U.S. Department of Homeland Security

United States Coast Guard

Commandant
United States Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
Staff Symbol: G-MSO-1
Phone: (202) 267-0229
Fax: (202) 267-4570

COMDTPUB P16700.4
NVIC 05 04
JAN 22 2004

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 05 04

Subj: GUIDELINES FOR ASSESSING MERCHANT MARINERS THROUGH DEMONSTRATIONS OF PROFICIENCY IN MEDICAL FIRST AID

Ref: (a) International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW), Regulation VI/4 paragraph 1 and Section A-VI/4-1 of STCW Code, incorporated into regulations at 46 CFR 10.102(b)
(b) Federal Register dated April 23, 2002, Docket No. USCG-2002-12032, Guidelines for Assessing Merchant Mariners Through Demonstrations of Proficiency in Medical First Aid
(c) Comments on Table A-VI/4-1, Assessment Guidelines, Specification of minimum standard of competence for persons designated to provide medical first aid, Docket No. USCG-2002-12032-3 and -4, Available at: http://dms.dot.gov

1. PURPOSE. This Circular provides the national guidelines for assessing merchant mariners through demonstrations of proficiency in medical first aid. 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 unless alternatives are used as discussed in paragraph 5.c.

2. ACTION. Officers in Charge, Marine Inspection (OCMIs), should use this Circular when establishing that candidates are entitled to hold STCW-95 certificates attesting proficiency as persons designated to provide medical first aid as stipulated in 46 CFR 10.205(i). 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. 140

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
A																										
B	*	2	2											3												1
C					3								3													
D											1	*														
E														1	2											
F																										
G																										
H																										

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 attesting proficiency as a person designated to provide medical first aid. 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 these national guidelines. These 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 attesting proficiency as persons designated to provide medical first aid on or after February 1, 2002, must present documentation demonstrating competence in those skills specified in the table of enclosure (2). The practical demonstrations of skills required by 46 CFR 10.205(p) need to be completed in the presence of, and certified by, a DE. Unless a mariner demonstrates proficiency in the skills required for competence as a person designated to provide medical first aid in enclosure (2), the OCMI will not issue the STCW certification as stipulated in 46 CFR 10.205(p).

b. A person assessing mariners for STCW certification attesting proficiency as persons designated to provide medical first aid should use either the guidelines in enclosure (2) or an alternative as discussed in paragraph "5. c" when assessing practical demonstrations of proficiency.

c. 46 CFR 10.302 gives the Coast Guard authority to approve courses that satisfy regulatory requirements or that substitute for a Coast Guard examination or a portion of a sea-service requirement. Those who assess the proficiency of mariners may refine these published guidelines and develop innovative alternatives; however, before they use any deviations from these guidelines, they must submit them to the NMC for approval by the Coast Guard. A training institution submitting a course that leads to certification attesting proficiency as a person designated to provide medical first aid should 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 certification as persons designated to provide medical first aid should use these guidelines for self-study and self-assessment.

e. STCW Regulation VI/4 paragraph 1 requires those persons designated to provide medical first aid on board ships to meet these standards of competence for demonstrations of skills to meet the proficiency in Table A-VI/4, paragraphs 1, 2, and 3 of the STCW Code. The STCW is not a manning document; it establishes standards for a mariner's professional qualifications. United States' manning laws or regulations do not require that a vessel have someone specifically designated as a person responsible to provide medical first aid unless required by the vessel's Certificate of Inspection. It is not the intent of this NVIC to formalize or impose new manning requirements. This NVIC merely provides guidance for review of medical training courses that may meet the STCW's requirements and acceptance of the qualifications of mariners. It therefore provides shipping companies an avenue for proving that the person designated to provide medical first aid meets the requirements of STCW.

6. DISCLAIMER. While the guidance contained in this document may assist the industry, the public, the Coast Guard, and other Federal and State regulators in applying statutory and regulatory requirements, the guidance is not a substitute for applicable legal requirements; nor is it itself a rule. Thus, it is not intended to nor does it impose legally-binding requirements on any party, including the Coast Guard, other Federal agencies, the States, or the regulated community.

T. H. Gilmour

T H. GILMOUR
Assistant Commandant for Marine Safety,
Security and Environmental Protection

Encl: (1) Assessments of Mariners
(2) Table A-VI/4-1, Assessment Guidelines, Specification of Minimum Standard of Competence for Persons Designated to Provide Medical First Aid

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. 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.

b. 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.

c. 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 conditions, the behavior, and the criteria. The first establishes the conditions under which the candidate demonstrates the knowledge, understanding, or proficiency. The second specifies the precise set of knowledge, understandings, or skills (the 'behaviors') that is recalled, demonstrated, or performed. The third are the particular standards against which we measure an applicant's behavior to determine whether the performance is minimally competent.

d. 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 the National Maritime Center of the Coast Guard has 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 and if the performance standard were a score of 70%, three correct answers and one incorrect answer would meet the requirements for minimum competency. In this case the mariner would qualify as competent for that knowledge.

TABLE A-VI/4-1 Assessment Guidelines

Specification of Minimum Standard of Competence for Persons Designated to Provide Medical First Aid

Each candidate for an STCW endorsement as an officer in charge of a navigational watch, as an officer in charge of an engineering watch in a manned engine room, or as a designated duty engineer in a periodically unmanned engine, or each candidate seeking to meet the standards of competence for seafarers designated to provide medical first aid on board ship, must meet the standards of competence set out in STCW Code Table A-VI/4-1. To accomplish this, each candidate must:

- Meet all the competencies listed in the table;
- Pass a written examination for the portion of the competencies on knowledge and understanding; and
- Successfully accomplish a practical demonstration of skill for selected competencies.

The United States Coast Guard requires each mariner seeking proficiency as a seafarer designated to provide medical first aid on board ship to attend a course approved by the National Maritime Center. For this reason, these guidelines contain the assessment criteria for both requirements, knowledge (listed in the paragraph below) and skill, Table A-VI/4-1.

Written assessments

The knowledge-based or understanding-based portion of the following competencies may be assessed through a written multiple-choice examination. Written examination should comprise the following areas: the contents of a standard first-aid kit; the anatomy of the body and function of each body system sufficient to understand and apply the required knowledge and understanding; toxicological ship-board hazards; identification of the hazardous substance and the hazards of exposure; assessment of patients; standard isolation techniques; the treatment of burns and scalds, including the description of burns and the rule of nines; heat and cold emergencies; treatment of electrical and chemical burns, including safety of the scene and removal of electrical power; signs, symptoms and treatment of hyperthermia, hypothermia, and dehydration; information on patients to be communicated to radio medical services; medications; and sterilization and sterile techniques.

Demonstrations of Skill

In addition to passing a written examination, the competency entitled "Apply immediate first aid in the event of accident or illness on board" requires a practical demonstration of skill to assess proficiency. 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 to measure the performance. The examiner should use a checklist in conducting assessments of practical demonstrations of skill. Checklists allow a training institution or designated examiner to avoid overlooking critical tasks 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.

** Indicates a proficiency from Table A-VI/4-1*

STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standards
Apply immediate first aid in the event of accident or illness on board.	*Examination of casualty or patient**	In a graded practical exercise, given a simulated non-critical patient,	the candidate will perform an initial assessment (primary survey).	The candidate correctly assesses and treats, within 1 minute, life-threatening conditions, including: 1. level of responsiveness; 2. breathing; 3. circulation; and 4. severe bleeding.
		In a graded practical exercise, given a simulated non-critical patient,	the candidate will perform a detailed physical assessment (secondary survey).	The candidate correctly: 1. observes and records, within 10 minutes, all of the following: a. temperature (±2°F); b. pulse (±6, rhythm, and strength); c. respiration (±6, depth, rhythm, and character); and d. blood pressure (±10 mm Hg systolic and diastolic); and 2. performs a head-to-toe assessment to identify any deformities, contusions, abrasions, penetrations, burns, tenderness, lacerations, or swelling.
	*Spinal Injuries**	In a graded practical exercise, given a simulated non-critical patient, use of a cervical immobilization device, a long spine board, and a team of	the candidate will properly immobilize the patient's spine.	The candidate correctly performs, within 20 minutes and in proper sequence, all of the following: a. stabilizes cervical spine; b. selects and applies appropriate size cervical spine-immobilization device; c. maintains cervical alignment and

STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standards
		(cont'd) rescuers,		(cont'd) traction while directing a team performing a log-roll onto a long spine board; and d. demonstrates securing the patient to a long spine board, securing the torso, then the head.
	*Fractures, dislocations, and muscular injuries**	In a graded practical exercise, given a simulated non-critical patient and assistance from a second rescuer, and using a device to apply traction to the femur (Hare traction, Thomas D-ring, or Sager splint),	the candidate will properly immobilize and apply traction to a simulated femoral fracture.	The candidate properly applies, within 10 minutes, an appropriate femoral traction device (Hare traction, Thomas D-ring , or Sager splint), performing the following tasks: a. manually stabilizes the leg; b. assesses neuro-vascular distal function; c. properly measures and prepares device for application; d. applies and maintains manual traction while: i. positioning device on leg; ii. securing proximally; iii. securing distally; and iv. applying mechanical traction; e. secures supporting straps; and f. re-evaluates distal pulse and neurological status.
		In a graded practical exercise, given a simulated non-critical patient and assistance	the candidate will use rigid splints to immobilize a long-bone fracture of the	For each fracture, the candidate properly applies rigid splints, within 5 minutes, and performs the following critical elements: a. manually stabilizes arm;

STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standards
		(cont'd) from a second rescuer,	(cont'd) forearm and a bent-knee fracture.	(cont'd) b. assesses neuro-vascular distal function; c. selects and properly applies appropriate device(s); d. secures splinting device(s) to extremity(ies) with appropriate materials; and e. reassesses distal neuro-vascular function. *Note:* Bent-knee fracture—padded board splints should be secured transversely to the medial and lateral aspects of the leg both above and below (distal to) the knee.
	Cardiac arrest, drowning, asphyxia, and obstruction of airway by a foreign body	In a graded practical exercise, given an adult manikin designed for cardio-pulmonary resuscitation,	the candidate will demonstrate airway-management techniques and management of a patient in cardiac arrest.	The candidate correctly demonstrates, according to standards of the American Heart Association, the following: a. assessing responsiveness; b. calling for help if victim remains unresponsive; c. opening airway by head-tilt—chin-lift (if neck injury not suspected) or modified jaw-thrust (suspected neck injury); d. assessing breathing by looking, listening, and feeling; e. giving rescue breaths (2) to non-breathing victim; f. assessing for signs of circulation by looking for normal breathing, coughing, or movement;

STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standards
				(cont'd) g. if no pulse, properly locating hand positions for chest compressions and administering 15 chest compressions followed by 2 ventilations; h. continuing CPR for a total of 4 cycles (one minute) of 15:2; i. after performing 1 minute CPR, reassess breathing and pulse; j. if no pulse or breathing, continue CPR; k. if pulse but no breathing, continue rescue breathing; and l. if pulse and breathing present, place victim in recovery position (on side).
	*Cardiac arrest, drowning, and asphyxia**	In a graded practical exercise, given an adult manikin designed for cardio-pulmonary resuscitation, simulating a patient in pulseless V-tach, V-tach over the maximum rate, or V-fib, and an Automated External Defibrillator (AED),	the candidate will demonstrate the proper set-up and simulate the use of an AED.	The candidate correctly demonstrates, according to standards of the American Heart Association: a. attaching AED to pulseless victim over 12 years-of-age and 90 pounds; b. activating AED according to operating procedures; and c. stating the circumstances under which CPR may be terminated (victim revived, unsafe to continue, too exhausted to continue, relieved by competent provider).
		In a graded practical exercise, given an adult	the candidate will demonstrate airway-	The candidate correctly demonstrates, according to standards of the American Heart

STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standards
		(cont'd) manikin designed for cardio-pulmonary resuscitation,	(cont'd) management techniques and management of a choking or obstructed airway in a conscious victim.	(cont'd) Association: a. asking the victim whether he or she is choking; b. if victim cannot respond, performing sub-diaphragmatic thrusts (5); and c. re-assessing the victim. *Note:* If the victim is still choking, the candidate should repeat performing sub-diaphragmatic thrusts until victim is breathing or becomes unconscious.
		In a graded practical exercise, given an adult manikin designed for cardio-pulmonary resuscitation,	the candidate will demonstrate airway-management techniques and management of a choking or obstructed airway in an unconscious victim.	The candidate correctly demonstrates, according to standards of the American Heart Association: a. assessing (look, listen, feel); b. laying victim on his or her back; c. attempting rescue breathing, repositioning head if necessary; d. if airway blocked, performing appropriate (adult, child, infant) CPR (no abdominal thrusts or mouth sweeps); and e. continuing until airway cleared.

* *Indicates a proficiency from Table A-VI/4-1*