controls (automatic and manual) and other day signals on particular ship.

Goal V: Train/supervise bridge personnel in the safe conduct of vessel throughout voyage

Objective V.A: Impart knowledge about specific features, characteristics and procedures of vessel control

TASK CODE: V.A.1									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	30	5	65	1A	5	4	4	3	4

TASK CODE: V.A.1	GOAL: Train/supervise bridge personnel in the safe conduct of vessel throughout voyage.
OBJECTIVE: Impart knowledge about specific features, characteristics and procedures of vessel control.	
TASK: Interviews/evaluates new personnel using own judgment within guidelines of company policy, union contract terms, regulations, and accepted practice, in order to find out their needs for orientation, specific training, and performance monitoring, relevant to vessel operating requirements.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Personnel needs for orientation, training, and supervision are determined promptly, thoroughly, and accurately. • Effective communication is established. Numerical: • Determination is made X hrs/days before (after) unberthing. • Specific knowledge and skills of all personnel are evaluated.	Functional: • Responsibilities prescribed for personnel categories and general content of tasks that go with those responsibilities. • Informal interview procedure. Specific: • Vessel and equipment design and operating procedures. • Safety features and procedures. • Company policy, union contract terms, pertinent regulations. • Location and procedures for maintaining logs and other records. • Content of manuals and other information sources used onboard vessel.

TASK CODE:	V.A.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	40	4B	40	1A	20	5	5	3	4

TASK CODE: V.A.2	GOAL: Train/supervise bridge personnel in the safe conduct of vessel throughout voyage.
OBJECTIVE:	Impart knowledge about specific features, characteristics and procedures of vessel control.
TASK: Walks personnel through vessel, explains layout and special equipment, and demonstrates operations related to specific job, using operations and safety manuals, checklists, other available aids, and discretion concerning how detailed orientation/indoctrination should be, in order to orient personnel to vessel and procedures.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Indoctrination to vessel is conducted clearly, thoroughly, and efficiently. Numerical: • 100% of personnel demonstrate that they know the information covered in indoctrination. • All prescribed resource material is identified.	Functional: • Knowledge of vessel systems, functions, operations, and personnel responsibilities. • Teaching and demonstration skills. • Importance of thorough indoctrination to vessel. Specific: • Specific vessel control systems, functions, operations, and procedures. • Specific personnel responsibilities, knowledge, and experience. • Documentation available aboard vessel to assist in task performance.

TASK CODE:	V.A.3

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	65	2	20	1A	15	3	3	1	4

TASK CODE: V.A.3	GOAL: Train/supervise bridge personnel in the safe conduct of vessel throughout voyage.

OBJECTIVE:
Impart knowledge about specific features, characteristics, and procedures of vessel control.

TASK: Orders, posts, and/or maintains in specified location(s) on vessel standard sources of reference information (equipment diagrams, standing orders, operations and safety manuals), following vessel, company and governmental regulations about required materials, in order to ensure that the information is available when needed.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Standard information is posted, stowed, updated and replaced promptly and accurately. • Availability and condition of information sources is checked thoroughly on a regular basis. Numerical: • All prescribed information is in designated location or known status whenever needed. • Changes are made within X hr of notification, or if critical, immediately upon notification. • Replacements are ordered as soon as known to be required and in place within X hr of receipt.	Functional: • How to obtain and distribute standard shipboard information sources. • Purpose(s) for which different sources are used. • Procedures for ordering, updating, and replacing documents. Specific: • Information sources required, used aboard vessel. • Locations for various types of information. • Vessel procedures for information acquisition and access control. • Particular training aids furnished aboard vessel.

TASK CODE: V.A.4									
WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	55	4B	35	1A	10	5	5	3	4

TASK CODE: V.A.4	GOAL: Train/supervise bridge personnel in the safe conduct of vessel throughout voyage.
OBJECTIVE: Impart knowledge about specific features, characteristics, and procedures of vessel control.	
TASK: Provides on-the-job training (OJT) throughout voyage following standard operating procedures and using discretion within guidelines of union contract terms, company policy, regulations and personnel's interest in developing skills above minimum.	

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Sensitive to personnel's work-related needs, interests. • Clear and accurate in demonstrations and explanations. • Sensible in selecting time, place for on-the-job training so as not to disrupt operations. Numerical: • Informal talks are held at prescribed intervals with all personnel, to check their needs. • All departures from standards of personnel performance are noted. • No casualty occurs because of inadequate personnel skills/knowledge.	Functional: • Knowledge of ship systems, functions, and personnel responsibilities. • On-the-job training, hands-on demonstration techniques. • Documentation available to assist in task learning performance. Specific: • Specific vessel control systems, functions, operations, procedures on vessel. • Specific personnel responsibilities, capabilities, experience. • Specific performance standards for tasks. • Union contract terms. • Company policy, pertinent regulations. • Documentation available.

Objective V.B: Examine/evaluate trainee's knowledge and performance on site

TASK CODE:	V.B.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	60	5	35	1A	5	5	5	4	4

TASK CODE: V.B.1	GOAL: Train/supervise bridge personnel in the safe conduct of vessel throughout voyage.

OBJECTIVE: Examine/evaluate trainee's knowledge and performance on site.

TASK: Watches and listens to trainee at work and queries him and others about his performance, using judgment in handling problems within the guidelines of established performance standards, regulatory and labor contract requirements, and operating circumstances, in order to make sure performance is maintained to standards, to prevent any deficiency in skil and knowledge, and to promote satisfactory attitudes and work relationships.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Thorough observations are made on a regular basis. • Standards are applied consistently and objectively, but with due regard for circumstances. • Personnel are stopped, replaced, or corrected immediately if their actions are judged to jeopardize safety. • Personnel are informed promptly, clearly, and purposefully of departures from performance standards and of the correction requirements or suggestions. Numerical: • Emergency drills are always conducted as required by company and Coast Guard regulations. • Logs and other records checked at end of each watch. • Daily informal observations made of personnel performance and depatures from standards noted. • No casualty occurs because of inadequate personnel skills/knowledge. • All inferior performance is corrected immediately.	Functional: • Knowledge of vessel operational requirements and associated task performance requirements. • Behavioral observation skills. • Communication skills. • Regulations, customs pertaining to personnel responsibilities. • Constructive correction of inferior performance. Specific: • Performance standards for specific tasks. • Vessel and equipment capabilities, operations, and current status. • Labor contract terms and regulations applicable to vessel personnel. • Company policy regarding personnel performance and its evaluation.

TASK CODE:	V.B.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	35	5	60	1A	5	5	5	1	4

TASK CODE: V.B.2	GOAL: Train/supervise bridge personnel in the safe conduct of vessel throughout voyage.

OBJECTIVE: Examine/evaluate trainee's knowledge and performance on site.

TASK: Talks with trainee about job performance and any problems, using established performance standards, knowledge of contractual and regulatory requirements, knowledge of operating circumstances and of personnel background, capabilities, and physical and mental/emotional state, and using full discretion in applying those guidelines, in order to provide feedback on performance evaluation and to find out needs, grievances, trainee's attitudes/views about own performance, and to promote honest communication.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Performance reviews are held as required. • Informal feedback is provided frequently. • Appropriate times are selected for both formal and informal review/feedback. • Is perceptive of and open to indications for trainee's desire for communication. • Any criticism is fair, objective, and constructive. Numerical: • No casualty occurs because of inadequate personnel skills/knowledge. • No casualty or hostility occurs because of a grievance that was not detected. • No detected grievance or problem and no question goes without an attempt to resolve it. • At least X% of trainees feel that they have been evaluated fairly.	Functional: • Knowledge of task requirements. • Behavioral observation skills. • Communication skills. • Regulations, customs pertaining to personnel responsibilities. • Fundamentals of psychology of human interaction in worker-supervisor relationships, including importance of feedback. Specific: • Specific performance standards for tasks of trainees. • Specific background, responsibilities, capabilities, personality traits, workload, and physical and attitudinal/emotional conditions of trainees. • Labor contract terms. • Company policy/pertinent regulatory requirements regarding personnel performance and evaluation.

Objective V.C: Perform necessary administrative tasks and maintain required records

TASK CODE:	V.C.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
4	20	5	75	1A	5	3	4	3	3

TASK CODE: V.C.1	GOAL: Perform personnel management and administration functions.

OBJECTIVE: Perform necessary administrative tasks and maintain required records.

TASK: Manages/organizes personnel of bridge team in performance of all required navigation duties, in order to ensure safe and expeditious navigation of ship.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Ensures full and punctual manning of all stations. • Verifies complete readiness of all personnel (knowledge, alertness, night vision, etc.). • Maintain high performance standards of support personnel. • Ensures personnel are provided with adequate working space and equipment. Numerical: • In 100% of the cases, ascertains that assigned personnel are fully qualified and ready to perform duties.	Functional: • How to organize bridge support personnel effectively. • How to evaluate satisfactory performance. Specific: • Knowledge of performance problem/requirements of own personnel. • Knowledge of own ship's characteristics which require special supervision.

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TASK ANALYSIS REPORT RELATIVE TO VESSEL COLLISIONS, RAMMINGS, A--ETC(U)
DEC 76 J SMITH, P DANIELS, B PARAMORE DOT-CG-41903-A
UNCLASSIFIED ORI-TR-1049-VOL-2 USCG-D-1-77-VOL-2 NL

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TASK CODE:	V.C.2

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	75	1A	20	1	5	1	1	1	2

TASK CODE: V.C.2	GOAL: Perform personnel management and administration functions.

OBJECTIVE:

Perform necessary administrative tasks and maintain required records.

TASK:

Records required information in specified logs in order to have legal documentation of ship's maneuvering and material condition history.

PERFORMANCE STANDARDS	TRAINING CONTENT
Descriptive: • Is complete, accurate, and legible in recording entries. • Is able to log information quickly after hearing it once. Numerical: • In 100% of the cases, all required information is recorded.	Functional: • Knowledge of information to be recorded in each log (communication, maneuvering, and safety equipment checks, draft readings, meteorological information, course and speed changes, name of pilot, number of tugs, unusual occurrences, communication traffic, anchor bearings, etc.). • Knowledge of standard phraseology required for each entry. • Knowledge of the source for each item to be recorded. • Knowledge of who is permitted to make entries in each log. Specific: • Knowledge of information specific to own ship.

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