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Special issue on marine casualty investigations

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Proceedings

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The Casco Bay steamer, Pilgrim, was running in thick fog when it stranded on a rocky ledge on Deer Point at Great Chebeague Island off Portland, Maine, in 1929. After being pulled off by a Coast Guard cutter, Pilgrim was repaired. (Courtesy of William P. Quinn, Orleans, MA)

NOTICE

A Coast Guard marine board of investigation identified the Dasic Jetfan 125, a high-velocity ventilation fan, as a possible source of ignition in a ballast tank containing naptha vapors during its investigation into the explosion and fire onboard the tank vessel *Surf City* in February 1990. A safety advisory will be issued in the form of an ALDIST and an article will be published in a future *Proceedings* to provide information on this potential safety hazard.

Marine casualty investigations

CAPT Gerard Barton

The Coast Guard has investigated commercial vessel casualties as part of its mission to promote safety of life and property at sea for many years. Here are some of the reasons why --

Authority

Title 46, United States Code, Chapter 61, requires that marine casualties be reported to the Coast Guard when they involve:

- a death of an individual,
- a serious injury to an individual,
- material loss of property,
- material damage affecting the seaworthiness or efficiency of the vessel
- or significant harm to the environment.

Title 46, United States Code, Chapter 63, requires the immediate investigation of those marine casualties to determine:

- the cause of the casualty, including the cause of any death;
- whether an act of misconduct, incompetence, negligence, unskillfulness or willful violation of law by any licensed, certificated or documented individual, or any other person, including an officer, employee or member of the Coast Guard, contributed to the cause of the casualty;
- whether there is evidence of a civil offense or criminal act;
- or whether there is a need for new laws or regulations, or changes to existing laws or regulations, to prevent recurrence of the casualty.

These laws and the implementing regulations apply to United States-flag vessels anywhere in the world and to foreign-flag vessels involved in casualties in United States waters.

The Coast Guard investigates about 4,500 marine casualties per year involving nearly 6,000 vessels, including about 1,000 investigations of injuries and deaths not associated with a vessel casualty, e.g., falls overboard.

Purpose

The requirements of law and regulations are sufficient reasons for conducting investigations. However, the greatest benefit to commercial vessel safety is realized through the appropriate use of information revealed by investigations.

From a strictly management perspective, commercial vessel casualties may be viewed as failures of the marine transportation safety system. Casualty investigation information provides feedback regarding system performance.

Detailed information on significant casualties and statistical information on large numbers of casualties can influence strategy and support decisions for programs to improve marine safety.

Analysis

Analysis of marine casualty information is performed by the Marine Investigation Division of the Office of Marine Safety, Security and Environmental Protection at Coast Guard headquarters in Washington, D.C.

The Casualty Review Branch reviews and disseminates detailed information and recommendations relevant to major casualty investigations.

The Marine Safety Evaluation Branch reviews the bulk of all non-major casualty investigations and codes relevant information into a computer data base.

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The Personnel Action Branch is responsible for remedial actions against licenses and documents of merchant marine personnel.

Since 1981, the commercial vessel casualty data base (CASMAIN) has accumulated more than 60,000 records of marine accidents. CASMAIN is now the foundation of Coast Guard marine safety analyses.

Since CASMAIN contains public information, it is available to the general public and private industry. Last year, nearly 1,000 requests for CASMAIN information were answered. The Coast Guard's goal is to support all individuals interested in improving marine safety with accurate, complete, relevant commercial vessel casualty information.

However, commercial vessel casualty information alone is not sufficient to support all marine safety program management decisions. Raw casualty data must be calibrated before comparisons become useful. For example, if tank ships have ten accidents and freight ships have 20 accidents in the same area over the same period, it might appear that freight ships are less safe. However, if tank ships made 1,000 trips and freight ships made 2,000 trips during that period, it becomes obvious that the number of accidents per trip are the same.

The future

An important new area of Coast Guard endeavor is the development of vessel exposure information to better support management decisions. A valid comparison of marine casualty information between types of vessels or types of accidents is essential to accurately determine the levels of risk.

Another new initiative involves the collection of pollution-incident cause data. In the past, the Coast Guard investigated pollution incidents only to determine the responsible party. While that information may be sufficient for enforcement purposes, it is not enough for pollution prevention.

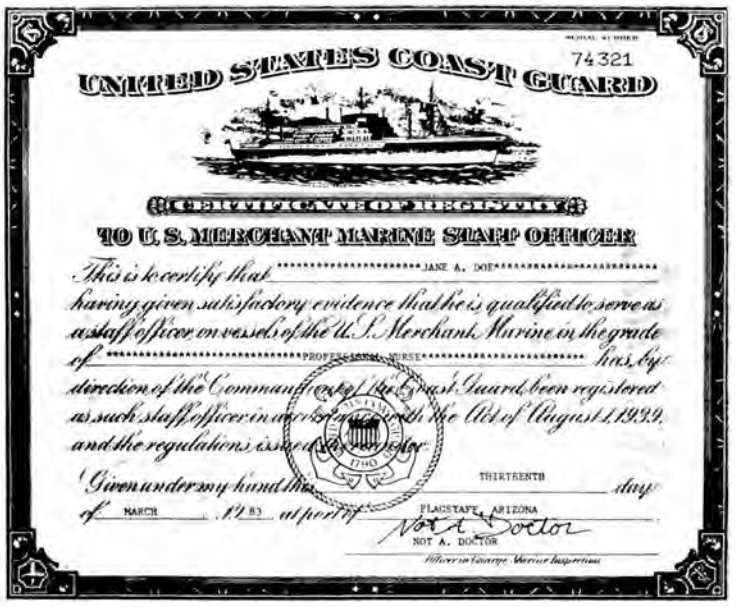
It is necessary to know the causes and reasons for pollution incidents to prevent their recurrence. The Coast Guard is beginning to investigate pollution cases in the same manner as casualty cases, and will soon be able to conduct similar pollution analyses.

Conclusion

As the Office of Marine Safety, Security and Environmental Protection strives to achieve the goal of "Total Marine Safety," marine casualty information will increase in importance. All Total Quality Management methods rely on the use of quantitative measures of the continuous improvement of operating processes.

Marine safety is an operating process which is already benefiting from accurate, timely feedback provided by marine investigations.

CAPT Gerard Barton is the chief of the Marine Investigation Division of the Coast Guard's Office of Marine Safety, Security and Environmental Protection.


UNITED STATES COAST GUARD

74321

CERTIFICATE OF REGISTRY

TO U.S. MERCHANT MARINE STAFF OFFICER

This is to certify that ********** JANE A. DOE **********

having given satisfactory evidence that he is qualified to serve as a staff officer on vessels of the U.S. Merchant Marine in the grade of ********** PROFESSIONAL NURSE ********** has by direction of the Commandant of the Coast Guard been registered as such staff officer in accordance with the Act of August 11, 1939, and the regulations issued thereunder.

Given under my hand this THIRTEENTH day of MARCH 1983 at port of FLAGSTAFF, ARIZONA

NOT A. DOCTOR

Officer in Charge, Marine Inspection

Administrative clemency procedures

LCDR Tom Murphy

When a Coast Guard license, certificate of registry or merchant mariner's document (MMD) is revoked or surrendered, what happens next? Can such documents be reissued?

It should be pointed out that administrative actions against a license, certificate or MMD holder are remedial and not penal in nature. These actions are intended to help maintain standards of competence and conduct essential to the promotion of safety at sea.

Once a mariner's license, certificate or MMD has been revoked after an administrative hearing or surrendered to an investigating officer through a voluntary surrender agreement, the individual no longer has the right to hold those documents. The burden is on the individual to provide sufficient evidence to justify a reevaluation of fitness for a new document.

Waivers

A mariner may apply for a new license, certificate or MMD three years after surrender or revocation through administrative clemency procedures. The three-year waiting requirement may also be waived by the commandant under certain circumstances. They are:

1. The offense that caused the revocation or surrender occurred more than three years ago, and the individual has demonstrated good character in the community during that time. (This often occurs when an individual has committed an offense for which revocation is merited, and has served a period of confinement or probation before the Coast Guard learns of the offense.)

2. The revocation or surrender was the result of the wrongful simple possession or use of dangerous drugs, and the individual:

   (a) has successfully completed a bona fide drug-abuse rehabilitation program;

   (b) has demonstrated complete abstinence from dangerous drugs for at least one year after finishing the rehabilitation program; and

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(c) is actively participating in a bona fide drug-abuse monitoring program.

3. The revocation or surrender was the result of offenses related to alcohol abuse, and the individual:

(a) has successfully completed a bona fide alcohol-abuse rehabilitation program; and

(b) is actively participating in a bona fide alcohol-abuse monitoring program.

(An individual may only be granted the waivers described in Numbers 2 and 3 one time.)

3. The completed application and fingerprint cards must be accompanied by a letter to serve as a request for a new license, certificate or MMD. The letter, addressed to the commandant, U.S. Coast Guard, 2100 Second Street, S.W., Washington, D.C. 20593-0001, must be delivered in person to the nearest OCMI.

The letter should contain:

(a) A letter from each employer during the past three years attesting to the individual's work record.

(b) Information to support rehabilitation or cure when the license, certificate or MMD was revoked or surrendered because of incompetency or association with dangerous drugs.

(c) Any other information which may be helpful to the commandant in arriving at a determination.

Reapplication

An individual follows straight-forward procedures to reapply for a license, certificate or MMD.

1. The individual must complete a standard Coast Guard license application form (CG-866), which can be obtained from the local Officer in Charge, Marine Inspection (OCMI).

2. The individual must complete two fingerprint cards for the FBI to conduct a background investigation.

Evaluation

The OCMI designates an investigating or licensing officer to review and process the request. In the review process, the application, personal letter and all supporting material including reference letters are verified, and the applicant is interviewed.

The investigator is concerned about the applicant's shore-side employment, attitudes, involvement with law enforcement authorities, social habits and relationships with fellow employees during the period of revocation or surrender. Of particular concern is whether past traits or habits which led to the revocation or surrender have been overcome or eliminated.

Character references are most effective when they acknowledge the applicant's prior problems and address the individual's success in overcoming them. (Letters extolling the virtues of an applicant who has constantly been in trouble with the authorities are of little value.)

In cases where the surrender or revocation was based upon a charge of physical or mental incompetence, the applicant must submit (at his/her expense) clinical records or a physician's statement attesting to his/her present physical or mental capacity to return to sea duty.

If surrender or revocation was the result of a narcotic-related offense or alcohol abuse, the documentation must include evidence of rehabilitation.

Based on the information submitted by the applicant and the in-person interview, the investigator prepares an evaluation and recommendation, and then forwards all of the documents to the commandant.

Review board

The commandant refers the applicant's letter and application form, along with the evaluation and recommendation, to the Administrative Clemency Review Board. The board reviews all appropriate information bearing on the case, and submits its findings and recommendation to the commandant. The commandant then decides whether or not a new license, certificate or MMD will be issued. The applicant is notified promptly in writing of this decision.

When the decision is favorable, the letter will tell the individual what additional steps must be taken to apply for a new license, certificate or MMD. A copy is sent to the nearest regional examination center to advise them of the applicant's eligibility status.

When the decision is unfavorable, the letter will clearly state which factors resulted in the denial, and address future actions to be taken by the applicant for reconsideration. Normally, an applicant will be allowed to submit another application one year after denial. In such a case, the supporting evidence of character and employment need only cover the period following the first reapplication, unless character and/or employment issues were a matter of concern in the denial letter.

LCDR Tom Murphy is the chief of the Personnel Action Branch, Marine Investigation Division. of the Coast Guard's Office of Marine Safety, Security and Environmental Protection.

Sinking of *Fish-N-Fool*

February 3, 1987 -- -- The small passenger vessel Fish-N-Fool departed Point Loma, California, at about 6:30 pm on what was to be a four-day sportfishing trip. Two licensed ocean operators, one deckhand and nine passengers were onboard.

After motoring all night in relatively calm seas with little wind, the 55-foot vessel arrived around midday at its destination near Isla de San Martin, an island off the Mexican Baja Peninsula, approximately 150 miles south of San Diego. The vessel fished at various locations in the area, including a period at anchor near "Ben's Rock," a charted navigation hazard more than two miles south of the island.

During the lunch period on February 5, Fish-N-Fool was anchored at a fishing site about one mile south of Ben's Rock, which consists of three crowns rising to just under the water's surface. With breaking swells known to occur at the pinnacle of the highest crown, the spot is a popular fishing location among sportfishers.

As the passengers and crew ate their noon meal, and fished while the vessel drifted, one of the operators was heard to comment, "My God, look at the swells at Ben's Rock." Existing swell conditions at the offshore location were from the west-northwest at approximately four to six feet, with light winds, warm air temperatures and clear skies. Most everyone onboard was wearing light T-shirts and jeans.

After lunch, with an operator at the wheel, Fish-N-Fool motored near Ben's Rock and set up to drift fish in the foam of the breaking swells. The vessel was apparently placed at idle with the starboard bow positioned into the oncoming swells. At about I pm, Fish-N-Fool was hit on the starboard side by a breaking swell reportedly 20 foot high.

Before the operator could turn the bow to starboard, the vessel broached, traveled up the side of the swell and quickly capsized. The event occurred so rapidly, that the surviving witnesses reported a total lack of verbal comment or exclamation from those onboard.

The primary lifesaving equipment onboard was initially unable to deploy and float free. Seven passengers and the deckhand, who were thrown together in the 59°F water with minimal flotsam on which to cling, chose to swim to Isla de San Martin, visible on the horizon about 2.6 miles away.

The operator at the wheel was not seen after the capsizing, and the other operator who had been below in the galley surfaced near the vessel. She stayed afloat near the overturned vessel by clinging to a fish hatch cover and a 50-gallon water barrel. Within an hour, the inverted vessel shifted, and four lifefloats, several life preservers and an electronic position-indicating radio beacon (EPIRB) floated to the surface.

The surviving operator lashed the four lifefloats together and activated the EPIRB. Coast Guard aircraft picked up the signal at about 2:35 pm and located her at 5:36 pm. She was picked up by helicopter at around 8:20 pm.

One of the eight swimmers managed to get close enough to the island to attract local fishermen, who rescued him.

Of the three crew members and nine passengers; two survived, two drowned, and eight are missing and presumed dead.

Conclusions

The commandant convened a marine board of investigation to investigate the circumstances surrounding this casualty. The board concluded, in part:

1. The proximate cause of the *Fish-N-Fool* casualty was the operator's positioning of the vessel in close proximity to and down

swell of Ben's Rock to engage in fishing. This action placed the vessel in such a position that a large swell struck it nearly broadside, imparting enough heeling energy to overcome its inherent dynamic stability, causing it to capsize.

2. A contributing cause of the loss of life was the onset of hypothermia, as experienced by the initial survivors thrown into the water after the capsizing. This condition was accelerated by their light clothing and the sea water temperature.

3. A contributing cause to the loss of life was the fact that the casualty occurred approximately 150 miles from the nearest Coast Guard search and rescue (SAR) facility, thereby logistically hampering a timely response.

4. Had the persons in the water remained in the vicinity of the capsized vessel until the lifefloats ultimately floated free, instead of trying to swim more than two miles to the island, their chances of survival would have been greatly increased.

5. There was evidence of negligence on the part of the operator at the wheel, in that he navigated the vessel so close to a charted navigational hazard, that a large breaking swell capsized the vessel.

6. The intermittent nature of the occurrence of large swells breaking at Ben's Rock could produce a false sense of security for operators of vessels approaching the hazard.

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7. At the time of the casualty, *Fish-N-Fool* met the applicable design and equipment requirements in Title 46 Code of Federal Regulations (CFR), Subchapter T, Small Passenger Vessels (under 100 gross tons). This included the stability requirements for a vessel of this size and route.

8. There was no evidence that the use of alcohol or other drugs played any part in causing the casualty or affecting the changes of survival of those onboard.

9. The lack of a passenger list on shore hampered Coast Guard search efforts by making it difficult to determine the number of people onboard.

10. The fact that a large majority of EPIRB signals were historically false alarms caused the Coast Guard to weigh the importance of completing other mission assignments against the small probability that the signal they were picking up in this case indicated an actual distress.

11. Once it had been confirmed that an actual casualty existed and there were people unaccounted for, the Coast Guard conducted an extensive search covering all possible areas that survivors could have been located. Resources continued to search the area until there was virtually no chance for survival.

Recommendations

The board of investigation also recommended, in part:

1. That the Coast Guard encourage and support the National Oceanographic and Atmospheric Administration and other involved agencies in improving upon the design of EPIRBs to reduce the high false alarm rate and design a method of identifying the emitting source.

2. That the Coast Guard verify that its current search and rescue (SAR) contacts within Mexico are up to date and provide for a rapid means of notifying Mexican SAR resources.

3. That the Coast Guard pursue the development of more workable agreements or treaties with the Mexican government relative to the execution of SAR efforts in Mexican territorial waters.

4. That the Coast Guard amend Title 46 CFR, Subchapter T, to require operators to deposit a sailing list with its landing or other shoreside facility prior to getting underway. The list would contain the names and addresses of all passengers and crew.

Actions taken

The Coast Guard and the Mexican Navy are currently implementing a new bilateral SAR agreement. It provides for much more direct coordination and should significantly improve response in cases like the *Fish-N-Fool.*

In addition, the Coast Guard has proposed that improved EPIRBs (406 MHz) be carried on all types of commercial vessels.

The board's recommendations regarding amendments to 46 CFR, Subchapter T, are under consideration in a current project to revise those regulations.

Details of this casualty were excerpted from the Coast Guard Marine Board of Investigation Report No. USCG 16732/001 HQS 88. This document is available to the public through the National Technical Information Service, Springfield, Virginia 22121.

When communications fail

PA3 J. Mark Sedwick

The aroma of fresh-brewed coffee permeated the Coast Guard operations center around mid-afternoon. The staff of radiomen, quartermasters and boatswain's mates were on duty during what, so far, was an uneventful 12-hour shift.

The quiet banter of conversation and an occasional "dit, dit, dat" from a distant radio beacon were the only sounds emanating from the center, as the staff manned telephones, sent out messages and listened carefully to Channel 16 on the VHF marine-band radio, the mariner's lifeline to the Coast Guard.

Mayday

Suddenly, the soft hiss of the radio was pierced by an all too familiar cry, "Mayday! Mayday! My boat's taking on water, it's going to sink!"

The operations center sprang to life. The radioman grabbed the microphone and tried to obtain vital information. "Sir, I need your location. Do you have any navigational equipment on board?" he asked the frantic boat owner.

"We're near Galveston, Texas," responded the man in distress. "Please hurry, we're sinking!"

"Hang in there," the radioman replied. "Help is on the way, but I'd like you to give me a description of your boat and a more exact location. Can you see any other vessels or a buoy in the area? Please have everyone on the boat put on their lifejackets."

Before the captain of the sinking vessel could respond, a third person keyed his radio, interrupting the life-and-death exchange.

"Hey Joe, how's the fishing out here today?" he asked.

"Not too good," replied another sport fisherman. "I haven't caught a thing all day."

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The two fishermen talked for several minutes, preventing the Coast Guard from maintaining contact with the sinking vessel.

The officer of the day sent a 41-foot utility boat and a rescue helicopter to the general area of Galveston to search for the vessel, but the odds of saving a life were not in the Coast Guard's favor.

This particular incident is fictitious, but similar scenarios have taken place and will continue to hamper search and rescue efforts, until the boating public is well versed in the proper use of the emergency VHF channel.

Safety campaign

A heavy volume of non-emergency traffic combined with an alarming number of hoax calls on Channel 16 have prompted the Coast Guard and the Federal Communications Commission (FCC) to launch a radio safety-awareness campaign for commercial and recreational vessel operators.

The first step in the campaign consists of a Coast Guard inspection of these vessels for "ship station" licenses. Required by law, these licenses authorize vessels to operate certain electronic equipment on board, including VHF marine-band radios, as well as emergency position-indicating radio beacons and radar. One license can cover all such electronic equipment. (Licenses are not required for citizen's band radios or cellular telephones.)

Applications for the $35 ship-station licenses maybe obtained at any FCC field office. Vessel owners must renew their licenses every five years and notify the FCC of any equipment additions or changes. There is no examination involved.

Chief Warrant Officer Jack M. Janway, a communications specialist in the telecommunications management section of the Eighth Coast Guard District in New Orleans, Louisiana, is spearheading an effort to educate the Gulf coast boating pubic about the license requirement.

"We've been working with the FCC for about a year on the problems with Channel 16," says Janway. He notes that the hoax calls and the improper use of the emergency channel "have hampered the Coast Guard's search and rescue mission nationwide."

The purpose of enforcing the license law is to expose the boating public to proper radio courtesy and procedures, according to Janway. "We need to let the public know there are rules governing marine communications, and we need people to start following them.," he adds.

The application form for the FCC license lists basic radio "rules of the road" to follow. The FCC also will issue a pamphlet in 1991 with more detailed information on proper radio usage.

Coast Guard boarding teams have started checking for ship-station licenses during routine boardings of commercial vessels and recreational boats. "If the master of the vessel doesn't have a license," notes Janway, "the Coast Guard boarding officer will inform him of the law, and instruct him on how to obtain one.

"Our efforts right now are geared purely to educate the boater. After September 30, 1991, the Coast Guard will begin issuing citations."

Penalties for noncompliance can include a maximum fine of $10,000, imprisonment, or both. Janway points out that the potential penalty shouldn't be the motivating force for complying with the law.

"We need the maritime community's cooperation in this effort," he says. "Otherwise VHF radio is going to be useless for emergency situations."

He sees the license requirement as "one little step in the right direction to improve our lifesaving capacity."

The Coast Guard operations center staff depends upon the boating public's common sense and courtesy when using Channel 16. As Janway put it, "We've got to be able to hear them before we can help them."

PAC J. Mark Sedwick is a public affairs specialist assigned to the Eighth Coast Guard District, New Orleans, Louisiana.

Coast Guard inspectors check out lifeboats on a merchant vessel (not involved in this article).

To lower or not to lower?

LCDR Robert V. Diaz

Recently, two masters from a tank vessel were charged with misconduct for failing to lower the vessel's lifeboat(s) as required by regulation.

Background

An inspection of the two lifeboats on board the tank vessel revealed sufficient deterioration to take them out of service. After they were removed, numerous sections of each hull, and most of the seats and thwarts were replaced.

It was apparent that the lifeboats did not get into this state overnight. When notified by the inspectors of their condition, an investigation team determined when the last lifeboat drills were performed.

Charges

Each master involved was charged with misconduct for failing to lower the vessel's lifeboats in accordance with the requirements of 46 CFR 35.10-5(e)5. The charge and all supporting specifications were proven in administrative hearings. The masters each received a one-month outright suspension and six-months' probation with the possibility of additional suspensions.

Fact finding

Initially, the investigating officers reviewed the deck logbook to determine how frequently the masters performed lifeboat drills.

A dated logbook entry stated: "While riding easy at anchor, in the port of. . . , a fire and boat drill was held. Lifeboats one and two were lowered to the water, the crew mustered and instructed in their duties." The drills were competed in one hour, according to the log. Investigators used this logbook entry as a starting point to determine when and by whom subsequent drills were conducted.

Further review of the logbook revealed that the number one lifeboat was not lowered for more

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than five months under one master. Also, neither lifeboat was lowered during more than four months under the command of the subsequent relieving master.

The administrative law judge determined that the first master had about 30 days at anchor in port with fairly good weather and calm seas in which to lower the lifeboats and conduct drills. The relieving master had about 18 days at anchor in port to accomplish the same important task.

Opinion

The interpretation of the phrase "if practicable," as stated in the regulation represented the turning point in the hearings.

The first sentence reads, "In port, every lifeboat shall be swung out, if practicable, and the unobstructed lifeboats shall be lowered to the water, and the crew exercised in the use of oars and other means of propulsion if provided for the lifeboat." The last sentence states, "The master shall be responsible that each lifeboat is lowered to the water at least once in each three months.

The judge ruled that "shall," as used in the last sentence, serves as a synonym for "The master will." Furthermore, the last sentence also states that "each lifeboat is lowered," not, "each lifeboat may or might be lowered."

The "if practicable" phrase must consider the regulation as a whole. The decision further stated that if the vessel is starboard side to a dock, it is not "practicable" to lower the starboard lifeboat. The master can and should, however, lower the port lifeboat to the water. At the next port, the master can berth the vessel port side to the dock, and lower the opposite lifeboat to the water.

The judge's last sentence in his ruling clarifies the master's responsibility to fulfill the requirements of the regulations.

Appeal

On appeal to the commandant, the masters argued that a labor agreement limited work hours and duties while in port. The commandant ruled that the admissibility of this labor agreement did not pertain to the disposition of the appeal, making it clear that labor contracts can not overrule federal laws and regulations.

The masters' appeal further contended that the "if practicable" modifier permits circumstances that could excuse compliance with the regulations to lower the lifeboats at least once every three months. In addition to the berthing arrangements and the limitations on crew work hours, one master cited rough weather and heavy currents as factors making the lowering of lifeboats impractical during his entire tenure on the vessel.

The commandant found, however, that the judge correctly observed that the duty of the master to lower the lifeboats to the water at least once every three months is absolute since the regulation states that the master "shall be responsible that each lifeboat is lowered..."

The commandant further agreed that even when lowering lifeboats to the water may not be practicable, those circumstances do not relieve the burden on the master to make sure that such a drill takes place quarterly.

The plain language in the regulation makes the duty to lower the lifeboats mandatory. There is no law or accepted practice of mariners which can be construed to conflict, modify or condition the affirmative language to lower lifeboats once a quarter.

The answer to "To lower or not to lower?" is a resounding "YES!"

LCDR Robert V. Diaz was the senior investigating officer at the Marine Safety Office in Port Arthur, Texas, when these charges were filed. Presently, he is a fire protection engineer with the Ship Design Branch of the Marine Technical and Hazardous Materials Division of the Coast Guard's Office of Marine Safety, Security and Environmental Protection.

Fuel fire erupts in tankship

At about 10:25 am on October 28, 1986, the ~~SS~~ SS ~~Omi Yukon~~ suffered major explosions and fires in the starboard fuel oil storage tanks and engine room about 1,000 miles west of Honolulu, Hawaii. The 37,784-ton tankship was enroute from Barbers Point, Hawaii, to Ulsan, South Korea.

The explosions extensively damaged the engine room, and removed the stack deck and the stack completely off the vessel.

Two men working in the vicinity of the starboard side of the stack deck and two men on watch in the engine room are missing and presumed dead. Four other crewmen were injured.

The starboard lifeboat was damaged from the explosions and rendered unusable. The master feared further explosions and asked for volunteers to lower the port lifeboat and move it forward to the port bow.

At about 4 pm, the ship was abandoned. The survivors were evacuated using lines leading over the side of the port bow into the port lifeboat. The inflatable liferaft stowed at the bow was launched and used.

A distress signal from the emergency position indicating radio beacon (EPIRB) was detected by commercial aircraft flying over the Pacific and confirmed by search and rescue satellite (SARSAT). A search and rescue effort was undertaken.

The first rescue aircraft was on scene by about 8:30 pm, but the crew aboard the aircraft was unable to communicate with the survivors. Rescue aircraft maintained surveillance throughout the night.

At approximately 7 am the next morning, the survivors were rescued by the ~~FV Shoichi Maru~~ (Japanese flag) and transferred to the MV ~~Dresden~~ (Singapore flag), and taken to Midway Island. They were subsequently flown to Honolulu.

The vessel was towed to a shipyard in Tsuneishi, Japan, where it was declared a constructive total loss.

Cause

The proximate cause of the explosions and fires aboard the *Omi Yukon* was the contamination of the vessel's bunkers (fuel oil) with distillate products (flush oil) during bunkering through an undersea pipeline. An equally significant causal factor was the absence of a flame screen in the after starboard fuel oil tank vent.

Background

The *Omi Yukon* was last inspected by a Coast Guard marine inspector on December 20, 1985. All fuel oil tank flame screens were examined and no discrepancies were found.

On August 21, 1986, a surveyor from the American Bureau of Shipping (ABS), conducted an annual survey of the vessel. After checking the flame screens, he notified a contract worker to clean or replace the screens on the port and starboard fuel oil storage tank vents.

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The contract worker was assigned to correct any deficiencies noted by the surveyor, including the items concerning the flame screens. He maintained that he and another contract worker took apart all six fuel oil tank gooseneck vents and installed new flame screens. He testified that he checked all the fuel tank vents and they had flame screens in place after the work was performed.

In early September, a second ABS surveyor boarded the *Omi Yukon* to follow up on the August inspection. He only checked on the discrepancies indicated in the earlier survey report. He examined the port fuel oil settler tank vent, but not the vents for the other five tanks.

The *Omi Yukon* left Valdez, Alaska, in mid-October to discharge its load of about 550,000 barrels of Alaskan North Slope crude oil at the Hawaiian Independent Refinery, Inc. (HIRI) at Barbers Point. After completing the discharge, the vessel was scheduled to proceed to Ulsan for drydocking and Coast Guard inspection for certification.

Fueling

Prior to departure, HIRI was contracted to supply the *Omi Yukon* with fuel oil or bunkers for the voyage. The vessel moored at the HIRI facilities for fueling on October 23.

HIRI uses an offshore mooring system for loading and discharging tankers. The system consists of three 13,000-foot-long undersea pipelines leading to an undersea manifold. Divers must change the valve positions on two valves at the manifold, which are used to cross connect the 16-inch, 20-inch and 30-inch pipelines.

Two hoses connected to the undersea manifold are used to load and discharge vessels. A 12-inch hose is connected between the 30-inch and 16-inch lines on the manifold. The 16-inch line is available as a return line for recirculating product or flushing the 30-inch line. The 30-inch line with the 12-inch hose is normally used for receipt of crude oil and also for fueling. The 10-inch hose is connected to the 20-inch line and is used for transferring white or clean products. Normally, the 20-inch line is isolated from the other two lines to prevent contamination.

In preparing to fuel the *Omi Yukon,* HIRI personnel pumped flush oil into the 16-inch undersea pipeline and recirculated it back through the 30-inch line to clear a prior load of crude oil.

Flush oil starts out as a diesel-grade distillate, but as it pushes other products through the refinery, it becomes contaminated. Eventually, contaminated flush oil is pumped into a crude oil tank and processed through the refinery again.

The first step in fueling the *Omi Yukon* was for the crew to hook up a specially manufactured jumper line between the cargo manifold and the midships fuel manifold. Prior to discharging cargo, fuel oil was taken aboard using the same hose for off-loading cargo.

The 12-inch hose from the undersea manifold was connected to the cargo manifold. A jumper was connected to the cargo manifold, then to the fuel oil manifold. The jumper was used rather then transferring the refinery's hose between the two manifolds.

Whatever product remained in the refinery's hose from its prior use, was flushed into a slop tank. It was easier to handle the residual product in the hose as part of the cargo discharge, rather than having to deal with it as a separate discharge operation.

When good fuel oil was observed at the cargo manifold, the valves on the cargo manifold system were changed to direct the flow of fuel oil from the offshore hose past the first header through a cross over between cargo manifold lines, out of the cargo manifold header, into the temporarily installed jumper line to the midships fuel oil manifold.

At nearly 3 pm on October 23, the product in the hose from the last discharge and flush oil were being transferred to the slop tank. The chief engineer was monitoring the operation by opening a sampling petcock and observing the color and feel of the product. He could then determine when fuel oil was being received.

After about 10 minutes, the vessel was still receiving flush oil and not fuel oil. The refinery personnel investigated the problem and

Damage to ~~Omi Yukon's~~ fuel-oil storage tank vent, located port-side forward.

discovered that less fuel was placed in the line because shore personnel miscalculated the shore-side tank quantity. Additional fuel was then ordered to the 30-inch line.

Fueling of the *Omi Yukon* was completed at 10:20 pm on October 23, and the jumper used during the operation was disconnected. Cargo discharge began shortly thereafter and was completed about 12:30 pm on October 25.

Voyage

The *Omi Yukon* left Barber's Point for Korea on the afternoon of October 25 with 37 persons aboard. In addition to the crew, the complement included 11 Japanese workers, who were to assist in cleaning and gas freeing the cargo tanks. Two independent contractors were also on board for normal maintenance and repairs, including hot work.

According to the chief engineer, the fuel oil was transferred from the storage tanks to the settlers after departing Barbers Point and before October 28.

On October 26, the boiler shut down due to a malfunctioning 50-volt circuit breaker on the control system. The emergency generator came on the line and the lights were out for only a few minutes. Sometime after the emergency generator came one, the chief engineer put the standby generator on the line to carry the vessel's normal electrical load.

The malfunctioning breaker was replaced and the boiler was restarted manually. Steam pressure was restored to operational levels about an hour and twenty minutes after the breakdown. Once the boiler was stabilized, boiler control was switched to automatic.

On October 27, a fire and boat drill was held, and the port lifeboat was lowered to the embarkation deck. The entire crew was mustered and a demonstration on how to properly don the survival suits was conducted.

The first explosion occurred on October 28 when routine tank cleaning and maintenance was being performed. This included a hotwork operation intended to remove an old stores boom on the starboard side of the engine casing. The two contract workers involved in this operation were blown overboard and were never found. Two crew members assisting were injured.

Continued on page 16

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Conclusions

Following are some of the conclusions regarding the explosions and fires aboard the *Omi Yukon* drawn by the Coast Guard marine board of investigation.

The proximate cause of this casualty was bunkers becoming contaminated with distillate products (flush oil) during its delivery to the vessel through a subsea pipeline.

Contributing to the casualty was the absence of a flame screen on the starboard-aft fuel oil storage tank vent, which permitted a source of ignition to enter vapor space above the contaminated bunkers. The exact source of ignition could not be determined.

3. The extent of fire and explosion damage limited the ability to determine the source of ignition. Possible sources included hot slag or sparks from the burner's torch falling into the vapor plume from the unprotected fuel oil storage tank vent, a dropped friction ignitor, discarded smoking materials or an electrical short in an on-deck fixture located near the vent.

   The extent of damage to the starboard tanks and the result of testing of fuel oil samples taken outside of the engine room are strong evidence of contaminated bunkers, with a flash point well below Coast Guard specifications, and low enough to create an explosive atmosphere in the bunker tanks on the day of the casualty.

5. The crew was lulled into a false sense of safety by working near a bunker tank knowing that bunkers normally have a flashpoint well above ambient temperature.

   An extensive explosion or flareback did not occur within the boiler furnace. All of the usual signs were missing. For example, there was no damage to the diffuser, corners or register brickwork.

The commandant commented on the board's findings as follows:

"The board concluded that the proximate cause of the casualty was the contamination of the vessel's bunkers with distillate products (flush oil) during bunkering through a subsea pipeline, and that contributing to the casualty was the absence of a flame screen in the after starboard fuel oil tank vent.

"I partially concur with that assessment, but have determined that the contamination of the fuel oil and the absence of a flame screen were equally significant causal factors.

"Because of the low flashpoint of the flush oil, combustible vapors were vented through the aft-starboard fuel oil tank vent. Following ignition of the vapors, the absence of a flame screen permitted the unimpeded propagation of flame directly into the fuel oil tank.

"Although the source of ignition could not be positively identified, it was probably related to an oxy-acetylene cutting operation being conducted in the vicinity of the fuel oil vent. The ensuing explosions and fire took the lives of four persons and resulted in the vessel being declared a constructive total loss."

Recommendations

Among the recommendations contained in the marine casualty report are:

1. The use of a common fuel/cargo line from a facility for refueling vessels may be an exception rather than the rule within the maritime community. A survey of worldwide fueling procedures should be taken to determine if this practice is widely used.

   If it is an accepted practice, international standards should be established and our regulations amended to cover the receipt of fuel oil under the practice. These standards should require at least the sampling of fuel tanks as well as the sampling of each lot taken at the fuel manifold during loading.

The chief engineer should then be provided with the test results before sailing and burning of the received fuel. The samples taken from the fuel tanks would indicate the actual condition of the fuel received aboard the vessel.

2. Examination of flame screens on boiler fuel tanks should be reemphasized to all field units and the examinations should occur during inspections for certification, mid-periods, reinspections and foreign vessel examinations. The maritime community should also be informed of the importance of flame screens on fuel tanks.

Commandant's action:

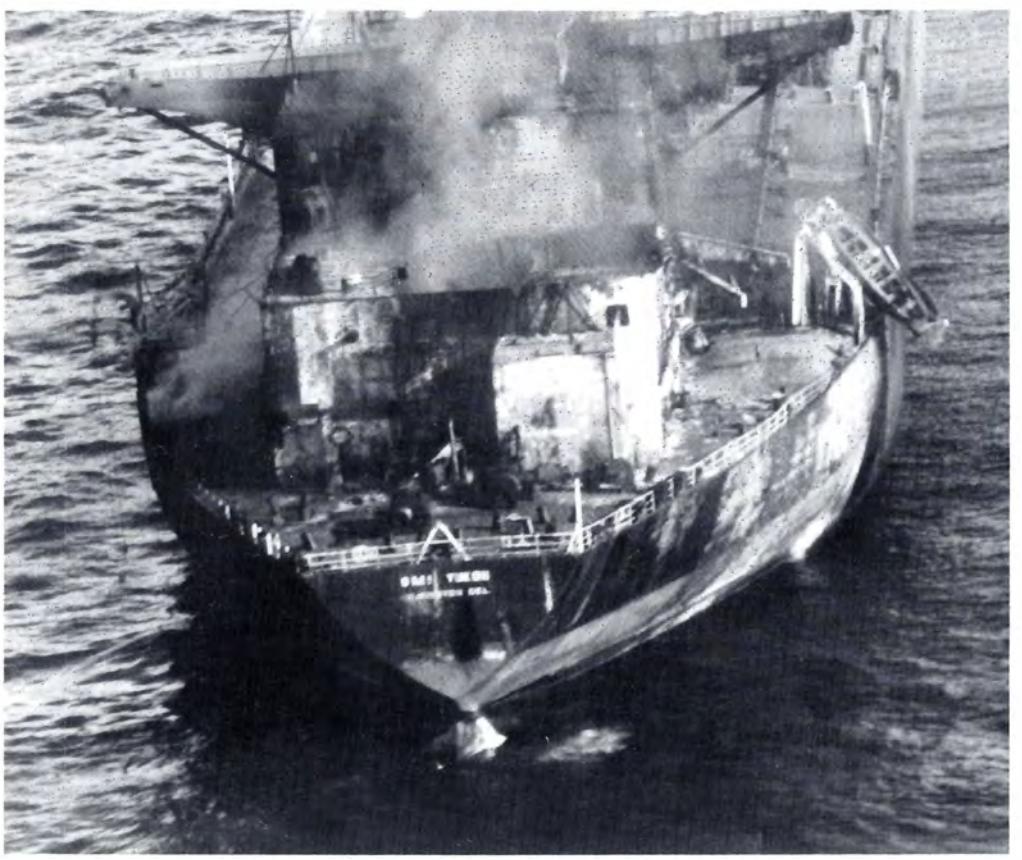
The commandant partially concurred with recommendation 1, stating:

"The Coast Guard will consult with the owners of United States tank vessels to determine the extent to which common fuel/cargo lines are used worldwide. Then appropriate actions will be identified and taken.

"However, both 46 CFR 58.01-15 and SOLAS 1974, as amended, regulation II-2/15.1, limit the use of boiler fuel oils based on flashpoint. The responsibility for compliance with these rules, and for establishing any specific procedures to ensure compliance, rests with the vessel operator or representatives."

The commandant concurred with recommendation 2, remarking: "While Coast Guard regulations, specifically 46 CFR 56.50-85(a)(7), currently require flame screens on fuel oil tank vents, SOLAS does not. The Coast Guard will propose that the International Maritime Organization require flame screens on fuel tank vents for all passenger, cargo and tank ships."

Details of this casualty were excerpted from the Coast Guard Marine Board of Investigation Report No. USCG 16732/0002 HQS 88. This document is available to the public through the National Technical Information Service, Springfield, Virginia 22121.



Stern view of Omi Yukon after the explosion.

Computers help prevent casualties

Thomas J. Pettin

By pinpointing potential hazards, a computerized record of commercial vessel casualties helps prevent history from repeating itself.

CASMAIN

The Coast Guard commercial vessel casualty database, known internationally as CASMAIN, contains an unparalleled record of accidents which happened during the last ten years. The casualties involved United States flag vessels throughout the world and foreign-flag vessels in navigable waters of the United States. CASMAIN is administered by the Marine Investigation Division (MMI) of the Office of Marine Safety, Security and Environmental Protection.

Since 1981, MMI personnel have processed more than 60,000 accident reports through CASMAIN. The number of requests for CASMAIN data increases every year, with more than 1,200 received in 1989.

Requests for data are very diverse, thus the reports contain a wide range of information. A typical casualty report includes the case number, location, the names and types of vessels involved, and the primary nature and cause of the incident.

Investigations

The information contained in CASMAIN reports comes from Coast Guard marine casualty investigations, which determine, as precisely as possible, the causes of the incidents to prevent similar occurrences from taking place again.

It is not enough to know **how** a casualty occurred, it must also be clear **why** it occurred. Only when the actual causes of casualties are known, can appropriate safety standards be developed and instituted; and appropriate legislation be recommended.

Note: Marine casualties are not investigated to determine issues on behalf of private interests. (See 46 CFR 4.07-1 and 46 U.S.C. 6301.)

Reporting

All commercial vessel casualties occurring in United States waters, including loss of life or injury, must be reported on form CG-2692. The owner, agent, master or person in charge of the vessel(s) involved must submit a separate form for each vessel, and for each death and incapacitation injury. When a death occurs aboard a foreign vessel in United States waters, it must be reported in the same manner as for a U. S. vessel.

Note: Form CG-2692 should not be used for reporting casualties involving recreational vessels. Such casualties are compiled by the Coast Guard's Boating Operations Branch (NAB-2)

Any owner or person chartering a vessel, or a managing operator, agent, master or individual in charge of a vessel who fails to report a casualty is liable for a civil penalty of $1,000, by authority of 46 U.S.C. 6103. Coast Guard officers investigating a vessel casualty have the authority to employ, when necessary, the power of subpoena for vital information.

Valuable safety lessons can be learned from vessel casualties, which is one reason why investigating officers ensure that all reporting forms contain the most accurate information available.

Data uses

Coast Guard data analysts stress marine safety by using CASMAIN as a tool for pinpointing potential hazards. They also use CASMAIN to compare casualties to vessel traffic for purposes of trend analysis.

CASMAIN data has been used to support legal opinions, regulatory change and congressional testimony. Customers include people from all areas of the marine community, along with members of Congress; local, state and federal government officials; and individuals associated with universities, medical research facilities and foreign embassies.

Note: All Coast Guard personnel in the field as well as in headquarters who have access to standard workstations can now access CASMAIN and print casualty reports with a new, menu-driven, user-friendly program. This is done through UNISYS terminals, VT100 emulators and telephone modems.

Program managers can now enter their port code and receive a casualty history of a particular waterway in their district. By entering their district representation code, they can obtain data for their entire district.

Conclusion

The Coast Guard is charting the progress made in marine casualty prevention through CASMAIN. Safety-oriented groups and the marine community at large can be influenced to act through the dissemination of casualty information, thereby reducing the rate of casualties. This is just another way the Coast Guard endeavors to protect those on the water.

Thomas J. Pettin is a program analyst in the Marine Safety Evaluation Branch of the Marine Investigation Division of the Coast Guard's Office of Marine Safety, Security and Environmental Protection.

New marine casualty data

Dr. Harry N. Hantzes & Mr. Paul Ponce

The raw casualty data collected and stored in CASMAIN only tells half of the story. It doesn't reveal how many casualties **did not** occur, nor the relative risks. There is no way to know those things unless there is data on waterway usage, which has not been routinely available.

Data on marine accidents is recorded on Coast Guard form 2692. The problem has been to find a way to determine the other part of the ratio -- the total number of waterway trips. The Coast Guard has no way to gather this data.

The United States Army Corps of Engineers collects data on United States vessels involved in domestic trade in United States waters. The Bureau of the Census collects data on United States and foreign vessels involved in foreign trade with domestic ports.

Exposure analysis

At present, trip data on vessels involved in domestic trade has been developed from Corps of Engineers' information. By this summer, a data base should be established on foreign traffic using the Bureau of the Census statistics

The Exposure Analysis Program provides the trip data necessary to calculate safety levels and relative risks. This data includes vessel types, registered tonnages, commodity tonnages, shipping and receiving ports and waterways traveled.

With this information, requirements for navigation aids, dredging and potential pollution cleanup can be evaluated based upon actual vessel traffic. For example, in the transportation of hazardous materials such as benzene, information is available on the shipping ports, receiving ports (even receiving docks) and quantity of the commodity in tons.

This data can be used to help estimate the potential effects of an accident in a specific locale. It can be used to help determine fruitful areas for prestaging pollution cleanup equipment. It can also point out specific waterways, or part of waterways,that are particularly susceptible to marine casualties.

In this way, areas would be suggested for study to enhance marine safety by reducing the risk of vessel accidents. Already used in several studies,this program can provide information to help improve vessel traffic systems.

Present plans call for additional support of Coast Guard studies concerning quantitative measures of safety levels, risks of certain vessel types, geographic area risks, resource allocations, and the detection of recurring casualty types that need to be addressed.

Dr. Harry N. Hantzes and Mr. Paul Ponce are operations analysts in the Marine Safety Evaluation Branch.

Chemical tankship explodes

At approximately 3:24 a.m. on October 31, 1984, the tankship S.S. Puerto Rican suffered fires and explosions in number six center void (6CV) and the adjacent wing tanks. The ship was outbound on a "dead slow" bell approximately 8.5 miles west of the Golden Gate Bridge, San Francisco, California.

At the time of the explosion, the pilot, a third mate and an able seaman were standing on the port side of the main deck over the number four port forward wing tank (4PF), which was adjacent to number 6CV. They were waiting for the pilot boat, which was about 100 yards off the port quarter, to come alongside.

As a result of the explosion, the three men were thrown over the side. The pilot and third mate were seriously injured, but were recovered alive from the water. The able seaman was not found.

The deck area over number 6CV and adjacent wing tanks was lifted, and blown directly forward, landing inverted on the deck immediately forward of its original location. The explosion severed the firemain piping and the water/foam fireline about 45 feet forward of the deckhouse. Isolating the breaks delayed bringing primary firefighting equipment to bear on the fire.

The remaining 26 people onboard the Puerto Rican abandoned ship safely at intervals following the casualty. The vessel's two lifeboats and a liferaft were launched without any problems. The majority of those onboard departed from the stern of the tankship and boarded commercial towing vessels.

The last person to leave was the master, who boarded a tug from the stern of the vessel about two hours after the explosion.

Puerto Rican had drifted to within 3.8 miles of Point Bonita by 6:30 am, when a towing vessel secured a towline to its stern and started towing it seaward. The fire on the tankship was not extinguished until the early evening of November 1.

On November 3, nearly four days after the explosion, the stern section separated from the forebody roughly in the middle of number 6CV. This section sank in about 1,500 feet of water 37 miles southwest of Point Bonita.

Number 6CV contained a large independent cargo tank which floated free and was towed to a ship repair yard in Oakland, California, on November 4. The forebody was towed to a graving dock in San Francisco on November 18. After the remaining cargo was removed and the tanks cleaned and freed of gas, the forebody was sold for scrap.

Vessel background

Constructed in 1971, the 660-foot *Puerto Rican* was laid up in Philadelphia, Pennsylvania, in September 1983, and drydocked the following May in nearby Chester. The Coast Guard issued the vessel a Certificate of Inspection in June 1984, authorizing it to carry grade "B" and lower other than oil, and also specified dangerous cargoes, including caustic soda solution.

After receiving the certificate, the vessel resumed operation as a chemical tanker in the coastwise trade between the Gulf of Mexico and the West Coast.

The vessel's bridge log book reveals that from October 1 to 8, 1984, the *Puerto Rican* was docked at five different terminals in Louisiana and Texas. Caustic soda was loaded at two ports.

On October 8, the *Puerto Rican* sailed from Lake Charles, Louisiana, via the Panama Canal to the GATX Terminal in San Pedro, California, the first of three West Coast ports at which it would discharge the caustic soda. The vessel docked on October 21.

The following day, after about 16 hours of discharging caustic soda from three tanks, a discrepancy was noted in the amount left in tank number 5CP, indicating there could be leakage. The captain of the *Puerto Rican* determined that the discrepancy was due to a recording error.

Puerto Rican on October 31, 1984, at about 10:30 a.m., a little more than 15 miles from Point Bonita.

Nevertheless, all double bottom and void spaces around 5CP were sounded, with the exception of 6CV. The adjacent cargo tanks were also checked for leakage of caustic soda from 5CP. No evidence of leakage was found.

The captain maintained that he had been told that 6CV had been inerted with nitrogen, and that he and others looked for a means of sounding the void for liquid. They couldn't find any sounding tubes for 6CV, although there was a fixed-eductor system for the void. The piping for this system had a removable blank where it penetrated the main deck. The system was not used to check for the presence of liquid in 6CV.

On the morning of October 24, the *Puerto Rican* sailed for the San Francisco Bay area, where it was scheduled for four terminals. While the vessel was enroute, 5CP was washed and made safe for entry. The captain and chief mate then inspected it for cracks or holes, which they did not find.

Several cargoes were loaded in the vessel at the various terminals, including 10,446 barrels of Alkane 60 (alkyl benzene) in tank number 5CP. On October 29, 35,794 barrels of caustic soda, the remainder known to be carried as cargo on the voyage, were discharged.

Cargo discharge and loading were completed on October 30, and the *Puerto Rican* was readied for sea.

Casualty

The vessel passed underneath the Golden Gate Bridge at about 3 a.m., and proceeded out the main channel toward the San Francisco Approach Lighted Horn buoy.

About 20 minutes later, speed was reduced to approximately five knots as the vessel neared the point where the pilot was to disembark to the pilot boat, *San Francisco*. The engine order telegraph was put on "dead slow" at 3:23.

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The pilot took his leave of the master and, escorted by a third mate, departed the bridge for the disembarking station on the port side of the main deck over 4PF tank. Neither man smelled, felt or heard anything unusual during their walk up the deck to the pilot ladder.

An able seaman was standing near the ladder, which he had readied for use except for detaching the top course of chainrail. The pilot and third mate joined the seaman at the station to wait for the *San Francisco* to make its approach.

There was no one else on deck but the three men, who stood around the ladder. No one was smoking and nothing was dropped on deck. The pilot did not make nor receive any communications on his portable radio, which was turned off. No one was using a flashlight.

The pilot was wearing his normal work clothes, including a nylon floatcoat with long sleeves. The third mate had on work shoes, jean-type pants, a wool shirt with rolled up sleeves and a lined polyester wind breaker. It is not known what the able seaman was wearing.

The master had just stepped though the port doorway and was about a foot outside the pilot house on the port wing of the bridge when the explosion occurred at approximately 3:24.

Conclusions

Following are some of the conclusions arrived at through the Coast Guard investigation of the casualty.

1. The breaking in half, sinking of the stern section on November 3, and total constructive loss of the *Puerto Rican* resulted from explosions and fires occurring in the 6CV and four adjacent wing tanks on October 31, 1984.

(a) The proximate cause of this casualty was the failure to repair a gouge through the stainless steel cladding on the bulkhead separating 5CP and 6CV. The gouge was most probably made while the tank was being constructed.

(b) The gouge exposed the mild steel bulkhead behind it, which then corroded due to repeated exposure to caustic soda. The corrosion process created a hole that fully penetrated the 5CP after bulkhead sometime before the vessel's arrival at the GATX Terminal in San Pedro on October 21.

(c) Approximately 2,500 to 3,000 barrels of caustic soda leaked through the hole from 5CP into 6CV, creating a liquid level height of about two feet.

(d) The caustic soda reacted with the zinc-rich epoxy coating on the bulkheads, tank supports and deck of 6CV up to about two feet from the deck, and with the zinc galvanized layer on the purge piping, consuming the zinc and liberating hydrogen gas. No other flammable gas was in 6CV at this time.

(e) Approximately 1,100 barrels of the Alkane 60 loaded into 5CP on October 28 also leaked into 6CV through the hole in the 5CP after bulkhead. Alkane 60 has a flashpoint of approximately 280°F. It is less dense than caustic soda solution, and, therefore, remained on top of the caustic soda in 6CV, raising the liquid level to five and one-half feet.

(f) Sufficient hydrogen gas was generated in 6CV by the reaction of the caustic soda with the zinc-rich epoxy and galvanized piping to cause the atmosphere in the void to be in the flammable range. This flammable mixture was ignited shortly before the explosion which inverted the main deck section on October 31.

(g) The most probable ignition source was a spark within 6CV, either from metal-to-metal contact or an electrostatic discharge.

2. Contributing to the cause of this casualty was the failure of the captain to use all reasonable means to account for the caustic soda discrepancy from 5CP after being notified of it on October 22.

3. The gouge and the stainless steel cladding in the 5CP after bulkhead, and the corroded area behind it, existed and was not detected during a number of internal inspections of this tank by various inspection personnel before the corrosion fully penetrated the bulkhead.

4. The fact that this hole was never detected during any inspection of 5CP before the casualty illustrates practical limitations inherent in the inspection of large, complex tank vessels by visual methods, rather than a lack of adequate inspection requirements.

Details of this casualty were excerpted from the Coast Guard Marine Board of Investigation Report No. USCG 16732/003 HQS 84. This document is available to the public through the National Technical Information Service, Springfield, Virginia 22121.

~~Puerto Rican~~ *on November 1, at about 9:30 a.m., approximately 35.5 miles from Point Bonita. The angular difference at the gunwale shows the area where the forebody separated from the stern on the port side at the main deck.*

Thank you, readers. . .

More than 1,150 of you responded to the readership survey published in the November-December 1990 issue of Proceedings of the Marine Safety Council. This represents a return of more than one-third of the labels. (This is not one-third of the total circulation, because a number of labels include multiple copies.) Considering the fact that most national and international surveys are fortunate to receive a return of around 10 percent, this is an excellent response. It gives us valuable information about you and what you want from Proceedings.

Who are you?

Not surprising, most of you who identified yourselves are either seafarers or are involved in marine service. The largest block of respondents are members of the merchant marine or pursue other seagoing occupations. You include captains, masters, chief engineers, first and second mates, harbor officers and deck hands. You serve on tankers, cargo vessels, tug boats, tow boats, barges, ferries, cruise liners, fishing boats, research ships, and other passenger, merchant and service vessels.

The second largest block of respondents includes managers, directors, company presidents and owners, consultants, vice presidents, operations officers, superintendents, administrators, coordinators and advisors involved in marine services. They include engineering, safety, training, surveying, off-shore oil exploration, admiralty law, insurance, transportation, nautical science, ship repair and construction, naval architecture, and fire and environmental protection.

Active, reserve and retired commissioned and noncommissioned officers of the United States Coast Guard and Navy are represented in the next block of respondents.

The remainder of the survey respondents come from widely diversified fields of endeavor, including institutions of higher education; libraries; federal, state and local governments; publishing; trade associations; port authorities; municipal services; manufacturing; marketing and other areas. We even heard from an honorary admiral of the Texas navy and a member of a circus in the United Kingdom.

Approximately 10 percent of Proceedings' readers are from Canada, South and Central America, Europe, Asia, Australia and Africa. Nearly 100 of you (about one-fifth of the total) responded to the survey. Like our national readers, most of your identified occupations are marine-related, including a substantial representation from the Canadian Coast Guard.

What do you want to read in Proceedings?

Here is what you told us that you wanted to read in the order of your preference.

1) The types of articles you want.
2) The regular features you want continued.
3) The subjects you want to read about.
4) Other subjects you suggested.
5) Suggestions for new regular features.

1) Article types

Regulatory	871
Instructional	844
General Interest	827
General policy	806
Legislative	646
Historical	635

2) Regular features

Nautical Queries	853
New Publications	789
Keynotes	710
Chemical of the Month	609

3) Subjects of interest

Casualties	851	Communications	513
Collisions	832	Salvage	511
Fire-fighting	824	Tankers/Gas Carriers	501
Investigations	816	Design	487
Fire Protection	792	Chemicals	479
Coast Guard	784	Barges	473
Inspections	774	Automation	436
Training	766	Book Reviews	429
Licensing	763	Fishing vessels	399
Navigation	754	Drownings	396
Environmental Protection	747	Drug Abuse	392
Regulations	742	Cruise ships	366
Hazardous Materials	688	Bridges	315
Lifesaving	680	Containers/Packaging	311
Protective Equipment	644	Incineration	258
Shipbuilding	618	Offshore Oil-Gas Transfer Facilities	251
Towing Vessels	604	Offshore Oil-Gas Prod. Platforms	229
Engineering	600	Aircraft	161
Ports	546	Seabed Mining	149
Lifeboats	541	Awards	92
Freighters	525	Other	229

4) Other subjects you suggested.

1. Vessel casualty reports and lessons
2. T-boats - new regulations & inspection procedures
3. Safety
4. Small boat & fishing vessel safety
5. Pleasure boat safety, accidents and problems
6. MODU (drilling) casualties, hazards and regulations.
7. Rules of the road examples and changes
8. Pilotage and pilot vessels
9. IMO (SOLAS) Regulations
10. Admiralty law decisions
11. Coast Guard regulations and proposals
12. Minimal crew size, manning and competence
13. New safety equipment, evaluations and problems
14. Ocean research (SEISMIC)
15. Chemical cargo loading and stowage safety
16. Fatigue, stress and other human factors in accidents
17. Ocean and river towboat operations
18. Oil spill response and cleanup
19. Vessel traffic management and services
20. Trash and gas hazards and disposal at sea regulations
21. Port security, rescue and firefighting
22. Engine room and steamplant safety
23. License and certification regulation changes
24. Aids to navigation
25. Regulation enforcement

5) New regular features suggested.

A consensus of your opinions informs us that you would like more of the same on a regular basis. (Unfortunately, budgetary limitations prevent us from publishing Proceedings monthly, as many of you requested.) For example, a number of you asked for an increase in bimonthly articles on ship inspections; casualty, accident and grounding investigations with lessons learned; proposed new legislation and rulemaking; National Transportation Safety Board hearings and accident reports; old shipwrecks and other historical subjects; responsibilities of ships' officers regarding Coast Guard regulations; and safety training and prevention measures.

Numerous other interesting suggestions were made, including a regular "letters to the editor" column. If you submit the letters, we will gladly consider them for publication. Many of you voiced a preference for special Proceedings issues devoted to single marine topics, such as the Special Passenger Vessel Issue in September-October 1990. In response, we are planning separate publications on tank vessels and fishing vessels for 1991.

Obviously, we can't fill all of your requests, but we will try to bring you the most informative, up-to-date marine safety news possible in Proceedings.

New Publications May - June, 1991

Arctic Passages

Whether you are an actual seagoing explorer or dream of adventure from your desk, *Arctic Passages* is a must for your nautical book shelf. It is the extraordinary true story of the first voyage by a small boat west to east through the Northwest Passage.

The author, John Bockstoce, an Arctic historian and archaeologist, began his incredible journey in 1972, achieving his goal in 1988. *Arctic Passages* describes in detail his 3,500-mile voyage through this hemisphere's least explored and most dangerous waterway, from Bering Strait to Baffin Bay.

Navigating largely without the benefit of a working compass, Bockstoce and a small group of companions made their way through thousands of uncharted islands along a shifting coastline, using critical skills learned from years of working with Eskimo whalers.

Traveling the first legs of the journey by umiak, the traditional Eskimo walrus-hide canoe, the author encountered many hazards, including fierce storms, thick fogs, severe cold and ice floes. He arrived within a few hundred miles of his destination, only to find his route blocked by a dense river of ice. At this point, he had already accomplished the longest recorded open-boat journey in the Arctic.

He returned to break through the final ice field in a steel-hulled yacht , and completed his remarkable and unprecedented Arctic odyssey.

Arctic Passages represents the culmination of Bockstoce's 25 years in the far north -- years spent researching the history, exploring uncharted territory, living and working with the Eskimos, and meeting the challenges of the Northwest Passage.

Written with dry humor and vivid detail, and illustrated with dramatic photographs of the journey, *Arctic Passages* makes the world up north come alive in all its awesome beauty and danger. At times, reminiscent of the adventures of Shackleton and Perry, *Arctic Passages* is a hard book to put down.

Bockstoce completed his journey on this yacht.

Bockstoce has written many articles and several books about the Arctic, including *Whales, Ice and Men.* Educated at Yale, he has a doctorate in archaeology from Oxford. Recently, the Royal Cruising Club of Great Britain awarded him the prestigious Tilman Medal for 20 years of voyaging in high latitudes.

Arctic Passages: A Unique Small-Boat Voyage Through the Great Northern Waterway costs $22.95 in hardcover. It wass published on April 23, 1991 by Hearst Marine Books, an affiliate of William Morrow and Co., Inc., 105 Madison Avenue, New York, N.Y. 10016.

Chemical of the month

4/C W. J. Lane

Hydrogen chloride

Hydrogen chloride (HCl) is a colorless, nonflammable gas that emits pungent suffocating fumes in moist air. In an aqueous solution, it is also known as hydrochloric acid or chlorohydric acid.

HCl condenses to a colorless liquid and freezes to a white crystalline solid. It is very soluble in water, which accounts for the high concentrations of hydrochloric acid obtainable.

Background

Crude HCl was probably prepared by early alchemists in studies of the refining and purification of metals, an application that is currently increasing in importance. About 1648, Glauber obtained HCl by the action of sulfuric acid on common salt.

Over the years, science and industry has developed several means for forming HCl. In 1978, more than 90 percent of HCl produced originated from preparing various organic compounds.

Two processes using the decomposition of alkali metal chlorides by acids are used commercially to manufacture HCl: the salt-sulfuric acid process and the Hargreaves process, using sulfur dioxide, air and water vapor instead of sulfuric acid. These processes account for less than four percent of all United States production of HCl.

Industrial uses

The first major industrial use of HCl came about through the development of the Weldon and Deacon processes for conversion of the gas to chlorine. This reaction is no longer a primary source of chlorine, the related oxychlorination technology is an integral component of several chlorohydrocarbon processes. Normally it is generated to dissolve in water, forming hydrochloric acid.

A major demand for the gas is in the production of salt cake for pulp processing and glass industries. It also is used to produce pharmaceutical hydrochlorides, chlorine and vinyl chloride from acetylene; alkyl chlorides from olefins; arsenic trichloride from arsenic trioxide; in the chlorination of rubber; as a gaseous flux for babitting operations; and in organic synthesis involving isomerization, polymerization, alkylation and nitration reactions.

HCl also is used in the process that produces tetrakis (hydroxymethyl) phosphonium chloride, a product sold commercially as THPC and used in formulas as a flame retardant for cotton textiles.

Cautions

HCl is very toxic and harmful to all plant and animal life including humans. The usual forms of contact are by inhalation of the gas or mist, and eye and skin contact. High concentrations of HCl gas are highly corrosive to eyes, skin and mucous membranes.It is a respiratory irritant, inflaming the respiratory tract and causing edema and spasm of the larynx.

Concentrations above one percent in air are lethal in exposures of a few minutes. The maximum concentration that can be tolerated for an hour is about 0.1 percent.

If this chemical gets into the eyes or contacts the skin, flush immediately with water. If inhaled, move to fresh air and perform artificial respiration if necessary.

To dispose of the chemical, add soda ash - slaked lime to form a neutral solution of chloride of sodium and calcium. This solution can then be discharged after dilution with water. Surplus or leaking gas can be vented slowly into a water-fed scrubbing tower or column in a fume cupboard.

Shipping

HCl is shipped in DOT-specification cylinders equipped with suitable safety devices. The maximum fill density permitted is 65 percent.

HCl may also be shipped under pressure as a liquid in railway tanks and highway tankers with top-loading insulated steel fusion-welded tanks. Carbon or stainless steel may be used as long as it has good low temperature qualities. Bottom outlets or washouts are prohibited.

Extreme care must be taken when shipping HCl because it has been known to react violently with aluminum, ignite on contact with fluorine, react dangerously with hexalithium disilicide, some acetylides, uranium dicarbide and tetraselenium tetranitride. HCl must also be stowed away from food and living quarters. The maximum net quantity allowed in one package is 300 pounds.

Currently, the Coast Guard does not permit the carriage of HCl as a liquefied gas in bulk. Break bulk shipments are regulated by DOT under 49 CFR Subchapter C as a hazard class 2.3 (poison gas, corrosive). The IMDG code lists HCl as a nonflammable gas (2.2) and a corrosive. The EPA considers it a hazardous substance and regulates it under 40 CFR Subchapter D.

Hydrogen Chloride

Chemical name: Hydrogen Chloride
Formula: HCl
Synonyms: Anhydrous hydrochloric acid

Physical properties:

Boiling point:	-85°C	(-121°F)
Freezing point:	-114.8°C	(-175°F)
Vapor pressure:	4330kPa (21.1°C)	

Threshold limit values:

Time weighted average:	5 ppm (ceiling)
Short term exposure limit:	Unassigned

Flammability limits in air: Non-flammable

Combustion properties:

Flashpoint (c. c.):	Non-combustible, above 600°C
Autoignition temperature:	Gives off hydrogen, which is combustible.

Densities:

Vapor (air = 1):	1.6391 g/l (0°C)
Specific gravity (at 25°C):	1.267 kg/m
Density (at 25°C):	1.500 kg/m

Identifiers:

U.N. number:	1050
CHRIS Code:	HDC
Cargo compatibility group:	Unassigned

W.J. Lane was a fourth class cadet at the Coast Guard Academy when this article was written as a special chemistry project for LT T. Chuba.

Nautical queries

May - June, 1991

The following items are examples of questions included in the third assistant engineer through chief engineer examinations and the third mate through master examinations.

Engineer

1. In reference to the probability of an unsafe condition developing, the most critical period of main turbine operation is during cold startup rather than hot shutdown because _____

A. lubricant film thickness during startup is considerably less than the dimensions of gear surface irregularities.
B. differential expansion can result from the temperature difference between the rotor casing and foundation.
C. the danger of blade erosion damage from steam impingement is greater during startup.
D. harmonic vibrations associated with critical speed can easily be reached during startup.

2. The proper oil inlet temperature for centrifuging lube oil should be _____

A. 100° to 120° F.
B. 130° to 150° F.
C. 160° to 180° F.
D. 190° to 210° F.

3. To prevent a small plastic refractory wall patch repair from falling into the furnace of a D-type boiler, you should _____

A. attach anchor bolts to the furnace casing.
B. reinforce the patch with fine mesh metal screen.
C. mix the plastic with concrete prior to using.
D. undercut the existing brick behind the patch.

4. To fight a Class C fire, you should use carbon dioxide or _____

A. mechanical foam.
B. dry chemical.
C. chemical foam.
D. any other hand portable extinguisher.

5. To reduce pulsations in pipe lines, the discharge side of a steam reciprocating feed pump is equipped with a/an _____

A. reed valve.
B. air chamber.
C. relief valve
D. feedwater regulator.

6. The purpose of heating the oil in a secured refrigeration compressor is to _____

A. reduce the absorption of refrigerant by the lubricating oil.
B. prevent acidic pitting.
C. remove entrained water
D. remove wax and gum.

7. Where would you expect to find the highest salinity concentration in a flash evaporator?

A. Distiller air ejector cooling medium.
B. Saltwater heater discharge.
C. First-stage internal feed box.
D. Second-stage internal feed box.

8. Coast Guard regulations 46 CFR 112 require the emergency diesel generator on a cargo vessel of over 1600 gross tons on an international voyage to be able to supply power to the _____

A. smoke detector system.
B. emergency loudspeaker system.
C. daylight signaling light system.
D. all of the above.

Deck

1. Some LORAN-C receivers automatically compute and read out the latitude and longitude of a vessel's position. This indicated position may be in error if _____

A. the crossing angle of the selected LOP's is less than 48°.
B. there is signal distortion due to skywave contamination.
C. the signal travels a significant distance over land.
D. there is excessive super-refraction due to ducting.

2. What type of cloud formations would you expect to see to the west of an approaching tropical wave?

A. Cumulus clouds lined up in rows extending in a northeast to southwest direction.
B. High altostratus clouds in the morning hours.
C. Cirrostratus clouds lined up in rows extending in a northeast to southwest direction.
D. Cirrostratus clouds lined up in rows extending in a north to south direction

3. Your vessel has completed an inspection for certification and is issued a temporary certificate. This _____

A. expires six months after it is issued.
B. must be exchanged for a regular certificate of inspection before going foreign or out of state.
C. has the full force of a regular certificate of inspection.
D. must be posted in the vicinity of the officers' licenses.

4. The charterer has completed loading the vessel in three days instead of the five days agreed to in the charter party. As a result of this, the _____

A. shipowner may charge for two lay days.
B. ~~charterer may receive dispatch money.~~
C. stevedore may collect demurrage.
D. consignee may be required to pay a ceaser fee.

5. When initial stability applies, the height of the center of gravity plus the matacentric height equals the _____

A. free surface moments.
B. righting arm
C. height of the metacenter
D. corrected height of the center of gravity.

6. When hoisting a boat on gravity-type davits using an electric motor driven winch, the davit arms should be brought up _____

A. to their final position with the winch operating at slow speed.
B. to the bar stop, and then hand cranked to their final position.
C. until just before they make contact with the limit switch, and then hand cranked to their final position.
D. to the embarkation deck, and then hand cranked to their final position.

7. Which of the following signals should be used to send the group "TRUE BEARING 045 DEGREES?"

A. 045.
B. B045.
C. B045T.
D. A045.

8. Fire hose stations shall be identified in red letters and figures such as "Fire Station No. 1, 2, 3," etc. The minimum height of the letters and figures must be at least _____

A. 1/2 inch.
B. 1 inch.
C. 1 1/2 inches.
D. 2 inches.

Answers

Engineer

1-B; 2-C; 3-D; 4-B; 5-B; 6-A; 7-D; 8-D.

Deck

1-C; 2-A; 3-C; 4-B; 5-C; 6-C; 7-D; 8-D.

If you have any questions concerning "Nautical Queries," please contact U.S. Coast Guard (G-MVP-5), 2100 Second St., S.W., Washington, D.C. 20593-0001. Telephone (202) 267-2705.

Keynotes

May - June, 1991

Withdrawal Notice

CGD 84-088, Certification of seamen (46 CFR Part 12) RIN 2115-AC02 (Febreuary 28)

ACTION: Notice of withdrawal.

On February 4, 1985, the Coast Guard published in the *Federal Register* (50 FR 4875) an advance notice of proposed rulemaking requesting comments on a revision to title 46, Code of Federal Regulations, part 12, certification of seamen. The Coast Guard is now withdrawing this rulemaking (CGD 84-088) because:

(1) several of the items to be covered by the revision have subsequently been accomplished in individual rulemakings, and;

(2) since the publication of the advance notice, Congress enacted the Oil Pollution Act of 1990, which requires regulatory reform of other subjects addressed in the advance notice of proposed rulemaking.

EFFECTIVE DATE: February 28, 1991.

For further information, contact: Mr. Mack C. Gould, Merchant Vessel Personnel Division, (202) 267-0224.

Final Rule

CGD 88-002A, Prevention of pollution from ships (33 CFR Part 151, 46 CFR Part 25) RIN 2115-AD40 (March 1)

ACTION: Final rule

This action amends the Coast Guard's garbage pollution regulations by adding waste management plan and placard requirements for certain U.S. ships, including recreational vessels and fixed or floating platforms. These provisions are needed to ensure that persons on the ship are made aware of garbage pollution laws and penalties, and that garbage is discharged in accordance with a waste management plan based on those laws. This action should help reduce the number of unlawful garbage discharges and the resulting pollution.

EFFECTIVE DATE: April 1, 1991.

For further information, contact: LT. James H. McDowell, Project Manager, Port Safety and Security Division (G-MPS), (202) 267-0491.

Emergency Rule

CGD1 91-009, Security zone regulations; Upper Bay and Lower Bay of New York and New Jersey (33 CFR 165) (March 6)

ACTION: Emergency rule

The Coast Guard established a security zone around vessels involved in the logistical support of "Operation Desert Storm," as they transit, anchor or moor in the Upper Bay or Lower Bay of New York and New Jersey. This zone is needed to safeguard personnel and property against sabotage or other subversive acts, accidents or other causes of a similar nature. Entry into or movement within this zone is prohibited unless authorized by the Captain of the Port , New York.

EFFECTIVE DATES: This regulation became effective at 7:01 a.m., local time, on February 28, 1991. It terminates at 7:00 a.m. on May 31 1991, unless it is terminated sooner by the Captain of the Port, New York.

For further information, contact: LTJG C. W. Jennings of Captain of the Port, New York (212) 668-7737.

Final regulations

Reservists Education; implementation of the Veterans' Benefits Improvement and Health-Care Authorization Act of 1986 (38 CFR Part 21) RIN 2900-AE10 (March 7)

ACTION: Final regulations.

The Veteran's Benefits Improvement and Health-Care Authorization Act of 1986 contains several provisions which affect the administration of educational assistance for members of the Selected Reserve. The effect of these provisions is to change the way in which the Department of Veterans Affairs (VA) must measure certain courses which do not led to a standard college degree; to add a requirement that certain reservists be counseled before choosing a program of education; and make a change concerning nonduplication of federal programs.

This amendment also contains two minor changes required by the Veterans' Benefits and Program Improvement Act of 1988 pertaining to the elimination of the 180-days' service requirement and less than half-time training.

Other amended regulations resulting from this act, and dealing with the education programs administered by the VA, will be proposed separately.

EFFECTIVE DATES: The amendments to 21.7540(a) and 21,7672(b) through (f), like the provisions of law they implement, are retroactively effective on November 18, 1988. The effective date of all other amendments, like the provisions of law they implement, are retroactively effective on October 28, 1986.

For further information, contact: Ms. June C. Schaeffer (225), Assistant Director for Policy and Program Administration, Education Service, Veterans Benefits Administration, Department of Veterans Affairs, 810 Vermont Avenue, N.W., Washington, D.C. 20420, (202) 233-2092.

Withdrawal notice

CGD 83-071a, Mobile offshore drilling unit regulations revision, (46 CFR Parts 56, 58, 107, 108, 109, 111 and 174) RIN 2115-AB88 (March 13)

ACTION: Notice of withdrawal.

On March 25, 1985, an advance notice of proposed rulemaking addressing revisions to the mobile offshore drilling unit (MODU) regulations was published in the *Federal Register* (50 FR 11741).

The primary purpose of this rulemaking was to align the existing regulations more closely with the International Maritime Organization's MODU code. One section of this rulemaking addressing operating manual requirements was "broken off" and published as a final rule on March 6, 1987 in the *Federal Register* (50 FR 1174).

This proposed rulemaking is being withdrawn because of the changing priorities and shift of resources within the Coast Guard necessary to respond to the Congressional mandates of the Oil Pollution Act, 1990. Work will continue with the National Offshore Safety Advisory Committee as resources permit, with the intent of redocketing this regulatory project later on.

DATE; March 13,1991.

For further information, contact: CDR Michael M. Ashdown, Chief, Offshore Activities Branch (202) 267-2307.

Notice

CGD 91-011, Joint United States and Canadian voluntary guidelines for control of ballast water discharges from ships in the Great Lakes (March 15)

ACTION: Notice of adoption of joint voluntary guidelines.

The United States Coast Guard and the Canadian Coast Guard are issuing joint voluntary guidelines for ships discharging ballast water into the Great Lakes. These guidelines are

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needed to protect the Great Lakes from non-native fish and other aquatic organisms that may be detrimental to the balance of nature that now exists. These guidelines should reduce the probability of introducing additional non-native species.

EFFECTIVE DATE: March 15, 1991.

ADDRESSES: Comments may be mailed to the Executive Secretary, Marine Safety Council (G-LRA-2), U.S. Coast Guard headquarters, Washington, D.C. 20593-0001, or may be delivered to room 3406 between 8 am and 3 pm, Monday through Friday, except federal holidays.

For further information, contact: LT James H. McDowell, Project Manager, Port Safety and Security Division (G-MPS), (202) 267-0491.

Withdrawal notice

CGD 88-011, Private electronic aids to maritime navigation (33 CFR Parts 66 and 164) RIN 2115-AD04, (March 19)

ACTION: Advance notice of proposed rulemaking: notice of withdrawal.

This action withdraws an advance notice of proposed rulemaking published in the *Federal Register* on July 22, 1988 (53 FR 27708). The imminence of new federally-provided systems for electronic navigation threatens with instant obsoleteness any rule such as that implied by the advance notice of proposed rulemaking.

Withdrawal of the advance notice of proposed rulemaking lets the Coast Guard engage in a comprehensive rulemaking later, without having led anyone to rely on an obsolescent system in the meantime.

EFFECTIVE DATE: March 19, 1991.

For further information, contact: LCDR William H. Bourland, Project Manager, Commandant (G-NRN), room 1413, (202) 267-0286.

Supplemental notice

CGD 74-284, Fixed fire-extinguishing systems for pleasure craft and other uninspected vessels (46 CFR Parts 25, 26 and 162) RIN 2115-AA08, (March 27)

ACTION: Supplemental notice of proposed rulemaking reopening of comment period.

On January 8, 1991, the Coast Guard published a supplemental notice of proposed rulemaking in the *Federal Register* (56 FR 829) proposing to establish standards and procedures for approving fixed fire-extinguishing systems for pleasure craft and other uninspected vessels.

The primary purpose of the rulemaking is to publish standards that will increase fire safety by allowing a greater variety of fixed systems, including several that are simple and inexpensive, to be installed on many pleasure craft and other uninspected vessels.

Because of requests for more time to comment on the supplemental notice, the Coast Guard is reopening the comment period for 60 days.

DATE: Comments must arrive on or before May 28, 1991.

ADDRESSES: Mail comments to the executive Secretary, Marine Safety Council (G-LRA-2), Coast Guard Headquarters, Washington, D.C. 20593-0001, or deliver them to room 3406 between 8 am and 3 pm, Monday through Friday, except federal holidays. The telephone number is (202) 267-1477.

The executive secretary maintains the public docket for this rulemaking. Comments will become part of this docket and will be available for inspection or copying at room 3406.

For further information, contact: Mr. Klaus Wahle, Office of Marine Safety, Security and Environmental Protection (202) 267-1444.

Proposed rule

CGD 90-067, Recreational vessel fees (33 CFR Part 1) RIN 2115-AD67, (March 28)

ACTION: Notice of proposed rulemaking.

The Coast Guard proposes to establish a graduated annual fee for recreational vessels operated on navigable waters of the United States, where the Coast Guard has a presence.

Assessing the fee will require recreational boaters to share in the cost of Coast Guard programs from which they benefit, including search and rescue, boating safety and aids to navigation. The amounts collected for fiscal years 1991 through 1995 will be deposited in the U.S. Treasury as offsetting receipts of the department in which the Coast Guard is operating, and ascribed to Coast Guard activities.

DATE: Comments must be received on or before May 13, 1991.

ADDRESSES: Comments may be mailed to the Executive Secretary, Marine Safety Council (G-LRA-2) Coast Guard headquarters, or may be delivered to room 3406 between 8 a.m. and 3 p.m., Monday through Friday, except federal holidays. The phone number is (202) 267-1477.

The executive secretary maintains the public docket for this rulemaking. Comments will become part of this docket, and will be available for inspection or copying at room 3406, Coast Guard headquarters.

For further information, contact: Mr. Carlton Perry, Auxiliary, Boating and Consumer Affairs Division, (202) 267-0979.

Final Rule

OST Docket No. 46987; Enactment, Coast Guard whistleblower protection (33 CFR Part 53) RIN 2105-AB68, (April 2)

ACTION: Final Rule

This final rule implements the whistleblower protection provisions contained in Public Law 100-456. The rule applies to the Coast Guard, the Board for Correction of Military Records of the Coast Guard and the Department of Transportation's Inspector General. It establishes procedures to ensure that members of the Coast Guard are protected from reprisals for making, or preparing to make, lawful communications to a member of Congress or an inspector general.

In addition, the rule specifically requires the reporting and investigation of reprisal allegations, and provides for remedies when reprisal is found, including disciplinary action against any person taking reprisal and the correction of military records when appropriate.

EFFECTIVE DATE: May 2, 1991.

For further information, contact: Ms. Joanne Petrie, Office of the Assistant General Counsel for Regulation and Enforcement (C-50), room 10424, (202) 366-9306, or Mr. Robert H. Joost, Chairman, Board for Correction of Military Records (C-60), room 5432, (202) 366-9335, Department of Transportation, 400 Seventh St., S.W., Washington, D.C. 20590.

Final rule

CGD 84-043, Portable tanks for the transportation of bulk hazardous materials by vessel (46 CFR Part 98) RIN 2115-AB69, (April 3)

ACTION: Final rule; technical amendment.

The Coast Guard is correcting errors in the amendment to the regulations governing the transportation of bulk hazardous materials in portable tanks by vessel. The amendment appeared in the *Federal Register* on Tuesday, September 11, 1990 (55FR 37406).

EFFECTIVE DATE: April 3, 1991.

For further information, contact: Mr. Frank K. Thompson, Office of Marine Safety, Security and Environmental Protection, Coast Guard headquarters, telephone (202) 267-1577.

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Notice

CGD 14 91-01, Vessel certificates and exemptions under the International Regulations for Preventing Collisions at Seas (72 COLREGS), April 8)

ACTION: Notice of granting of Certificates of Alternative Compliance to vessels.

This notice lists a vessel granted a Certificate of Alternative Compliance. This notice lists a vessel which, due to its special construction and purpose, cannot comply fully with certain provisions of the International Regulations for Preventing Collisions at Sea (72 COLREGS) without interfering with the vessel's special functions. The intent of this notice is to allow the mariner to be aware of the listing of this vessel that has been granted a Certificate of Alternative Compliance.

EFFECTIVE DATE: April 1, 1991

For further information, contact: CDR Arthur E. Adkins, Chief, Commercial Vessel Safety Branch, Coast Guard, Commander (mvs), Fourteenth Coast Guard District, PJKK Federal Bldg., 300 Ala Moana Blvd., room 9149, Honolulu, Hawaii 96850-4982. Telephone (808) 541-2144.

Meeting

CGD 91-021 Navigation Safety Advisory Council (April 8)
ACTION: Notice of meeting

As required by the Federal Advisory Committee Act, this notice announces a meeting of the Navigation Safety Advisory Council on Monday through Wednesday, May 6-8, 1991. The meeting will be held at the Coast Guard Support Center Alameda, Coast Guard Island, Building 10, room 114, Alameda, CA.

Committees will meet on May 6 from 8:30 to 11:30 a.m. and on May 7 from 1 to 4 p.m. The committees will discuss navigation rules, Vessel Traffic Service issues, provisional IMO standards for electronic chart display and information system (ECDIS), marking of submerged dredged pipelines and human factors in navigation.

The council will convene in plenary session on May 7 at 4:15 p.m. and on May 8 at 8:30 a.m. to hear committee reports. The meeting is open to the public.

For further information, contact: Ms. Margie G. Hegy, Executive Director, Navigation Safety Advisory Council, Coast Guard (G-NRS-3), Washington, D.C. 20593-0001, (202) 267-0415.

Navigation and Vessel Inspection Circulars

Subscriptions for 1991 Navigation and Vessel Inspection Circulars, along with a complete index of all effective NVICs issued before January 1, 1991, with prices and ordering information are now available for $14 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, telephone: (202 783-3238.

Requests for back issues of 1990 or earlier NVICs should be submitted to:

Commanding Officer
U.S. Coast Guard
Marine Safety Center
400 7th Street, S.W.
Washington, D.C. 20590-0001
Phone: (202) 366-6480