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Assistant Commandant's Perspective

by **Rear Adm. Paul Pluta**
Assistant Commandant For Marine Safety & Environmental Protection

February 1, 2002 marks a significant date for mariners, vessel owners, operators and all others who have a stake in maritime training and certification. On that date the 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW) become fully effective; the five-year transition period ends. The amendments to the Convention addressed international concerns that the human element in accident causation was being ignored while emphasis was directed to improving vessel design and equipment. The objective of the amendments is to establish a uniform standard of training and certification to safeguard mariners, vessels and the marine environment.

Since the amendments were adopted in 1995, members of the international maritime community have worked diligently to put in place the convention provisions for improving the safety of personnel and property, including, most notably, the requirement for standards of crew training and competency to ensure mariners attain certain levels of safety and professional expertise. In addition, these provisions impact port state control and provide mechanisms for improved international oversight to verify compliance.

Implementation of STCW and the improvements it will bring to the maritime community are important goals. While we kept our sights on February 1, 2002, the tragic events of September 11, 2001 changed our nation's focus in a thousand ways. Homeland security became the primary concern of the Coast Guard. While maintaining our efforts to fully implement STCW, we have redirected personnel and resources to maritime security. Ports around the nation are under tighter security than they have been in more than 50 years. In line with the President's emphasis on homeland security, the Coast Guard has increased our security posture, using existing active-duty, reserve, auxiliary and civilian personnel, as well as existing shore units, ships, boats, and aircraft.

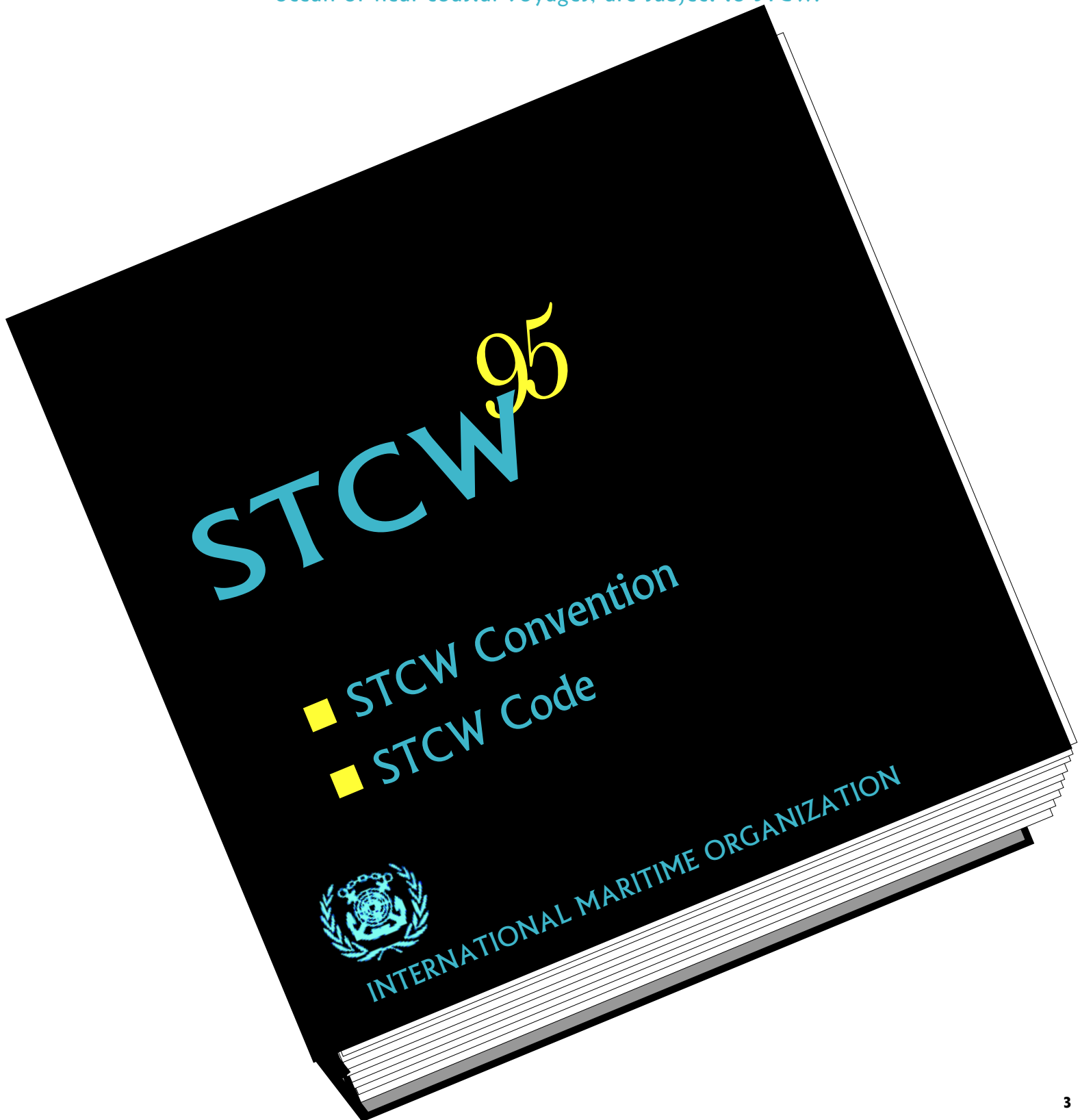
Because many of our resources have been diverted to respond to this national emergency, we have reduced counter-drug, fisheries, and migrant interdiction patrols. Many Regional Examination Center (REC) personnel, who process STCW applications, are now temporarily involved in port security. Since there may be some delay in the RECs' ability to process applications for STCW 95 certificates, we have taken some steps to alleviate problems this might cause for the mariner. We will delay enforcement of the STCW's requirements for mariners sailing on near-coastal waters in domestic service until February 1, 2003. This deferred enforcement does not mean we are minimizing the importance of STCW; rather, it is a reflection of our need to balance our responsibility to implement STCW with that of ensuring the safety and security of our nation's ports and waterways.

In the weeks and months ahead, we will be defining a new state of normalcy. During that time, we all must remember that port security is the responsibility of all people involved in the port environment and that it requires situational awareness and teamwork. As we usher in this era of renewed vigilance, we look forward to the increased standards of safety we will be afforded through implementation of STCW.

A handwritten signature in black ink that reads "Paul Pluta". The signature is written in a cursive, flowing style.

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), as amended, sets qualification standards for masters, officers and watch personnel on seagoing merchant ships. STCW was adopted in 1978 by conference at the International Maritime Organization (IMO) in London, and entered into force in 1984.

The Convention was significantly amended in 1995. The 136 current parties to the Convention represent approximately 98 percent of the world's merchant vessel tonnage. The United States became a party in 1991. Over 96 percent of ships visiting U.S. waters are foreign-flag. Approximately 350 large U.S. merchant ships that routinely visit foreign ports, as well as thousands of smaller U.S. documented commercial vessels that operate on ocean or near-coastal voyages, are subject to STCW.





Point of View

National Maritime Center

by Capt. Ernest J. Fink, Commanding Officer

STCW ... it's been a buzzword in the maritime community for the past decade. What is it, who does it affect, and most importantly, what does it mean to the average mariner in particular, and to the international maritime community at large? This issue of *Proceedings* focuses on the most recent changes to the Convention, which were adopted by the International Maritime Organization in 1995 and are to be implemented this year.

The National Maritime Center's primary function is to initiate and execute various marine safety programs at the national and international level, which includes overseeing and approving mariner training and certification courses. Because of this role, we have long supported the most recent changes and the improvements it will bring to the international maritime community. Since the Convention is quite complex, we offer the following paragraphs as a very general overview of STCW as a framework for the articles that follow.

WHAT IS STCW?

STCW, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended, is an agreement between virtually every maritime country and applies, very generally, to all mariners, vessels, and vessel operators of nations that are party to the Convention. The Convention is composed of three parts: the Articles, the Annex, and the STCW Code.

The articles are the heart of the Convention; they explain the legal arrangements that exist between the countries that are party to it. The articles have remained unchanged since 1978, which is why that date is referenced in the proper title of the Convention.

Article VI contains the two most important obligations in the Convention. First, it specifies that certificates are to be issued to masters, officers and ratings when they meet the requirements for service, age, medical fitness, training, qualification and examinations in accordance with the Annex. Secondly, certificates issued to masters and officers are to be endorsed using the form prescribed in the Annex.

The Annex to the Convention outlined the technical requirements that had to be met to fulfill the obligations imposed by the articles. The 1978 version of the Annex was totally replaced by the 1995 version, which also expanded the number of chapters in the Annex from six to eight.

The Code was adopted in 1995 and is discussed below.

WHY WERE CHANGES MADE IN 1995?

By 1993, significant limitations to STCW had become apparent. Most notably, it was evident that the Convention did not address concerns of the international community that human error was a major cause of maritime casualties. In addition, it did not include uniform standards of competence, it did not provide for effective international oversight to verify compliance, and it included outdated technical references that did not address modern shipboard systems, job descriptions and approaches to maritime training. In 1993, IMO undertook a full-scale revision of STCW. The changes, referred to as the 1995 Amendments, were adopted on February 1, 1997.

WHAT WAS CHANGED BY THE 1995 AMENDMENTS?

The driving force behind the 1995 Amendments is that people can help prevent maritime casualties. To this end, the Amendments include, among other things, uniform standards of train-

ing and certification for mariners, mandatory rest periods, and the requirements for English proficiency and basic safety training.

One of the main new features of the 1995 amendments was the creation of the Seafarers’ Training and Certification Code (STCW Code), which contains almost all of the technical details needed for meeting the requirements in the eight Chapters of the Annex. The Code is divided into two sections. Part A contains “mandatory standards,” and gives the minimum standards required to be maintained by Parties to effectively implement the requirements of the STCW Convention. Part B contains recommended guidance and is provided to clarify a regulation or promote a uniform interpretation of a particular requirement.

WHO WILL BE AFFECTED BY THE 1995 AMENDMENTS?

Ultimately, implementation of the 1995 Amendments to STCW will result in increased standards of safety for the international maritime community. For most mariners around the world it means they now must demonstrate a minimum standard of competence in specific skills before they can be issued an STCW certificate. These skills will be assessed according to a uniform set of standards. The Amendments also will impact the conduct of port state control examinations.

WHEN DO THE 1995 AMENDMENTS BECOME EFFECTIVE?

The changes adopted in 1995 allow for a five-year transition period, calling for full implementation on February 1, 2002. To accommodate the already overburdened RECs and the last-minute rush of applications as the February 1, 2002 date approached, the U.S. Coast Guard will defer enforcement of the STCW’s requirements for mariners sailing on near-coastal waters in domestic service until February 1, 2003.

WHERE CAN I LEARN MORE ABOUT STCW?

One of the best sources of information is the Coast Guard Web site: www.uscg.mil/stcw, as well as the National Maritime Center’s site: www.uscg.mil/nmc.

WHO MADE THE CHANGES POSSIBLE?

Almost the entire international maritime community was involved in effecting the latest changes to STCW. The IMO, signatory nations, training institutions and indeed, the mariners themselves, all had a hand in creating an agreement that imposes consistent, measurable standards for crew competency. Because of their cooperation, we all can expect to see an increased level of safety for mariners and the entire maritime environment.

My special thanks to Mr. John Bobb of the National Maritime Center for managing this issue of Proceedings.

HOW MANY...?

Countries party to STCW	136
Countries on the “White List” (countries that are in compliance with STCW requirements)	102
U.S. schools offering STCW courses	130
Coast Guard-approved STCW courses	714
Coast Guard-approved STCW instructors	1,125
Coast Guard-issued STCW 95 certificates as of September 1, 2001	6,535



Cadets aboard the CGC *Eagle* perform fire fighting drills. USCG photo by PAC Robert D. Wyman.

Using Assessments to Measure Performance

by John Bobb, National Maritime Center

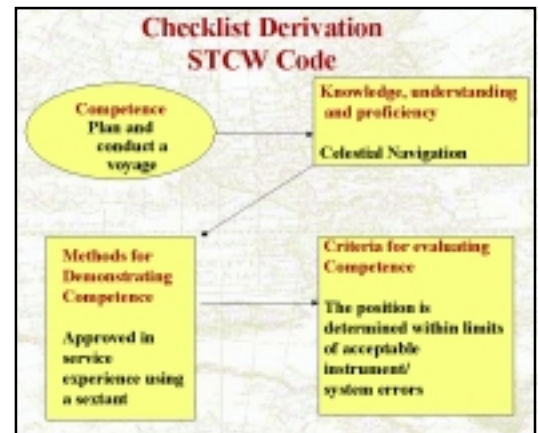
The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), as amended in 1995, presented a number of challenges for countries that issue original certificates of competency. One of the most perplexing challenges for the United States has been how to obtain reliable, valid evidence that candidates for STCW certification meet the required standards of skill competence. Has the candidate achieved competence? Can he or she competently carry out the required duties aboard ship? There is typically one way to best test competency, namely, to ask the student to **perform the skill** for an evaluator.

Section A-I/1.1.1 of STCW defines *standard of competence* as the level of proficiency to be achieved for the proper performance of functions aboard ship in accordance with the internationally agreed criteria as set forth in STCW and incorporating prescribed standards or levels of knowledge, understanding and demonstrated skill.

STCW evaluation criteria appear in column four of the "Specification of Minimum Standard of Competence" tables in part A. The column is titled "Criteria for evaluating competence" and parties to the convention must evaluate the candidate's evidence of competence before issuing the STCW certificate. Column four, however, offers no help to ships' officers or training institution assessors about how to assess a practical demonstration of skill. In other words, assessors had the experience but not the tools to judge whether a candidate could perform his or her duties.

Assessment is the process of gathering, describing, or quantifying information about performance. It could be the performance of individuals, groups, programs, or processes. Assessment examines abilities, achievements, personality variables, aptitudes, attitudes, preferences, interests, values, demographics, and other characteristics. Assessment generally takes two forms: written exams and practical demonstrations. Other assessment procedures include but are not limited to: questionnaires, inventories, portfolios, rating scales, surveys, interviews, and other clinical measures. Performance-based assessments require individuals to apply their knowledge and skills in context, not merely complete a task on cue.

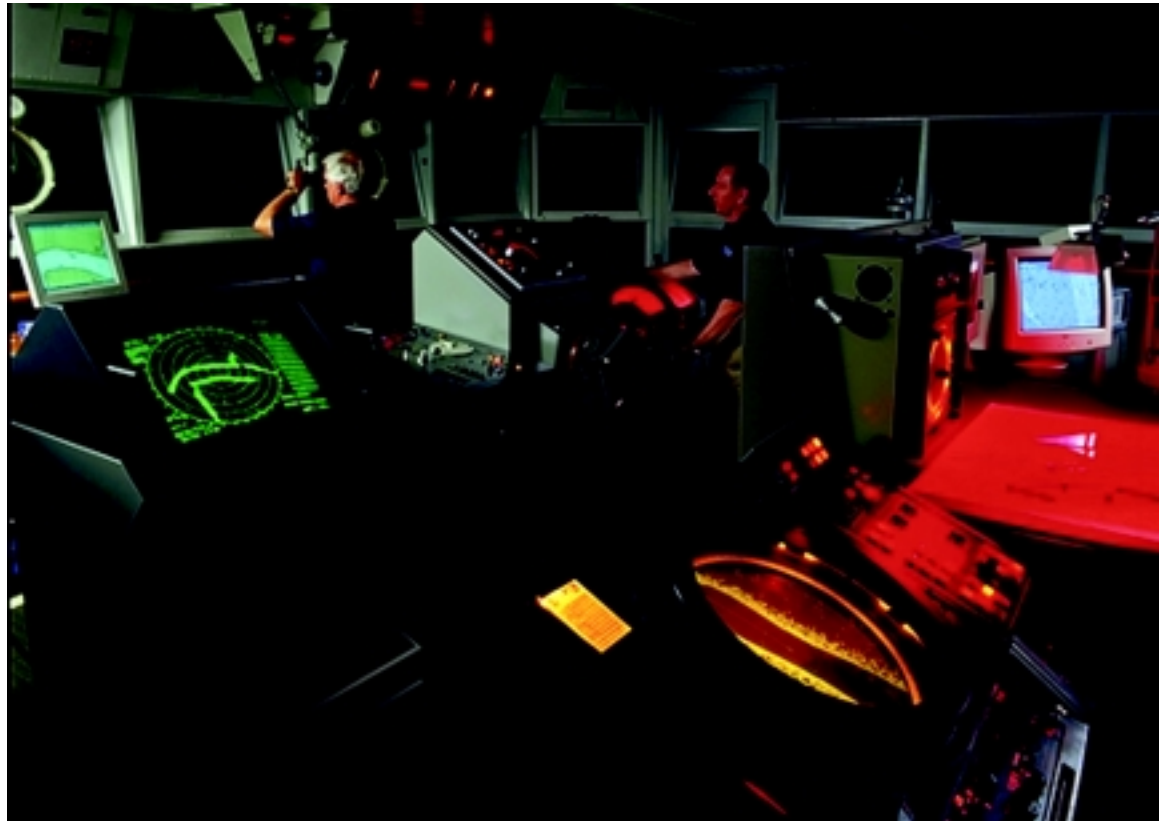
An assessment system consists of multiple assessments combined into a comprehensive reporting format that produces comprehensive, credible, and dependable information upon which important decisions can be made about students. In the case of STCW competence, the party is evaluating evidence to determine if an individual candidate has achieved competence to perform his or her shipboard duties. This is the responsibility of the parties to the convention. One of the methods the Coast Guard has chosen to gather evidence of STCW eligibility is the personal observation of candidate performance; namely, a performance assessment. A training record book is simply the comprehensive reporting format used by STCW as evidence of competence. The Coast Guard requires either the training record book or an assessment record consisting of completed control sheets where a training record book is not required.



In 1998, officers and unlicensed unions expressed concern that by signing a training record book, they could be indicating a candidate was competent. Would officers be liable if they said a candidate could perform a function competently and the candidate subsequently had an accident? What about the officer or school that trained the candidate? Compounding the officers' reluctance to assess performance was their lack of experience conducting

assessments of practical demonstrations of skill. While all had experience with written examinations, none had experience assessing practical demonstrations in a way that would provide consistent, repeatable and valid assessment results. In addition, no standards existed to allow the assessor to achieve the goal of obtaining consistent, repeatable and valid results.

One solution to these problems is to standardize the assessment criteria to remove as much subjectivity as possible from the observation of the practical demonstrations. In the world of training and education, a method of assessing psychomotor skills was developed to address similar concerns. The concerns were alleviated by the development of assessment standards and behaviors for each activity or skill that had to be demonstrated. By matching a learning objective to its performance objective, an assessor is able to assess different candidates of similar skill at different times and places and achieve the same result. The tool that enables them to do this is the performance objective, which is expressed as a condition, an observable behavior and a standard of performance. In many cases the standard of performance is a checklist of tasks that must be successfully completed, in some cases in sequence.

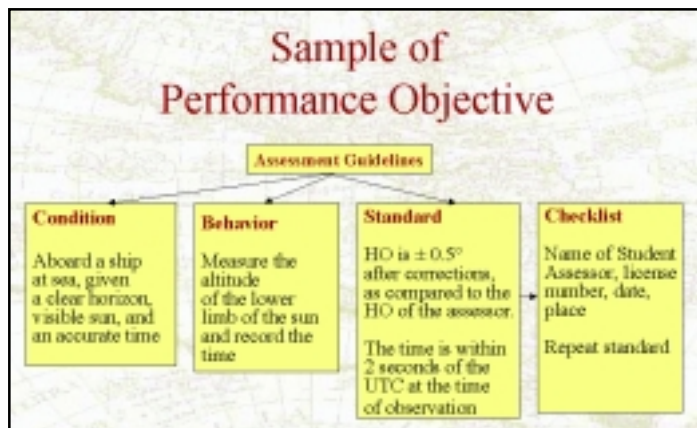


Bridge teamwork students conduct an exercise on the MITAGS full-mission simulator. Photo courtesy MITAGS.

fied candidates performing the task under nearly the same conditions should receive the same approximate score. To achieve assessment reliability, the assessor must not forget any relevant performance steps or scoring factors. The Coast Guard must account for different assessors using different criteria based on their own opinions. Naturally, there must be oversight of the assessment activities.

To achieve these goals, noted educator Peter W. Airasian suggests that the following steps be completed:

1. Identify the overall performance or task to be assessed, and perform it yourself or imagine yourself performing it.
2. List the important aspects of the performance or product.
3. Try to limit the number of performance criteria, so they can all be observed during a pupil's performance.
4. If possible, have groups of subject matter experts think through the important behaviors included in a task.
5. Express the performance criteria in terms of observable student behaviors or product characteristics.
6. Don't use ambiguous words that cloud the meaning of the performance criteria.
7. Arrange the performance criteria in the order in which they are likely to be observed.



Two important characteristics of assessments are validity and reliability. **Validity** means the task being assessed is a relevant part of the skill set required of the candidate. In STCW terms, a task is valid if it is required of competent officers and qualified ratings in the performance of their duties. **Reliability** means that equally quali-

So the Coast Guard set a course to develop the assessment criteria: the performance conditions, behaviors and standards that could be used to determine if the candidate could successfully demonstrate his or her skill. In developing the assessment criteria, the National Maritime Center (NMC) sought to get the maritime training institutions to develop an industry-wide consensus on the criteria. The Coast Guard also had access to other organizations that could provide the broad base of subject matter experts necessary to reach consensus.

The first meeting to develop the criteria was at Maine Maritime Academy in March 1999. Representatives of the maritime academies met to develop assessment criteria for officers in charge of both navigational and engineering watches. The resultant assessment criteria were further refined by the members of the Merchant Marine Personnel Advisory Committee (MERPAC), a federal advisory committee first established in 1992. MERPAC's purpose is to advise the Secretary of Transportation, via the Commandant, U.S. Coast Guard, on matters relating to the training, qualification, licensing, certification and fitness of seamen in the U.S. merchant marine. After MERPAC commented on the criteria, the assessment criteria were published in the Federal Register as guidelines for assessment and to solicit comments from the public at large. At the expiration of the comment period, NMC reviewed the comments and made changes as necessary. Lastly, the guidelines were published as a Navigation and Vessel Inspection Circular and were posted on NMC's Web site at www.uscg.mil/hq/g-m/nmc/web/index.htm.

Currently, there are assessment criteria for five different certificates published on the site. The remaining criteria will be published within the coming months.

While NMC was developing the assessment criteria, the International Maritime Organization (IMO) published two model courses to teach maritime administrations, training institutions and ships officers about assessing seafarers and conducting onboard assessment. The revised edition of IMO Model Course 3.12, *Assessment, Examination and Certification of Seafarers*, was published in 2000. The course includes introductory instruction to assessors covering the international requirements for training, assessment and certification under STCW.

Part 16 of the model course covers the performance criteria for shipboard assessment, including the identification of performance objectives and determining performance measures and standards. It is not surprising that the authors of the model course and NMC followed the same methodology in developing assessment criteria for STCW.

One year after Model Course 3.12 was published, IMO followed with Model Course 1.30, *On-board Assessment*. The course is for anyone conducting on-board assessments. It also covers the development of performance objectives and performance measures and standards, and includes instruction and practice on the assessment process to be followed when conducting on-board assessments.

Meanwhile, the U.S. Coast Guard Research and Development Center

published their report, *A Method for Developing Mariner Assessments*, in July 2000. An appendix to the report addressed the process for conducting shipboard assessments and is published separately on the NMC Web site at www.uscg.mil/hq/g-m/nmc/web/assessorman.pdf.

The process used by the United States to develop assessment criteria with performance measures and standards is very similar to the process being used around the world to conduct assessment of practical demonstrations of skill. In fact, the IMO has conducted a number of seminars throughout the world regarding the Model Course 3.12, *Assessment, Examination and Certification of Seafarers*.

A system has been created to complement the assessment of knowledge and understanding by evaluating practical demonstrations of skill. Assessors at schools and ships officers have been provided with guidelines to observe that a task was properly performed. They provide the evidence that candidates can perform the tasks required

of the jobs they seek. They are not stating that a mariner is competent; they are simply verifying that the student has performed the task in accordance with the published guidelines.

The information collected and verified in the training record book is then submitted to Regional Examination Center (REC) personnel for evaluation. *Evaluation* is the examination and interpretation of collected information to make judgments about individuals, programs, or processes that lead to decisions and future actions. The training record book evidence

is only one factor REC personnel evaluate to determine whether a candidate for an STCW certificate has achieved the required level of competence. The Coast Guard also evaluates age, character, sea service, training, knowledge and understanding, and medical condition. It is only then that the Coast Guard determines if the required standards of competence have been met.

Recalling the definition of standards of competence, the candidates for officer in charge of a navigational watch must be able to navigate, handle cargo and stowage, control the operation of the ship, and care for persons on board at the operational level.

The method of collecting and evaluating evidence to verify that candidates for STCW certification have met the required standards of competence conforms to long-established educational practices. While new to the U.S. maritime industry, this method is well accepted and practiced throughout the world. With experience, using assessment criteria to observe practical demonstrations of skill will become second nature.

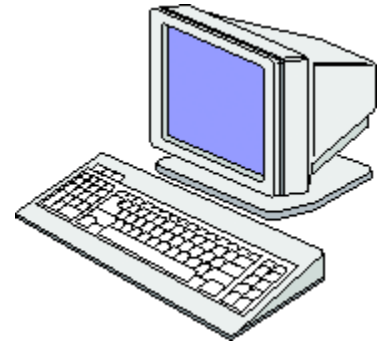


Students attack an open fire on deck of simulated vessel.
Photo courtesy Seafarer's Harry Lundeberg School of Seamanship.



Finding Information About STCW ... *Let Your Fingers Do the Talking*

by Stewart A. Walker, National Maritime Center



The 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), requires significant changes to the processes by which mariners qualify for certification. Beginning February 1, 2002, the full effects of STCW apply to all mariners. With that day drawing near, mariners need reliable information about the impacts of STCW on their careers and how to comply with its requirements. Without this information, a mariner cannot make an informed decision about which course of action would be most advantageous.

..... W O R L D W I D E W E B

It is difficult for the serving mariner to stay abreast of developments regarding STCW. Now, when many mariners require information about STCW, many others have already begun the application process for issuance of their STCW credentials. Staffs of the Regional Examination Centers (RECs) are fully engaged in processing these and other transactions. While the Coast Guard encourages mariners to discuss their situations with personnel at an REC, the existing workload often makes it difficult to establish contact. As REC personnel devote their efforts to processing the pending applications, fewer resources are available to respond to mariners' inquiries. The Coast Guard is working hard to provide additional resources to the RECs, but due to an expected influx of nearly 10,000 applications for STCW credentials, mariners may expect delays in being able to contact an REC. If you need answers and are unable to contact an REC by telephone, try finding the information on one of the Coast Guard's Web sites. While not as personal as discussing your situation with an REC employee, you may be able to more quickly find the answers to your questions electronically.

A valuable source of information about STCW is the Coast Guard's Web site, www.uscg.mil/STCW/index.htm. The site contains information on three areas regarding the issuance of mariners' credentials. The first area contains information about the issuance of licenses, merchant mariners' documents, and other mariners' credentials that are authorized under the domestic licensing scheme. Pages and hot-link buttons that refer to the domestic licensing scheme are colored blue. The second area of the Web site provides general information for any mariner and information for applicants for an original credential. Pages and hot-link buttons in this area are colored green. The third area, colored red, provides information relating to the issuance of certificates required by STCW. Throughout the Web site, each page has hot-link buttons that can take you from the current area to relevant pages in each of the other two areas. This allows you to quickly switch between areas to view all relevant information. The following table provides a quick reference to the material contained in each section.

U.S. Mariner License, Document, or Certificate of Registry Requirements	Merchant Mariner Information Center	STCW Information and Requirements
Requirements for issuance of a deck officer's license	List of Regional Examination Centers	History and background
Requirements for issuance of an engineering officer license or certificate of registry	Questions used in Coast Guard examinations	Frequently asked questions
Requirements for issuance of a qualified deck or engineering rating; i.e., AB, lifeboatman, or QMED	Policy letters	Requirements for STCW certification
Requirements for issuance of an entry-level rating	Guide to deck examinations	Responsibilities of a vessel's master under STCW
Information on user fees	Guide to engineering examinations	Responsibilities of a vessel's operator under STCW
Application forms	Application forms	Search feature and Email contact information

A mariner may benefit from the information in policy letters, which provide guidance to the RECs about the interpretation of STCW. All of the policy letters are located at www.uscg.mil/STCW/m-policy.htm. The policy letters cover many topics and new policy letters are frequently issued to address the changes made by STCW to the former licensing scheme. Eventually, there will be a separate policy letter for each STCW level of qualification that will include step-by-step information for a mariner to qualify for certification. As these letters are developed, they will be added to the Web site. By opening the correct policy letter and downloading the necessary forms (located at www.uscg.mil/STCW/m-forms.htm), you will have a head start on understanding the requirements for STCW certification.


Don't overlook the Navigation and Vessel Inspection Circulars (NVICs) as valuable and informative resources. These documents provide long-term Coast Guard policy on issues that affect the maritime community. For example, NVIC 6-00, *Issuance Of International Forms Required By The STCW To Validate Merchant Mariner Licenses And Documents*, provides

information about the entries required on STCW certificates issued by the United States. If you have a question about why your STCW certificate is endorsed with a particular phrase, this NVIC should provide the answer. This NVIC also has a section of frequently asked questions, which clarifies information about STCW. In 2001, the Coast Guard issued NVICs on licensing of officers of towing vessels and on the qualifications required of an engineer to qualify for service on vessels propelled by gas turbine engines. The index of NVICs from previous years is available at www.uscg.mil/hq/g-m/nvic/. Several of these are of particular interest to mariners and marine personnel experts.

When you need information about the effects of STCW on your maritime career, the first impulse for many mariners is to call the REC. Before picking up the phone next time, try clicking your mouse. Due to the workload the RECs are now experiencing, you may get the information you need more quickly. The Web sites cited in this article are valuable resources and they may help you to quickly find the information you need to make informed career decisions.

A Closer Look at the STCW 95 Certificate

by Lt. j.g. Aaron W. Demo, National Maritime Center



United States of America

ENDORSEMENT ATTESTING THE ISSUE OF A CERTIFICATE UNDER THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED IN 1995

The Government of the United States of America certifies that Certificate No. (s) 1. _____ has been issued to 2. _____, who has been found duly qualified in accordance with the provisions of regulation(s) 3. _____ of the above Convention, to serve in the capacity or capacities listed below, subject to any limitations indicated until 4. _____.

This endorsement is not valid unless accompanied by a valid U.S. Merchant Mariner's license or document.

FUNCTION	LEVEL	LIMITATIONS APPLYING (IF ANY)
..... <u>5.</u>		

The lawful holder of this endorsement may serve in the following capacity or capacities specified.

CAPACITY	LIMITATIONS APPLYING (IF ANY)
..... <u>6.</u>	

Endorsement No.: 7. _____ issued on 8. _____ at 9. _____

_____ 10. _____
Date of birth of the holder of the certificate Signature of duly authorized official

_____ 10. _____
Signature of certificate holder Photograph area Name of duly authorized official

DEPT. OF TRANS., CG 5611 (10-96) (Cut on dashed line) (Emboss Official Seal above this line. ↑)

This article clarifies the information on a certificate issued under the 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW). The new certificate was created to conform to a worldwide standard. The form was designed to work in conjunction with the vessel's safe manning document. A port state control boarding officer will compare the crew requirements set forth in the safe manning document of a vessel to the STCW certificates held by the crew. For every required certification listed on the safe manning document there must be a matching STCW 95 certificate held by a mariner onboard. In a boarding situation, the port state control boarding officer will only be interested in the STCW certificate, not the underlying license or merchant mariner's document.

The following list breaks down the STCW 95 form shown on the previous page and describes the information that is contained in the document. The illustration provided is a sample STCW 95 certificate. The numbers below correspond to the numbers superimposed on the form. These descriptions provide greater detail to the information included in the STCW 95 certificate.

1. This block contains the serial number of the license or the social security number from the merchant mariner's document. If a mariner holds both, both numbers will appear.
2. The name of the mariner will appear in this block exactly as it is printed on the license or document.
3. The STCW 95 regulation number under which the mariner is qualified is entered in this block. If the mariner is qualified under more than one regulation, all numbers will appear.
4. The expiration date of the license or merchant mariner's document, whichever comes first, is entered in this block.
5. No entry is required in the FUNCTION-LEVEL-LIMITATION SECTION. This section refers to a certification scheme that the United States does not use.
6. General limitations are entered in the top part of this block. An example of a general limitation is a requirement to wear corrective lenses. If a mariner holds both a license and a merchant mariner's document, only separate and distinct qualifications and limitations will be listed on the STCW 95 form. Qualifications that are inherent within the license, such as qualification as a rating forming part of a watch or proficiency in survival crafts need not be repeated. Only STCW qualifications will be shown. Qualifications outside the scope of the STCW (e.g., inland, Great Lakes routes) are not listed. If the capacities or limitations fill the front of the form, they may be continued on a second page. The terminology for STCW qualifications is different than the commonly used terminology we are familiar with. As you will see in the following capacities, the Coast Guard has attempted to link the STCW terminology to our current licensing scheme. A common list of capacities as they will be seen on the form is as follows:

- a. Officer in charge of a navigational watch (Third Mate)
- b. Officer in charge of a navigational watch (Second Mate)
- c. Officer in charge of a navigational watch (Mate)
- d. Chief Mate
- e. Master
- f. Rating forming part of a navigational watch (Able Seaman-Unlimited)

- g. Rating forming part of a navigational watch (Able Seaman-Limited)
- h. Rating forming part of a navigational watch (Able Seaman-Special)
- i. Engineer in charge of a watch (Third Assistant Engineer)
- j. Engineer in charge of a watch (Second Assistant Engineer)
- k. Engineer in charge of a watch (Assistant Engineer)
- l. Engineer in charge of a watch (Designated Duty Engineer)
- m. Second Engineer Officer (First Assistant Engineer)
- n. Chief Engineer
- o. Rating forming part of an engine room watch (QMED-Any Rating)
- p. Rating forming part of an engine room watch (QMED-Oiler)
- q. Rating forming part of an engine room watch (QMED-Engineman)
- r. Proficient in the use of survival craft (Lifeboatman)
- s. Radio Operator
- t. Proficient in providing medical First Aid
- u. Proficient in taking charge of Medical Care
- v. Cadet (Deck)
- w. Cadet (Engine)

* *This list is not all-inclusive. It only contains the most common capacities.*

7. The license number and/or social security number is entered in this block and must be the same as the numbers entered in block 1.
8. The date on which the form was issued is entered in this block.
9. The port where the form was issued is entered in this block.
10. A passport photo will be glued in this block. The photo can be black-and-white or color.

This form will only be issued when a mariner complies fully with the STCW. A new form will be issued to a mariner who upgrades a license, increases the scope of a license, or adds an endorsement to either a license or a merchant mariner's document that changes the mariner's qualifications under the STCW. New qualifications are not added to an existing form. Old forms are voided and may be returned to the individual.

If you have questions on qualifying for an STCW 95 form, visit the STCW Web site at www.uscg.mil/STCW. Information on issuance of STCW forms can also be found in Navigation and Vessel Inspection Circular (NVIC) No. 6-00 available at www.uscg.mil/hq/g-m/nvic/index00.htm.

COAST GUARD ISSUES NEW LICENSE FORMS

by Lt. Michael R. Washburn, National Maritime Center

Change, at times, can be perceived as an uninvited burden to one's comfortable routine. There are times, however, when change is necessary. Beginning early this year, licensed merchant mariners will see a new Coast Guard license form being issued from the 17 Regional Examination Centers.

The new license form, CG-2849, will be issued to all licensed merchant mariners, including Masters (any GT), Chief Engineers (any HP) and Radio Officers. This form will use the existing border design, title and vessel graphic design as the current version of the CG-2849 Merchant Marine Officer license. It will be 8½" x 11" in size and will not have the pre-printed text and blank endorsement lines seen on the current version. The license title, applicable endorsements and issue/signature information will be completely printed from the Coast Guard's Merchant Marine Licensing and Documentation (MMLD) System, which is the database the Coast Guard uses to maintain and produce license, merchant mariner document and STCW transactions.

This change was necessary as the supply for existing forms is nearly exhausted and reproduction of those same forms would result in extremely poor print quality certificates, especially in the case of the Master and Chief Engineer forms. In addition, the Coast Guard has experienced alignment problems with the current forms when used with the MMLD system; the problems stem from the fact that the current supply of licenses were produced by both the U.S. Government Printing Office and the U.S. Bureau of Engraving and Printing (BEP). Slight differences in paper size resulted in poorly aligned text. The new licenses, produced solely by BEP, are cut to exacting tolerances. When coupled with our MMLD system, now printing all license text, the new format will eliminate any alignment errors and produce a much more professional-looking credential. These same features have also been incorporated into the new CG-887 Certificate of Registry, which will replace the existing CG-887.

One future benefit of the new forms is the possibility of incorporating STCW related capacities/limitations, thus eliminating the need for a separate STCW form for mariners.

For questions or comments, contact Lt. Michael R. Washburn at mwashburn@ballston.uscg.mil.





Coast Guard Revises Application Forms for Improved Service

by Lt. Tamara Wilcox, National Maritime Center

The U.S. Coast Guard has long been concerned with delivering top-quality service to U.S. mariners. With this in mind, early in 2001, a group of quality performance consultants, Regional Examination Center (REC) process technical experts, customers, and staff from various RECs met in Baltimore, Md., to conduct a comprehensive review of REC internal processes. Among the items identified for analysis was reducing mariner application errors. This came after data collected from RECs in the months before the Baltimore meeting revealed that 57 percent of the application packages submitted to RECs typically require corrections or additional information from the mariner. Fifty-seven percent! Analysis indicated that the errors made by mariners on the various required forms are one of the major contributors leading to a four- to eight-week cycle time for processing mariners' applications and significantly increased REC work and rework.

The following error rates were identified: a 19 percent error rate in applications; a 20 percent error rate in physical examination forms; a 13 percent error rate

in sea service forms, and a 9.2 percent error rate in drug test documentation. Some of the principal reasons for these errors were found to be form complexity, unclear instructions, and non-standard operating procedures among RECs. While there were changes made across the board to all these forms, the most significant changes were made to the Application for License as an Officer, Staff Officer, or Operator and Merchant Mariner Document (719B), and the Merchant Marine Personnel Physical Examination Report (719K).

The challenge was to simplify the forms in ways that would reduce the majority of errors, while still asking for the wide range of information necessary to complete an informed evaluation of a mariner's qualifications and physical ability to do the job. The new forms can be viewed and printed from the Coast Guard Web site at www.uscg.mil/STCW/m-pers.htm. The link to "applications and forms" is at the bottom of the page. The forms were released in late August for a six-month trial period, after which they will be reviewed and possibly further revised.

Application for License as an Officer, Staff Officer, or Operator and Merchant Mariner Document (719B)

There were 740 application packages in this data set. Errors were found on 140 (19 percent). Analysis of this data revealed four common errors:

1. *No initials in block #24*: Block #24 contained the question, “Has any Coast Guard document or license held by you ever been revoked, suspended, or voluntarily surrendered?” The instructions prompted the applicant to initial the column marked “yes” or “no.”
2. *No initials in Section VI*: Section VI covers a series of questions pertaining to Narcotics, DWI/DUI and Conviction Records. The instructions prompted the applicant to initial the column marked “yes” or “no.”
3. *No statement from the mariner in Section VI*: After each question in section VI, the applicant is prompted to attach a statement if he/she answered “yes.”
4. *No signature in block #43*: The mariner was prompted to “certify that the information on this application is true and correct ... ” by signing in that block.

Specific changes were made to reduce the error rate in each of the above sections. The revised form is shown below.

Section III - Narcotics, DWI/DUI, and Conviction Record		
Yes (X)	No (X)	Indicate your answers to the following questions; sign and date at the bottom of this section.
<input type="checkbox"/>	<input type="checkbox"/>	Have you ever been convicted of violating a dangerous drug law of the United States, District of Columbia, or any state, or territory of the United States? (This includes marijuana.) <i>(If yes, attach statement)</i>
<input type="checkbox"/>	<input type="checkbox"/>	Have you ever been a user of/ or addicted to a dangerous drug, including marijuana? <i>(If yes, attach statement)</i>
<input type="checkbox"/>	<input type="checkbox"/>	Have you ever been convicted by any court – including military court – for an offense other than a minor traffic violation? Conviction means found guilty by judgment or by plea and includes cases of deferred adjudication (NOLLO CONTENDERE, adjudication withheld, etc.) or where the court required you to attend classes, make contribution of time or money, receive treatment, submit to any manner of probation or supervision, or forgo appeal of a trial court finding? Expunged convictions must be reported unless the expungement was based upon a showing that the court’s earlier conviction was in error. <i>(If yes, attach statement)</i>
<input type="checkbox"/>	<input type="checkbox"/>	Have you ever been convicted of a traffic violation arising in connection with a fatal traffic accident, reckless driving or racing on the highway or operating a motor vehicle while under the influence of, or impaired by, alcohol or a controlled substance? <i>(If yes attach statement)</i>
<input type="checkbox"/>	<input type="checkbox"/>	Have you ever had your driver’s license revoked or suspended for refusing to submit to an alcohol or drug test? <i>(If yes, attach statement)</i>
<input type="checkbox"/>	<input type="checkbox"/>	Have you ever been given a Coast Guard Letter of Warning or been assessed a civil penalty for violation of maritime or environmental regulation? <i>(If yes, attach statement)</i>
<input type="checkbox"/>	<input type="checkbox"/>	Have you ever had any Coast Guard license or document held by you revoked, suspended or voluntarily surrendered? <i>(If yes, attach statement)</i>
I have attached a statement of explanation for all areas marked “yes” above. I signed this section with full understanding that a false statement is grounds for denial of the application as well as criminal prosecution and financial penalty. I understand that failure to answer every question will delay my application.		
X Signature of Applicant agreeing to the above statement		Date

1. Block #24 has been moved to the bottom of Section III and incorporated as an additional question regarding Narcotics, DWI/DUI, and Conviction Record (previously Section VI). Where that section had required the mariner to initial, all of the questions can now be answered by placing a check mark in the appropriate box.
2. The signature required at the end of the old Section VI (previously box #43) now includes the clarifying statement, “I have attached a statement of explanation for all areas marked ‘yes’ above.” In addition, the block has been greatly enlarged, making it very prominent.
3. The initials previously required next to each of the questions in the old Section VI have been replaced and the applicant is now instructed to place an X or a check mark in the appropriate box in the new Section III.
4. Each of the questions in the new Section III is followed by the now bolded statement, “If yes, attach statement.”

In addition, the new form uses a larger, easier-to-read font, and certain sections have been bolded to help clarify instructions. This has the added effect of making the form appear less crowded.

Merchant Marine Personnel Physical Examination Report (719K)

There were 659 forms in the data set. Errors were included on 132 (20 percent). Analysis of the data collected revealed the following common errors:

1. *Documentation for uncorrected vision insufficient or in error.*
2. *Color vision data incorrect or missing.*
3. *Section 14 errors:*

Section 14 covers the doctor's assessment and answers the question, "Does the applicant have or has he/she ever suffered from any of the following?" If the answer is "yes" the doctor is asked to explain in Block 16.

4. *No competency certification provided by a doctor.*

The format of the physical form has been changed significantly. On the new form, the "Instructions for the Applicant" and "Instructions for Physician/Physician's Assistant/ Nurse Practitioner" have been made much more prominent and easier to read by using a larger font and list format.

Instructions for Applicant
This section gives details for the completion of appropriate sections of this form. If you are applying for:
1. ORIGINAL LICENSES AND/OR QUALIFIED RATING DOCUMENTS (i.e., <i>First Rating of Able Seaman, Qualified Member of the Engine Department, and Tankerman</i>) – You must complete the entire report.
2. RENEWALS FOR LICENSES AND QUALIFIED RATING DOCUMENTS – You must complete Sections: I-Applicant Information, III-Vision, V-Hearing, and VII-Certification of Physical Impairment or Medical Conditions.
3. RAISE-IN-GRADES (LICENSES) – You must complete Sections: I-Applicant Information and VII-Certification of Physical Impairment or Medical Conditions.

Instructions for Physician/Physician's Assistant/Nurse Practitioner
The U.S. Coast Guard requires a physical examination/certification to determine that all holders of Coast Guard issued licenses and Merchant Mariner documents (Note: the list below may be some of the physical demands placed on the Applicant as part of his/her assigned duties):
<ul style="list-style-type: none">• Are of sound health.• Have no physical limitations that would hinder or prevent performance of duties.• Are capable of working in cramped spaces on rolling vessels.• Are able to maintain balance on a moving deck.• Are able to quickly don an exposure suit.• Are able to step over door sills of 24 inches in height.• Are able to open or close watertight doors that may weigh up to 56 pounds.• Are able to pull heavy fire hoses a distance of 400 feet, and have the ability to lift fully charged fire hoses.• Are able to climb steep stairs or vertical ladders without assistance.• In an emergency must be able to fully participate in the firefighting and lifesaving efforts including wearing a self-contained breathing apparatus (SCBA).• Are physically and mentally able to stay alert for 4 to 6-hour shifts.• Are free from any medical conditions that pose a risk of sudden incapacitation which would affect operating or working on vessels.
1. Detailed guidelines on potentially disqualifying medical conditions may be obtained from any U.S. Coast Guard Regional Exam Center or by calling the National Maritime Center at (202) 493-3000.
2. Examples of physical impairment or medical conditions that could lead to disqualification include impaired vision, color vision or hearing poorly controlled diabetes, multiple or recent myocardial infarctions, psychiatric disorders, and convulsive disorders. In short, any condition that poses an inordinate risk of sudden incapacitation or debilitating complication, and any condition requiring medication that impairs judgment or reaction time are potentially disqualifying and will require a detailed evaluation.
3. Engineer Applicants only need be able to distinguish Red, Yellow, Green, and Blue. However, the Color Vision Test must still be noted on the Examination with a statement of proof, attesting to his/her ability to distinguish the stated colors.
4. This applicant should present photo identification before the physical examination/certification.
<small>Previous Edition Obsolete</small>

The remaining sections are very similar to the old form in content, but seek throughout to provide clarity both by breaking the form into readily distinguishable sections and providing detailed instruction where the form was found to be insufficient in the past.

Perhaps the most significant change was in recognizing that the physical requirements for renewal and raise-in-grade transactions are somewhat less than for original transactions. Mariners seeking original licenses and/or qualified rating documents are to use the new 719K form, but those seeking to renew or raise in grade are instructed, on the first page, that they need only fill out certain sections.

Section VII – Certification of Physical Impairment or Medical Conditions

Does the Applicant have or ever suffered from any of the following PHYSICAL TEST RESULTS, AS DESCRIBED:

HYES:

- Mouth conditions
- Bone of alveolus
- Any condition
- Progress
- Use Cases (Pain RC)
- Is condition controlled, but may

Remarks (Please Print)

No.	Yes	1. Cardiovascular System
		a. Heart disease (please list in the past year)
		b. Hypertension (diastolic BP reading)
		c. Coronary vessel illness
		d. Cardiac surgery (please list in the past year)
		e. Blood transfusion/vascular disease
		2. Digestive System
		a. Severe digestive disorder
		b. Esophageal system
		c. Throat dysfunction (HIV tested in the past year)
		d. Malabsorption (please specify condition & affected in the 10 days)
		3. Infectious
		a. Communicable disease
		b. Hepatitis A/B/C
		c. HIV
		d. Tuberculosis
		4. Mental/behavior
		a. Psychiatric disorder
		b. Depression
		c. Alcoholism
		d. Alcohol abuse
		e. Drug abuse
		f. Loss of memory
		5. Musculoskeletal System
		a. Amputation
		b. Impaired range of motion
		c. Impaired balance/coordination
		6. Nervous System
		a. Epilepsy/epilepsy
		b. Epilepsy/seizures
		c. Paralysis
		7. Respiratory System
		a. Asthma (PFT results in the past year)
		b. Lung disease (PFT results in the past year)
		c. Other
		d. Cerebral palsy
		e. Other ear disease (hearing & Unaided Visual acuity)
		f. Ulcers (Please specify results in the past year)
		8. Blood or negative cancer
		a. HIV/AIDS
		b. Severe speech impairment
		c. Other three or disability listed

Section 14 on the old form (now Section VII – Certification of Physical Impairment or Medical Conditions) was determined to be too general and did not indicate what additional information was required to evaluate certain conditions. The new section is more comprehensive and provides far more instruction, which should result in fewer physicals being returned to the mariner for clarification.



Merchant Marine Certification of Fitness for Entry Level Ratings

Page 1

Section I – Applicant Information

Name (Last, First, Middle) of Applicant: _____ Social Security Number: _____

Section II – Physical Information

Height: _____ ft _____ in Eye Color: _____ Emerging/Under: _____

Weight: _____ lb Hair Color: _____

Section III – Physical Ability Certification

An Applicant for an Entry Level Rating... is not required to complete a physical examination, they must have the agility, strength, and flexibility to:

- Climb steep or vertical ladders.
- Maintain balance on a moving deck.
- Pull heavy fire hoses up to 400 feet, and have the ability to fully charge fire hoses.
- Rapidly don an exposure suit.
- Step over clear rails of 24 inches in height.
- Open or close winch/rope down that may weigh up to 50 pounds.

Enter an X in the appropriate block below.

Applicant has the physical strength, agility, and flexibility to perform all of the items listed above.

Applicant does NOT have the physical strength, agility, and flexibility to perform any one of the items listed above.

Considering the above requirements and noting the status as performed by the Applicant (check one):

Competent Not Competent Standing For Further Review

Name of Physician/Physician's Assistant/Nurse Practitioner: _____ Office Address, City, State, Zip Code: _____

License Number: _____ Telephone Number: _____

Signature of Physician/Physician's Assistant/Nurse Practitioner: _____ Date: _____

Section IV – Applicant Signature

I certify that all information provided by me is complete and true to the best of my knowledge.

Signature of Applicant _____ Date: _____

In addition, because the requirements for entry-level ratings are so vastly different, a separate physical form (CG-719K/E) was created specifically for entry-level mariners (i.e., Ordinary Seaman, Wiper, Steward's Department).



SAMHSA Periodic Drug Testing Form

Page 1

INSTRUCTIONS: PART I: The user of this drug test is the sole responsibility of the applicant.

Section I – Applicant Consent

I certify that I am the described applicant and that I have provided the information described below in accordance with Substance Abuse and Mental Health Services Administration (SAMHSA) protocols specified in 49 CFR 40.25 and 40.27. I understand that failing in any way to follow the instructions, rules, or evidence is a violation of the U.S. Federal Code at Title 49 U.S.C. 1902 which subjects the violator to federal prosecution and possible incarceration, fine, or both.

Section II – SAMHSA Approved Laboratory Results

Name: _____ Social Security Number: _____

Signature of Applicant: _____ Date: _____

Section III – Medical Review Phase

I certify that I meet the qualifications for Medical Review Authority as outlined in Title 49 CFR 40.57(b). I have reviewed the results and determined that the applicant is "DRUG FREE" in accordance with 49 CFR 40.27 and 40.33.

Section IV – Signature and Verification (Applicant Seal Return Signing)

I certify that these operators above vessel as listed. I am making the statement under oath. The signature, this stamp or handwritten signature is required under the provisions of Title 49 CFR, as applicable. I understand that if false any false or fraudulent statement is made, it may be subject to a fine or imprisonment of up to 5 years or both. (49 U.S.C. 1902)

Signature of Applicant _____ Date: _____

NOTE:

- If you were not the owner, the master, operator, or mariner must complete the remainder of this form.
- If you were the owner of the above vessel, your signature must be provided with this form.

Signature (Seal Return Signing)

I certify that my signature represents my true and correct signature. My signature is being provided to the vessel for verification and to be used by the vessel's representative to verify the status of the vessel.

Signature of person attesting to experience _____ Date: _____

Name of Operator or Master (If applicable) Title (None): _____ Name of Operator or Master (If applicable) Title (None): _____

In addition to these forms, the Coast Guard has also created a standardized SAMHSA Periodic Drug Testing Form and a Small Vessel Sea Service Form.



Small Vessel Sea Service Form

Page 1

Section I – Applicant Information (Note: Complete One Form per Vessel)

Name (Last, First, Middle): _____ Social Security Number: _____

Residence: _____ Official Number or State Registration Number: _____

Vessel Name, Type, Length: _____ State (please list): _____ Coast (if known): _____

Proprietor (Name/Address/Telephone/Fax): _____ Vessel No. (Manufacturer/Owner/Manufacturer): _____

Name of City or Town (if water upon which vessel will operate) (if applicable) (optional): _____

Section II – Record of Underway Service

In the block under the appropriate month, write in the number of days you served for that year (you can show more than one year)

	January	February	March	April	May	June
(year / day)	(year / day)	(year / day)	(year / day)	(year / day)	(year / day)	(year / day)
1	/	/	/	/	/	/
2	/	/	/	/	/	/
3	/	/	/	/	/	/
4	/	/	/	/	/	/
5	/	/	/	/	/	/
6	/	/	/	/	/	/
7	/	/	/	/	/	/
8	/	/	/	/	/	/
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25	/	/	/	/	/	/
26	/	/	/	/	/	/
27	/	/	/	/	/	/
28	/	/	/	/	/	/
29	/	/	/	/	/	/
30	/	/	/	/	/	/
31	/	/	/	/	/	/

Total number of days served on this vessel _____ Average hours underway per day _____ Average distance in miles _____

Number of days operated on Great Lakes _____ Number of days operated inland _____ Number of days operated near coast _____

Section III – Signature and Verification (Applicant Seal Return Signing)

I certify that these operators above vessel as listed. I am making the statement under oath. The signature, this stamp or handwritten signature is required under the provisions of Title 49 CFR, as applicable. I understand that if false any false or fraudulent statement is made, it may be subject to a fine or imprisonment of up to 5 years or both. (49 U.S.C. 1902)

Signature of Applicant _____ Date: _____

NOTE:

- If you were not the owner, the master, operator, or mariner must complete the remainder of this form.
- If you were the owner of the above vessel, your signature must be provided with this form.

Signature (Seal Return Signing)

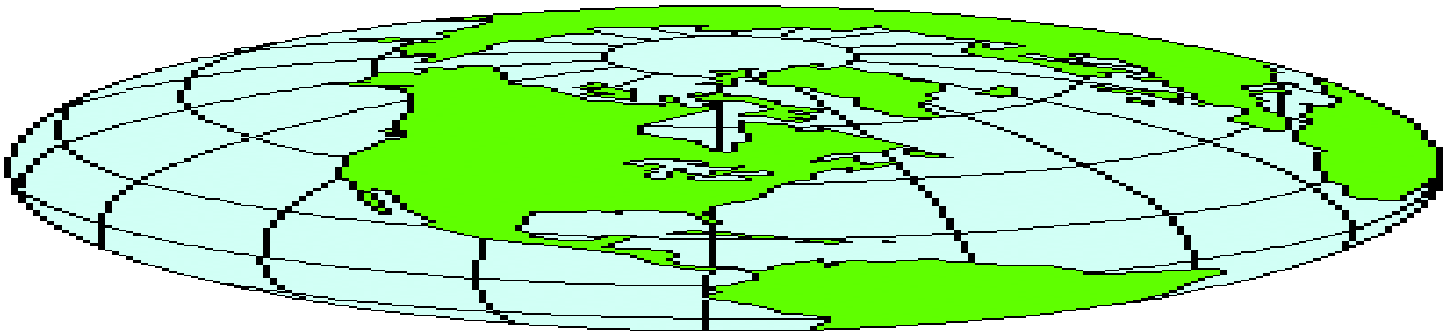
I certify that my signature represents my true and correct signature. My signature is being provided to the vessel for verification and to be used by the vessel's representative to verify the status of the vessel.

Signature of person attesting to experience _____ Date: _____

Name of Operator or Master (If applicable) Title (None): _____ Name of Operator or Master (If applicable) Title (None): _____

Studies indicate that together the five new forms will save the REC's, as well as the mariners, a significant amount of time and effort. When fully implemented these collective measures will save the Coast Guard and maritime community tens of thousands of dollars annually, reduce error rates in application submissions by as much as 57 percent and reduce process cycle time by as much as 50 percent.

Spreading the Word on Competence-Based Assessment



by Ashok Mahapatra, Technical Advisor, Human Factors Section, IMO

The 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW) introduced standards of competence and related evaluation criteria for assessors to judge whether a candidate is proficient. Many staff working in maritime administrations and training institutes were familiar with the traditional systems of written examination-based assessment of knowledge and the gaining of practical experience at sea, but were not familiar with or confident about, the concepts contained in the revised Convention, which are assessments at sea and ashore. STCW and the International Maritime Organization's (IMO) Human Element Section addressed many questions on this subject. As a result, IMO Model Course 3.12, *Examination and Certification of Seafarers*, was revised to include guidance on competence-based assessment. The Maritime and Port Authority of Singapore assisted in the revision without cost to IMO. The STCW subcommittee validated this revised model course at its thirty-first session in January 2000.

The objectives of the model course are: to prepare trainees to apply the international provisions concerning the training, assessment, examination, and certification of masters, officers and ratings on merchant vessels; to implement these provisions under national law; to determine appropriate assessment methodologies; to organize, administer and conduct assessments; and if national laws permit, to issue and control certificates. The course subjects include an overview of the assessment process, as well as training and assessment regulation; approving training, assessment and records; developing written examinations; developing performance criteria; and developing performance improvement plans. If the model course is offered as developed, it totals 71 hours of instruction.

IMO Model Course 3.12

SEMINAR DATE	HOST COUNTRY	COUNTRIES REPRESENTED
March 27 - 31, 2000	Mumbai, India	Bangladesh, India, Iran, Maldives, Myanmar, Sri Lanka, Sudan and Yemen
April 10 - 14, 2000	Buenos Aires, Argentina	Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Honduras, Mexico, Panama, Peru
July 10 - 14, 2000	Port of Spain, Trinidad and Tobago	Antigua and Barbuda, Bahamas, Barbados, Belize, Guyana, Jamaica, St. Vincent and the Grenadines, Trinidad and Tobago, United States, along with observers from Anguilla, Grenada, Norway, and Suriname
September 18 - 22, 2000	Cape Town, South Africa	Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa and Tanzania
February 12 - 16, 2001	Bangkok, Thailand	The Democratic Republic of Korea, Indonesia, Malaysia, People's Republic of China, Philippines, Republic of Korea, Thailand, and Vietnam and observers from Brunei and Dar es Salaam
April 23 - 27, 2001	Gdynia, Poland	Bulgaria, Estonia, Georgia, Hungary, Latvia, Lithuania, Poland Russian Federation, Slovakia, Slovenia, and Ukraine
July 16 - 20, 2001	Valletta, Malta	Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Syria, Tunisia, and Turkey
TBD (estimated early 2002)	Nigeria, Africa	Representatives from West and Central Africa

The model course also includes instruction on developing performance objectives and ensuring that they encompass critical knowledge and skills, considering the consequences of performance failure with respect to personal injury and loss of life; environmental damage and pollution; and economic costs. The course also urges the trainees to ensure that the performance objectives are tied to the STCW competencies. The trainees are also taught how to develop the performance measures and standards used to determine competent performance.

To ensure that this new element be fully understood and the provisions be uniformly applied globally, IMO decided to conduct eight regional seminars/workshops based on the model course. Each seminar/workshop was for a period of five days. The workshops were in keeping with an IMO program originally held to explain the provisions of the revised Convention (STCW 95). The main goal was to introduce seminar participants

to the concepts involved in competence based training and certification so as to provide a firm foundation for the development of national training programs, based on the revised model course.

The proposed regional seminars and workshops were planned so representatives from selected countries within the different geographical regions could attend the workshop most convenient for them. Special emphasis was placed on the participation of countries that are major labor suppliers to the global shipping industry. It was expected that, as a result of this effort, a uniform approach to assessment, examination and certification of seafarers would be established to achieve the

objectives of the revised STCW Convention.

The immediate objective of this project was to ensure that maritime administrators, examiners, assessors and trainers gain an improved understanding of the competence-based approach to assessment, examination and certification prescribed in the 1995 amendments to the 1978 STCW Convention. The seminars/workshops were expected to provide sufficient guidance to participants to develop and implement competence-based assessment, examination and certification procedures in their respective countries. On a long-term basis the information will assist in enhancing human resource development in the field

of maritime education and training, and assist in achieving a uniform global standard of assessment, examination and certification of seafarers. The above table shows the dates of each seminar, the country in which it was held, and the countries that were represented. The Maritime and Ports Authority of Singapore, U.S. Coast Guard, and the South African Maritime Safety Agency have generously supported these efforts by providing qualified lecturers to conduct the seminars/workshops at no cost to the IMO.

Government representatives from Eastern Europe attend IMO model course on examination and certification of seafarers in Gdynia, Poland.



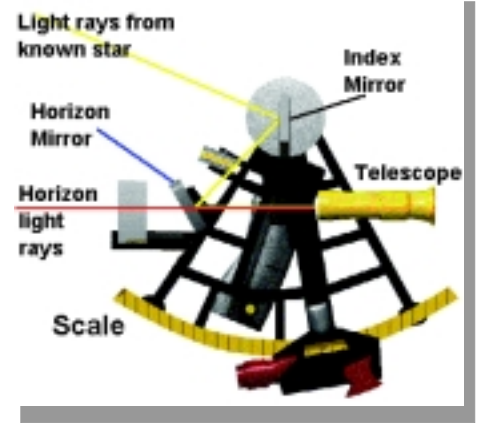
The Road to Implementing STCW at a Maritime Academy

*by Cmdr. Dennis Compton, USMMA STCW Coordinator
and Lt. Robert Smith, USCG Liaison Officer to USMMA*

*All photographs of U.S.
Merchant Marine Academy
cadets demonstrating required
STCW skills are courtesy of
USMMA.*







A Look at the New Requirements

by Perry Stutman, National Maritime Center

On February 1, 2002, the five-year transition period to implement the requirements of the 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), will usher in significant changes to the methods the Coast Guard uses to verify mariner competency when issuing licenses and documents. In addition to the requirements of sea service and the written professional examination, additional focus will be placed on training and the assessment of practical skill demonstration.

Another element of STCW continues to require service at the previous level to further reinforce experience obtained during the transition to the next level. One of the more intriguing aspects in the evolution of STCW's implementation with that of the existing U.S. licensing system has been the three-level certification system fostered by STCW compared to the four-level, domestic licenses for unlimited ocean deck and engineering licenses.

UNLIMITED DECK LICENSES

STCW requires that deck officer candidates qualify at the "operational level" as an Officer in Charge of a Navigational Watch (OICNW). In response to the focus of achievement, the Coast Guard has revised its qualifying requirements to mirror those of the STCW for all deck licenses issued at or above 500 gross registered tons (GRT). Unlike the domestic licensing system, which utilized the two watchstanding licenses of third mate and second mate, STCW uses the lone watchstanding certifi-

cate of OICNW. To achieve harmonization with STCW, the Coast Guard has modified its licensing qualifications for third mate candidates by requiring that training, proficient skill demonstrations and examinations be at the level traditionally attributed to that of the second mate. However, 46 CFR, 10.405 requires one year of service as an OICNW while holding a license as second mate in order to upgrade to chief mate. The Coast Guard has determined that to qualify for second mate, a candidate will only need to provide documentary evidence of service as a third mate to be issued the next higher license, but without having to undergo further examination.

STCW requires an additional set of training and assessments for the management level than that required for the operational level and commensurate with the requisite knowledge as a certificated master. In response to the international requirement, candidates who have attained the required service and training will be tested through an examination level previously required of a candidate for an original master's license. Hence, candidates for a master's certification having acquired three years of sea service, of which one year is to be served as chief mate, will be issued the master's license without further examination as the knowledge requirement would have been satisfied when obtaining their license as chief mate. Lastly, for deck license candidates to qualify for an ocean license at the operational and management levels, they must first have completed performance-based celestial navigation training (in addition to the other areas of



Requirements for Mariner Licenses

training indicated in the STCW Code). This specific training must include the ability to properly use a sextant and determine vessel position, and successfully complete the relevant celestial navigation module.

UNLIMITED ENGINEER LICENSES

In much the same manner that STCW is applied to the deck licensing scheme, similar requirements will be applied to engineer licensing. Hence, STCW requires that engineering officer candidates qualify at the operational level as an Officer in Charge of an Engineering Watch (OICEW). In response to the focus of achievement, the Coast Guard has revised its qualifying requirements to mirror those of STCW for all engineer licenses issued at or above 4,000 horsepower according to the mode of propulsion training and service on-board vessels for the operational, management, and support levels. Unlike the domestic licensing system, which utilized the two watchstanding licenses of third assistant engineer and second assistant engineer, STCW utilizes the lone watchstanding certificate of OICEW. As with third mate candidates, the Coast Guard has modified its licensing qualifications for third assistant engineer candidates by requiring that training, proficient skill demonstrations and its examinations be at the level traditionally attributed to that of the second assistant engineer. However, 46 CFR, 10.512 requires one year service as an OICEW while holding a license as second assistant engineer in order to upgrade to first assistant engineer (equivalent to STCW certification of second engineering officer). The Coast Guard has determined that to

qualify for second assistant engineer, a candidate will only need to provide documentary evidence of service as a third assistant engineer to be issued the next higher license, but without having to undergo further examination.

STCW requires an additional set of training and assessments at the management level above that required for the operational level and is commensurate with the requisite knowledge as a certificated chief engineer for each propulsion mode. In response to the international requirement, candidates who have attained the required service and training will be tested through an examination level required of a candidate for a chief engineer's license. Hence, a candidate for a chief engineer's license, having acquired three years of sea service, of which one year is to be served as a first assistant engineer, will be issued the chief engineer's license without further examination as the knowledge requirement would have been satisfied when obtaining the license as first assistant engineer.

LIMITED DECK LICENSES

STCW requires all candidates for certification as OICNW operating on vessels at or above 500 GRT to qualify as an OICNW at the operational level on-board unlimited tonnage vessels. These candidates will be required to obtain the required training and complete the same licensing examination as candidates for third mate. Candidates obtaining one year of service as a licensed mate of 500 GRT and who apply for an increase in grade to 1600 GRT before February 1, 2002 will receive the raise in

grade as provided by the domestic regulations. On or after February 1, 2002, candidates obtaining the raise in grade to 1,600 GRT will need to obtain training and assessment indicated in Section A-II/1 and table A-II/1 of the STCW Code and successfully complete the examination for OICNW.



Candidates for a master's license of either 500 GRT or 1,600 GRT on or after February 1, 2002 must complete the required training and assessment indicated in Section A-II/3 and table A-II/3 of the STCW Code prior to being administered the examination for master. Applicants who have completed the required training, assessments, and examination in obtaining their master 500 GRT license and obtaining relevant sea service will be issued their master 1,600 GRT license without further examination.

Any candidate who has obtained the required service for a domestic deck license of 200 GRT or less will only need to successfully complete the relevant examination as has been in effect and published in the Administration Guide for Merchant Marine Deck License Examinations. This publication is available online at www.uscg.mil/nmc.

LIMITED ENGINEER LICENSES

STCW applies to engineer licenses above 1,000 horsepower, with the exception of uninspected fishing industry vessels and mobile offshore drilling units. After February 1, 2002, candidates for the license of limited assistant engineer will need to have completed training, assessment of practical skills, and service indicated in the STCW Code, Section A-III/1 and table A-III/1. The examination will be commensurate with the type of propulsion mode and pertinent to the engineering plant of vessels of restricted tonnage. Similarly, candidates for chief engineer, limited near-coastal or ocean will need to obtain the training, assessment of practical skills indicated in the STCW Code, Section A-III/2 and table

A-III/2 in addition to successfully completing the examination for the relevant propulsion mode, pertinent to the engineering plant on vessels of restricted domestic tonnage. Candidates having obtained their chief engineer limited near-coastal license through the method cited above may apply for an increase in scope for chief engineer limited oceans after obtaining one additional year of service without further testing.

As STCW applies to the certification of engineers onboard vessels powered by main propulsion machinery above 1,000 horsepower, the domestic requirements and examination for the designated duty engineer (DDE), 1,000 horsepower license will not change. However, candidates who apply for a raise in grade for a DDE, 1,000-4,000 horsepower license will need to complete training and assessment indicated in the STCW Code, Section A-III/1 and table A-III/1 appropriate for the mode of propulsion, commensurate with the type of machinery in the engine space. No further examination at this level will be required.

Candidates with applicable sea service who apply for a raise in grade for the DDE, unlimited horsepower license will need to complete training and assessment indicated in the STCW Code, Section A-III/1 and table A-III/1 appropriate for the mode of propulsion, commensurate with the type of machinery in the engine space and the required examination. A candidate applying for chief engineer, OSV who satisfies the training, assessment, and sea service requirements, may also be issued an endorsement for DDE unlimited upon the successful completion of the examination for chief engineer, OSV.

The specific test modules used for the engineer license examinations may be found in the Administration Guide for Merchant Marine Engineering License Examinations provided online at www.uscg.mil/nmc.

PHOTO CREDITS PRIOR TWO PAGES: *Left to Right* - Students lay down a fog spray prior to entering a compartment. Courtesy Seafarer's Harry Lundeberg School of Seamanship; Cadets work on bridge training. USCG photo by PAC Keith Spangler; Sextant graph; A student demonstrates proper hand placement while practicing CPR. Courtesy Seafarer's Harry Lundeberg School of Seamanship; A student floats in an immersion suit. Courtesy Seafarer's Harry Lundeberg School of Seamanship; M/V *Sealand Kodiak* sails from Seattle to Alaska. Photo by John Bobb. THIS PAGE: USCG photo by PAC Tom Gillespie.

Impact of STCW on the U.S. Port State Control Program

*by Lt. Lindsay Dew,
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On February 1, 2002, the transition period allowed by the International Convention on Standards for Training, Certification and Watchkeeping for Seafarers, 1978 (STCW) for mariners to gain certain levels of safety and professional expertise expires. After this date the skills of each crewmember onboard a vessel, with some exceptions, should have been assessed in accordance with the STCW code.

Background

In 1978, the International Maritime Organization (IMO) presented STCW to the international maritime community as part of its continuous efforts to safeguard mariners, vessels, and the maritime environment. The Convention's purpose was to address and outline the essential components needed to ensure the safety of a vessel, its crew, and the environment. The desire was that each flag state administration would require safety training of its mariners, and subsequently issue certificates confirming an individual had completed the training, thus establishing a means of managing safety.

The Convention entered into force in 1984. The United States became signatory in 1991 and began issuing STCW endorsements in 1996. Despite the Convention's international acceptance, it became obvious the provisions within the Convention were not specific enough. Primarily, the Convention lacked strength in the area of crew competency and other human factors elements. Due to these findings, amendments to STCW that detailed the requirements of the provisions were ratified in 1995. In the United States, these amendments, referred to as STCW 95, were implemented on February 1, 1997. The amendments include provisions for: tonnage limitations; certification and endorsements; rest periods; English proficiency; basic safety training; and vessel familiarization.

Flag administrations were allowed five years to establish and implement a program to ensure mariners complied with the provisions of STCW 95. Administrations were encouraged to develop a program, demonstrate good faith toward its establishment, and required to submit the specifics of their program to the IMO. The cumulative list of maritime administrations that have submitted this information is known as the "White List." The list currently includes 102 flag states and one IMO associate member.

The greatest impacts the adoption of STCW 95 has had on individual mariners are the numerous training requirements mariners need to fulfill before they can be issued an STCW endorsement. Mariners who transit beyond the boundary line on February 1, 2002 must carry these endorsements. All mariners to whom STCW 95 applies (which is explained later) will be required to have completed safety-training courses and received certification endorsements in association with their licenses and/or documents by this date. While the first STCW convention, commonly referred to as STCW 78, required certification and endorsement, the 1995 amendments make it significantly more difficult to meet the safety training requirements due to the detail included in the amendments.

Port State Perspective

From a U.S. port state perspective, STCW applies to mariners on all foreign vessels entering U.S. ports. There are exceptions, which include mariners sailing on warships, naval auxiliaries or other ships owned or operated by a state not engaged in commercial service, fishing vessels, pleasure yachts (not engaged in trade), and wooden ships of primitive build.

Mariners who sail on vessels engaged in “near-coastal” voyages are responsible for meeting fewer training requirements. Each flag state administration is responsible for defining “near-coastal” relative to vessels sailing under its flag. In the United States, near-coastal is defined as not more than 200 miles from the boundary line. This delineation dismisses a need to show proficiency in certain areas of knowledge such as celestial navigation.

Additionally, department and gross tonnage further divide STCW. Within the deck department, requirements are divided by vessels under 500 gross tons, 500 to 3,000 gross tons, and greater than 3,000. Within the engineering department, the ratings are divided by the power of main propulsion machinery: between 750 kW and 3,000 kW, and greater than 3,000 kW.

Port State Control Enforcement of STCW

STCW is specific regarding the control action that can be exercised by a duly authorized control officer. The Port State Control Officer (PSCO) is limited in his or her abilities to verify that all mariners onboard a vessel who are required to be certified hold a certificate, and also to verify that the number of mariners and the certificates they possess conform with the vessel’s safe manning certificate. PSCOs may “expand” the exam and assess a mariner’s ability to perform “watchkeeping standards” only when the following situations occur:

- The vessel has been involved in a collision, grounding or stranding;
- The vessel is involved in a chemical or oil spill;
- The safe navigation practices and procedures have not been followed; or
- The vessel is operating in a manner as to pose a danger to persons, property, or the environment.

The control procedures outlined within STCW focus on the ability of a PSCO to initially assess a mariner’s skills. The code states specifically that only the methods for demonstrating competence, together with the criteria for its evaluation, contained in part A of the Code shall be used in the assessment. This does not mean PSCOs must memorize the proficiency expectations contained in STCW for the position in which a mariner is assigned. It does mean the PSCOs must be familiar with the Code and be able to find the applicable assessment tables. The crews onboard foreign flag vessels calling on the U.S. can expect few changes in the examination procedures already in place. STCW certificates belonging to vessel officers will be examined and a random sampling of those certificates belonging to the remainder of the crew will also be examined. Only in the event that a PSCO has reason to be concerned



USCG photo.

with a particular crewmember’s knowledge will select certificates be requested for examination.

Let’s consider the example of lifeboat drills as a potential situation that would cause a PSCO to question a crewmember’s knowledge. Frequently a PSCO will experience a situation in which the vessel’s crew is unable to satisfactorily perform a lifeboat drill. In the past, the PSCO would require the lifeboat to be stowed and the drill to be run again, sometimes even reviewing the procedures with the person in charge, pointing out where the errors had occurred. Subsequently, either the drill was passed and the inspection continued, or the crew was still unable to perform the drill and the vessel was detained until the crew was able to complete a satisfactory drill.

Under STCW, a situation such as this is clear grounds to expand the examination and investigate the reasons as to why the crew did not have required competencies. Reasons could include: the STCW required familiarization of the crewmember with the vessel and pertinent systems did not take place; the crewmember does not hold the required training certificate or endorsement; or the individual’s certificate or endorsement is fraudulent.

Familiarization

Familiarization with the vessel, and more importantly, familiarization with critical safety systems that a mariner will be required to manage during emergency situations, is required for each member of a vessel’s crew and is the most basic element of STCW 95. Familiarization must take place prior to an individual being assigned shipboard duties. Familiarization must include communication, procedures for man overboard, fire and smoke detection, fire and abandon ship alarms, identification of muster and embarkation stations and emergency escape routes, location and donning of lifejackets, use of portable fire extinguishers, medical assistance and emergencies, closing and opening fire-tight, weather-tight and water-tight doors.

If a crewmember is unable to demonstrate any of these duties during an inspection it is likely the required vessel familiarization training has not occurred. During the course of a Port

State Control exam it is common to find that one crewmember in a particular department is the sole demonstrator of the various skills required in his particular space/emergency response billet. While he or she is professionally demonstrating these skills, the other members of the department stand back and watch, hoping not to be queried by the PSCO. This also may be an indication that vessel familiarization training is not taking place.

Certification and Endorsement

Using the example of the lifeboat drill, should the Chief Mate fail to organize the crew and demonstrate the ability to safely launch the lifeboat, the PSCO would be authorized to expand the exam and review the Mate's certification and endorsements. Should the certificate and appropriate endorsements not exist, then the Mate is considered unqualified for the position, and a replacement must be found. In this circumstance there is insufficient crew for the vessel to meet the requirements of the Safe Manning Certificate and the vessel would be detained until a qualified replacement arrives onboard.



USCG photo.

Responsibilities

STCW spells out a number of responsibilities that each Administration must hold companies accountable for. These responsibilities include:

- ensuring assigned seafarers hold appropriate certificates;
- ensuring ships they are operating are manned in compliance with the applicable safe manning requirements;
- ensuring documentation of experience, training, medical fitness and competency is maintained and readily accessible;
- ensuring assigned seafarers are familiar with their specific duties, ship arrangement, installations, equipment, procedures and ship characteristics relevant to routine or emergency duties; and
- ensuring the ship's crew can effectively coordinate their activities in an emergency situation.

While compliance with these provisions is required of the company, it is the ship's crew that demonstrates compliance with these provisions through their daily work and watchkeeping. During the course of a Port State Control examination, the crew can expect the boarding officer to look for evidence of

compliance with these and other provisions of STCW. Examples of how this evidence might be sought include:

- review and verify onboard paperwork, including the safe manning document;
- check licenses;
- conduct a fire and boat drill; and
- review the ship's Safety Management System.

Similar to current policy, if the PSCO finds evidence that suggests a crewmember does not possess the appropriate certification, endorsement or knowledge specific to the vessel, the PSCO will likely expand the exam to seek further evidence of possible noncompliance with STCW.

In keeping with the lifeboat example used earlier, if a crewmember responsible for lowering the lifeboat appears to lack required knowledge, familiarization, or training regarding the lowering of the boat, there would be sufficient grounds to look for further evidence of noncompliance. This or other evidence of noncompliance may also cause the PSCO to review the vessel's Safety Management System to seek specific information regarding how assigned

seafarers acquire the necessary onboard familiarity with their responsibilities and duties.

Current Policy

Current policy regarding Port State Control enforcement of STCW can be found in Navigation and Vessel Inspection Circular (NVIC) 3-98. This NVIC offers an excellent discussion regarding the STCW 95 amendments. It also contains an addendum to the current Foreign Vessel Examination Book and a listing of standards of competency expected from mariners, as well as proficiency assessment guidelines. This NVIC is currently being revised to reflect changes in enforcement policy with the new STCW amendments. The rewrite will address possible enforcement action for non- "White List" countries, as well as provide a more detailed discussion of inter-relatedness of ISM and STCW. This NVIC and other information pertaining to the U.S. Port State Control program can be found at www.uscg.mil/hq/g-m/psc/psc.htm. STCW 95 is an important tool for both flag state and port state authorities to ensure that mariners aboard ships possess the job skills and knowledge required for safe shipping and will help to improve the safety of international shipping.

Coast Guard Planning for Surge Operations

to Meet STCW Deadlines



by Lcdr. Tony Curry,
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The Coast Guard estimated in October 2001 that up to 10,000 mariners had not yet applied for certification under the requirements of the 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW). If all of these mariners applied for certification within the short time remaining before February 1, 2002, the date the STCW becomes fully effective, the Coast Guard's Regional Examination Centers (RECs) would be overwhelmed and unable to expeditiously process the requested certificates. This estimate was based on information from vessel owners and operators, maritime labor organizations, and maritime training facilities, and was verified with information from the Coast Guard's records contained in the Merchant Mariner Licensing and Documentation (MMLD) System.

To respond to this anticipated surge of applicants and to meet the normal demand for mariners' credentials, the Coast Guard's National Maritime Center developed a plan to respond to this short-term, intense demand. This plan, Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (As Amended) (STCW) Regional Examination Center (REC) Surge Operations Plan, which is discussed below, uses a number of strategies to ensure timely service to the mariner and enables vessel operators to continue service without disruption due to a lack of properly certified mariners.

On February 1, 2002, all seagoing U.S. mariners must be in full compliance with this important international convention to which the United States is a signatory nation. If seagoing mariners are not in compliance, they will not be allowed to perform their duties aboard ship. To demonstrate that they are in compliance, both in the United States and abroad, mariners must have an STCW 95 certificate that is issued by one of the 17 RECs.

The STCW REC Surge Operations Plan was developed to facilitate the issuance of STCW 95 certificates to mariners and to reduce the backlogs at the RECs. With these goals in mind, NMC developed a strategy that included the tools listed below:

- **REC Priority of Services:** These priorities are to be established by RECs to facilitate the rapid issuance of credentials to mariners most impacted by STCW 95.
- **New REC Office Standards:** These standards were designed by NMC to enhance swift issuance of mariner documents by the RECs. For example, one of the new standards allows RECs to issue renewals of mariners' credentials without waiting for National Driver Registry results. This new standard will greatly shorten the processing time of mariners' documents.
- **Upgrading and Augmenting REC Equipment:** NMC identified that many of the RECs needed more effective equipment in order to provide better service to the mariners. One machine in particular, the MID printer, plays an incredibly important role at the RECs. This machine creates the actual Merchant Mariner Documents that are in the form of a credit card-sized, plastic, identification card. These cards contain a great deal of mariner information, including the mariner's picture and thumbprint. Some RECs reported that their present MID printers were breaking down frequently, causing significant customer service disruptions. One goal of the plan is to ensure that all RECs have functional and reliable MID printers.
- **Augment Present REC Work Staff:** The RECs will require additional staff to meet this anticipated surge of mariner requests. The Coast Guard will seek a variety of

ways to augment the present work staff. Civilian contractors, Coast Guard reservists, and Coast Guard Auxiliaries will all be considered as possible resources.

Standard File/Workload Management System:

This is a new computer-based system that tracks mariner files within the REC and analyzes the unit's workload. This system not only reduces the time required for tracking mariner files throughout an REC, but it also reduces the chance of lost mariner files.

Coast Guard Policy Modifications Regarding STCW 95:

The following policy modifications will spread the surge over an extended time period and work in conjunction with other initiatives to ensure that all mariners are given timely services commensurate with their needs and the needs of the maritime industry.

(a) Deferred Enforcement of STCW: Mariners serving on vessels in near-coastal domestic trades on vessels of 200 or more gross register tons are subject to the full effects of STCW. If their credential is based on service or training that began prior to August 1, 1998, they would normally be required to complete the gap-closing training and be issued their STCW 95 certificates by February 1, 2002. Due to existing circumstances, that requirement is being modified. *Beginning February 1, 2002, the Coast Guard will defer enforcement of the requirement for these mariners to hold an STCW 95 certificate until February 1, 2003 to reduce the demand for immediate issuance of STCW credentials.* Even though many STCW 78 certificates are endorsed to expire on February 1, 2002, the Coast Guard will defer any action on those certificates held by mariners employed in near-coastal domestic trades.

(b) Continued Applicability of STCW: Beginning February 1, 2002, all mariners applying for an upgrade of an existing credential, or issuance of a new credential subject to the STCW, must meet the full requirements of the STCW before a certificate will be issued. Between February 1, 2002, and February 1, 2003, any mariner renewing a credential *will be issued an STCW 95 certificate if the gap-closing requirements have been met.*

(c) Issuance Priority: A request for an STCW 95 certificate from a mariner who will be employed on a vessel engaged in foreign trade, on either near-coastal or ocean routes, *will be treated as a high-*

priority transaction. A mariner holding a limited license (e.g.: 500 or 1,600 GT) should present a letter from the vessel's owner or operator stating that the bearer will be employed on the vessel identified in the letter on a foreign voyage and requesting expedited issuance of the STCW certificate. The mariner must have completed all of the gap-closing requirements before an STCW 95 certificate will be issued.

(d) Crew Requirements: Between February 1, 2002, and February 1, 2003, owners and operators of vessels in near-coastal domestic trades must ensure that the mariners they employ have completed basic safety training and familiarization training in accordance with the current regulations. *Those training requirements are not deferred.*

Even with all of these measures, however, the Coast Guard still needs the cooperation of U.S. mariners! Don't wait until the last moment to file your application. If you have completed all of the required STCW related training and are engaged in foreign trade, please begin the process of getting your STCW 95 certificate as soon as possible. For the latest information on STCW and licensing, visit NMC's Web site at www.uscg.mil/nmc/stcw.



YN3 Flowers processes a document for Alvin Douglas.



STCW's Link with PTP

by Jennifer Blain Kiefer¹



At a quick glance, the non-regulatory approach of Prevention Through People (PTP) and the regulatory implementation of the International Convention of Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW) seem fixed at polar opposites of the maritime safety spectrum. But upon closer inspection, the two programs are closely aligned and in direct support of each other. How did these two seemingly different ideas mesh together? The answer lies in the very reasons that created the February 1, 2002 deadline of STCW.

STCW, first adopted in 1978 by the International Maritime Organization (IMO), established qualification standards for masters, officers and watch personnel on seagoing merchant ships. While valuable, those standards focused more on technological improvements (such as ship construction and equipment standards) than personnel and operational improvements (such as training) to prevent casualties. This gap in focus on the role of the human element in preventing casualties soon became a strong source of concern for some members of IMO, and discussion began about amending STCW.

A string of disastrous maritime accidents, including the 1990 fire on the S/S *Scandinavian Star*, in which 158 people perished, and the December 1992 grounding of the M/V *Aegean Sea*, further incited the growing worry that more decisive action must be taken. Therefore, at IMO's December 1992 Maritime Safety Committee (MSC) meeting, the United States formally proposed a review of the 1978 Convention. This review, the United States suggested, should include a focus on the role of the human element in maritime casualties. Agreed upon by the other delegations, the MSC assigned the review to its Standards of Training and Watchkeeping (STW) Sub-Committee.

When disaster again struck the maritime community just one month later with the January 1993 M/V *Braer* grounding in the Shetland Islands, the need for the STCW review was further highlighted. With human element as the focus and the belief that it was a major cause of maritime casualties, the MSC and a group of consultants set out to identify areas in which they considered human element-related safety improvements could be made. Such areas of improvements, among others, included better training and improved shipboard practices. After two and a half years of intense work, the revised amendments were successfully adopted in July 1995, took force in February 1997, and are to become fully implemented February 1, 2002.

The new amendments acknowledge the value of the human element in preventing casualties, and provide increased measures for improving the safety of personnel and property. The focus of the human element in the safety equation — the recognition that people can help prevent maritime casualties — is therefore the underlying theme of both STCW and PTP. While PTP remains a proponent of using non-regulatory methods for achieving a higher safety standard, it recognizes and applauds the increased safety that such regulatory measures as STCW provide.

¹ Potomac Management Group, Contractor with the Coast Guard's Human Element and Ship Design Division

MARINER'S SEABAG

A Look Back

by John Bobb, National Maritime Center

Portions of this article were taken from the U.S. Merchant Marine Web site: www.USMM.org

There was a shortage of mariners, a shortage that affected virtually every licensed and unlicensed billet. Our nation's security and freedom demanded a sufficient supply of properly trained U.S. mariners to man American ships serving in both commercial and national defense. Training programs were quickly established to meet this manpower shortage. One of these training programs trained able-bodied seamen. The year was 1942 and the training program began at Sheepshead Bay, NY.

In 1995, the international maritime community adopted amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), to address the role that human error plays in accident causation. These amendments required training for officer candidates and qualified ratings (unlicensed personnel) and established for the first time minimum standards of competence. A manpower shortage also existed in 1995 and it does today.

What do these two conditions separated by more than 50 years have in common? The requirement for competently trained individuals. This article will examine the training required for the able seaman in 1942 and the training and standards of competence required for ratings forming part of a navigational watch today. Will there be any parallels? What are the differences? Will the differences be related to changes in the shipboard tasks or how the tasks are done?

SHEEPSHEAD BAY

Shortly after Pearl Harbor, the Coast Guard purchased 125 acres of property on the eastern tip of Brooklyn, NY, for a huge training center. Seventy-six acres were set aside for the Sheepshead Bay Maritime Service station. The Maritime Service property was still a mire of muddy paths and partially constructed buildings on September 1, 1942, when the first sections of trainees entered the gates. Three months later, on December 5, the station shipped out its first graduate.

OUTLINE OF TRAINING PROGRAM

The training program at the U.S. Maritime Service Training Station, Sheepshead Bay, is divided into a preliminary training branch and six branches of advanced instruction. The courses are: Deck; Engine; Cooks and Bakers; Pursers; Hospital Corps; and Chief Steward's Course. We will look at the deck course only.

Apprentice seamen, during the preliminary training course of six weeks, may apply for admission to any of the courses except Chief Steward. The first two weeks of the training is focused on indoctrination and military training. It is the maritime training that is the subject of our examination. We will look at the final four weeks of the preliminary training.

FINAL FOUR WEEKS OF PRELIMINARY TRAINING

During the next four weeks the trainee receives instruction in 20 subjects. He attends classes eight hours each day, five days a week. The subjects include:

Rules and Regulations	Fire Equipment
Mental Hygiene	Physical Training
Practical Boat Training	Marching
Safety Seamanship (swimming)	Hygiene
Nautical Nomenclature	Venereal Disease
Lifeboat and Raft Equipment	Knots
Organization and Classification	Resuscitation
First Aid	Gunnery
Customs and Traditions of the Sea	
Breeches Buoy-Lyle Gun, Compass	
Gas Masks and Breathing Apparatus	
Life Preserver and Exposure Suit	

* Subjects highlighted in gray are either obsolete or are required by wartime service.

A wide variety of training aids are used including mimeographed forms, motion pictures, practical demonstrations of fire equipment, breathing devices, breeches buoy, and line-throwing gun.

During courses to prepare them for emergencies, they are taught the seriousness of fire at sea, how to **swim under**

burning oil, what precautions to take to prevent fire, how to use fire-fighting apparatus, how to use lifeboats and the 39 standard articles of lifeboat equipment; and how to rig and use rescue apparatus, gas masks and oxygen breathing equipment.

During instruction in gas masks, the trainees are given practical training in a gas chamber filled with sulphur dioxide gas. Before entering the chamber the men fit on gas masks. Then they remain in the vapor-filled room for several minutes. The mask is removed before leaving the chamber and the trainee is thus forcibly impressed with the effectiveness of the device.

DECK TRAINING

Seventeen courses are given in Deck Training plus three weeks of practical duty aboard one of the U.S. Maritime Service Training Ships, which operate on Long Island Sound and Chesapeake Bay. The total advanced deck-training period is seven weeks. The courses are:

Boats	Ground Tackle and Mooring Lines
Mast-Rigging	Paints and Maintenance
Swimming	Cargo Hatch; Cargo Work
Steering	Gunnery
Compass	Sail Loft
Lifeboat	Signaling
Lookout; Bridge (and navigational gear)	
Ships — Terms, Specifications and Types	
Preparation for Able-Bodied Seaman Exam	

STCW

Basic safety training required by Regulation VI and described in section A-VI/1 through 4 compares very favorably to the preliminary training given to every mariner as part of the training at Sheepshead Bay. STCW requires training and demonstration of competence (nothing new about demonstrating competence) in First Aid: Personal Survival Techniques, including the use of immersion suits, lifejackets, liferafts, and swimming; Fire Prevention and Fire Fighting, and Personal Safety and Social Responsibility. The Coast Guard has approved courses that achieve these objectives in one week.

The STCW requires ratings that form part of a navigational watch meet the standards of competence in Table A-II/4 of the STCW Code. While no formal training is required,

training to meet the standards of competence is. Candidates for certification as a rating that form part of a navigational watch must have acquired knowledge, understanding and proficiency in the following subjects:

Use of magnetic and gyro-compasses	Helm orders
Procedures for the relief, maintenance and hand-over of the watch	Change-over from auto-pilot to handsteering and vice versa
Information required to keep a safe watch	Shipboard terms and definitions
Basic environmental protection procedures	Responsibilities of a lookout
Knowledge of emergency duties and alarm signals	Use of internal communications and alarm systems
Knowledge of pyrotechnic distress signals; satellite EPIRBs and SARTs	Avoidance of false distress alerts and action to be taken in event of accidental activation
Ability to understand orders and communicate with the watch officer	

CONCLUSION

Sometimes training, assessment and certification programs suffer slippage over time. We forget what was done and why it was done. It is helpful to look back and compare training programs of the past with those of today. Naturally, the tools we use today are greatly improved over the tools available 50 years ago, but the basic training goals and objectives remain the same, whether to train seafarers to an international standard, or to train them to save the world for democracy.

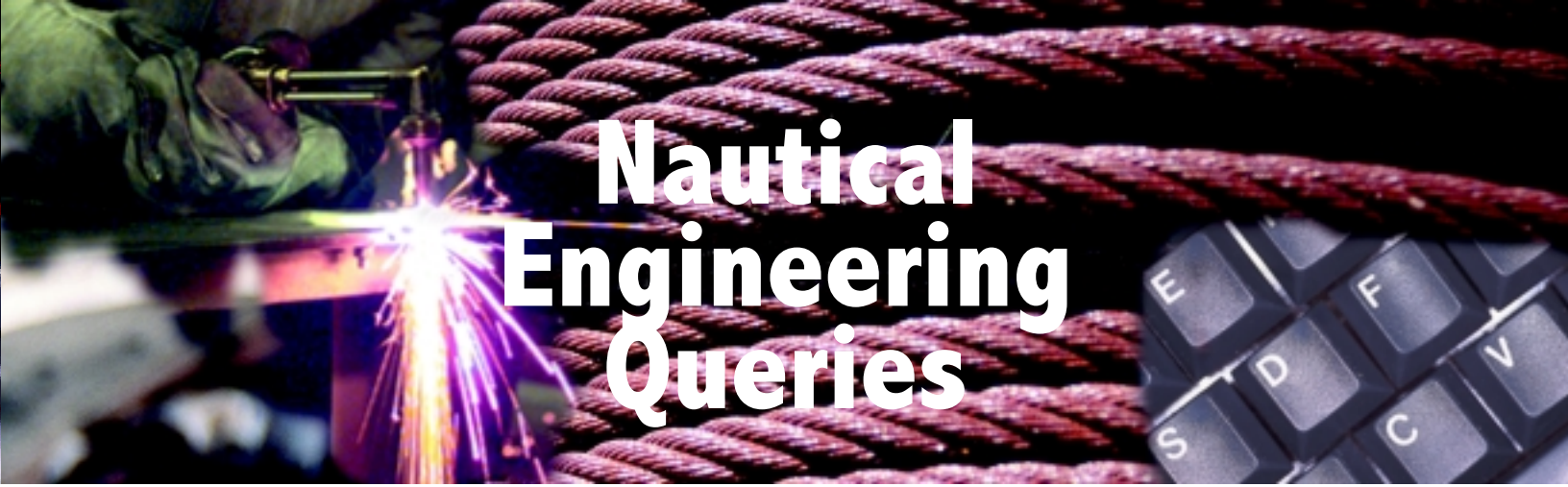
For more information about the U.S. Maritime Service, visit the Web site of the U.S. Maritime Service Veterans dedicated to those who served in that service during World War II at www.USMM.org. We thank them for allowing the use of parts of their Web pages about the training program conducted at Sheepshead Bay.



Nautical Deck Queries

- As the South Equatorial Current approaches the east coast of Africa, it divides with the main part flowing south to form the warm _____.
 - Agulhas Current
 - Canary Current
 - Benguela Current
 - Madagascar Current
- The nominal range of a light may be accurately defined as the maximum distance at which a light may be seen _____.
 - under existing visibility conditions
 - under perfect visibility
 - with 10 miles visibility
 - with 15 miles visibility
- On a clear, warm day, you notice the approach of a tall cumulus cloud. The cloud top has hard, well defined edges and rain is falling from the dark lower edge. Should this cloud pass directly overhead _____.
 - it will be preceded by a sudden increase in wind speed
 - it will be preceded by a sudden decrease in wind speed
 - the wind speed will not change as it passes
 - the wind will back rapidly to left in a counterclockwise direction as it passes
- BOTH INTERNATIONAL & INLAND: What is required of a vessel navigating near an area of restricted visibility?
 - A power-driven vessel shall have her engines ready for immediate maneuver.
 - She must sound appropriate sound signals.
 - If she detects another vessel by radar, she shall determine if risk of collision exists.
 - All of the above.
- BOTH INTERNATIONAL & INLAND: Which statement is true concerning the light used to accompany whistle signals?
 - It is only used to supplement short blasts of the whistle.
 - It is mandatory to use such a light.
 - The light shall have the same characteristics as a mast-head light.
 - All of the above.
- A flame screen _____.
 - permits the passage of vapor but not of flame
 - prevents the passage of flammable vapors
 - prevents inert gas from leaving a tank
 - permits vapors to exit but not enter a tank
- After extinguishing a fire with CO₂, it is advisable to _____.
 - use all CO₂ available to cool the surrounding area
 - stand by with water or other agents
 - thoroughly ventilate the space of CO₂
 - jettison all burning materials
- If the cargo gear on your vessel is equipped with a regular guy and a preventer guy, you should _____.
 - let the schooner guy take most of the strain, thus transferring the load to the opposite boom
 - leave the preventer guy slack
 - secure them as close together as possible on deck
 - secure them so the angle between them is 90° at the boom head
- While moving ahead, a twin-screw ship has an advantage over a single-screw ship because _____.
 - correct trim will be obtained more easily
 - drag effect will be cancelled out
 - side forces will be eliminated
 - speed will be increased
- The label required on containers carrying barium oxide in an international shipment must read _____.
 - “Keep away from food”
 - “Spontaneously combustible”
 - “Radioactive”
 - “Biomedical material”

Answers: 1A, 2C, 3A, 4D, 5A, 6A, 7B, 8C, 9C, 10A



Nautical Engineering Queries

- When used for taking resistance measurements, a volt-ohm-milliammeter is normally powered by _____.
 - a hand cranked generator
 - internal batteries
 - the current in the circuit being tested
 - a step down transformer
- If you have a duplex double acting reciprocating pump making 120 strokes/minute, with a 6" diameter cylinder, a 5" stroke and operating with 91 percent volumetric efficiency, what is the capacity of this pump?
 - 34 gpm
 - 55 gpm
 - 67 gpm
 - 134 gpm
- To remove an alternator operating in parallel with another unit from the main electrical bus, you must FIRST _____.
 - adjust the power factor on both units
 - set the desired voltage on the outgoing alternator
 - open the circuit breaker on the outgoing alternator
 - remove the load from the outgoing alternator
- A series wound DC motor has its armature and field connected in series with a resistor. When the motor is disconnected from its power supply, this motor will exemplify _____.
 - the proper connections for across the line starting
 - the proper connections for an automatic strip heater
 - a reversing controller circuit
 - dynamic braking
- Which statement is true concerning two-stage air ejector assemblies?
 - Air is removed from the condensate as it passes through the tubes.
 - In the aftercondenser the air ejector motivating steam is condensed and returned to the main condenser via the loop seal.
 - The first stage air ejector takes suction on the second stage to increase vacuum.
 - The steam/air mixture from the main condenser is discharged by the first stage jet pump to the intercondenser.
- On some diesel-electric ships, the DC propulsion motor will only attain half speed when the generator fields are fully excited. Speeds above this are obtained by _____.
 - rotating brush alignment
 - raising the generator engine speed
 - lowering the generator engine speed
 - decreasing excitation
- In a direct expansion type cargo refrigeration system, a box is normally changed from chill to freeze by adjusting the _____.
 - hand expansion valve
 - compressor suction valve
 - solenoid bypass
 - back pressure regulating valve
- When the current flow in a power transmission line is halved, the power loss _____.
 - is halved
 - is doubled
 - is divided by four
 - remains the same
- While a vessel is underway, one of the FIRST indications of the failure of the gland leakoff exhaust fan motor is _____.
 - excessive steam leakage at the turbine glands
 - loss of vacume at the turbine
 - increased turbine exhaust temperature
 - water knock on the turbin gland steam header
- If a mixture containing air and a concentration of flammable vapor is capable of igniting when exposed to a spark or other source of ignition, it is said to be _____.
 - in the flammable range
 - at the rich point limit
 - at the auto ignition point
 - above the explosive limit

Answers: 1.B, 2.D, 3.D, 4.D, 5.D, 6.B, 7.D, 8.C, 9.A, 10.A



An instructor checks a student's face seal on a Self-Contained Breathing Apparatus (SCBA). Photo courtesy Seafarer's Harry Lundeberg School of Seamanship.



OPPOSITE PAGE: CPR is crucial to marine safety. Photo courtesy Seafarer's Harry Lundeberg School of Seamanship.

A cadet aboard the CGC *Eagle* uses a sextant to read the vessel's position. USCG photo by PAC Robert D. Wyman.