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NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 2 02

Subj: GUIDELINES FOR ASSESSMENT OF SEAFARERS' PROFICIENCY FOR CERTIFICATION AS RATINGS FORMING PART OF A NAVIGATIONAL WATCH THROUGH DEMONSTRATIONS OF SKILLS

Ref: (a) International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW), Regulation II/4 and Section A-II/4 of STCW Code, incorporated into regulations at 46 CFR 12.01-3
(b) Federal Register dated June 2, 2000, Docket No. USCG-2000-7373, Guidelines for Assessing Merchant Mariners' Proficiency Through Demonstrations of Skills for Ratings Forming Part of a Navigational Watch
(c) Guidelines for Assessing Merchant Mariners' Proficiency Through Demonstrations of Skills for Ratings Forming Part of a Navigational Watch, Docket No. USCG-2000-7373-2, Available at: http://dms.dot.gov

1. PURPOSE. This Circular provides the national guidelines for the assessments of seafarers' proficiency through demonstrations of skills of applicants for STCW certification as ratings forming part of a navigational watch (RFPNW). These guidelines are for use in training programs approved or accepted by the Coast Guard as meeting reference (a) and by designated examiners (DEs) when carrying out their assessments.

2. ACTION. Officers in Charge, Marine Inspection (OCMIs), should use this Circular when establishing that candidates are entitled to hold STCW-95 certificates as ratings forming part of a navigational watch. OCMIs should also bring this Circular to the attention of the appropriate people in the maritime industry within their zones. This Circular is available on the World Wide Web at **http://www.uscg.mil/hq/g-m/nvic/**. The Coast Guard will distribute it by electronic means only.

DISTRIBUTION – SDL No. 139

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NON-STANDARD DISTRIBUTION: See Page 3

3. DIRECTIVES AFFECTED. None.

4. BACKGROUND.

a. The guidance from the International Maritime Organization (IMO) on shipboard assessments of proficiency, MSC/Circular 853, suggests that administrations should develop standards and measures of performance for practical tests as part of a program of training and assessment of mariners. These standards and measures ensure the uniform assessment of mariners without regard to individuality of the DEs and will result in standardization, fairness, and consistency. Enclosure (1) provides an overview of the Coast Guard's policy on assessments of mariners as required by the STCW.

b. The Coast Guard tasked the Merchant Marine Personnel Advisory Committee (MERPAC) to recommend national assessment criteria for certification as ratings forming part of a navigational watch. The National Maritime Center (NMC) then used MERPAC's recommendations to develop proposed national guidelines, which we published for public comment in reference (b). Reference (c) contains the public's responses to the request for public comment. MERPAC's recommended guidelines included "knowledge" competencies not included within the national guidelines. The guidelines focus solely on the practical demonstrations of mariners' competency. Out of this process came the final version of the national assessment guidelines contained in enclosure (2).

5. DISCUSSION.

a. All mariners who commence training or sea service required by the STCW on or after August 1, 1998, or all mariners applying for STCW certification as ratings forming part of a navigational watch on or after February 1, 2002, are required by 46 CFR 12.02-7(d) to present documentation demonstrating competence in those skills specified in the table of enclosure (2). 46 CFR 12.02-11(h)(1) requires the practical demonstrations of skills to be completed in the presence of, and certified by, a DE. Unless a mariner demonstrates proficiency in the skills required of an RFPNW in enclosure (2), the OCMI will not issue the STCW certification.

b. A person assessing mariners for STCW certification as ratings forming part of a navigational watch should use either the guidelines in enclosure (2) or an alternative as discussed in paragraph 5. c when assessing practical demonstrations of proficiency.

c. Those who assess the proficiency of mariners may refine these published guidelines and develop innovative alternatives; however, they must submit any deviations from these guidelines to the NMC for approval by the Coast Guard before use. A training institution submitting a course that leads to certification as ratings forming part of a navigational watch must either state that the guidelines in enclosure (2) will apply or otherwise identify the guidelines to be used.

d. Merchant mariners required to demonstrate proficiency through demonstrations of skills for ratings forming part of a navigational watch should use these guidelines for self-study and self-assessment.

PAUL J. PLUTA
ASSISTANT COMMANDANT FOR MARINE SAFETY
AND ENVIRONMENTAL PROTECTION

Encl: (1) Assessments of Mariners
(2) Assessment Guidelines for Table A-II/4, Proficiency in Ratings Forming Part of a Navigational Watch

Non-Standard Distribution:

B:a G-M(1); G-MS(1); G-MSO (4)

D:l CG Liaison Officer MILSEALIFTCOMD (Code N-7CG) (1); CG Liaison Officer MARAD (MAR-720.2) (1).

ASSESSMENTS OF MARINERS

1. ASSESSMENT OF SKILLS.

a. All mariners who commence training or sea service required by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), on or after August 1, 1998, or all mariners who apply for STCW certification as ratings forming part of a navigational watch on or after February 1, 2002, must demonstrate to a designated examiner (DE) minimum competency in certain knowledge, understandings, and proficiencies. Without evidence to this effect, no endorsement will be issued.

b. Traditionally, in the United States, the Coast Guard has measured mariners' competency through assessments of knowledge. Knowledge-based components of this competency usually involve the recalling of facts or concepts, and written examinations are normally valid and reliable instruments for assessing such components. Historically, the Coast Guard has issued licenses and documents based predominantly on written essay and multiple-choice examinations. Currently, the Coast Guard employs a bank of over 25,000 multiple-choice questions to examine mariners.

c. Assessment of understanding is more complex than assessment of knowledge. Understanding involves specific principles and information processes necessary to analyze alternatives, make conclusions, make choices and decisions, or affect outcomes. Because it is a covert characteristic, understanding must be ascertained through assessment of an overt behavior that demonstrates understanding. Ascertainment can employ a variety of mechanisms, ranging from written problems involving calculations or analysis of facts to practical demonstrations requiring diagnostic or analytical reasoning. Many of the Coast Guard's 25,000 written questions for multiple-choice examinations involve problems that assess an understanding; but, in many instances, complete understanding is best measured through actual assessment of a mariner's performance.

d. Guidance provided by the IMO on certain assessments of proficiency requires development of standards and measures of performance for practical tests as part of seafarers' training programs. This is a new requirement for many flag-state administrations and their maritime industries. Performance assessment is part of a larger, well established body of knowledge called instructional system design (ISD). Within this body, assessment methodologies range from the simple and straightforward to the complex and difficult. For the purposes of STCW, the Coast Guard believes the simplest and most straightforward approach works best and has decided to develop a set of national guidelines. In these, a performance standard has three components: the condition, the behavior, and the criteria. The first establishes the conditions under which

the candidate must demonstrate the knowledge, understanding or proficiency. The second specifies the precise set of knowledge, understandings, or skills (the 'behaviors') that must be recalled, demonstrated or performed. The third is the particular acts against which we measure an applicant's behavior to determine if the performance can be considered minimally competent.

e. The third component is normally expressed in terms of "measures" or combinations of "measures," such as a time limit or requirement, a specific sequence, a number or a percentage, a tolerance, or a degree of conformance or accuracy required. For highly critical skills, the criteria may require precise answers, require exact sequences of actions, or have very small tolerances of errors or degrees of conformance. For instance, missing just one step of a sequence may constitute failure because that step was critical to achieving the final outcome. In less-critical skills, wider tolerances or degrees of conformance may pass; however, in every case the applicant must demonstrate the minimal level of competence set forth in the criteria.

2. DEVELOPMENT OF STANDARDS.

a. While the STCW Code gives broad guidance on the standards of performance and methods of assessment, the responsibility for the development of specific performance standards for each competency lies with the training provider. Development of valid and reliable performance standards is a resource-intensive effort. To minimize cost to the industry, promote uniformity, expedite the development process, and provide valid examples of these new performance standards, the Coast Guard asked that the Merchant Marine Personnel Advisory Committee (MERPAC) develop recommendations for a set of these standards.

b. MERPAC developed the core elements of a set of these standards and forwarded them to the Coast Guard. We reviewed the initial recommendations and compared them to the requirements of the STCW. We incorporated the final products into the proposed national assessment guidelines and published them in the Federal Register for public comments. After considering the comments, we have made them the standards for identifying minimum levels of competence during demonstrations of a mariner's proficiency.

c. We encourage companies and maritime training institutions to use the national guidelines for assessment of STCW proficiencies in training programs submitted for our approval or for acceptance by a recognized quality-standards system. They should use them during STCW proficiency assessments conducted by their DEs. They may develop alternative assessment standards; however, they may not use these in accepted or approved training programs until we have reviewed and

approved them.

3. WRITTEN EXAMINATIONS.

a. Written examinations used in training programs under the STCW deserve particular emphasis. Companies and maritime training institutions should review their written instruments for assessing each knowledge-based and understanding-based competency from the STCW to ensure they include at least one question for each competency in the appropriate table from Part A of the STCW Code.

b. Companies and maritime training institutions should also have multiple questions for addressing each knowledge-based and understanding-based competency from the STCW to afford candidates a fair opportunity to demonstrate minimum ability. If only one question assessed a required knowledge or understanding, an incorrect answer would constitute a failure to have demonstrated the knowledge or understanding and would leave the candidate ineligible to have that competency certified by the DE, unless the DE used an alternative method. Accordingly, it would be preferable for the assessment to contain several questions. For example, in a written multiple-choice examination, if four questions concerned the same critical knowledge, three correct answers and one incorrect answer would meet the requirements for minimum competency if the performance standard was a 70% score. In this case the mariner would qualify as competent for that knowledge.

Assessment Guidelines for TABLE A-II/4
Proficiency in Ratings Forming Part of a Navigational Watch

Skills that must be demonstrated:

1. Use of magnetic and gyro-compasses;
2. Respond to standard rudder orders (Hard right [starboard] or left [port]; ease the rudder; midships; shift your rudder; meet her; steady as she goes; steer on the range);
3. Change over from automatic to hand steering;
4. Certain responsibilities of the lookout (reporting sounds, lights and objects); and
5. Watch procedures that contribute to a safe watch (relief, maintenance and hand over).

Skill demonstrations

As part of a proficiency in Rating Forming Part of a Navigational Watch assessment, candidates must meet the standards of competence set out in STCW Code Table A-II/4. The candidates will demonstrate their competence to (1) steer the ship and comply with helm orders; (2) keep a proper look out; and (3) contribute to a safe watch. Each candidate must perform every required demonstration using actual equipment or an approved full mission simulator. All steering and helm assessments must occur on a vessel of at least 100 gross tons or a full mission ship simulator programmed to realistically simulate the hydrodynamic properties of vessels of at least 200 GRT (500 ITC), equipped with a rudder order indicator, a rudder angle indicator, gyrocompass, magnetic compass, and a steering stand which permits the steering to be switched from hand to gyro. The assessment of the ability to contribute to monitoring and controlling a safe watch must occur aboard a ship at sea.

These assessment guidelines establish the conditions under which the assessment will occur, the performance or behavior the candidate is to accomplish, and the standards against which the performance is measured. The examiner is encouraged to use a checklist in conducting assessments of practical demonstrations of skill. Checklists allow a training institution or designated examiner to ensure that critical tasks are not overlooked when evaluating a candidate's practical demonstration. Training institutions and designated examiners should develop their own checklists for use in conducting the assessments in a complete and structured manner.

TABLE A-II/4 Guidelines for Assessment

Specification of minimum standard of competence

RATINGS FORMING PART OF A NAVIGATIONAL WATCH

Function: Navigation at the support level

**** Italics denote STCW proficiency from Table A-II/4 of the STCW***

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
Steer the ship and comply with helm orders in the English language	*Use of magnetic and gyro-compasses** Steady on a new course.	At full sea speed, while on a northeasterly heading, when hearing the command in English, "Steer 342,*" *The assessor may select any course desired as long as it is more than 30° from the original heading. At least one assessment should include a turn to the right from the ordered course.	the candidate will turn the helm to bring the vessel to the new course and steady on the course of 342°.	The candidate will: 1. Repeat the order; 2. Turn the helm in the direction of the fewest degrees to the ordered course using no more than 15° of rudder; 3. Reduce the rudder angle as the vessel approaches the course; 4. Steady on the course of 342° with less than 5° of overshoot; and 5. State: She's steady on three four two.
Steer the ship and comply with helm orders in the English language	*Use of magnetic and gyro-compasses** Steer a course by gyro compass.	In a sea state of 4 or less, when hearing the command in English, "Steer 342,"	the candidate will use the gyrocompass to steer the course of 342°.	The candidate will: 1. Repeat the order; 2. When steady on course, state: Steering three four two; and

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
				(cont'd) 3. Steer the course ordered within ± 3° (open ocean), and ±2° (near coastal) for 15 minutes.
Steer the ship and comply with helm orders in the English language	*Use of magnetic and gyro-compasses** Steer a course by magnetic compass.	In a sea state of 4 or less, when hearing the command in English, "Steer 342,"	the candidate will use the magnetic compass to steer the course of 342°.	The candidate will: 1. Repeat the order; 2. When steady on course, state: Steering three four two; and 3. Steer the course ordered within ± 5° (open ocean), and ± 3° (near coastal) for 15 minutes.
Steer the ship and comply with helm orders in the English language	*Helm orders** Right (Starboard) 10	When hearing the command in English, "Right (Starboard) 10,"	the candidate will turn the helm until the rudder is right (starboard) 10°.	The candidate will: 1. Repeat the order; 2. Immediately turn the helm to right (starboard); 3. Stop turning the helm when the rudder angle indicator reads right (starboard) 10°; and 4. State: The rudder is right (starboard) 10, or she's right

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
				(cont'd) (starboard) 10°.
Steer the ship and comply with helm orders in the English language	*Helm orders** Left (Port) 20	When hearing the command in English, "Left (Port) 20,"	the candidate will turn the helm left (port) until the rudder angle indicator shows the rudder is at left (port) 20°.	The candidate will: 1. Repeat the order; 2. Immediately turn the helm to left (port); 3. Stop turning the helm when the rudder angle indicator reads left (port) 20°; and 4. State: The rudder is left (port) 20, or she's left (port) 20°.
Steer the ship and comply with helm orders in the English language	*Helm orders** Hard right (Starboard)	When hearing the command in English, "Hard Right" (Starboard),	the candidate will turn the helm to the right (starboard) until the rudder is at maximum right (starboard) rudder.	The candidate will: 1. Repeat the order; 2. Immediately turn the helm to right (starboard); 3. Stop turning the helm when the rudder angle indicator reads the rudder is at maximum right (starboard) rudder; 4. Ensure that the rudder is not jammed against the stops; and 5. State: The rudder is hard right (starboard), or she's hard right

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
				(cont'd) (starboard).
Steer the ship and comply with helm orders in the English language	*Helm orders** Ease to 5	When the rudder is more than 5° right (starboard) or left (port), when hearing the command in English, "Ease to 5,	the candidate will turn the helm to reduce the angle of the rudder until the indicator shows the rudder angle is right (starboard) or left (port) 5°.	The candidate will: 1. Repeat the order; 2. Immediately turn the helm to reduce the rudder angle; 3. Stop turning the helm when the rudder angle indicator shows the rudder angle is right (starboard) or left (port) 5°; and 4. State: The rudder is right (starboard) or left (port) 5°.
Steer the ship and comply with helm orders in the English language	*Helm orders** Midships; or, midships the wheel	When hearing the command in English, "Midships,"	the candidate will turn the helm to reduce the angle of the rudder until the rudder angle indicator shows the rudder angle is zero.	The candidate will: 1. Repeat the order; 2. Immediately turn the helm to reduce the rudder angle; 3. Stop turning the helm when the rudder angle indicator shows the rudder angle is zero; and 4. State: The rudder is midships.
Steer the ship and comply with helm orders in the	*Helm orders**	With the rudder at 15° right (starboard) rudder,	the candidate will turn the helm to the left (port) until	The candidate will:

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
(cont'd) English language	(cont'd) Shift your rudder.	(cont'd) when hearing the command in English, "Shift your Rudder,"	(cont'd) the indicator shows the rudder angle is left (port) 15°.	(cont'd) 1. Repeat the order; 2. Immediately turn the helm to the left (port); 3. Stop turning the helm when the rudder angle indicator shows the rudder angle is left (port) 15°; and 4. State: The rudder is left (port) 15°.
Steer the ship and comply with helm orders in the English language	*Helm orders** Meet her; or, check her.	During a turn, when hearing the command in English, "Meet Her," or "Check Her,"	the candidate will turn the helm to reduce the angle of the rudder and apply counter rudder until the vessel stops turning.	The candidate will: 1. Repeat the order; 2. Immediately turn the helm to reduce the rudder angle; 3. Apply counter rudder until the vessel stops turning; 4. Ease the wheel to midships; and 5. State: The vessel's heading is .....
Steer the ship and comply with helm orders in the English language	*Helm orders** Steady as she goes.	When hearing the command in English, "Steady as She Goes,"	the candidate will note the heading of the vessel, stop any swing of the ship, and steer in the direction noted when the command was	The candidate will: 1. Repeat the order; 2. Note the heading when the command

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
			(cont'd) given.	(cont'd) was given; 3. Immediately apply rudder to stop any swing of the ship; 4. Steer in the direction noted; and 5. State: She's steady as she goes.
Steer the ship and comply with helm orders in the English language	*Helm orders** Steer on the range.	When hearing the command in English, "Steer on the range,"	the candidate will keep the vessel's heading the same as the direction of the range.	The candidate will: 1. Repeat the order; and 2. Use the upper and lower range to keep the vessel's heading within 1° of the charted direction of the range for 5 minutes when the upper and lower ranges are aligned one over the other.
Steer the ship and comply with helm orders in the English language	*Helm orders** Nothing to the right (Starboard).* *Nothing to the left (port) may also be used .	When hearing the command in English, "Nothing to the right (Starboard),"	The candidate will keep the vessel from swinging to the right (starboard) and the vessel's heading from increasing.	1. The vessel does not swing to the right (starboard). 2. The vessel's heading does not increase for 5 minutes.

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
Steer the ship and comply with helm orders in the English language	*Change-over from automatic pilot to hand steering**	At sea speed, when hearing the command to put the steering into hand steering,	the candidate will change the steering mode from auto pilot to hand steering.	The candidate will: 1. Repeat the order; 2. Switch the steering mode from autopilot to hand; 3. Test that the new steering mode is responding; and 4. State: She's in hand steering.
Steer the ship and comply with helm orders in the English language	*Change over from hand steering to automatic pilot**	At sea speed, when hearing the command to put the steering into auto pilot,	the candidate will change the steering mode from hand steering to autopilot.	The candidate will: 1. Repeat the order; 2. Put the wheel amidships; 3. Verify the course dialed into the auto pilot is the same as the course to be steered; 4. Switch the steering mode from hand to auto pilot; 5. Verify that the autopilot is responding properly; and 6. State: She's in auto pilot.

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
Keep a proper look out by sight and hearing	*Responsibilities of a lookout, including reporting the approximate bearing of a sound signal, light or other object in degrees or points**	On a ship or full mission ship simulator, given a condition **in daylight** of unlimited visibility through a field of view from right ahead to 22.5 degrees abaft the beam on each side of the vessel and a sea state of four or less, and a large and small vessel and a buoy in sight,	the candidate will detect and report all three objects.	The candidate will report: 1. The large vessel before it is within ten miles of own ship; 2. The small vessel before it is within 2 miles of own ship; 3. The buoy before it is within 2 miles of own ship; and 4. The direction to all objects in degrees or points within ±1 point or ± 11°.
Keep a proper look out by sight and hearing	*Responsibilities of a lookout, including reporting the approximate bearing of a sound signal, light or other object in degrees or points**	On a ship or full mission ship simulator, given a condition **at night** of unlimited visibility through a field of view from right ahead to 22.5 degrees abaft the beam on each side of the vessel and a sea state of four or less, and a large and small vessel and a buoy in sight,	the candidate will detect and report all three objects.	The candidate will report: 1. The lights of the large vessel before it is within ten miles of own ship; 2. The lights of the small vessel before it is within 2 miles of own ship; 3. The light of the buoy before it is within 2

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
				(cont'd) miles of own ship; and 4. The direction to all objects in degrees or points within ±1 point or ± 11°.
Keep a proper look out by sight and hearing	*Responsibilities of lookout, including reporting the approximate bearing of a sound signal, light or other object in degrees or points**	On a ship or full mission ship simulator, in any condition of visibility, when a sound is generated by any sound appliance listed in the International Navigation Rules,	the candidate will detect and report the direction of the sound.	The candidate will report the direction of the sound in degrees or points within ±1 point or ± 11°.
Contribute to monitoring and controlling a safe watch	*Procedures for the relief, maintenance and hand over of a watch**	On a ship at sea, given traffic that has been reported to the officer of the watch, when the lookout relief reports to relieve the watch,	the candidate will hand over the watch in accordance with the ordinary practice of good seamanship.	1. The candidate will tell the relief of: a. all objects sighted and reported; b. objects sighted and not yet reported; c. past and present weather; d. any special instructions to be followed during the watch; and e. the status of the running lights.

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
				(cont'd) 2. The candidate will allow the lookout relief to acquire his or her night vision. 3. The candidate will report, "The lookout is relieved."
Contribute to monitoring and controlling a safe watch	*Procedures for the relief, maintenance and hand over of a helm watch**	On a ship at sea, when being relieved at the helm,	the candidate will hand over the helm in accordance with the ordinary practice of good seamanship.	1. The candidate will tell the relief: a. both the gyro and magnetic course or helm position; b. the steering mode; c. the steering unit in use; and d. the amount and direction of rudder needed to hold course. 2. The candidate does not turn over the helm while executing a helm order (the candidate waits until the order is completed). 3. The helmsman states, "The wheel (or helm) is relieved."

STCW Competence	Knowledge, understanding and proficiency	Performance Condition	Performance Behavior	Performance Standard
Contribute to monitoring and controlling a safe watch	*Use of appropriate internal communications and alarm systems**	On a ship at sea,	the candidate will notify the officer of the watch when hearing the following alarms: 1. The ARPA guard ring intrusion alarm; 2. The gyro-compass failure alarm; 3. Smoke and/or heat detector alarms; 4. Running Light panel alarms; 5. The steering motor failure alarm; and, 6. The steering pump failure alarm.	The candidate will: 1. Immediately report each alarm to the Officer in Charge of the Watch; and 2. In the case of steering failures, immediately after notifying the Officer in Charge of the Watch: a. if not in hand steering, switch the steering to hand; b. midship the wheel; c. switch the motor or pump; d. test the steering response; and e. when ordered by the watch officer, switch the steering to autopilot.

**** Italics denote STCW proficiency from Table A-II/4 of the STCW***