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Our 53rd Year

Proceedings

of the Marine Safety Council

January-February, 1996 Vol. 53, No. 1

Annual Index issue

Features

Departments

All photos this edition courtesy of U.S. Coast Guard

READER SURVEY

PROCEEDINGS is published for all members of the maritime community by the Coast Guard's Office of Marine Safety, Security and Environmental Protection. Whether you are a fishing vessel captain, river pilot, ocean scientist, marine engineer, tug or tow boat operator, shipping executive, insurance underwriter, oil company representative, cruise line president, ship builder, active duty or retired, *PROCEEDINGS* is published for you in the interest of safety at sea. While we like being informative, our main business is mishap prevention and dissemination of safety information. To help us evaluate our effectiveness and provide all of our readers with a quality publication, we would appreciate your response to the questions below. We welcome letters, articles, and photographs from you for the publication. We value your maritime expertise and input. Please write to:

Editor, *PROCEEDINGS*
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National Maritime Center
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RADM Card Speaks On "The Face of Change"

Dear Readers,

In the popular press and on the evening news, evidence of rapid and massive change in the Federal government is clear. The way things were done "in the past" simply will not suffice now or in the future. The Coast Guard, like every other service or agency, has to devise new ways to perform our missions, and at less expense. This has come as no surprise to us. Regular readers of this publication and its sister "Marine Safety Newsletter" know the Coast Guard embraced the concept of continuous improvement (namely, Total Quality Management) several years ago. We are, and will continue to be, an "excellent value" for the American public.

In this issue, we have provided an outline of the new Coast Guard organization. While structure is only one aspect of change, of greater impact is the way all of us in the Maritime Community work together. Also in this issue, we explore our expanding role in partnerships created with Classification Societies. Over the next several issues, we will continue to discuss "emerging" management tools, and will provide a forum for discussion on topics as diverse as the impact of information technology on maritime safety and the exciting application of "Risk Based Technology."

We live and work in an environment of rapid change. One thing, however, is certain—the way things "were" will not be the way things "will be."

Sincerely,

Jim Card

JIM C. CARD
Rear Admiral, U.S. Coast Guard

U.S. Coast Guard Regulatory Reform

U.S. Coast Guard and the U.S. Maritime Industry Team Up

Coast Guard Regulatory Reform

Regulatory reform is among the highest priorities established by RADM Card for the M directorate. The goal of Coast Guard Regulatory Reform (CGRR) is to make improvements in the way the Coast Guard regulates the U.S. Maritime Industry resulting in increased safety, reduced cost of compliance and improved competitiveness of the industry in the global marketplace.

As an initial step in regulatory reform, the Coast Guard invited the maritime industry to comment on the current regulatory scheme. The U.S. maritime industry submitted comments noting the continuing pressure on the competitive position of the U.S. oceangoing merchant fleet and commercial shipbuilding industry. Members of the industry called for greater alignment of Coast Guard regulations with international standards to reduce the cost disadvantages incurred by U.S. maritime industry, and thereby improve the competitiveness of the U.S. industry.

Initial regulatory reform planning identified specific initiatives which would better align Coast Guard regulations with international conventions and provide options to traditional Coast Guard compliance methods. These initiatives were intended to reduce adverse regulatory effects without jeopardizing safety.

Since then the scope of CGRR has been expanded to include other important marine safety initiatives, primarily work being done to address the human element in marine casualties and advancements in the application of risk-based technology. By taking this broad view, advancements made in these areas, largely non-regulatory, can be incorporated into the Coast Guard's overall approach to marine safety.

CGRR encompasses many areas within the Office of M where work is being done to make real improvements in the way the Coast Guard regulates the maritime industry.

- Changes to Coast Guard Regulations
- Options for Regulatory Compliance
- Prevention Through People
- Risk-Based Approach to Safety Management

Changes to Coast Guard Regulations

One of the first objectives of CGRR was to eliminate any differential between requirements that apply to U.S. vessels in international trade and those that apply to similar vessels flying the flag of responsible foreign nations

Conventions, protocols and codes of the International Maritime Organization (IMO) have been part of marine safety regulation for many years. One area identified for improvement in the initial regulatory reform assessment was the area seeking harmony between U.S. and IMO regulations. Considerable progress has already been made toward achieving this harmony through regulatory projects as well as involvement with the IMO and international standards organizations.

The transition from U.S. to international standards is by no means automatic. Each U.S. requirement which is identified as being more demanding or different than an analogous international requirement is evaluated. In many cases the international requirements are found to be sufficient. However, there are some existing U.S. requirements, more demanding than international, that the Coast Guard considers critical. In these instances the issue becomes part of the U.S. agenda at the IMO, where U.S. representatives will seek to have the U.S. requirement become an international regulation.

Industry consensus standards have been an important part of Coast Guard marine safety programs for many years. Adopting standards into regulations has proven to have many benefits, both for the Coast Guard, as well as the marine industry.

Traditionally, industry standards are developed by committees of experts from a particular segment of the industry. Through participation in the development of standards related to marine safety, Coast Guard representatives are able to provide their perspective on performance requirements and specifications. Standards which achieve the necessary levels of safety for a particular system or component can be adopted by the Coast Guard to replace detailed prescriptive regulations.

Comments from the maritime industry also indicated there were existing coast Guard regulations which were unnecessary, and these regulations place undue burden on the industry. A comprehensive review of vessel safety regulations was conducted, resulting in a rulemaking initiative to make many necessary updates and deletions to the regulations. Three individual regulatory projects were initiated. The first two have been published in the Federal Register, the third is being drafted to include all remaining changes identified to date. This work is also an integral part of the Coast Guard's role in the President's Regulatory Reinvention Initiative.

Options for Regulatory Compliance

Submitted comments indicated the maritime industry would benefit from improvements in the way plan review and vessel inspection are carried out. Members of industry, classification societies and the coast Guard worked together to develop compliance options providing increased flexibility and reducing redundancy among the activities of owners, classification societies, and the Coast Guard.

The Coast Guard has worked in cooperation with the leading classification societies, **primarily** the American Bureau of Shipping (ABS), for many years. The Alternative Compliance Program (ACP) is the natural evolution of this cooperative relationship, providing extensive delegation of Coast Guard marine safety functions to recognized class societies.

Under the ACP, plan review and vessel surveys conducted by a classification society to the rules of that classification society and international conventions are accepted in lieu of Coast Guard plan review and inspections. Coast Guard oversight of the ACP includes examinations of vessel material condition and audits of classification society processes. Currently the ABS is the only classification society which has been delegated the authority to conduct ACP surveys.

ACP is currently being implemented as a pilot program involving existing cargo ships and tank ships with international certificates. The pilot program is designed to evaluate ACP procedures in preparation for broader application of the program.

Streamlined Inspection Program

The Streamlined Inspection Program (SIP) is a partnership between the coast Guard and vessel owners who are committed to safety. This program is based on the idea that there is substantial benefit, both in safety and in operational flexibility, to having vessel crews more involved in the inspection of a vessel's safety systems.

Companies participating in the SIP are allowed to have qualified personnel perform many of the tests and inspections required for Coast Guard certification. This work, traditionally conducted by Coast Guard inspectors, is done with minimal Coast Guard oversight. Companies work with the Coast Guard to develop written procedures and establish inspection intervals for various regulatory items. The SIP allows owners to conduct maintenance and inspections at times best suiting vessel schedules.

Several adaptations of the SIP are being conducted throughout the Coast Guard as pilot programs. Coast Guard Headquarters is monitoring and evaluating these pilot programs to develop a standard SIP for nationwide implementation.

Through recognition of classification societies the Coast Guard is able to provide additional options for regulatory compliance.

The Coast Guard has a long history of cooperation with classification societies, primarily the ABS. Coast Guard regulations adopt ABS rules for vessel structure and machinery. In 1982, a Navigation and Vessel Inspection Circular (NVIC 10-82) delegated many of the functions related to certification of newly constructed vessels to the ABS. Existing U.S. law restricts delegation of functions related to plan review and vessel inspection to U.S. classification societies, making the ABS the only organization eligible.

The restriction of foreign classification societies does not apply to load line certification and vessel tonnage measurement. The Coast Guard has made delegations of these functions to foreign based classification societies including a Memorandum of Agreement with the Norwegian classification society, Det Norske Veritas, to conduct tonnage measurement and issue tonnage certificates. Classification societies

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based in foreign countries are delegated the authority to issue Load Line Certificates on a case-by-case basis.

Prevention Through People

The Coast Guard's Prevention Through People (PTP) program will play a major role in CGRR, and it will significantly impact regulation of the maritime industry in the future. PTP is a fundamental change in the Coast Guard approach to improving marine safety where the human element (government, management and labor) and vessel hardware are viewed together as a system.

Addressing the human element has been clearly identified as the best way to make significant gains in marine safety today. PTP will be a largely non-regulatory undertaking, relying on the idea that the marine industry will embrace changes which are proven to result in increased safety.

Risk-Based Approach to Safety Management

The Coast Guard intends to address safety considerations holistically by embracing a systems approach and by applying risk-based methods in defining, assessing, and managing safety. To accomplish this we will develop new and refocus existing programs to view the maritime as a sociotechnical system and involve all stakeholders in the process.

A specific marine safety evaluation program was begun in November 1992 to develop this view and the methods and program elements needed to institutionalize it. This program is well underway. This will merge our traditional emphasis on the physical components of the sociotechnical system with our new emphasis on human factors, which we are pursuing in partnership with industry through our Prevention Through People program.

A holistic view will help ensure that the treatment of safety considerations comprehensively addresses all aspects of ship design, construction, operation and management, throughout the life of the vessel, and that safety determinations are clear and consistent. This view is recognized internationally, as well as reflected in the activity in formal safety assessment at the IMO. Applying risk-based technology to make safety determinations and safety management decisions will also enable both the Coast Guard and the marine industry to better analyze and prioritize work and work processes and to optimize their allocation of resources in designing, building and operating safe and profitable ships in a safe and profitable manner.

From the very beginning, the Coast Guard has relied on participation of the maritime industry in structuring the future of marine safety regulation. A common theme among each of the CGRR elements is extensive partnership between the Coast Guard and the U.S. maritime industry, now and for many years to come. The success of these initiatives will depend on shared commitment. This commitment must be supported by the potential benefits in enhanced safety, reduced costs and increased flexibility. ☸

Small Passenger Vessel Safety

Every day, people board small passenger vessels for various reasons. Some are dining, whale watching, fishing, or SCUBA diving. Whatever the reason, passenger safety must be the greatest concern for the Master, crew, and owners of these vessels. To protect and keep their passengers safe is not only the moral thing to do, it is also the law. Additionally, the safer the passengers feel, the more likely they will be to return.

SAFETY BRIEFINGS INFORM AND SAVE LIVES

To maintain the confidence of their passengers, the owners of small passenger vessels should require their crews to perform a safety briefing with passengers before each voyage. This briefing should fulfill the safety orientation requirements found in 46 CFR 185.25-1(d) or 46 CFR 185.506 in the Interim Rule for Small Passenger Vessel Inspection and Certification published on January 10, 1996. The briefing should also ensure both passengers and crew are aware of emergency procedures and are familiar with the emergency checkoff lists required to be posted by 46 CFR 185.25.

Although these lists are important, many passengers do not take notice of them until an emergency has arisen. During an emergency, there is seldom enough time to read and understand the procedures provided by these lists.

The *ARGO COMMODORE* is a 75-foot, 80-gt passenger vessel used for dinner cruises that is certificated for up to 70 passengers while in the San Francisco Bay area. On December 3, 1994, at 1930, the vessel left from Alameda, California with 45 persons on board including the crew. Approximately one hour after departing, a fire broke out in the engine room of the *ARGO COMMODORE* while 100 yards off of pier 39 in San Francisco. The extensive smoke and fire damage was limited to the starboard side of the vessel. The *ARGO COMMODORE* is equipped with a fixed CO2 extinguishing system for the engine room. The extinguishing system did not automatically release the CO2 nor did the crew attempt to manually activate the system. By the time the fire was detected, smoke had completely filled the engine room and was noticed by passengers in the dining area. Upon discovering the fire, the Master ordered the crew to provide personal flotation devices (PFDs) to the passengers and to have them muster on the bow.

This is an example of a case where a safety briefing by the crew could have made the abandonment of a vessel more orderly.

A number of passengers reported difficulty in donning the PFDs because the straps were secured about the preservers tightly. Passengers also informed the investigators that the crew initially could not find the PFDs and mustering of the passengers for transfer to rescue vessels was awkward. Had the crew been required to perform a safety brief for the passengers, the crew and passengers would have known immediately where to find and how to don the PFDs. By providing a safety briefing to the passengers, the crew would themselves be better prepared to deal with any emergency which might present itself.

Although there was extensive smoke and fire damage, there were no deaths or serious injuries as a result of the fire on board the *ARGO COMMODORE*. Passengers and crew were safely evacuated to a Coast Guard utility boat (UTB).

The investigation report is still under review and not available for release at this time. For information regarding what is to be contained in an emergency check-off list and safety briefings, please refer to Title 46 Code of Federal Regulations Subpart 185.25 or 46 CFR 185.506 in the Interim Rule for Small Passenger Vessel Inspection and Certification published on January 10, 1996.

Enforcement of Chemical Testing Regulations

In 1995, a Coast Guard Drug and Alcohol Program Inspector (DAPI) position was established in each of the ten Coast Guard Districts to enforce chemical testing regulations. These DAPI positions were established in the geographical center of the applicable vessel distribution in the District. The ports where DAPIs are located are Providence, St. Louis, Baltimore, Miami, New Orleans, Toledo, Los Angeles/Long Beach, Portland (Oregon), Honolulu, and Anchorage. DAPIs will conduct vessel inspections and visit marine employers within the District to ensure compliance with the chemical testing regulations. The scope of the inspections will include required record-keeping and reporting, specimen collection, Medical Review Officer activities, employee assistance programs, proper designation of crewmembers to be tested, and proper conduct of required tests.

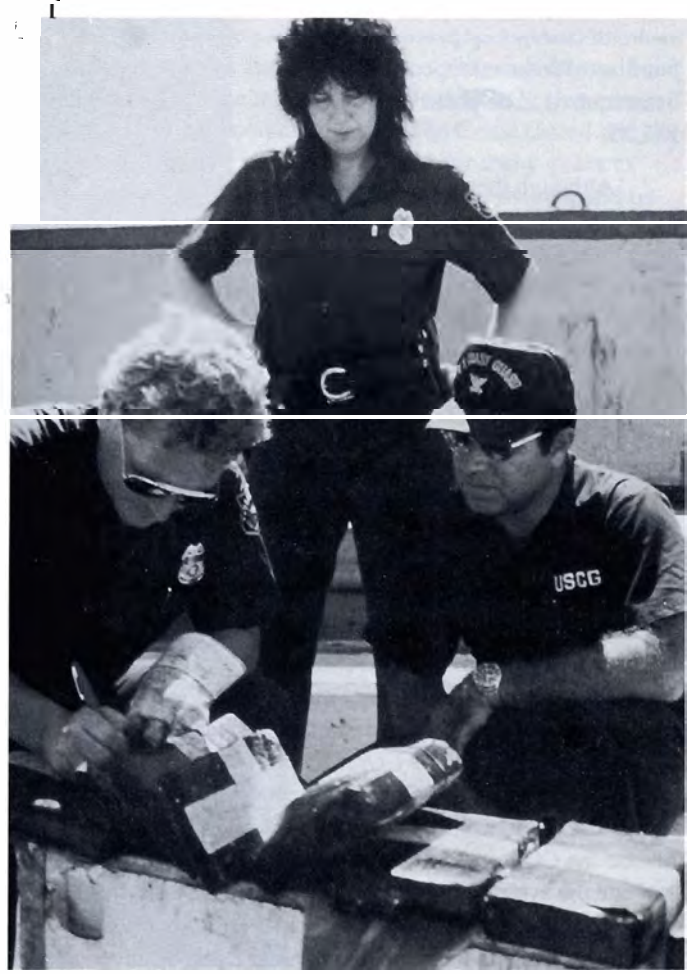
The use of dangerous drugs and alcohol in the workplace continues to pose a significant risk to passenger and crew safety in the marine industry. The Coast Guard is seriously committed to eliminating this risk, and is actively promoting and enforcing the chemical testing regulations.

While the chemical testing regulations apply to almost all commercial vessel operations, Coast Guard resources have previously focused primarily on gaining compliance from inspected vessel operators. However, with the advent of the additional DAPI resource, all drug testing programs will be examined more closely to ensure compliance with the regulations, with equal attention given to uninspected vessel operations as well.

To better manage our risks and serve our customers, the Coast Guard is emphasizing two methods of doing business. One method is to establish partnerships with marine industry representatives and private sector organizations to work together towards achieving common goals. The second method is prevention through people, which focuses on establishing "best work practices" to eliminate human error—the leading factor in most marine casualties. Providing personnel with substance abuse awareness training and education can significantly reduce the safety risk from drug and alcohol abuse. Both of these methods are essential for achieving the goal of a drug-free marine industry.

By joining in partnership to enforce the drug regulations and providing information that will assist personnel in refraining from drug use, we will achieve our goal of a safer, drug-free work environment for the marine industry.

Any questions or comments on the Drug and Alcohol Program Inspector should be directed to the DAPI nearest you, or LT Jerry Hilton at Coast Guard Headquarters, Commandant (G-MAO), (202)267-0686.



USCG Streamlining

STREAMLINING BEGINS— DOWNSIZING CONTINUES

In response to the President's mandate for change and the Secretary of Transportation's determination to meet the goals of the National Performance Review and the Government Performance Results Act, the Coast Guard positions itself for the next decade's challenges.

Headquarters, the districts, maintenance and logistics commands and support centers are about to be streamlined. This is the latest part of a four-year belt-tightening initiative required of the Coast Guard and other federal agencies.

Between 1994 and 1998 the Coast Guard must cut about 4,000 people and save $400 million. The Coast Guard will accomplish the cuts by downsizing and streamlining. Downsizing will account for 75 percent of the reductions. Streamlining will account for 25 percent.

Downsizing involves cuts without changing the basic structure of the service. An example would be what happened to recruiting field offices: several recruiting offices were cut and the remaining offices had to cover larger geographic areas.

Streamlining involves changing the organization without affecting the public. An example would be what happened to the recruiting-support system. Several years ago, there were district recruiting supervisors overseeing and supporting each district's recruiters. This support system was reduced to three regional offices and recently reduced to one office. During each of these changes, the Coast Guard was able to reduce recruiting-support staff without cutting field recruiters. The public did not notice the change.

Fiscal 1994/95 cuts were part of down-sizing. Approximately 2,300 civilian and military members, 15 cutters and 14 aircraft were cut and $149 million saved without changes to the structure of the Coast Guard.

For fiscal 1996, the Coast Guard is pro-posing to continue downsizing by cutting an additional 870 people, three cutters, three aircraft and 23 smallboat stations. At press time, this proposal had not been passed by Congress.

The Coast Guard will also cut 1,400 positions and save $100 million through streamlining during fiscal 1996/97. These changes will affect the way Coast Guard units are supported but should be invisible to the public. This proposal has been accepted by the administration and is now with Congress.

Streamlining Results in Many Changes

Headquarters will be reduced from 2,400 people to about 1,800. Three hundred people will move out of the building.

"Almost all of the people who interact with the public will be moved out of headquarters," CAPT Jim Doherty of the Streamlining Implementation Team, said. "Headquarters will deal with the administration and Congress, and provide policy, planning and resources to the field. Resources involve money, replacement of assets and changes in billets."

The Engineering and Logistics Center at the Yard, Curtis Bay, Maryland, and the National Maritime Center, Arlington, Virginia, are examples of commands created by moving people from headquarters.

"Neither one of these commands make policy," Doherty said. "The Engineering Logistic Center implements policy to support Coast Guard units, and the National Maritime Center deals directly with merchant mariners, shipyards and other external customers."

Area and district offices will also be streamlined. The districts will concentrate on command and control of operational units.

The 2nd District office in St. Louis will be merged with the 8th District in New Orleans. A senior captain will remain as director of western rivers operations in St. Louis. The 11th District office in Long Beach, California, will move to Alameda, California, and merge with the Pacific Area office. Atlantic Area and MLC Lant will leave Governors Island, New York, and merge with the 5th District office in Portsmouth, Virginia.

New operational commands, called Activities, will be opened in New York, Baltimore, Corpus Christi and San Diego. Activities will merge operations centers, communications centers and support staff of groups, marine safety offices and other units where possible. The goal is to draw together port operations and better use resources. This means "one-stop shopping" to the mariner.

District support to units will move to MLCs and support centers. Personnel, financial and industrial support will be provided by these units.

Integrated Support Commands will be created. They will be super support centers for Coast Guard units. The ISCs will be located in Boston, Portsmouth, Virginia, Miami, Cleveland, New Orleans, St. Louis, "The support centers and MLSs already have support

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functions," Doherty said. "By concentrating support functions there instead of at the districts we will be able to decrease personnel and save money without hurting service to the field."

Due to the changes, $15 to $20 million will be saved.

All operations will be moved from Governors Island by the end of fiscal 1997. The CGCs Dallas and Gallatin will move to Charleston, South Carolina, and new activity will be established on Staten Island, New York, to handle the needs of New York harbor.

The research and development program, and electronic, communications and computer-support systems will also be streamlined. There will be a combined military and civilian personnel command in the Washington, D.C. area. From these initiatives, $3 to $4 million will be saved and a total of 1,350 positions will be eliminated.

Training

Along with the streamlining initiative, a training plan was released. The plan will not save money or lead to personnel reductions, but it will improve the way the Coast Guard trains and teaches leadership.

A new Performance Technology Center will be established at Yorktown, Virginia. The center will develop job-performance aids, correspondence courses, resident training, computer-based training and unit-level training.

A leadership program for military members, civilian employees, reservists and auxiliarists will be established at the Academy, New London, Connecticut.

The Coast Guard will also combine similar components of different "A" done with the electronic rates. Similarly, needed skills in nonelectronic rates could also be taught with the electronic rates.

The Future

The downsizing and streamlining moves should be completed by 1998. But, the service will continue to become more efficient beyond 1998. The first of the new seagoing buoy tenders, for example, is ready for duty. This class of cutter will be bigger, faster and have smaller crew complements. By using the new tenders, the service will be able to provide the public with the same level of service and cut 500 people. These gains in efficiency will continue with other cutters.

Mariner's Seabag

Examinations Versus Experience

It is always desirable that a candidate for any license examination study and examine for the highest license eligible, based upon sea service and desired employment. By following this advice as employment opportunities arise, the candidate will have the necessary license to serve in the higher position. The licensing system's goal is to have individuals who have attained the skills, knowledge and aptitude to safely function at a satisfactory license level based on experience and training.

The major difference between the license for Master 100 GT and Operator Uninspected Passenger Vessel (OUPV) is **experience and acquired knowledge**! Candidates for the OUPV are being misinformed that they are fully qualified to obtain a Master 100 GT license by merely taking an additional 10 question partial exam after obtaining their OUPV license. While this may seem to be an acceptable route stemming from the required license examination, the actual requirements are more extensive.

Specifically, the regulations only allow the holder of an OUPV license to obtain a ***Mate*** 200 GT license by further testing with the appropriate 10 question examination. Once the time in service has been obtained, as Mate 200 GT, the candidate for Master up to 200 GT may find that a similar exam to that taken for mate was used. However, the knowledge and experience gained through their additional sea service is essential.

Further, some candidates are being guided by "friendly advice," even where it is not truly in line with licensing policy, to test for the Master, up to 100 GT exam, even though it is not required to operate a small vessel. Most candidates are not ready for the higher level of responsibility, or the additional knowledge required, using qualifying time they acquired operating fishing charter vessels. More specifically, they are not familiar with the additional equipment required on the higher tonnage vessels, much less fully knowledgeable in advanced subject matter necessary to successfully complete the exam. Therefore, the candidate applying for the Master's license, up to 100 GT, is, in reality, responsible for more knowledge than being merely familiar with the subject matter required by a candidate for OUPV.

These differences are illustrated in 46 CFR 10.910. The increased levels include the experience and knowledge obtained in: proper use of blocks and tackle; proper watchkeeping; interpretation of weather reports; actions to take if dragging an anchor and other actions to take in clearing fouled anchors; safe and proper liferaft and lifeboat operations during emergencies; safe and proper towing operations; in-depth knowledge of ship construction, calculation of trim and stability; management and guidance to passengers during fire emergencies as prompted through frequently conducted drills and the effective use of firefighting equipment; the application of load lines and survival at sea.

Individuals with experience which has only prepared them for obtaining an OUPV license have become understandably frustrated attempting to test for the Master up to 100 GT license. Although it may appear to be a simple task to pass the exam, individuals unable to complete the exam cycle during the first three attempts are required to wait three months to re-examine for the OUPV license and must pay an additional examination fee. It is to the advantage of the license candidate to examine only to that level for which they are professionally qualified.

The World Wide Web (WWW) site for the Coast Guard, National Maritime Center "Publication and Information" branch is on-line with information relating to merchant mariner safety. Included on the WWW is the marine Safety Newsletter, *Proceedings* magazine, the phone book for the Office of Marine Safety, Security and Environmental Protection reorganization and Merchant Mariner deck and engineering exam questions. Difficulties experienced by early users have been corrected. By placing all

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examination questions on the WWW, the public can gain access and provide immediate feedback on clarity and correctness by interested parties, while providing greater flexibility in adding and changing questions in the databank than previously available. Comments about Merchant Mariner Examination questions should be sent to:

Director, National Maritime Center (NMC-4B)
4200 Wilson Blvd, Suite 510
Arlington, VA 22203-1804

Placing the questions on the Internet will replace publishing of the "yellow books" as the mechanism used by the Coast Guard to disseminate exam question information to the public. The exam question database will be provided in dBase III format and can be accessed for downloading to almost any database or spreadsheet program. Each of the originally numbered question books exists as a database file and will contain the examination questions sorted by question number. In place of publishing supplemental books annually, as new questions are developed for the exams, they will be added quarterly via the WWW. Revision dates will be added to provide an easy means to sort for new questions.

The WWW address for Marine Safety is http://www.dot.gov/dotinfo/uscg/hq/g-m/gmhome.htm. If you have questions about this WWW or suggestion for other maritime related items to add, contact CDR T. Patrick at the address above, or via E-mail to mail09572@pop.net.

Courses in Lieu of Examinations

The Coast Guard's "Prevention Through People" initiative has yielded more than a few alternatives directed at improving marine safety. Coast Guard approved courses play a significant role in the implementation of this initiative.

Historically, merchant vessel personnel regulations have allowed approved courses to satisfy specific training requirements, replace mandatory sea experience, or substitute for Coast Guard administered examinations. Only recently have schools requested and received approval of courses to be completed in lieu of the Coast Guard's written examinations for limited deck licenses, such as the operator of uninspected passenger vessels (OUPV) license.

The Coast Guard's report entitled "Licensing 2000 and Beyond," published in the fall of 1993, was instrumental in prompting schools and the Coast Guard to focus on this little-used provision of the regulations (46 CFR 10.301) governing approved courses. The report recommended training courses in lieu of the exam for certain limited licenses (for service on vessels of not more than 200 gross tons), provided an effective system of quality assurance, or "oversight," is in place. Subsequently, Coast Guard personnel staffing the Regional Examination Centers (RECs) were trained in new oversight policy and procedures; the training included on-site audits of schools in their respective zones. RECs continue to conduct oversight visits to schools, and they may also request graduates of approved courses complete "customer surveys" to evaluate quality of approved courses from the students' point of view.

The objective of approved courses in lieu of deck license examinations, paraphrased from the International Maritime Organization's model course for master and chief mate, follows:

After attaining the requisite sea service, and upon successful completion of this course, the trainee will—

on navigable waters, be able to take responsibility for the safety of a vessel, its passengers, crew, and cargo (as applicable); and

be aware of obligations under Coast Guard regulations concerning safety and protection of the marine environment, and will be able to take the practical measures necessary to meet those obligations.

Approved courses seek to achieve this objective through a combination of instruction, practice, hands-on demonstrations, and written exams. There are several schools offering approved courses in lieu of the USCG written examination for limited deck licenses. A list of approved courses may be obtained through contacting the Director, National Maritime Center (NMC-4B). Internet users may access the list of approved courses online at the WWW address shown in the preceding ***Mariner's Seabag*** article.

The National Maritime Center's Examination Administration Branch, NMC-4B, is responsible for the Coast Guard's approved courses program. Information concerning regulations, policy, etc., is available upon request. Guidelines for specific courses, such as the OUPV License course, are designed to provide more details for schools seeking approval, and to provide a standard that will reduce variance between courses approved for a particular license. Any comments and suggestions you may have for improving the approved courses program and services are welcome and encouraged. You may write to the NMC-4B address shown in the previous column, or telephone (703) 235-1864 or (703) 235-1062 [fax].

Nautical Queries

January-February 1996

Deck

1. On a cargo vessel, fire and boat drills must be held within 24 hours of leaving port if more than what percentage of the crew was replaced?

A. 5%
B. 10%
C. 25%
D. 40%

2. Which of the following CANNOT be determined by use of a stabiloguage?

A. Metacentric height
B. Mean draft
C. Moment to trim one inch
D. Deadweight

3. A vessel's "quarter" is that section which is _____.

A. abeam
B. dead astern
C. just forward of the beam
D. on either side of the stern

4. Which statement is TRUE concerning lifeboat gripes?

A. They must be released by freeing a safety shackle.
B. They should not be released until the boat is in lowering position.
C. They may be adjusted by a turnbuckle.
D. They are normally used only with radial davits.

5. From where is an azimuth angle for a body measured?

A. Observer's meridian
B. Greenwich meridian
C. Body's meridian
D. Zenith distance

6. Which statement is TRUE concerning life preservers?

A. Bouyant vests may be substituted for life preservers.
B. Life preservers are designed to turn an unconscious person's face clear of the water.
C. Life preservers must always be worn with the same side facing outwards to float properly.
D. Lightly stained or faded life preservers will fail in the water and should not be used.

7. You are off the coast of South Africa, when a seaman is injured. What indicator should be used in a message requesting medical advice from a South African station?

A. DH MEDICO
B. XXX RADIOMEDICAL
C. MEDRAD
D. PORT HEALTH

8. What is retrograde motion?

A. Movement of the points of intersection of the
B. Apparent westerly motion of a planet with respect to stars
C. Movement of a superior planet in its orbit about the sun
D. Movement of the celestial north pole in an elliptical pattern in space

9. What would give the best radar echo?

A. The beam of a three-masted sailing vessel with all sails set.
B. A 110-foot fishing vessel with a radar reflector in its rigging.
C. A 300-foot tanker, bow on.
D. A 600-foot freighter, beam on.

10. An air mass that has moved down from Canada would most likely have which of the following symbols?

A. mPk
B. cPk
C. cTk
D. cTw

Answers

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

If you have any questions concerning this quiz, please contact the National Maritime Center at (703) 235-1368.

Engineering

1. Which of the journal bearings listed most easily accommodates the minor turbine shaft misalignment?

A. Ball bearings
B. Roller bearings
C. Spring bearings
D. Spherically seated bearings

2. Fuel injectors used in heavy fuel oil systems are usually provided with cooling to reduce which of the following?

A. Cold corrosion of the nozzles
B. Fuel viscosity for better atomization
C. Carbon accumulation on the nozzles
D. Fuel detonation in the cylinders

3. An eight-cylinder, four-stroke/cycle, single-acting diesel engine has a 650 mm bore and a 1400 mm stroke. What will be the developed indicated metric horsepower if the average mean effective pressure is 30 kg/cm2 at a speed of 100 PRM?

A. 1,689 kW
B. 9,111 kW
C. 12,388 kW
D. 24,776 kW

4. If ignited, which of the listed materials would be a class "B" fire?

A. Magnesium
B. Paper
C. Wood
D. Diesel oil

5. How shall fire main outlet valves or hydrants be installed?

A. In screened enclosures in all passageways
B. Where they are protected from the weather
C. In a protected location to prevent cargo damage
D. Pointing downward or horizontally to prevent kinking of the fire hose

6. Which of the bearings listed is most widely used for main and connecting rod bearings of modern diesel engines?

A. Steel-lined
B. Poured babbitt, self-aligning
C. Split roller
D. Precision insert

7. What is the greatest danger in cold temperatures when at sea in an inflatable liferaft?

A. Asphyxiation due to keeping the canopy closed
B. Hypothermia caused by the cold temperature
C. Collapsing of the raft due to the cold temperature
D. Starvation

8. How is low velocity water fog used in firefighting?

A. As a cooling agent
B. As a smothering agent
C. As a barrier against radiant heat
D. All of the above

9. Which of the procedures is recommended for auxiliary boilers having high salinity?

A. Treating with oxygen scavengers
B. Securing the boiler and giving it a bottom blow
C. Increasing the pH
D. Reducing the phosphate level

10. When patching holes in the hull of a MODU, how can pillows, bedding, and other soft materials be used ?

A. As caulking
B. As gaskets
C. As strongbacks
D. As wedges

Answers

1-D, 2-C, 3-B, 4-D, 5-D, 6-D, 7-B, 8-D, 9-B, 10-B

If you have any questions concerning this quiz, please contact the National Maritime Center at (703) 235-1368.

License Statistics from 01/01/94 to 12/31/94

Deck Department

Description	Issues	Endorsements	Failures	Renewals	Duplicate	SNR
Master Ocean Any	113	58	2	682	9	0
Master Near Coastal Any	10	4	1	21	1	0
Chief Mate Ocean Any	121	34	4	200	19	0
Chief Mate Near Coastal Any	1	0	0	2	0	0
Second Mate Ocean Any	140	31	4	221	10	4
Second Mate Near Coastal Any	3	0	0	1	0	0
Third Mate Ocean Any	414	25	9	420	15	1
Third Mate Near Coastal Any	13	0	0	8	1	0
Master Ocean Not More Than 1.6 K	268	129	9	646	59	1
Master Near Coastal Not More Than 1.6K	94	100	4	413	21	1
Mate Ocean Not More Than 1.6K	21	32	0	44	2	0
Mate Near Coastal Not More Than 1.6K	152	44	15	113	8	1
Master Ocean Not More Than 500	12	33	1	123	15	2
Master Near Coastal Not More Than 500	35	56	5	322	29	8
Mate Ocean Not More Than 500	10	2	0	18	2	0
Mate Near Coastal Not More Than 500	12	10	0	49	5	1
Mate Inland Not More Than 100	13	0	0	4	0	0
Mate Inland Not More Than 200	45	1	2	8	0	0
Master Ocean Not More Than 200	6	15	0	63	2	1
Master Near Coastal Not More Than 200	63	74	5	394	27	4
Mate Near Coastal Not More Than 200	170	22	6	64	7	0
Master Near Coastal Not More Than 100	2,040	406	56	4,367	190	21
Master Uninspected Fishing Industry Vessel	33	30	0	206	9	0
Mate Uninspected Fishing Industry Vessel	47	14	3	29	1	0
Master MODU	0	0	0	4	0	0
Mate MODU	0	0	0	0	0	0
Master Great Lakes and In. Any	10	11	0	48	0	0
Master Inland Any	26	18	2	228	8	0
Mate Great Lakes and Inland Any	11	8	0	47	0	0
Master Great Lakes and In. Not More Than 1.6K	4	5	0	10	0	1
Mate Great Lakes and In. Not More Than 1.6K	4	1	0	2	0	0
Master Great Lakes and In. Not More Than 200	1	1	0	13	0	1
Mate Great Lakes and In. Not More Than 200	4	1	0	1	0	0
Offshore Installation Manager (OIM)	78	1	0	8	2	0
Barge Supervisor (BS)	20	5	0	184	2	0
Ballast Control Operator	19	8	0	4	1	0
Master Inland Not More Than 100	1,335	131	38	1,279	54	2
Master Inland Not More Than 200	15	17	5	29	2	0
Master Great Lakes and In.	369	73	6	441	12	5
First Class Pilot	116	286	6	1,005	44	3
Operator Uninspected Towing Vessel	345	100	19	2,388	82	23
2nd Class Operator Uninspected	31	6	2	64	3	0
Operator Uninspected Passenger Vessel	1,456	53	40	2,313	39	3
Master Lifeboats	0	0	0	0	0	0
Assistant Towing Endorsement	1,761	153	23	518	48	1
Total	9,441	1,998	267	17,004	729	84

License Statistics(continued)

Radio Officer and Certificates of Registry

Description	Issues	Endorsements	Failures	Renewals	Duplicate	SNR
Radio Officer	9	0	0	153	4	0
Chief Purser	16	0	0	0	0	0
Purser	4	0	0	2	0	0
Sr. Asst. Purser	2	0	0	0	0	0
Jr. Asst. Purser	16	0	0	1	1	0
Medical Doctor	19	0	0	0	0	0
Professional Nurse	2	0	0	2	1	0
Surgeon	2	0	0	2	0	0
Total	70	0	0	160	6	0

Summary

License Transactions

Description	Issues	Endorsements	Failures	Renewals	Duplicate	SNR
Deck Department	9,441	1,998	267	17,004	729	84
Engine Department	1,810	387	53	3,369	151	24
Radio and Staff Officers	70	0	0	160	6	0
Total	11,321	2,385	320	20,533	886	108

Engine Department

Description	Issues	Endorsements	Failures	Renewals	Duplicate	SNR
Chief Engineer Motor	221	85	10	557	29	7
1st Asst. Eng. Motor	80	22	0	81	8	0
2nd Asst. Eng. Motor	102	23	2	95	2	1
3rd Asst. Eng. Motor	108	17	2	252	8	2
Chief Engineer Steam	43	16	0	217	4	0
1st Asst. Eng. Steam	67	10	1	117	6	0
2nd Asst. Eng. Steam	72	8	1	136	4	1
3rd Asst. Eng. Steam	106	7	1	156	9	1
Chief Engineer Steam or Motor	71	21	1	335	12	2
1st Asst. Eng. Steam or Motor	40	3	1	102	3	0
2nd Asst. Eng. Steam or Motor	46	2	1	93	3	0
3rd Asst. Eng. Steam or Motor	369	13	6	398	10	1
Chief Engineer Ocean	118	47	7	414	23	5
Chief Engineer Near Coastal	74	9	0	46	1	1
Assistant Engineer	70	19	3	98	7	0
Designated Duty Eng.	176	63	17	145	12	3
Chief Engineer Uninspected Fishing Industry Vess.	25	17	0	96	6	0
Assistant Engineer Fish Ind.	14	5	0	11	4	0
Chief Engineer MODU	8	0	0	14	0	0
Assistant Engineer MODU	0	0	0	0	0	0
Liftboats	0	0	0	6	0	0
Total	1,810	387	53	3,369	151	24

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* U. S. Government Printing Office 1996-405-533/20002

U.S. Department
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