

TABLE A-II/1 Record of Assessment

Specification of minimum assessment criteria for officers in charge of a navigational watch of ships of 500 tons gross tonnage or more.

Name _____

Soc. Sec. No. _____

FUNCTION: Navigation at the operational level.

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P / A
Plan and conduct a passage and determine position.	<i>Celestial Navigation</i> Ability to use celestial bodies to determine the ship's position.	Use a standard marine sextant, capable of adjustment to remove side error, parallelism, and index error. The sextant must have these errors introduced before assessment.	Remove side error, parallelism, and index error, in that order. Final error is less than 0.5 minutes of arc. <i>ORAL/Written exam, with minimum passing 70%.</i>				
	Determine sextant index error. <i>Adjusting the sextant</i>	Use the determined sextant index error and correctly convert to index correction (IC).	Correctly apply IC + or - for a sextant altitude (Hs) of a celestial body.	Laboratory, or onboard ship at sea.	<i>/ /</i>	<input type="checkbox"/>	P / A
	Measure altitude of the sun. Measure altitude of a star	Measure the altitude of the sun using a standard marine sextant, and accurately record the time. Measure the altitude of not less than 3 stars within a single twilight period using a standard marine sextant, and accurately record the times	Altitude is within +/- 0.5' arc, from assessor's altitude, after correction for index error. Time is within +/- 1 second from UTC.	Onboard ship at sea <i>on beach.</i>	<i>/ /</i>	<input type="checkbox"/>	P / A
	Sight reduction. using any standard method.	Reduce celestial observations and plot into a line ^{of lines} of position (LOP) on chart/plotting sheet.. excluding pre-programmed calculator or computer.	LOP is within +/- 1 mile of assessor's solution, (Laboratory); +/- 2 miles (at sea).	Laboratory, or onboard ship at sea.	<i>/ /</i>	<input type="checkbox"/>	P / A

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Plan and conduct a passage and determine position. (continued)	Measure altitude of sun at meridian passage at Local Apparent Noon (LAN).	Measure the sun's altitude correctly at meridian passage (LAN).	Altitude is within +/- 0.5' arc, from assessor's altitude, after correction for index error.	Laboratory, or onboard ship at sea or on beach.	/ /	<input type="text"/>	P / A
	Celestial Running fix position.	Advance multiple celestial LOPs to a common time to form a running fix position.	Running fix position is within +/- 1 mile of assessor's solution, (Laboratory); +/- 3 miles (at sea).	Laboratory, or onboard ship at sea.	/ /	<input type="text"/>	P / A
	Multiple celestial body Fix position. (Stars, Planet(s), and/or moon.)	Advance multiple sequential celestial LOPs to a common time to form a celestial fix position.	Fix position is within +/- 1.5 mile of assessor's solution, (Laboratory); +/- 5 miles (at sea).	Laboratory, or onboard ship at sea.	/ /	<input type="text"/>	P / A
	<i>Terrestrial and Coastal Navigation</i> Ability to determine the ship's position by use of:						

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Plan and conduct a passage and determine position. (continued) <i>Terrestrial and Coastal Navigation</i> <i>Ability to determine the ship's position by use of:</i>	1. Landmarks.	Fix vessel's position by plotting two ^{or 3} or more visual bearing LOPs of identified charted objects. <i>(3 preferred if available)</i>	Fix position is within +/- .1 mile of assessor's or vessel's actual position. Crossing angles of bearings should be not less than 30° but not more than 160°	<i>Simulator or Laboratory, or onboard ship at sea. (Note- many limited tonnage vessels do not have compass pelorus stands)</i>	<u> / / </u>	<input type="checkbox"/>	P
	2. Aids to navigation, including lighthouses, beacons and buoys.	Fix vessel's position by plotting two ^{or 3} or more visual bearing LOPs of identified charted aids to navigation. <i>(3 preferred if available)</i>	Fix position is within +/- .1 mile of assessor's or vessel's actual position. Crossing angles of bearings should be not less than 30° but not more than 160°	<i>Simulator or Laboratory, or onboard ship at sea. (Note- many limited tonnage vessels do not have compass pelorus stands)</i>	<u> / / </u>	<input type="checkbox"/>	P
	3. Marine Radar	Fix vessel's position by plotting two ^{or 3} or more radar ranges of identified charted objects. <i>(3 preferred if available)</i>	Fix position is within +/- .1 mile of assessor's or vessel's actual position.	<i>Simulator or Onboard ship at sea.</i>	<u> / / </u>	<input type="checkbox"/>	P
	4. Dead Reckoning (DR)	Plot vessel's DR position for the watch, taking into account <i>winds, tides, currents & estimated speed.</i>	+/- 0.1 mile from assessor's DR.	<i>Simulator or Onboard ship at sea.</i>	<u> / / </u>	<input type="checkbox"/>	P

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Function: **Navigation at the operational level**

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Plan and conduct a passage and determine position. (continued)	5. Determine set and drift of current and compensate.	Plot vessel's position two or more times not less than 15 minutes apart. Use DRs and positions to determine the set and drift of the current and correctly calculate the correct compensating course to steer.	+/- 5° from assessor's solution.	Simulation or Onboard ship at sea.	_ / _ / _	<input type="text"/>	P
	Thorough knowledge of and ability to use navigational charts and publications, such as sailing directions, coast pilots, tide tables, notice to mariners, radio navigational warnings and ships routing information. NOTE: ECDIS systems are considered to be included under the term "charts."	Complete a comprehensive exercise that includes planning a voyage, using the required navigation charts and publications to plan a safe passage accounting for: -Route -Local conditions -Local regulations -Available water depth(s) -Weather -Tides/Currents -Aids to Navigation -Hazards to Navigation	Candidate will achieve a minimum of 70% on an exam. or exercise.	Approved Training Program.			T

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Plan and conduct a passage and determine position. (continued)	<i>Electronic systems of position fixing and navigation</i> Ability to determine the ship's position by use of electronic navigational aids.	Initialize GPS, determine ship's position, and evaluate the accuracy of the GPS position.	Determine PDOP, mode, recency of data and other indicators of position accuracy.	Onboard ship. <i>or simulator.</i>	__ / __ / __	<input type="text"/>	P
		Demonstrate the use of the GPS man overboard/emergency save feature.	Demonstrate the use of the GPS man overboard/emergency save feature, within 1 mile.	Onboard ship at sea. <i>or simulator.</i>	__ / __ / __	<input type="text"/>	P
		Where practicable - Initialize LORAN set, determine ship's position, and evaluate the accuracy of the LORAN position.	LORAN set is properly initialized and reads vessel's position within manufacturer's tolerance.	<i>simulator or</i> Onboard ship. (Note-many modern limited tonnage vessels may no longer have LORAN-C)	__ / __ / __	<input type="text"/>	P
	<i>Echo sounders</i> Ability to operate the equipment and apply the information correctly.	Performance checks and tests of echo sounder complies with manufacturer's recommendations and good navigational practice.	Turn set on, select proper scale, adjust sensitivity to obtain optimum display.	Onboard ship. <i>or simulator</i>	__ / __ / __	<input type="text"/>	P

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Plan and conduct a passage and determine position. (continued)	Compass - magnetic and gyro Knowledge of the principles of magnetic and gyro compasses.	Candidate must take a visual bearing on a navigational, or natural terrestrial range and determine gyro compass error. <i>Candidate must demonstrate knowledge of principles of magnetic & gyro compasses</i>	+/- 0.5° from the assessor's solution.	Onboard ship at sea. or simulator, or written exam. with minimum passing 70%	— / —	<input type="checkbox"/>	P / T
	Ability to determine errors of the magnetic and gyro compasses, using terrestrial means, and to allow for such errors.	Candidate must compare the vessel's magnetic heading with the gyro heading (corrected to True) and determine the magnetic compass error.	+/- 0.5° from the assessor's solution.	Onboard ship at sea. or simulator	— / —	<input type="checkbox"/>	P
		Apply the magnetic compass error and steer a desired true heading by magnetic compass.	Compass error correctly applied. <i>Record errors in appropriate ship's record book and logbook.</i>	Onboard ship at sea. or simulator, or laboratory,	— / —	<input type="checkbox"/>	P
	Where practicable - Ability to determine error of the gyro compass, using celestial means, and to allow for such errors.	Note the azimuth of the sun when the repeater is level (in pelorus), compare the azimuth taken with computed-azimuth (Zn) of the sun, determine gyro error.	+/- 0.5° from the assessor's solution.	<i>simulator or</i> Laboratory, or onboard ship at sea. (Note- many limited tonnage vessels do not have compass pelorus stands)	— / —	<input type="checkbox"/>	P

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Plan and conduct a passage and determine position. (continued)	<i>Steering control systems</i> Knowledge of steering control systems, operational procedures and change-over from manual to automatic control and vice-versa.	Complete a comprehensive exercise on typical vessel steering controls and operational procedures.	Candidate will achieve a minimum of 70% on an exam.	Approved Training Program.			T
	Adjustment of controls for optimum performance.	Demonstrate ability to initialize steering system.	Correctly performs all associated tasks following manufacturer's and company procedures.	Onboard ship. <i>or simulator.</i>	_ / _ / _	<input type="text"/>	P
		Perform pre-departure and pre-arrival tests of steering control systems.	Correctly performs all associated tasks following manufacturer's and company procedures.	Onboard ship. <i>or simulator.</i>	_ / _ / _	<input type="text"/>	P
		Switch steering control over to emergency steering systems.	Correctly performs all associated tasks following manufacturer's and company procedures.	Onboard ship at sea. <i>or simulator.</i>	_ / _ / _	<input type="text"/>	P

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Plan and conduct a passage and determine position. (continued)	<i>Steering control systems</i> Adjustment of controls for optimum performance.	Candidate will demonstrate switching the vessel's steering control from manual to automatic and back to manual control following manufacturer's procedures and guidelines.	Selection of the mode of steering is the most suitable for the prevailing weather sea and traffic conditions and the anticipated maneuvers.	Onboard ship at sea. or <i>simulator.</i>	<i>/ /</i>	<input type="text"/>	P
		Candidate will demonstrate the selection of the automatic steering controls. Allowing for rudder angle parameters, and ambient conditions - following the manufacturer's procedures and guidelines.	Selection and adjustment of the automatic steering ^{controls} most suitable for the prevailing weather, sea, and traffic conditions and the anticipated maneuvers.	Onboard ship at sea. or <i>simulator.</i>	<i>/ /</i>	<input type="text"/>	P
	<i>Meteorology</i> Ability to use and interpret information obtained from on board meteorological instruments.	Read wet and dry bulb thermometers and determine the dew point temperature.	Calculate the dew point within 1° of assessor's dew point solution.	Laboratory, or onboard ship.	<i>/ /</i>	<input type="text"/>	P

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Plan and conduct a passage and determine position. (continued)	Meteorology Ability to use and interpret information obtained from on board meteorological instruments.	Read a barometer and apply any associated correction(s).	Read the barometer within one- tenth of a millibar of assessor's reading.	Laboratory, or onboard ship.	— / — / —	<input type="text"/>	P
		Use an anemometer and/or wind vane to determine the relative wind speed and direction.	Use relative wind speed and direction to calculate true wind speed and direction. <i>within one point for wind and within 5 knots for speed.</i>	Laboratory, or onboard ship.	— / — / —	<input type="text"/>	P
	Knowledge of the characteristics of the various weather systems, reporting procedures and recording systems.	Complete a comprehensive exercise on characteristics of various weather systems, interpretations of changes of instruments, reporting procedures and recording systems.	Candidate will achieve a minimum of 70% on an exam.	Approved Training Program.			T
	Ability to apply meteorological information available.	Read relevant weather ^{sea state} analysis maps and apply information in such a manner to ensure the safe navigation of the vessel. <i>Use other information commonly available aboard ship.</i>	Correctly routes the ship to avoid weather and/or sea conditions that are hazardous to the vessel.	Laboratory, or onboard ship.	— / — / —	<input type="text"/>	P

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Maintain a safe navigational watch.	<i>Watchkeeping</i> Thorough knowledge of the content, application and intent of the International Regulations for Preventing Collisions at Sea.	Pass an exam on the content, application, and intent of the International Regulations for Preventing Collisions at Sea.	Candidate will achieve a minimum of 90% on an exam.	Approved Training Program.			T
		Identify vessels through visual observation of prescribed lights and shapes characteristics.	Candidate will correctly identify 18 of 20 vessels that have different light and/or shape configurations.	<i>Simulator or Laboratory, as part of approved training, or onboard ship at sea.</i>	____/____/____	<input type="text"/>	P
		Identify vessels in restricted visibility by hearing of audible sound signals.	Candidate will correctly identify 9 of 10 vessels with different identity sound signals.	<i>Simulator or Laboratory, as part of approved training or onboard ship at sea.</i>	____/____/____	<input type="text"/>	P

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Maintain a safe navigational watch. (continued)		Determine risk of collision and steering and sailing rules situations of other vessels by observation aspect, bearing and sound signals.	Candidate will correctly identify 9 of 10 different types of situations, and provide a solution that will result in a safe passage in accordance with steering and sailing rules contained in the International Regulations for Preventing Collisions at Sea.	Simulator or Laboratory, as part of approved training or onboard ship at sea.	— / —	<input type="text"/>	P
	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	Reads the standing orders and other special instructions of the Master, and instructions outlined in the vessel's Safety Management System.	Reads the standing orders and other special instructions of the Master, and instructions outlined in the vessel's Safety Management System.	Onboard ship at sea. or simulator.	— / —	<input type="text"/>	P
		Verifies the ship's position, speed, course, and draft using all available navigational equipment and information.	Verifies the ship's position, speed, course, and draft using all available navigational equipment and information.	Onboard ship at sea. or simulator.	— / —	<input type="text"/>	P
		Familiarizes self with tide, current, weather, visibility and other effects on vessel's course and speed.	Familiarizes self with tide, current, weather, visibility and other effects on vessel's course and speed.	Onboard ship at sea. or simulator.	— / —	<input type="text"/>	P

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Maintain a safe navigational watch. (continued)	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	Familiarizes self with the use of the main engine(s) to maneuver when the engines are on wheelhouse control. <i>Know the handling character- istics of the ship.</i>	Demonstrates that is familiar with the use of the main engine(s) to maneuver when the engines are on wheelhouse control. <i>Know the handling characteristics of the ship.</i>	Onboard ship at sea or simulator.	<u> </u> / <u> </u> / <u> </u>	<input type="checkbox"/>	P
		Familiarizes self with navigation situations including: -Condition of all navigation and safety equipment -Magnetic and Gyro compass errors -position of all vessels and contact within sight of the vessel	Demonstrates ability to maintain appraisal of navigation situations including: -Condition of all navigation and safety equipment -Magnetic and Gyro compass errors -position of all vessels and contact within sight of the vessel	Onboard ship at sea or simulator.	<u> </u> / <u> </u> / <u> </u>	<input type="checkbox"/>	P
		Does not turnover or relieve a watch while maneuvering or other action to avoid a hazard is taking place	Does not turnover or relieve a watch while maneuvering or other action to avoid a hazard is taking place	Onboard ship at sea or simulator.	<u> </u> / <u> </u> / <u> </u>	<input type="checkbox"/>	P
		-keeps the watch on the bridge until properly relieved. <i>Never leaves bridge unattended.</i>	-keeps the watch on the bridge until properly relieved. <i>Never leaves bridge unattended.</i>				
		-safely navigates the ship despite the presence of the Master on the bridge unless relieved	safely navigates the ship despite the presence of the Master on the bridge unless relieved				
		-notifies the Master when in doubt as to what action to take in the interest of safety	-notifies the Master when in doubt as to what action to take in the interest of safety				

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Maintain a safe navigational watch. (continued)	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	Checks vessel course and speed at sufficient intervals	Uses any available navigation aid to ensure vessel follows planned course	Onboard ship at sea or simulator.	1 1	<input type="checkbox"/>	P
		Only undertake duties that are related to maintaining the watch	Do not undertake any duties which interferes with the safe navigation of the ship	Onboard ship at sea or simulator.	1 1	<input type="checkbox"/>	P
		Maintains an updated record of the movements and activities relating to navigation of the ship. <i>Insure that a proper lookout is maintained.</i>	Keeps a proper record during the watch of the movements and activities relating to navigation of the ship <i>Insure that a proper lookout is maintained.</i>	Onboard ship at sea or simulator.	1 1	<input type="checkbox"/>	P
		Follow the policies for operational tests of navigational equipment	Conducts operational tests of all navigational equipment, including those to be carried out prior to departure and arrival. Properly records all test results <i>in the logbook.</i>	Onboard ship at sea or simulator.	1 1	<input type="checkbox"/>	P

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Maintain a safe navigational watch. (continued)	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	Regularly checks that the standard compass error is determined at least once per watch	Checks that the standard compass error is determined at least once per watch, and after any alteration of course; compares the gyro and standard compass against the master gyro compass	Onboard ship at sea or simulator.	__/__/__	<input type="text"/>	P
		Checks that automatic pilot is tested manually	Checks that automatic pilot is tested manually at least once per watch	Onboard ship at sea or simulator.	__/__/__	<input type="text"/>	P
		Checks navigation and signal lights are functioning	Regularly checks navigation, signal lights and other navigational equipment are functioning properly	Onboard ship at sea or simulator.	__/__/__	<input type="text"/>	P

- use the corrected largest scale chart available and take fixes ~~should be taken~~ at frequent intervals using different methods

- positively identify all relevant marks

- exchange information regarding navigation procedures, local conditions and the ship's characteristics in accordance with federal & international regulations

- evaluate the pilot's performance and when doubt exists shall notify the master immediately and take whatever actions necessary before the master arrives

- use the corrected largest scale chart available and take fixes ~~should be taken~~ at frequent intervals using different methods

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Maintain a safe navigational watch. (continued)	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	Knows to regularly check radio equipment	Regularly checks that radio equipment is functioning properly in accordance with radio regulations and SOLAS Convention; reports to Master any observed operational failures	Onboard ship at sea or simulation	11	<input type="checkbox"/>	P
		Regularly ensures that unmanned machinery spaces are being checked	Ensures that unmanned machinery space controls, alarms and indicators are functioning properly, if so fitted and certified.	Onboard ship at sea or simulator.	11	<input type="checkbox"/>	P
		Knows to use radar in areas of restricted visibility and congested waters	Use radar effectively in areas of restricted visibility and at all times in congested waters, with due regard for limitations of radar	Onboard ship at sea or simulator.	11	<input type="checkbox"/>	P
		Understands the necessity of changing radar range scales at sufficient intervals	Ensures the ARPA or radar range scales employed are changed at sufficiently frequent intervals	Onboard ship at sea or simulator.	11	<input type="checkbox"/>	P

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Maintain a safe navigational watch. (continued)	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	Know the conditions and circumstances of when to notify the Master immediately	Understands and demonstrates the knowledge that the Master shall be notified immediately when: <ol style="list-style-type: none"> 1. Restricted visibility is encountered 2. Traffic conditions or other vessel movements are cause for concern 3. Difficulty in maintaining course 4. Failing to sight land, landmarks, or obtain sounding at expected time 5. Unexpectedly sight land, landmarks, or change in sounding 6. Failure of main engine(s) control, steering control, navigation/radio equipment, alarm/indicators 7. Heavy weather, encounter navigation hazards 8. In an emergency or whenever in doubt 	Onboard ship at sea <i>or</i> simulator <i>or</i> by examination	/ /	<input type="text"/>	P

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Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Maintain a safe navigational watch. (continued)	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	Determines risk of collision early when encountering other vessels or contacts	Takes frequent and accurate compass bearings of approaching vessel or contact to determine bearing, drift <i>as a means of early detection of risk of collision.</i>	Onboard ship at sea or <i>simulator.</i>	<u> </u> / <u> </u> / <u> </u>	<input type="text"/>	P
		Correctly determines what action(s) to take in risk of collision situations	Takes early and positive action(s) in compliance with the applicable International Regulation for Preventing Collisions at Sea	Onboard ship at sea or <i>simulator.</i>	<u> </u> / <u> </u> / <u> </u>	<input type="text"/>	P
	Stands a proper watch in restricted visibility	Correctly determines what actions to take when encountering area of restricted visibility	In area of restricted visibility performs the following actions: 1. Informs the Master 2. Post a proper lookout 3. Exhibits navigation lights 4. Sounds appropriate fog signal 5. Uses radar 6. Evaluates safe speed	Onboard ship at sea or <i>simulator.</i>	<u> </u> / <u> </u> / <u> </u>	<input type="text"/>	P
		- comply with the relevant rules of the International Regulations for Preventing Collisions at Sea when restricted visibility is encountered or expected	- comply with the relevant rules of the International Regulations for Preventing Collisions at Sea when restricted visibility is encountered or expected				

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TABLE A-II/1 Record of Assessment

Function: **Navigation at the operational level**

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Maintain a safe navigational watch. (continued)	Stands a proper navigational watch at anchor	Maintains an alert and proper navigational watch while vessel is at anchor	<p>Performs the following actions in the course of standing an alert and proper anchor watch:</p> <ol style="list-style-type: none"> 1. Determine and plot vessel position on the chart 2. Checks position at frequent intervals 3. Ensures lookout at anchor is maintained 4. Ensures rounds of ship are made periodically 5. Monitors weather conditions and sea state 6. Notifies Master if anchor appears to be or is dragging 7. Knows the state of readiness of main engines 8. Ensures proper lights, day shapes, and sound signals are used 9. Take measures to ensure marine environment is protected 	Onboard ship or simulation or by examination	11	<input type="text"/>	P

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Function: Navigation at the operational level

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Maintain a safe navigational watch. (continued)	Thorough knowledge of effective bridge team work procedures	Understands to use the applicable check off lists for proper bridge procedures	Describes using the applicable check off lists for proper bridge procedures	Assessed as part of an approved training course			P
		Account the limitations of personnel when assigning watch standing duties	Takes into account the limitations of personnel when assigning watch standing duties				P
		Personnel assigned to proper locations so that they can effectively perform their duties	Ensures personnel assigned to proper locations so that they can effectively perform their duties				P
		Understands and knows how to prioritize tasks	Performs tasks in the order of priority				P
		Understands and knows what equipment is necessary to perform assigned tasks	Ensures that the proper and necessary equipment to perform the assigned tasks are available				P
		Understands that communications with members of the navigational watch must be clear, immediate, concise, and relevant	Communicates with members of the navigational watch in a clear, immediate, concise, and relevant manner				P

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Maintain a safe navigational watch. (continued)	Thorough knowledge of effective bridge team work procedures	Knows the operational condition of all bridge equipment	Knows what bridge equipment is operating properly, and what is not, takes into account any non-operational equipment in making operational decisions	Assessed as part of an approved training course			P
		Knows to collect, process and interpret information pertinent to members of the navigational watch	Collect, process and interpret information pertinent and is made available to members of the navigational watch				P
		Understands that the bridge is to be kept clear on non- essential equipment and materials	Keeps the bridge clear on non- essential equipment and materials				P
		Alert to possible changes in the vessels navigational or operational situation and circumstances	Prepared to react to changes in the vessels navigational or operational situation and circumstances				P

Inspection of bridge equipment should include reporting any malfunctioning equipment or nonconformities coinciding with ISM Code requirements.

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TABLE A-II/1 Record of Assessment

Name _____

Soc. Sec. No. _____

Function: Navigation at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Use of radar and ARPA to maintain safety of navigation	<i>Radar Navigation</i> Knowledge of the fundamentals of radar and automatic radar plotting aids (ARPA)	Knows the fundamentals of radar theory and operation including the limitations of radar and ARPA	Describes the fundamentals of radar theory, operation and controls, including the limitations of radar and ARPA Achieve minimum of 70% on an exam.	Approved training name			T
	Ability to operate and to interpret and analyze information obtained from radar, including the following: 1. Factors affecting performance	Understands and knows how to operate, interpret and analyze information obtained from radar, as well as the factors that affect radar performance <i>Note the radar bearing & range of atleast 2 prominent geographic coastal features & fix the vessel's position</i>	Describes how to operate, interpret and analyze information obtained from radar, as well as the factors that affect radar performance Achieve minimum of 70% on an exam. <i>+/- 0.5 mi from assessor's solution</i>				T
	2 Setting up and maintaining displays	Power up and tune the radar, including tune, gain, brilliance and anti-clutter controls	Radar is properly tuned and set up. Anti-clutter controls are set to the minimum required so that targets are not lost. Proper range is selected and adjusted as required.	On board ship or simulator	<u> / / </u>	<input type="text"/>	P

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Function: Navigation at the operational level

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Use of radar and ARPA to maintain safety of navigation (continued)		Demonstrate switching between head up, relative motion, and true motion displays	Correctly recognize and identify which mode is displayed	On board ship or simulator	_ / _ / _	<input type="text"/>	P
	3. Detection of misrepresentation of information, false echoes, sea return, etc., Racons and SARTs	Identify and locate misrepresented information, false echo, sea return, Racon, SARTs, on a display that is simultaneously displaying valid targets of other vessels	Correctly identifies misrepresented targets, false echoes, sea return, and distinguishes from valid targets. Correctly identifies Racon and SARTs, and determines range and bearing to same. Within +/- 0.2 2 mi. or +/- 1 percent of range scale in use for range, and +/- 1° of the assessors bearing. Selects most appropriate range scale.	On board ship or simulator	_ / _ / _	<input type="text"/>	P

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Function: Navigation at the operational level

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Use of radar and ARPA to maintain safety of navigation (continued)	Use including: 1. Range and bearing, course and speed of other ship, time and distance to closest approach of crossing, meeting, overtaking ships	Demonstrate obtaining the true bearing and range of all targets and determining the situation and risk of collision. Demonstrate through manual plotting techniques the direction of relative motion, the CPA, time of CPA, and the true course, speed of the target, and aspect of the other vessel	True bearing is $\pm 1^\circ$ and range is ± 2 percent of the range scale in use of the assessor's solution. Correctly determines the situation and risk of collision. From assessor's solutions: DRM $\pm 5^\circ$, CPA ± 0.5 miles. Time CPA ± 3 min. Target true course $\pm 5^\circ$, true speed ± 2 knots.	On board ship or simulator	— / —	<input type="text"/>	P
	2. Identification of critical echoes, detecting of course and speed changes of other ship's course or speed or both	Maneuver by course and/or speed change to avoid target with risk of collision to achieve CPA specified by the assessor	Maneuver will result in not more than 0.5 miles outside the specified CPA, nor more than 0.2 miles inside	On board ship or simulator	— / —	<input type="text"/>	P

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Function: **Navigation at the operational level**

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Use of radar and ARPA to maintain safety of navigation <i>(continued)</i>	3. Application of the International Regulations for Preventing Collisions at Sea	Knowledge of the application of International Regulations for Preventing Collisions at Sea	Describes the application of International Regulations for Preventing Collisions at Sea Achieve minimum of 90% on an exam.	Approved training course			T
	4. Plotting techniques and relative and true motion concepts	Knowledge of plotting techniques and relative and true motion concepts	Describes and demonstrates plotting techniques and relative and true motion concepts Achieve minimum of 70% on an exam.	Approved training course			T
	5. Parallel indexing	Plan and construct parallel index lines to keep vessel on her course line	Vessel does not stray from the intended track more than 10% of the distance to the parallel index line	On board ship or simulator	/ /	<input type="text"/>	P

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Use of radar and ARPA to maintain safety of navigation <i>(continued)</i>	Principal types of ARPA, their characteristics, performance standards and the dangers of over reliance on ARPA Ability to operate and to interpret and analyze information obtained from ARPA 1. System performance and accuracy, tracking capabilities and limitations, and processing delays	Determine the results by comparing between manual plot solutions and those obtained by ARPA, and identify the "trends" as opposed to final results	Identify the "trends" as opposed to final results between manual plot solutions and those obtained by ARPA after 3 minutes, in addition the candidate's solutions shall be within the following parameters from the assessor's: Distances: +/- 0.3 miles Times: +/- 3 minutes Courses: +/- 5° Speeds: +/- 10% Vector updating will be observed on the scope head Achieve minimum of 80% on an exam.	Approved training course			T

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Use of radar and ARPA to maintain safety of navigation <i>(continued)</i>	2. Use of operational warnings and system tests	Establish appropriate guard and exclusion zones from own vessel - Establish appropriate dangerous target parameters - Test system for proper functioning -	Within 2 minutes Within 1 minute Perform ARPA self-test	On board ship or simulator	__ / __ / __	<input type="text"/>	P
	3. Methods of target acquisition and their limitations	Acquire targets manually	Acquires target within 10 seconds	On board ship or simulator	__ / __ / __	<input type="text"/>	P
	4. True and relative vectors graphic representation of target information and danger areas	Switch between display modes (relative or true vectors), and demonstrate past position display of targets (trails, tails, wakes)	Perform each within 10 seconds	On board ship or simulator	__ / __ / __	<input type="text"/>	P
	5. Deriving and analyzing information, critical echoes, exclusion areas and trial maneuvers	Demonstrate trial maneuver mode, to determine safe course and/or speed change to achieve a 2 mile CPA	Within 30 seconds <i>must</i> <i>execute course change</i> <i>& maintain at least that</i> <i>CPA getting no closer</i> <i>than 1 mi. inside specified</i> <i>CPA & not more than 1/2 mi.</i> <i>outside specified CPA.</i>	On board ship or simulator	__ / __ / __	<input type="text"/>	P

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Respond to emergencies	<i>Emergency Procedures</i> Precautions for the protection of passengers in emergency situations	Take precautions for the protection of passengers in emergencies.	List emergency duties and alarm signals. Achieve minimum of 70% on an exam.	Approved training course			T
	Initial action to be taken following a collision or a grounding; initial damage assessment and control	Take actions prior to and following a collision or grounding, including damage assessment and control.	List actions to be taken. Achieve minimum of 70% on an exam.				T
	Appreciation of the procedures to be followed for rescuing persons from the sea, assisting a ship in distress, responding to emergencies which arise in port	Understand procedures for rescuing persons and assisting ships in distress.	Describe procedures to be taken as well as equipment to be used. Achieve minimum of 70% on an exam.				T

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Respond to emergencies (<i>continued</i>)	Appreciation of the procedures to be followed for rescuing persons from the sea, assisting a ship in distress, responding to emergencies which arise in port (<i>continued</i>)	Understand precautions to take when beaching a ship.	List precautions. Achieve minimum of 70% on an exam.	Approved training course			T
		Refloat a grounded ship.	Describe the procedures. Achieve minimum of 70% on an exam.				T
		Assess damage control.	Given a scenario and a response taken, evaluate the appropriateness of the actions taken and their effectiveness. Achieve minimum of 70% on an exam.				T
		Shift to emergency steering.	Describe the procedures. Emergency steering is effected in accordance with company and vessel operating procedures	On board ship at sea or simulator	— / —	<input type="text"/>	P
		Emergency towing procedures.	List the procedures. Achieve minimum of 70% on an exam.	Approved training course			T

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Respond to distress signal at sea	Search and rescue Knowledge of the contents of the MERSAR manual (IMO MERCHANT SHIP Search & Rescue Manual)	Knowledge of search methods, communications, and reporting procedures.	Describe search methods, communications, and reporting procedures. Achieve minimum of 70% on an exam.	Approved training course			T		
		Knowledge on the use MERSAR for guidance on rendering assistance, on-scene coordination, and on-board emergencies.	Use MERSAR for guidance on rendering assistance, on-scene coordination, and on-board emergencies. Achieve minimum of 70% on an exam.				T		
Use standard marine vocabulary	Read English language.	Read English in charts, nautical publications, meteorological information.	Demonstrate ability to read in English Achieve minimum of 70% on an exam.	Approved training course			T		
	Speak English language.	Use English in communications with other vessels and crew.	Communications are clear and understandable	Seafarership Approved training			1 1	<input type="checkbox"/>	P
	Use Standard Marine Navigational Vocabulary.	Use proper terminology.	Understands and uses proper terminology Achieve minimum of 70% on an exam.	Approved training course					T

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Function: Navigation at the operational level

Column 1 STCW Competence	Column 2 Performance Objective <small>(Knowledge, Understanding and Proficiency)</small>	Column 3 Performance Measures <small>(Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam</small>	Column 4 Performance Standard <small>(Criteria against which performance is measured)</small>	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Transmit and receive information by visual signalling	<i>Visual Signaling</i> Ability to transmit and receive signals by Morse code	Ability to receive and record Morse code by flashing light	Demonstrate the ability to receive and record Morse code by flashing light at a minimum rate of 6 words per minute	Assessed as part of an approved training program	_ / _ / _	<input type="text"/>	P
	Ability to use the International Code of Signals	Ability to encode messages to be sent and de-code received messages	Demonstrate the ability to encode messages to be sent and de-code received messages		_ / _ / _	<input type="text"/>	P

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Maneuver the ship	<i>Ship maneuvering and handling</i> Knowledge of: Basic Maneuvering	Turn the ship left or right more than 45° from the original heading	Achieve a rate of turn of at least 30° per minute, steady on new course without over shooting by more than 10°	On board ship or simulator	/ /	<input type="text"/>	P
	1. The effects of deadweight, draft, trim, speed and under- keel clearance on turning circles	Understands the effects of deadweight, draft, trim, speed and under- keel clearance on turning circles	Describes the effects of deadweight, draft, trim, speed and under- keel clearance on turning circles Achieve minimum of 70% on an exam.	Approved training course	/ /	<input type="text"/>	T
	The effects of deadweight, draft, trim, speed and under- keel clearance on stopping distances	Demonstrate the execution of an emergency stop	Within safe operating limits of the vessel's propulsion system, stop the vessel using maximum astern thrust <i>when at an initial speed of at least halt ahead.</i>	On board ship or simulator	/ /	<input type="text"/>	P
	2. The effect of wind and current on ship handling	Knowledge of the effect of wind and current on ship handling	Describes and understands the effect of wind and current on ship handling Achieve minimum of 70% on an exam.	Approved training course	/ /	<input type="text"/>	T

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Maneuver the ship	3. Maneuvering and procedures for the rescue of person overboard	Select type of maneuver for circumstances, as per MERSAR manual. - Full rudder to side of MOB - Sound MOB signal - Release MOB buoy - Mark (if equipped) position ARPA/GPS, enter emergency return mode - Notify any vessels in vicinity - Complete selected MOB recovery return - Control vessel's speed on approach to MOB, slow vessel to launch rescue craft - Order launch of rescue craft	Initiate Anderson ^(round turn) or Williamson turn (as appropriate). Return ship to within sight of MOB. Within the ship's maneuvering ability and characteristics give command to launch the rescue boat as soon as possible	On board ship at sea or simulator	___/___/___	<input type="text"/>	P
	3. Squat, shallow water and similar effects	Knowledge of squat, shallow water and similar effects	Correctly describes squat, shallow water and similar effects Achieve minimum of 70% on an exam.	Approved training source			T
	4. Proper procedure for anchoring and mooring	Knowledge of proper procedure for anchoring and mooring	Correctly describes the proper procedure for anchoring and mooring Achieve minimum of 70% on an exam.				T

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TABLE A-II/1 Record of Assessment

Function: Cargo handling and stowage at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P / A
Monitor the loading, stowage, securing and unloading of cargoes and care during the voyage	Cargo handling, stowage and securing Safe handling of cargoes, including hazardous cargoes.	Know the safe handling of cargoes, including hazardous cargoes, and their effect on the safety of life and of the ship.	Describe procedures for cargo handling, including signaling, rigging, and stowage, particularly the bulk liquid and dry materials carried on Achieve minimum of 70% on an exam.	Approved training course			T
	Effect of cargo on stability and seaworthiness.	Know the effect of cargo on stability and seaworthiness. <i>including heavy lifts, of the ship.</i>	Describe the limitations for cargo carriage on vessels in relation to the vessel's stability letter. Achieve minimum of 70% on an exam.				T
	Apply regulations, codes, and standards regarding cargo handling.	Know and apply regulations, codes, and standards regarding cargo handling. <i>use & familiarity with an approved cargo securing Manual</i>	Apply relevant sections of the CFR and codes to cargo handling situations. Achieve minimum of 70% on an exam.				T
	Stow and secure cargoes, including cargo-handling gear and lashing equipment.	Stow and secure cargoes, including cargo-handling gear and lashing equipment. <i>use & familiarity with the vessel's approved cargo securing Manual.</i>	Stow and secure cargoes. Cargo is stowed and secured in a manner that is stable, safe, and efficient.	On board ship	<u> / / </u>	<input type="text"/>	P / A

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TABLE A-II/1 Record of Assessment

Function: Cargo handling and stowage at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Monitor the loading, stowage, securing and unloading of cargoes and care during the voyage <i>(continued)</i>	Precautions and care of carrying dangerous cargoes	Know the precautions and care of carrying dangerous cargoes.	Describe the requirements and recommended operational procedures for carrying dangerous cargoes, including labeling, packaging, and stowage. Achieve minimum of 70% on an exam.	Approved training course			T

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TABLE A-II/1 Record of Assessment

Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Ensure compliance with pollution prevention requirements	<i>Prevent pollution of the marine environment and anti-pollution procedures</i> Knowledge of the precautions to be taken to prevent pollution of the marine environment	Know the precautions to be taken to prevent pollution. <i>Use and familiarity with a vessel's Waste Management Manual.</i>	List the precautions to be taken in compliance with MARPOL and U.S. regulations. Achieve minimum of 70% on an exam.	Approved training course			T
	Anti-pollution procedures and all associated equipment	Know equipment associated with pollution prevention and clean-up.	Describe the equipment. Achieve minimum of 70% on an exam.				T

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Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Maintain seaworthiness of the ship	Knowledge and application of stability, trim and stress tables, diagrams and stress calculating equipment	Know and apply the data in the stability and trim tables	Calculate and evaluate stability using a stability letter and data commonly available on board ship. Achieve minimum of 70% on an exam.	Approved training XXXXXX			T
	Understand the fundamental actions to be taken for partial loss of intact stability	Know and understand the fundamental actions to be taken for partial loss of intact stability	List actions to be taken for partial loss of intact stability. Achieve minimum of 70% on an exam.				T
	Understand the fundamentals of watertight integrity	Know and understand the fundamentals of watertight integrity	Describe the actions to be taken to ensure and maintain watertight integrity. Achieve minimum of 70% on an exam.				T
		Understand the fundamental principles of construction and stability	List the ways that vessel's construction affects its stability and seaworthiness. Achieve minimum of 70% on an exam.				T
		Know and understands the stability effects of flooding and countermeasures	Calculate the impact of flooding and free surface effects. Achieve minimum of 70% on an exam.				T

T/P Column - T designates that this competency will be evaluated with a written test that is not evaluated on this form but the score will be marked on the last page of this form. P- designates that this competency will be evaluated with practical-skills evolution.

TABLE A-II/1 Record of Assessment

Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Maintain seaworthiness of the ship <i>(continued)</i>	<i>Ship construction</i> General knowledge of the principal structural members and then proper names of various parts of the vessel	Know the principal structural members and then proper names of various parts of the vessel	List the principal structural members and then proper names of various parts of the vessel Achieve minimum of 70% on an exam.	Approved training course			T
Prevent, control and fight fires on board	<i>Fire prevention and fire-fighting appliances</i> Knowledge of fire prevention	Know fire prevention/protection techniques	List the techniques for fire protection, including vessel layout and construction and operational procedures Achieve minimum of 70% on an exam.	Approved training course			T
	Ability to organize fire drills	Organize fire and abandon ship drills	Describe the organization and conduct effective drills Achieve minimum of 70% on an exam.				T
	Knowledge of classes and chemistry of fires	Know classes and chemistry of fires	List the classes of fires and their associated combustible materials Achieve minimum of 70% on an exam.				
	Knowledge of fire-fighting systems	Know fire-fighting systems	Describe the firefighting systems commonly found in shipboard use Achieve minimum of 70% on an exam.				T

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Function: Controlling the operation of the ship and care for persons on board at the operational level

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Prevent, control and fight fires on board	Actions to be taken in the event of fire, including fires involving oil systems	Take actions to protect all persons on board in an emergency	Describe the actions to take to protect persons Achieve minimum of 70% on an exam.	Approved training course			T
		Take actions to limit damage and save the ship following a casualty	List the actions to limit damage and save the ship Achieve minimum of 70% on an exam.				T
		Know the actions to take in event of fire	<ul style="list-style-type: none"> -Use various types of portable extinguishers. -Use self-contained breathing apparatus. -Extinguish smaller fires. -Extinguish extensive fires. -Extinguish fires with foam or other suitable chemical agent. -Fight fire in smoke filled enclosed spaces wearing self contained breathing apparatus. -Extinguish fire with water fog. -Extinguish oil fire with fog applicator, dry chemical, or foam applicator. -Effect a rescue in a smoke filled space wearing breathing apparatus 	Proficiency demonstrations as part of an approved course <i>training</i>			P

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TABLE A-II/1 Record of Assessment

Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P / A
Operate life-saving appliances	<i>Life-saving</i> Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements and their equipment, including radio life-saving appliances, satellite EPIRB, SARTs, immersion suits and thermal protective aids	Organize abandon ship drills	Describe the organization and conduct effective drills Achieve minimum of 70% on an exam.	Approved training course			T
		Know survival craft and rescue boats	Describe features and operation of equipment. Achieve minimum of 70% on an exam.				T
		Use emergency signaling equipment and communications equipment	Inspect and operate in simulated fashion pyrotechnic distress signals, EPIRB's and SART's. Actions are taken in accordance with manufacturer's instructions, specifications.	On board ship	— / / —	<input type="checkbox"/>	P / A
		Know sea survival techniques	List techniques for survival at sea. Achieve minimum of 70% on an exam.	Approved training course			T

T/P Column – T designates that this competency will be evaluated with a written test question and is not evaluated on this form but the score will be marked on the last sheet of this form, P designates that this competency will be evaluated with a practical skills evolution. A designates that this competency will be evaluated by shoreside assessment of shipboard training and experience by a designated examiner.

TABLE A-II/1 Record of Assessment

Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Apply medical first aid on board ship	<i>Medical aid</i> Practical application of medical guides and advice by radio, including the ability to take effective action based on such knowledge in the case of accidents or illnesses that are likely to occur onboard ship	Know procedures for using medical guides and sources of medical advice by radios	List procedures. Achieve minimum of 70% on an exam.	Approved training 			T

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TABLE A-II/1 Record of Assessment

Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1 STCW Competence	Column 2 Performance Objective (Knowledge, Understanding and Proficiency)	Column 3 Performance Measures (Mariner knowledge or action including consequences of same) Demonstration or Oral/Written Exam	Column 4 Performance Standard (Criteria against which performance is measured)	Column 5 Condition of Assessment	Date of Assessment	Assessor's Initials	T / P
Monitor compliance with legislative requirements	Basic working knowledge of the relevant IMO conventions concerning safety of life at sea and protection of the marine environment - National requirements affecting the operation and safety of the vessel	Know the following: - Relevant IMO conventions concerning safety of life at sea and pollution prevention - National laws and regulations - Certificates required and their period validity - Responsibilities under the load line convention - Responsibilities under SOLAS - Responsibilities under the International Convention of Pollution Prevention - Requirements of the International Health Regulations - International instruments affecting the ship, passengers, crew, and cargo - Methods and aids to prevent pollution - National legislation for implementing international agreements	Describe the application of the relevant conventions, laws, and regulations to vessels. Achieve minimum of 70% on an exam.	Approved training *****			T

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TABLE A-II/1 Record of Assessment

Name _____

Soc. Sec. No. _____

Identification Page

Written evaluation score _____ On an exam conducted on ____ / ____ / ____ at _____

and proctored and graded by _____ Proctor's Identification Number _____

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TABLE A-II/1 Record of Assessment

Name _____

Soc. Sec. No. _____

Identification Page

The individual(s) identified here confirm that his or her initials certify they witnessed the practical demonstration or a particular task or skill by the candidate.

Assessor's Initials	Assessor Printed Name	Assessor Signature	Assessor's License or ID Number	Organization or Vessel