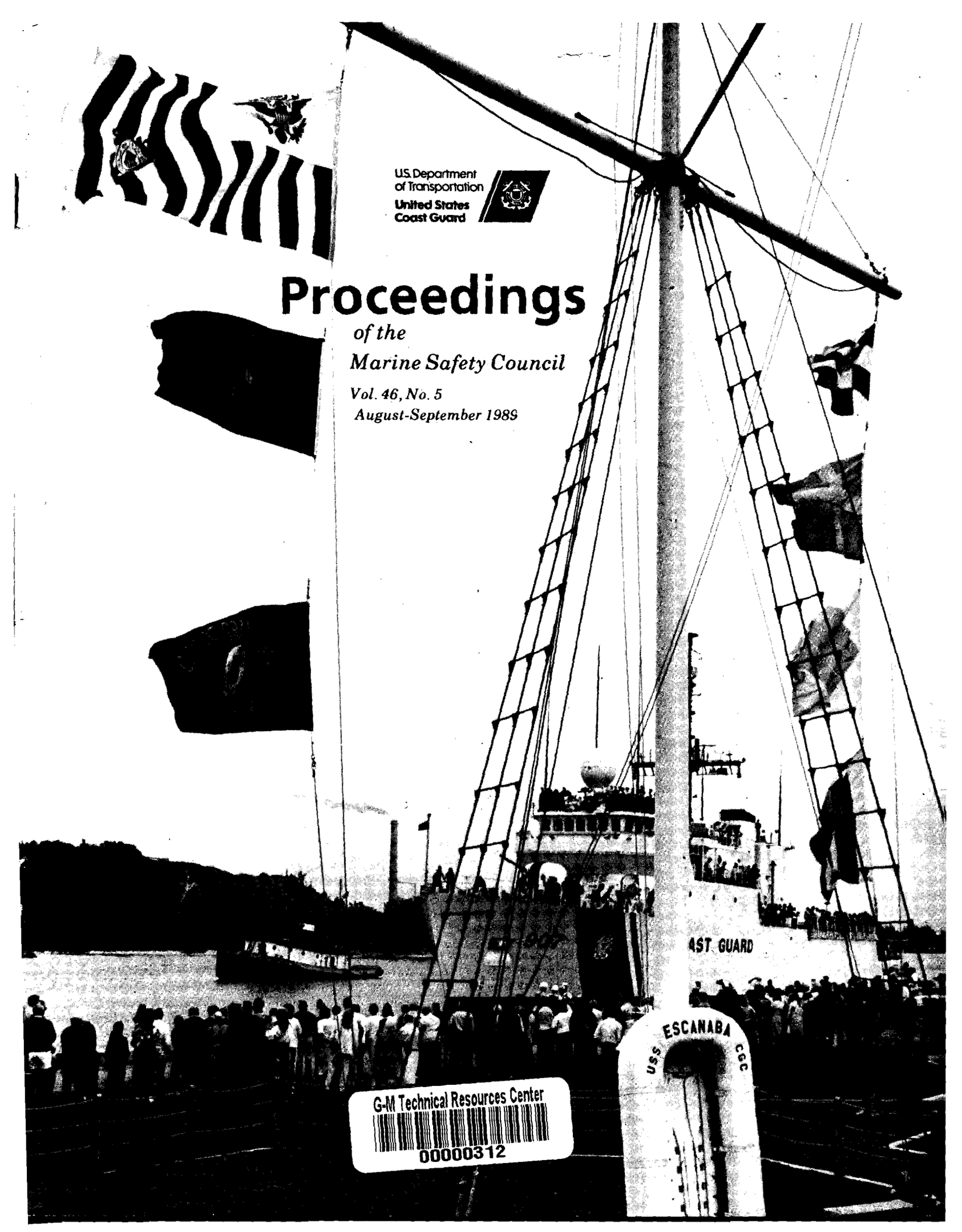

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Proceedings

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The city of Grand Haven, Michigan, celebrates Coast Guard Day on the first Saturday of August. In our photo, the Coast Guard cutter ESCANABA is moored in the shadow of the Escanaba Memorial in Grand Haven. The mast of the original cutter, removed during World War II conversion, stands as a reminder of the 101 crew members lost when the first ESCANABA sank in 1943. *(Coast Guard photo by SN Robert LeValley)*

Coast Guard Inspections and Civil Penalties

CDR Lane I. McClelland

The authority of the Coast Guard in the realm of vessel inspection is well accepted in the marine industry. The Coast Guard's function and the industry's own safety concerns complement each other. Most vessel operators make an honest effort both to comply with inspection regulations and to keep their vessels safe. Nevertheless, there have always been a few marginal operators. To the Coast Guard, these are exemplified by the multi-page work list at the end of the first day of inspection for certification, or by the multi-page CG Form 835 at the end of the "midperiod" reinspection. The marginal operator reminds us that enforcement means are necessary. In fact, enforcement means are necessary for responsible operators too, for no one is perfect.

Enforcement of inspection regulations typically has been carried out by means of the well-known requirements form, CG 835, backed up by the threatening prospect of the inspector walking off the vessel with the Certificate of Inspection in his pocket. An inherent weakness of this enforcement method lies in the fact that the inspector must show up and write the requirement. This leads to the attitude that regards the vessel as being in full compliance until the Coast Guard inspector has written the requirement -- or even longer: until the deadline set forth on the CG-835. Yet in reality, the vessel operator is responsible for ensuring that the vessel is in compliance with the regulations at **all** times, not merely after an inspector has pointed out a problem, and not even just before the inspector arrives. And whenever the vessel is **not** in compliance, the operator is liable for a civil penalty.

(The term "operator" in this article refers to the whole list of persons identified as responsible in statute and regulation: owner, charterer, managing operator, agent, master, person in charge, and perhaps others. The lists vary among various provisions. It's worth noting that the master is usually included as a liable party.)

Civil penalty provisions have been part of inspection statutes at least since the comprehensive Act of February 28, 1871, and more and more of them have appeared as new inspection statutes were enacted. When the inspection statutes were codified in 1983, the main civil penalty provisions for inspection violations were placed in sections 3318 and 3718 of Title 46 of the U.S. Code (46 U.S.C.). Section 3318 applies to all inspected vessels, and section 3718 applies to tank vessels. In 1984, 46 U.S.C. 3318 was amended to substantially its present form. It provides for a penalty of up to $10,000 for a violation of an inspection statute or regulation, depending on the violation. 46 U.S.C. 3718 provides for a penalty of up to $25,000 in a tank vessel case. Many of these penalties are per day of violation.

The civil penalty has long been used for violations of the basic requirement to have the vessel inspected. (The threat of withholding the Certificate of Inspection is obviously powerless in such cases.) This has arisen most often in cases of small passenger vessels; only occasionally does a large ship bring such a case upon itself, typically by failing to renew the Certificate.

In addition to inspection statutes, 46 U.S.C. also contains manning, documentation, and other statutes with civil penalty provisions. Civil penalty provisions are also found in other statues that affect the marine industry. The Federal Water Pollution Control Act of 1972 (FWPCA) provided for civil penalties of up to $5,000 not only for oil spills but also for violations of Pollution Prevention Regulations (originally 33 CFR parts 154-156, now including other parts) and Marine Sanitation Device regulations (33 CFR part 159). The Ports and

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Waterways Safety Act of 1972 (PWSA) provided for civil penalties for violations of regulations promulgated thereunder. Among these are the Navigation Safety Regulations (33 CFR part 164) and various notice of arrival, notice of hazardous conditions, and Captain of the Port Order provisions of 33 CFR part 160. Since its amendment in 1978, PWSA's maximum penalty is $25,000. These 1972 statutes were significant because under them, extensive regulations were issued applying to foreign as well as U.S. vessels, and the Coast Guard began to devote significant resources to boarding vessels to ensure compliance with them, along with dangerous cargo regulations. When violations were found, the civil penalty was the enforcement tool of choice. And U.S. vessels began to find themselves cited for violations and assessed penalties under these statutes, just like foreign vessels.

The great strength of the civil penalty is that it does not give the vessel operator a "free bite." The operator must strive to comply all the time, or at least when in U.S. waters, lest a Coast Guard boarding detect a violation and result in a civil penalty. This enforcement tool is being used increasingly to enforce inspection regulations. The Coast Guard and, to their chagrin, vessel operators, are learning more about the interaction of civil penalties and inspections. Thus a discussion of the subject is timely.

The civil penalty assessment process itself is simple.[1] In essence it looks like this. Each of the Coast Guard Districts has a marine safety division (referred to as the "program manager"). The program manager receives reports of violations from field units (marine safety offices, marine inspection offices, and port safety stations) and, after review, forwards them to the Hearing Officer assigned to serve that District. If the Hearing Officer determines there is sufficient evidence to proceed, the Hearing Officer sends a letter to the person selected as the liable party, notifying that person of the alleged violation, the maximum penalty assessable, and the amount of penalty that appears appropriate based on the material in the file. The notification also informs the party about the procedures and the party's rights. Upon receiving the notification letter, the party has 30 days to respond, either by providing written evidence and arguments or by asking for an in-person hearing. In effect, the party may choose to have a hearing on paper or in person.

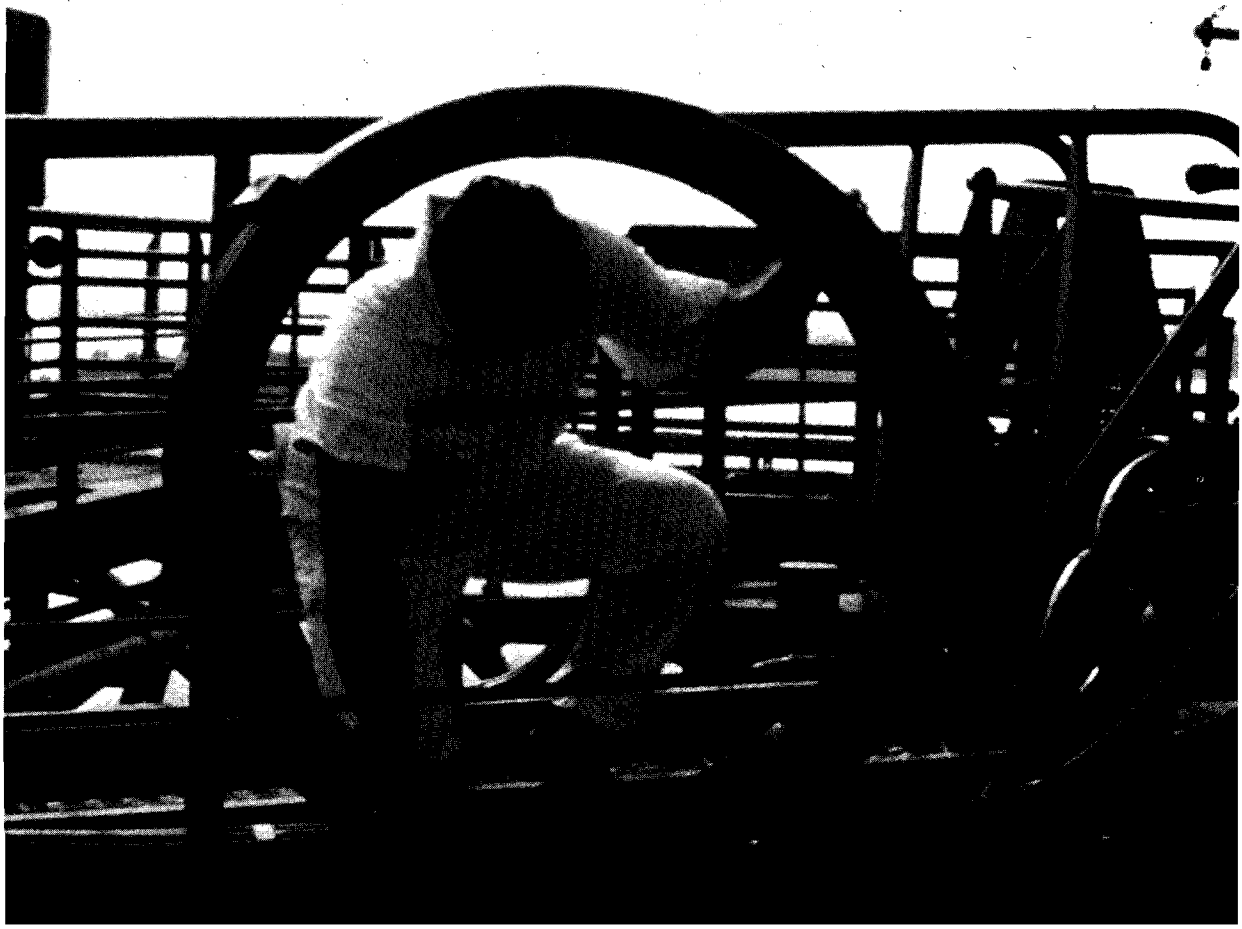
In case the party has no desire for a hearing, the party is invited by the notification letter to simply send in a check for the stated "amount that appears appropriate based on the material in the file." Otherwise, the stated amount helps the party decide how much attention needs to be given to the case -- whether it's worth calling a lawyer, how much time is warranted in gathering evidence, and the like.

At any time after the 30 days, which may be extended, the Hearing Officer renders a decision based on all the material in the file, including what the party has submitted either by letter or in a hearing. The file may also include additional information provided by the program manager; if so, the party is notified of the additional information.

The Hearing Officer's decision includes whether a violation was committed and, if so, the amount of penalty assessed (which can be as little as zero, except for oil or hazardous substance spills). Most penalty statutes contain a list of factors that the Hearing Officer must consider when deciding on a penalty amount, such as the party's ability to pay as well as the circumstances of the violation. (These statutory factors tend to be the same ones that common sense suggests.) Of course, consideration means only consideration. The Hearing Officer is not required to assess a small penalty merely because the party is unable to pay a large one. The circumstances of the violation may overwhelm other factors, calling for the maximum penalty.

After the party receives the Hearing Officer's decision, the party has 30 days in which to appeal the decision to the Commandant. The appeal is submitted to the Hearing Officer, who processes it and forwards it, with the file, to the Commandant. Appeals are handled by the Commandant's Maritime and International Law Division.

On appeal, the case is reviewed to ensure that it is within Coast Guard jurisdiction and otherwise in accordance with law, that the party has received all rights due, and that the Hearing Officer has not abused his discretion or acted arbitrarily and capriciously. (Of course, the focus is on the issues raised in the party's appeal letter.[2]) The appeal decision official does not substitute his discretion for that of the Hearing Officer. Rather, the appeal stage is designed to ensure that the law has been followed and interpreted uniformly throughout the Coast



The vessel operator is responsible for ensuring that the vessel is in compliance with the regulations at all times, not merely after an inspector has pointed out a problem. *(Coast Guard photo)*

Guard.[3] The appeal decision is final; any penalty affirmed is then a debt to the government.

The limited, as opposed to "de novo" review on appeal means that everything the party thinks might be favorable needs to be presented to the Hearing Officer before a penalty is assessed. What if the party later discovers additional evidence that might help? If the case is not yet final, the party may petition the Hearing Officer to reopen the case. The petition is unlikely to be successful unless the party didn't know, and couldn't have known, about the evidence earlier.[4]

Now let's look at how civil penalties fit into the inspection realm. As we pointed out at the beginning, whenever the vessel is not in compliance, the operator is liable for a civil penalty. That means compliance with the regulations and with the conditions of its Certificate of Inspection. Furthermore, from 46 U.S.C. 3313(b) it can be seen that a situation that prompts the writing of a CG-835 requirement can also be the basis for requiring the vessel to cease operating and for suspending or revoking the Certificate.[5] Indeed, according to 46 U.S.C. 3313(c), the Certificate shall be revoked if an unsafe condition is not corrected when so ordered. This means that the CG-835 requirement is itself a condition of the Certificate, in addition to the conditions set forth on the face of the Certificate.

When an inspector finds a deficiency on a vessel and writes a requirement to correct it, civil penalty liability can arise by several routes, some sooner than others. Suppose the deficiency is a violation of an unambiguous requirement found in regulations or on the Certificate of Inspection. Then civil penalty liability exists immediately, independent of the issuance of the CG-835 requirement, and may also receive

notification from the Officer in Charge, Marine Inspection (OCMI) and, in due course, a letter from a Hearing Officer concerning the commencement of civil penalty proceedings.

Example: an inspector on a tankship finds that a couple of the vessel's fire stations lack nozzles. 46 CFR 34.10-10(e) requires that each fire station hydrant have at least one length of firehose, which must have an approved combination nozzle. This violation of a regulation will support a civil penalty as well as a CG-835 requirement. Even if the deficiency is corrected before the vessel sails, a civil penalty may be assessed. This does not mean that every such situation will result in civil penalty proceedings, but it could.

Another example: an inspector finds that a vessel whose Certificate of Inspection calls for 57 life preservers has only 54. This is a failure to comply with the conditions of the Certificate, and again, a civil penalty as well as a CG-835 requirement will result. The CG-835 may restrict the vessel to carrying three fewer people until the requirement is cleared, but it can't be assumed from this that there was no violation in the past merely because the full complement of people was not then being carried. No, the violation was of a condition of the Certificate rather than of a requirement to have a life preserver for each person carried.

But suppose the vessel has entered a shipyard, and the Certificate of Inspection has expired before the inspector comes aboard and discovers the deficiency. There can be no civil penalty liability for violating the conditions of the Certificate on that day, since the Certificate is not in force. However, the deficiency on that day is circumstantial evidence that a few days earlier, when the Certificate **was** in force, its conditions were being violated. So a civil penalty is still possible.

What about a deficiency that's a judgment call? For example, 46 CFR 33.15-1(b) requires that lifeboat equipment be "of good quality, efficient for the purpose they are intended to serve, and kept in good condition." Suppose the inspector decides that the wooden lifeboat rudder is showing enough signs of rot that it needs to be replaced. The inspector may properly issue a CG-835 requirement accordingly, but the Coast Guard will not impose civil penalty liability in this situation unless the equipment was in a condition that the reasonable person would consider unacceptable.[6]

Once a requirement to replace the rudder has been issued, failure to replace it as required will support civil penalty liability. This is so for two reasons. First, the CG-835 puts the operator on notice that the rudder does not meet the standard of the regulation. It is now clear that failure to replace it is a violation of the regulation, supporting a civil penalty. Second, as we pointed out before, the requirement is a condition of the Certificate of Inspection, and failure to comply violates that condition of the Certificate.

If the vessel operator disagrees that the equipment is unserviceable, it is incumbent upon the operator to appeal the requirement. If the operator waits until civil penalty proceedings begin, the operator runs the risk of losing -- and losing is likely unless the requirement was obviously unfounded, because the Hearing Officer will not second-guess the judgment of the inspector or the inspector's boss, the Office in Charge of Marine Inspection (OCMI).

Sometimes an inspector writes a requirement that is not based on a regulation. 46 U.S.C. 3305(a) sets forth some fundamental standards of inspection, including that the vessel be "of a structure suitable for the service in which it is to be employed" and "in a condition to be operated with safety to life and property." When an inspector finds a part of a vessel which has deteriorated to the point where it is no longer suitable for the vessel's service, the inspector issues a requirement to correct the problem. Up to that point there has been no violation. But if the requirement is not complied with, civil penalty liability follows by virtue of -- you guessed it -- violation of a condition of the Certificate of Inspection.

It should be noted that a CG-835 form is not the only way the Coast Guard can impose a requirement. An ordinary letter can serve the same purpose. For example, suppose a vessel is reported to have grounded, and after refloating, it proceeds without any survey for damage. The Coast Guard could write a letter to the operator requiring immediate drydocking. Like any other requirement, this one would be a condition of the Certificate of Inspection. The Coast Guard could suspend the Certificate and could equally commence civil penalty proceedings if the vessel was not immediately drydocked as required.

One application of the civil penalty that is being used increasingly is when the vessel

missed its midperiod reinspection. 46 CFR 31.10-17(a) reads:

At least one reinspection shall be made on each vessel holding a certificate of inspection valid for two years. This reinspection will be made, where possible, between the tenth and fourteenth month of the period for which the certificate is valid. No written application for reinspection will be required.

Similar provisions are found in other subchapters.

The wording of this regulation has led some to argue that it does not establish a mandatory requirement for the vessel operator, particularly in light of the words "where possible." The Coast Guard's view is that the regulation **does** create a mandatory requirement, disregard of which will support a civil penalty as well as suspension or revocation of the Certificate of Inspection. It is the operator's responsibility to go to the OCMI and make a case for delaying the reinspection beyond 14 months.

It has been customary for OCMIs to send a letter to the vessel operator advising that the vessel is due for reinspection. When this is done, it is all the clearer that civil penalty liability will attend failure to have the vessel reinspected, because the requirement, issued by letter, is a condition of the Certificate of Inspection.

Now you have the basics of civil penalties in the context of vessel inspection. What are the implications for you if you're a vessel inspector?

(1) You should take responsibility for owner compliance with regulations, rather than waiting for the Coast Guard inspector to tell you what needs to be done. This won't come as a shock to the responsible vessel operator.

(2) If a requirement is issued that you're not sure you agree with, don't let it slide. Decide whether you will comply. If you are going to comply, you don't need to appeal it just to ward off civil penalty liability. If it was a glaring deficiency, fighting the requirement won't help. If it was a close judgment call that you couldn't have been expected to foresee, there won't be any civil penalty.

If you decide not to comply, though, appeal the requirement to the OCMI right away. That way, if you lose, you'll know you've lost in time to change course and avoid civil penalty liability. None of this should shock the responsible operator.

(3) When deficiencies exist on a vessel, civil penalty liability is lurking nearby. If you've never heard of it happening before, that doesn't mean it can't happen to you. This one may shock the responsible operator. Sorry about that. But if you routinely take the initiative to maintain your vessel in compliance, you will minimize your risk of facing a civil penalty.

Footnotes

[1] For full details, see 33 CFR subpart 1.07.

[2] 33 CFR 1.07-70(a) provides, "The only issues which will be considered on appeal are those issues specified in the appeal which were properly raised before the Hearing Officer and jurisdictional questions."

[3] This information which was not before the Hearing Officer has no effect on the final penalty amount. This means that anything the party thinks would help his case must be presented to the Hearing Officer. A lack of diligence at the Hearing Officer level will not be rewarded on appeal. Withholding some information until the appeal stage serves no purpose.

[4] 33 CFR 1.07-80. Again, a lack of diligence will not be rewarded.

[5] 46 U.S.C. 3313(b). When a vessel is not in compliance with its certificate or fails to meet a standard prescribed by this part of a regulation prescribed under this part:

(1) the owner, charterer, managing operator, agent, master, or individual in charge shall be ordered in writing to correct the noted deficiencies promptly;

(2) the Secretary may permit any repairs to be made at a place most convenient to the owner, charterer, or managing operator when the Secretary decides the repairs can be made with safety to those on board and the vessel;

(3) the vessel may be required to cease operating at once; and

(4) if necessary, the certificate shall be suspended or revoked.

[6] The vessel operator who knows that equipment is unserviceable but decides to wait until the Coast Guard tells him to replace it is asking for a civil penalty.

Fisherman Overboard!

LCDR Christopher Walter

On Sunday evening, April 12, 1989, Ken Twiddy of Kitty Hawk, North Carolina, told his wife Shirlene, "Here, take all of my money in case I fall overboard." For the first time in 6 years of fishing, Ken Twiddy had a premonition that something might happen. The next day, in the cold ocean near Oregon Inlet, his premonition came true.

Captain Otto Bridges eased the dropnetter **Heather Lynn** away from the Endurance Seafood docks in Collington at 5:00 a.m. and headed past Manteo and Wanchese toward Oregon Inlet and the fishing grounds just offshore. The weather was pleasant with light winds, a smooth 2-foot ground swell, sunny skies -- and chilly 50-degree water.

The 35-foot **Heather Lynn** had been built in Marshallburg, North Carolina, and was delivered to Captain Bridges the previous Christmas. She's a deadrise boat, built of wood and covered with fiberglass. Her wheelhouse sits well forward, and two net reels take up most of her afterdeck. When a school of fish is spotted, the crew drops the nets to gill the fish below.

Dropnetting is hard, uncertain work that requires a great deal of concentration. As Captain Bridges puts it, "At 12 knots, you can pass over a school of fish that is a week's catch and miss them if you take your eyes off the (fish) scope for a couple of seconds. You have to catch fish -- you may only be able to fish 2 days out of a week but you have to do a week's work in that 2 days." He shares a problem common to all commercial fishermen -- "The bills just keep piling up."

Ken Twiddy slept on the boat as it made its way toward the sea, and he dreamed of the **Heather Lynn** sinking. Despite this nightmare and the premonition that made him give his wallet to Shirlene, Twiddy had no fear that this day would be different. Barely 30 minutes later, as he held a bucket over the side to fill it with

Ken Twiddy survived a *real* survival test when he fell overboard in 50o water. *(Photo by the author)*

spray from the boat's wake, the **Heather Lynn** dug into a swell deeper than he expected, catching the bucket and yanking him into the deadly cold water. Twiddy later recalled his surprise at finding himself in the ocean.

"How many times do you reach over the side with a bucket? I've done it a million times without problems. It was just a freak accident."

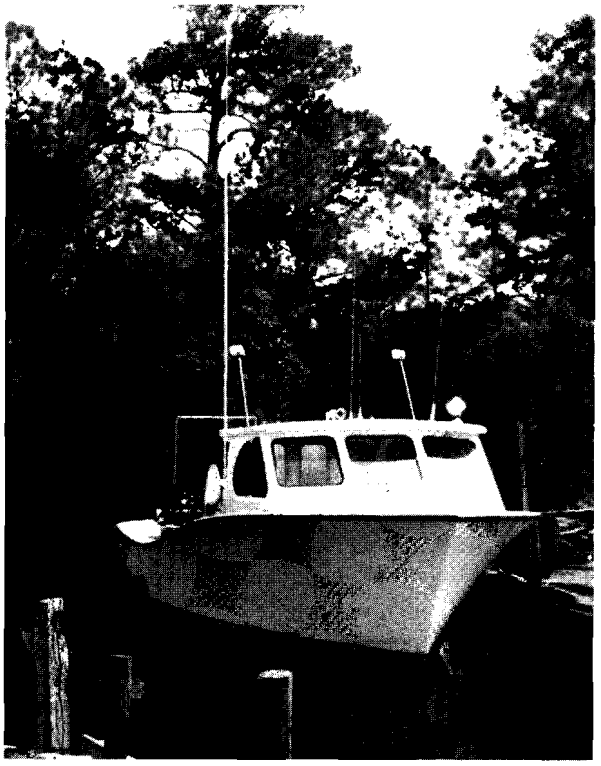
Twiddy grabbed for a line as he fell overboard but missed. As soon as he surfaced, he yelled in vain at the rapidly vanishing **Heather** Lynn.

Meanwhile, Captain Bridges kept a sharp lookout on the fish scope and ahead for other boats as the **Heather Lynn** ran south across Platt Shoals at 12 knots. With his attention on the scope and his view astern blocked by two large net reels, Bridges didn't know that Twiddy had fallen overboard.

Twiddy was wearing boots and a heavy flight jacket when he fell overboard -- and no life preserver. The jacket quickly filled with water and pulled him under before he could shed it. His boots went next.

"I was fortunate I didn't have my slicker on. If I had my slicker on, I would have drowned. The cold was a shock. It was a lost feeling to fall overboard. But I had a good feeling that I'd be picked up and I wondered how long it would be until he realized I was gone. Sometimes, an hour would go by before he'd stop the boat and look around."

LCDR Walter is assigned to the Port and Vessel Safety Branch in the Coast Guard's Fifth District Office, Portsmouth, Virginia.



The Heather Lynn at the Endurance Seafood docks. *(Photo by the author)*

Twiddy treaded water, unable to see the low-lying coastal plain just 3 miles away. He spotted a trawler to the south slowly working its way toward him. Twiddy swam toward it, but when the trawler had closed to within 500 yards, it suddenly turned away from him.

"It was a lonely feeling when that trawl boat headed away," Twiddy recounted with a fisherman's characteristic understatement.

Two dangers now stalked Ken Twiddy. The first was hypothermia, the loss of body heat followed by exhaustion, unconsciousness, and drowning. Fifty-degree water will exhaust most people in an hour and kill them between 1and 6 hours after immersion if they're wearing life preservers and don't drown first.

The second danger looming in Twiddy's mind was schools of blues, the predatory game fish. All along the Outer Banks, blue fish were predicted in the Oregon Inlet area at any moment. While charter boats and fishing piers did a brisk business, Ken Twiddy prayed that he wasn't in the path of thousands of blues eating their way northward in a frenzy.

"He was more afraid of the blue fish than he was of sharks," Shirlene Twiddy confided. Ken agrees. "Those blue fish have been known to bite off the fingers and toes of surfers."

Several miles away, as Twiddy seesawed between hope, desperation, Captain Bridges suddenly realized that his crewman was missing. While only 15 minutes had passed, Bridges knew time was critical and Twiddy might be close to death. Bridges radioed the Oregon Inlet Coast Guard Station which alerted everyone of the unfolding drama and asked all vessels to watch out for the missing man. What happened next was a heartwarming example of commercial fishermen helping each other.

When they heard the Coast Guard's urgent marine information broadcast, the entire dropnetter fleet, 20 to 25 boats altogether, headed toward the area as fast as they could, and charter boats from the Oregon Inlet area quickly joined them. To Ken Twiddy, these boats were a beautiful and most welcome sight.

The charter fishing boat **Capt B.C.**, owned and skippered by Buddy Cannady of Manteo, found Twiddy. Her crew and passengers missed him twice when swells pulled him out of their reach. On the third try, they grabbed the numbed fisherman and hauled him to safety. He'd been in the cold sea for 30 minutes. They told Twiddy he was the best catch they had all day. "You're the best thing I've seen all day!", he replied.

They stripped Twiddy's wet clothes off, wrapped him in blankets, and passed word of his recovery to Captain Bridges. Just 15 minutes had elapsed since he noticed that Twiddy was missing. Bridges picked Twiddy up from the **Capt B.C.** and took him to a medical center where he was checked and released. Between 6 and 8 hours later, Twiddy finally regained feeling in his hands. He figures he had only 30 to 40 minutes of life left when he was rescued.

Otto Bridges and Ken Twiddy are back fishing on the **Heather Lynn** with a greater appreciation for the perilous sea and gratitude that a tragedy was averted. They both have safety suggestions for other fishermen. Bridges requires crewmen to wear life preservers when they're on the stern and out of his sight. Even though this was a one-in-a-million freak accident, Twiddy has this warning for other fishermen: "Don't stick buckets over the side. Use the deck hose." He plans to wear an inflatable life vest in the future, one that allows him to work freely but still keeps him afloat if he falls overboard.∎

Examining Foreign Passenger Vessels in the United States

LCDR J. E. Veentjer

The United States provides a large and lucrative market for passengers, not only in the United States, but also in many ports around the world. Many estimates indicate that over 80 percent of all cruise ship passengers, worldwide, are U.S. citizens. Although the United States has a large fleet of small passenger vessels, i.e., passenger vessels that measure less than 100 gross tons, most of these vessels operate domestically subject only to U.S. law. Only those that operate internationally are subject to the International Convention for the Safety of Life at Sea (SOLAS). The small passenger vessel fleet aside, the foreign-flag cruise ships significantly outnumber the cruise ships under U.S. flag.

All foreign passenger vessels operating in the United States are subject to examination, and in some cases full inspection, in accordance with U.S. law. The authority for such examinations comes, in part, from SOLAS, in particular Regulation 19 of Chapter I, i.e., port state control. More important, U.S. law requires that all passenger vessels, regardless of their flag, be inspected. However, U.S. law (46 USC 3303(a)) also allows that any foreign-flag vessel inspected and certificated by a country having inspection laws and standards similar to those of the United States will generally be subject only to an inspection to ensure the vessel's lifesaving and propulsion equipment are as stated in its current certificate of inspection. A country which is party to SOLAS is considered to have inspection laws and standards similar to those of the United States, and certificates issued by that country may be accepted as evidence of lawful inspection provided that vessels of the United States visiting that country are accorded the same privileges.

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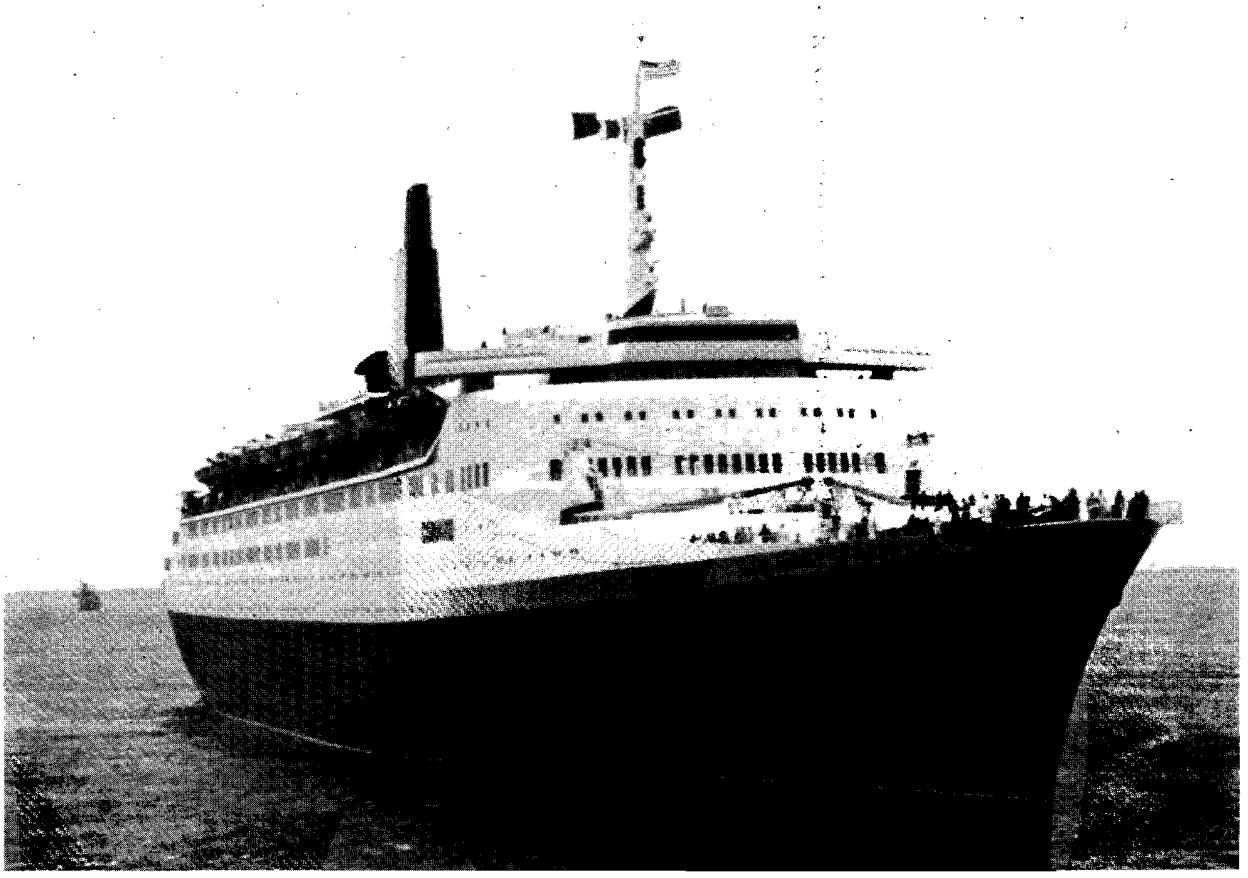
Generally, a U.S. passenger vessel that is less than 100 gross tons and carries no more than six passengers is subject only to the minimum fire safety and lifesaving equipment requirements in Title 46, Code of Federal Regulations (CFR), Subchapter C -- Uninspected Vessels; they are not subject to inspection. Passenger vessels that are under 100 gross tons and carry more than six passengers are subject to the requirements of and inspection under 46 CFR Subchapter T -- Small Passenger Vessels. Passenger vessels that are 100 gross tons or more and carry any number of passengers for hire are subject to the requirements of and inspection under 46 CFR Subchapter H -- Passenger Vessels. These are the standards to which a foreign passenger vessel operating in the United States would be inspected by the Coast Guard unless that vessel has a SOLAS Passenger Ship Safety Certificate.

Notwithstanding 46 USC 3303(a), U.S. law (46 USC 3505) requires the Coast Guard to verify that a foreign passenger vessel of more than 100 gross tons having berth or stateroom accommodations for at least 50 passengers is in compliance with SOLAS before it may depart a U.S. port with passengers who have embarked at that port. Primary reliance for certifying adherence to the applicable standards is on the flag Administration, as it should be. Nevertheless, when the Coast Guard finds a vessel is not in compliance, corrective action will be required, if not by the flag Administration, then by the Coast Guard. Failure to comply could result in control of the vessel's U.S. operations, even to the extent of not allowing it to carry passengers from the United States.

The activity and intensity of the Coast Guard's examination of foreign-flag passenger vessels has varied over the years. The significant activity began in the 1960s, when after a series of fires on board passenger vessels, the 1966 and 1967 Fire Safety Amendments to SOLAS were adopted by what is now the International Maritime Organization (IMO).



All foreign passenger vessels operating in the United States are subject to examination, and in some cases full inspection, in accordance with U.S. law. A country which is party to SOLAS is considered to have inspection laws and standards similar to those of the United States, and certificates issued by that country may be accepted as evidence of lawful inspection. The United States and Great Britain, both members of SOLAS, have such an arrangement. Cunard's *Queen Elizabeth 2*, of British registry, shows the American flag while visiting a U.S. port. *(Coast Guard photo)*

These amendments never came into force until they were incorporated in SOLAS '74, which didn't itself come into force until 1980. However, in 1968 the United States took action to impose these standards on all passenger vessels operating in the United States that were over 100 gross tons and had overnight accommodations for at least 50 passengers. This was the origin of what is commonly referred to as the control verification program. [Note: The program name reflects its authority and purpose, i.e., *control* actions (under SOLAS Regulations I/19) for *verfication* of compliance with SOLAS and applicable regualtions. Actually, *control verifications*, though called by different names, are performed on all foreign-flag vessels, e.g., tank vessel examinations, freight vessel examinations, etc., operating in the United States. They vary in scope depending on the category of vessel.]

The passenger vessel control verification program is implemented by Navigation and Vessel Inspection Circular (NVIC) 1-85. In accordance with this NVIC, the Coast Guard provides fire safety plan review for foreign passenger vessels prior to their arrival for the first time in the United States. Although NVIC 1-85 is not regulation and its language appears to be such that pre-arrival plan review is not mandatory, those owners/operators who have vessels operating in the United States know the importance of this submittal. Plan review is essential to the timely inspection of the vessel at its first U.S. port of call. If a vessel's owner/operator fails to take advantage of this opportunity, it is highly unlikely that a full and thorough inspection of the vessel can be

performed without substantial delay. NVIC 1-85 specifies which fire safety plans are to be submitted and recommends that they be submitted to the Coast Guard's Marine Safety Center (MSC) at least 45 days prior to the vessel's scheduled arrival in the United States. Earlier submissions are encouraged. However, keeping in mind that the Coast Guard is not doing the flag Administration's job of approving the design, all plans submitted should bear the approval of the flag Administration.

When the MSC has completed plan review, the plans are forwarded to the Officer in Charge, Marine Inspection (OCMI) for use as needed during the examination. The MSC will provide the OCMI with comments on the design of the vessel relative to the requirements of SOLAS. The owner (or plan submitter) will also be informed of the results of the review. In most cases, where questions are raised in the plan review, discrepancies can and will be resolved during the examination to the satisfaction of the OCMI. However, when significant discrepancies are evident in plan review, the MSC will inform the Commandant (Coast Guard Headquarters). This often results in direct communications with the flag Administration, or its agent, attempting to resolve these discrepancies without adversely affecting the vessel's schedule. However, when discrepancies are not resolved in this manner, it may be that the vessel will not be allowed to embark passengers or it may have placed on it some temporary additional operating measures necessary to ensure passenger safety pending resolution of the issues. In this case, resolution usually results in required modifications if the vessel is to continue operations in the United States.

Although the MSC will not do detailed design review of foreign-flag passenger vessels, an owner may seek conceptual approval of a vessel's design from the Commandant. Such requests are made to the Marine Technical and Hazardous Materials Division, Commandant (G-MTH), of the Office of Marine Safety, Security and Environmental Protection, Commandant (G-M). This is particularly important when a vessel's design will embody new concepts, i.e., any design features not specifically addressed by SOLAS, for which interpretations may be necessary. Any new concept should be presented first to the flag Administration for consideration and approval. At the same time, to facilitate discussions between Administrations, a copy of the proposal, including all the safety considerations to provide a level of safety equivalent to that intended by SOLAS, should be forwarded to the Administration of the port where the vessel intends to operate. In the past year, some 20 designs have been reviewed by Commandant (G-MTH) for conceptual approval.

The emphasis of NVIC 1-85 is on foreign passenger vessels that are over 100 gross tons and have berth or stateroom accommodations for at lest 50 passengers. However, foreign-flag passenger vessels that are less than 100 gross tons or have less than 50 berth or stateroom accommodations are also subject to control verification. Of particular concern is the increasing number of foreign passenger vessels that carry large numbers of passengers from U.S. ports on day trips. Additionally, many of these vessels are claiming sheltered routes and have received numerous exemptions from their flag Administration. Currently, the pre-arrival plan review discussed in NVIC 1-85 will not be performed on these vessels as a matter of routine. However, if during the initial examination there is reason to believe a vessel in this category is not substantially in compliance with SOLAS, the OCMI may require a more thorough examination, including plan review. This could result in a significant delay of the vessel's operations in the United States. Consequently, the same philosophy applies to these vessels as did to those subject to 46 USC 3505, i.e. if there are new concepts or what may be controversial interpretations being applied, conceptual approval should be sought. It may also be advantageous to request pre-arrival plan review by the MSC.

When the owner of a foreign-flag passenger vessel has determined the vessel's first U.S. port of call, an initial control verification examination should be scheduled with the cognizant OCMI. An initial examination may also be required for a vessel that has been away from service in the United States for an extended period, i.e., about 1 year. A minimum of 2 weeks pre-arrival notice is recommended so that the OCMI can prepare for the examination. Earlier notice is encouraged and welcome. Owners/operators should anticipate that the initial examination at the vessel's first U.S. port of call will take at least 2 days. The timeliness of the examination will depend on a number of factors; one of the more important ones is preparation.

The initial examination will be of sufficient detail to ensure that the vessel is constructed and fitted as depicted on the plans submitted to the MSC. Any discrepancies that are considered to be obvious violations of SOLAS will be brought to the owner's attention for correction. If modifications are necessary, but may be impracticable in the short term, the OCMI may allow temporary operations pending corrective action, during which time additional operational measures may be imposed. If the discrepancies are major, the OCMI may determine it appropriate not to allow operations until corrective action is completed. If the OCMI finds discrepancies that may be the result of interpretations of SOLAS that differ from those of the United States, these will be passed to Commandant for discussion, and hopefully timely resolution, with the flag Administration. Again, depending on the significance of these differences, additional operational measures may be imposed pending resolution.

Upon completion of the initial examination, the vessel will be issued a Control Verification Certificate good for 1 year or until the expiration of the vessel's SOLAS certificates, whichever occurs first. The Coast Guard will conduct a thorough examination of each foreign-flag passenger vessel at least annually to ensure that they are maintained in compliance. The Control Verification certificate will be reissued annually; however, it will never be valid beyond the expiration of the vessel's SOLAS certificates. Each vessel will also be examined quarterly to ensure that it is being operated in a safe manner.

Besides examining the vessel, the Coast Guard requires and will be present to witness fire and abandon-ship drills during each examination including those conducted quarterly. These drills are witnessed to ensure that the crew is familiar with their duties and with the vessel, and that they can carry out their duties in an effective manner. Most often, crew makeup of the foreign-flag passenger vessels involves numerous nationalities, which has been cause for concern. This can present language barriers often resulting in communications problems, not only between the crew and the passengers, but also among the crew themselves. Drills will involve the demonstrated use of various firefighting equipment and lifesaving gear, including lifeboats and liferafts. Crew members will be randomly queried about their duties. These drills will be performed, repeatedly if necessary, until the OCMI is satisfied with their performance.

With each new passenger vessel, there is an attempt to incorporate new design features that give the vessel an edge in the competition to attract passengers. Some of these new design concepts have become almost standard features. For example, most new cruise ships have an atrium as one of their primary attractions. Atriums come in various sizes and shapes, and they have been given many different names. In general, they consist of a large public space that spans three or more decks with a central opening or openings, and they contain spaces such as shops and restaurants. Despite the fact that this design feature has become commonplace on cruise ships, it is beyond the scope of the current SOLAS regulations. Most new cruise ships have at least one design feature that falls into this category, and they usually have a few more that stretch the existing regulations. Consequently, flag Administrations have made some broad interpretations of SOLAS relative to these features. Few, if any, of these interpretations have been the same. Unfortunately, many of these interpretations have not been in agreement with those in the United States, the country in which most of these vessels operate.

(continued on next page)

Over the last 2 years, we have detected some alarming discrepancies during the examinations of non-U.S. flag passenger vessels. While some of our concern may stem from differing interpretations of vague language in the SOLAS requirements, we have also discovered some basic violations of the SOLAS standards. Although the current SOLAS standards represent substantial improvement over the vague language of earlier conventions, the violations that have been detected point out the sobering fact that even the finest standards in the world are of little value without uniform and effective enforcement.

Although there have been some significant incidents, the cruise ships that operate from the United States actually have an enviable safety record. Nevertheless, the potential for catastrophe is always present and so must be our attention to safety. For those of us who are regulators, it is our duty to ensure the safety of the public we service. The industry itself owes it not only to the passengers to provide the safest ships, but also to itself, for if catastrophe does strike, the entire industry will surely feel the effects.

The Coast Guard will continue to push for improvements to SOLAS, particularly to eliminate the vague language that leads to varying interpretations, and to address the new design features which are not now adequately covered by SOLAS. We will also push for more uniform and effective enforcement by all party Administrations. In the meantime, the cooperative dialogue between owners/builders and the Coast Guard should be continued so that problems that lead to expensive modifications can be minimized.∎

New Publications

Shipwrecks in New York Waters

The coastal areas of Long Island and New Jersey have been the scenes of untold numbers of shipwrecked vessels and lost lives. Dangers lurked within the Narrows and off Sandy Hook. Many ships were lost while trying to enter, operate in, or leave the confines of this famous port whose three major approaches -- one via the Hudson River, a second through the tricky waters of the East River, and the third from the south -- called for the most careful and exacting maneuvers. Fogs, storms, fires, and errors in navigation have all added to the long list of disasters. Aids to navigation in the early days were often limited to the visibility and hearing of those on board ship.

Throughout history shipwrecks have had a fascinating appeal to the public in general. A shipwreck is almost always an excellent subject for a photograph. The pictures are the dominant theme of this book. The maritime accidents illustrated vary greatly, from groundings, collisions, fires, and sinkings to extraordinary and spectacular incidents.

This book grew out of two large collections of maritime photographs. Bill Quinn met Paul Morris when Bill made a trip to Nantucket Island to do a TV film documentary on the Morris' Ivory Shop. The two found they had many common interests. Both were very much interested in maritime history, and both had impressive collections of marine photos.

The collection of photographs contained in this volume come from a wide and diverse number of sources. Some were donated, a few were purchased, and many were copied from files, scrapbooks, and private collections. They all portray incidents that occurred 50 or more years ago. While shipwrecks are nothing new, they still hold a strange fascination for most of us. Looking at them gives one a chance to go back in time to see the fate of some mariners who trafficked in the waters in and around New York harbor. In most of the photographs shown, it was an unhappy lot.

Shipwrecks in New York Waters, by Paul Morris and William Quinn, may be ordered from Parnassus Imprints, 21 Canal Road, Box 335, Orleans, MA 02653. The cost is $34.95.∎

Sea Stories Worth Their Salt

Last year, the Coast Guard magazine Commandant's Bulletin *sponsored a contest in which Coast Guard men and women could tell their best sea stories. Needless to say, a bizarre collection of mail arrived at the* Bulletin's *offices shortly thereafter. Following is a collection of the winning entries:*

Chiefs in Greece

First place to CWO4 (ret) Paul R. McKenna

During a shipyard availability in Piraeus, Greece, the crew of Coast Guard cutter **Courier**, homeported in Rhodes, Greece, decided to throw an "all-hands" party at the NCO Club of the U.S. Air Force Station in Athens.

Representatives from the **Courier's** wardroom, CPO mess, and crew were selected and directed to meet with the NCO Club treasurer at the club to make the arrangements. Uniform of the day: dress whites.

After completing the arrangements, two of the reps, Chief Commissaryman Harry Zink and Chief Electrician's Mate "Mac" MacDermott, thought to take advantage of their early liberty status and meandered about looking for a cold beer to quench their thirst on that hot summer day.

Alas, it was between pay days, and they couldn't muster up 30 drachma ($1.00) between them. Never daunted by such trivia as a lack of funds, the two chiefs hitched up their ties, squared their hats and, with pad and pencil at the ready, walked into the nearest tavern with an air of confidence and authority.

Never saying a word to the bartender, Harry and Mac walked around looking in corners, holding glasses up to the sunlight, looking into the kitchen, checking both heads, and generally giving the place a "white-glove" inspection.

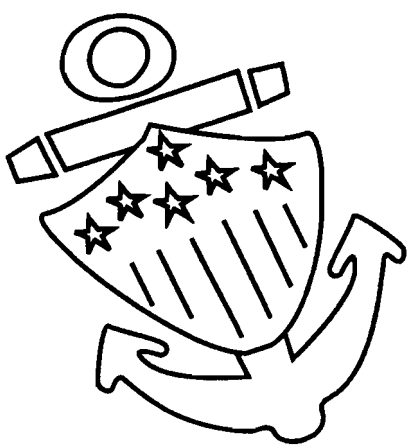
As Harry would check an item, he would mumble something to Mac, who would dutifully make an entry in his notebook.

The bartender, Bufos Skilos, followed them with his eyes and, as he became more curious, approached them and asked, "Tee nuff tow?" (What is going on?)

Harry explained, a little apologetically, that he and Mac were part of a team sent by the U.S. Sixth Fleet to inspect eating and drinking establishments usually frequented by sailors of the fleet when they were in port.

The fleet had been at sea for the past 3 months and was now steaming toward Piraeus for a long and well-deserved R&R. Harry went on to tell Bufos that they were there to designate which establishments were not in conformance with the strict standards established by the Sixth Fleet and to recommend those places be classified as "out-of-bounds" or "off-limits."

Bufos, who owned the tavern, surveyed the neatly attired and authoritative-looking representatives of the Sixth Fleet and broke into a broad grin, reaching under the bar for his best Metaxa and Ouzo. As he poured copious drinks for Harry and Mac, he proudly explained that he operated one of the cleanest and finest establishments in all of Piraeus and had always



enjoyed good relations with the men of the Sixth Fleet. There was obviously no reason why his place should even be considered in the same category as those other "dens of iniquity" in the Port of Piraeus.

Harry and Mac drank to that.

They also toasted the King of Greece, the President of the United States, the Sixth Fleet, and of course, to Bufos' good health.

It didn't take too long for Bufos to become suspicious, and just as he was about to ask for their credentials, a very big guy in "choker" whites, gold shoulder boards, and about four rows of multi-colored campaign ribbons on his chest loomed in the doorway.

Harry and Mac, always one step ahead of their "mark," jumped to attention and threw very snappy salutes to the officer.

While Mac engaged the officer in conversation, Harry whispered to Bufos that their "boss" just came in, and he was madder than hell because they had not designated any places "out-of-bounds." It looked like this place was to be put on this list if Harry and Mac were to stay out of the brig.

Bufos reached under the bar and produced a bottle of 50-year-old Metaxa at the same time motioning two of the prettiest and most voluptuous B-girls to join the officer and the two "inspectors" at a table.

LCDR Carl Morton, **Courier's** engineering officer and the wardroom rep to the party committee, didn't get from Watertender First Class to Lieutenant Commander by being stupid, so he was not bewildered when Harry and Mac began to make profuse excuses for their dereliction of duty and begged to keep their jobs. Instead, he joined in the sham by chewing both CPOs "up one side and down the other" and demanded that "this joint be placed out-of-bounds."

After a few drinks of the smooth brandy and some close fraternization by the B-girls, everybody became the best of friends. Both Harry and the commander heaped high praise on that fine establishment while Mac ripped pages out of his notebook, making obvious complimentary notes in their place.

As the "inspection party" departed to continue their tour of other places, they assured Bufos that his establishment would rank high on the Sixth Fleet's approved list. As soon as they were out the door, Bufos dispatched the B-girls to warn all the other owners of the impending inspection and recommended that they show the inspection team "every courtesy."

As the day turned into evening, the "inspection party" grew in number to include all the personnel who were ashore to arrange for the ship's party. They were the only ones in uniform since the liberty party was authorized to, and did, wear civilian attire.

All the tavern owners were very generous to the "inspection team," and the team obviously enjoyed the extra duty that day.

Late in the evening the Greek police were called to a commotion at the infamous John Bull Saloon on the Piraeus waterfront. The incident was serious enough to be reported to the U.S. Naval Attache at the embassy in Athens. However, no action was ever taken since it was obviously a case of mistaken identity. Everyone knew that the Sixth Fleet was at sea, and there were no U.S. Navy ships in the Port of Piraeus that day.

This really happened -- I #&*@ you not!

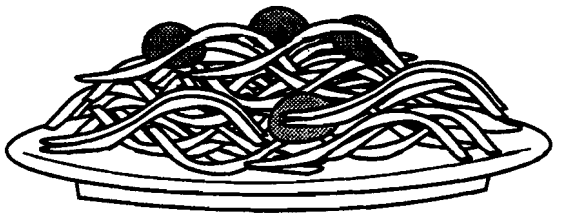
Spaghetti a la Weevil

Second place to A. "Boats" Newell Garden

Coast Guard cutter **Eastwind** had been in the Arctic for some 6 weeks. The scenery was beautiful, but it was limited to white and brown and very stark. It was summer, and day never turned into night. The same 15 movies were a bore. The only respite was the food, which became more important every day.

Being commissary officer became a stressful assignment when the chief asked to speak with me privately. A one-man protest was festering because we hadn't served spaghetti in a month. "Easy fix," I answered, "we have everything we need. Put it on the menu."

But the chief had reservations. Weevils had invaded the spaghetti, so he had avoided using it. He hadn't deep-sixed it because the crew was working hard around the clock, and we



were feeding them four meals a day. This, with no one off the ship or missing a meal, left us no margin to write off inventory losses.

"*The weevils won't hurt anybody* -- they're protein anyway," he said. "We could do it if we serve the sauce already on the spaghetti so the critters are covered up." Nevertheless, we held off.

Two days passed with growing discontent. The fire controlman asked to see me. He said he'd spoken with the chief about spaghetti, and the chief had sent him to me with the message that he'd be willing to serve spaghetti if I approved.

"So be it," I said, "spaghetti tomorrow." Tomorrow came, and my midday watch on the bridge was just getting underway when there was a knock on the open door to the wheelhouse. The fire controlman was balancing a mess tray with a generous serving of spaghetti as he asked permission to come on the bridge.

"Permission to put my tray on the chart table, sir?"

The courtesy and extreme deference were disarming, setting the stage for a complaint of major proportions.

"Yes. I see you got your spaghetti at last."

Taking his fork, he capsized the pile of spaghetti, and then looked at me and said very sharply, "What do you call that, sir?"

Honesty turneth away wrath, it is written, so I picked up his knife as a pointer and detailed the items in the sauce. "Those are chopped peppers, these are chopped onions, there's a piece of garlic, that's a piece of a bay leaf, those are tomato seeds. . . and those are weevils."

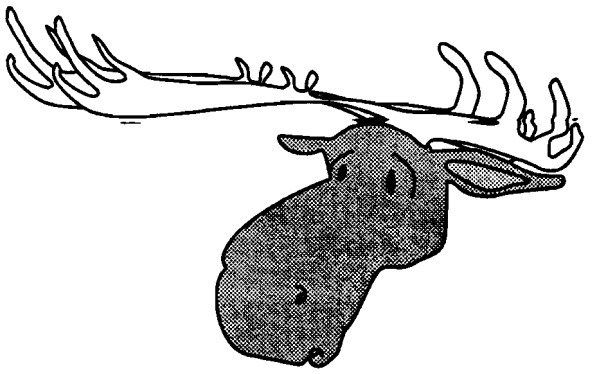
He sighed with relief. "Oh," he said apologetically, "I thought they were bugs."

Loose Moose

Third place to Petty Officer Tony Guerra

While stationed as the group corpsman in God's Country, Duluth, Minnesota, I was out and about in the government vehicle when I heard on channel 22 that the small boat was called out to assist the city police and others in the capture of a moose.

Earlier that morning, it seems, the moose decided to wander about town, and in the attempt to get the moose in its natural habitat, zoo personnel were called in.



The young cow moose was restrained long enough to be tranquilized, but she managed to get away and head for Lake Superior. Enter the Coast Guard. The **Outrage** was used to head the moose back to shore to relieve all fears of a moose drowning. As the moose was on shore, the coxswain, boat engineer, the policeman who happened to be on board, and I made plans on how to capture and transport this 400-pound, wet, nervous, and agitated animal.

The four of us moved, and because of the moose's drugged condition, we were able to get the tow line around her neck. We then positioned the animal in an alongside-tow and headed along the shore toward the woods. While underway we had difficulty in keeping the drugged moose's head above water. We were informed that on shore a trailer was available to take the moose.

So we headed to the beach, and once the moose felt solid footing under her, she broke loose and dragged the boat up on shore. The towline was still around her neck and was keeping her from going any farther. The policeman suggested we use his sidearm and schedule a large barbecue at his house for the next four weekends. However, scanning the crowd on shore and the three network TV crews filming, we decided on finishing the job we started.

I got together with the zoo vet who suggested more tranquilizer. Seeing that he was nearly the spitting image of Marlin Perkins, in size and age, I took the syringe and headed for the receiving end of the moose.

Site selection of the needle did not follow the procedures they stressed at corpsman's school; however, the hairy area did remind me of

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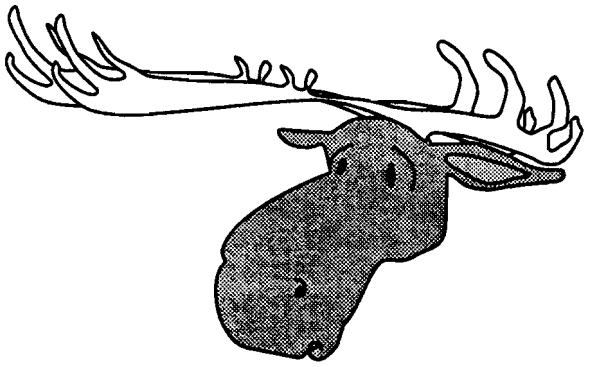

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Often the convoys would be attacked by enemy subs. More than once, fierce battles between U-boats and escort ships took place.

One day aboard one of the Coast Guard-manned transports, the lookout spotted a sub on the surface. General quarters was piped, and the crew raced to man their battle stations. The sub quickly dove to attack the slow ship.

Since the only deck guns the ship had were anti-aircraft guns, the crew knew they were in a tough spot. Knowing that a torpedo attack could happen at any time, the Old Man turned to the crew for any suggestions on how to attack the U-boat.

Someone finally came up with the idea to throw all the green paint over the side. Willing to try anything, the CO ordered all green paint overboard.

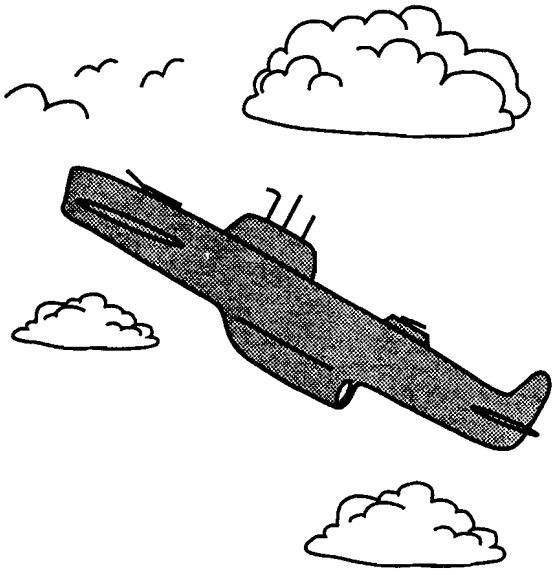
Meanwhile, the submarine's captain was preparing to attack the ship. The sub's skipper called "up periscope." Upon looking through the eyepiece, he saw nothing but green Thinking the sub was still underwater, the captain ordered "up 10 feet."

Looking again, he still saw green. "Up 20 feet" screamed the captain.

Still green. "Up 30 feet" called the captain. Again green. On and on this continued.

Back on the transport, the crew simply waited until the submarine was at about 100 feet, then they shot it down with the anti-aircraft gun.

And that is a sea story worth its salt.∎



(Editor's Note: Illustrations in this article are by Petty Officer John Guzman.)

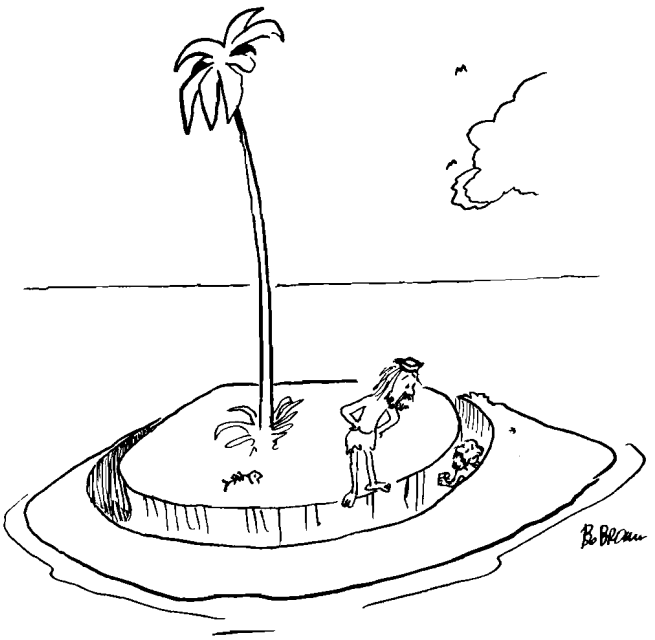
U.S. Naval Institute Sponsors Essay Contest

The U.S. Naval Institute announces its annual Arleigh Burke Essay Contest. Formerly called the General Prize Essay Contest, this 110-year-old contest has been won in the past by people such as Lieutenant Charles Belknap, USN; Lieutenant Commander R. Wainwright, USN; Lieutenant Ernest King, USN; Rear Admiral J. K. Taussig; and Representative Sam Stratton (D-NY).

Cash prizes of $2,000, $1,000, and $750 and medals will be awarded to the authors of the top three essays. The topic of the essay must relate to the mission of the U.S. Naval Institute: "The advancement of professional, literary, and scientific knowledge in the naval and maritime services, and the advancement of the knowledge of sea power."

Essays must be received on or before 1 December 1989 and must not exceed 4,000 words. Winning essay will be published in the Naval Institute's monthly magazine, Proceedings.

For a complete list of contest rules, write the Naval Institute Membership Department, Annapolis, MD 21402, or call toll-free (800) 233-USNI.∎



"Must you jog all the time?"

Maritime Licensing, Certification, and Training

Marine Firefighting Training Update

Robert S. Spears

Every year, millions of dollars worth of damage to U.S. merchant ships results from what may be every seafarer's worst nightmare: fire. Substantial amounts of cargo are also consumed in the flames. But more important than these material things are the crews and firefighters who face life-threatening situations. Unfortunately, many of these people have received little or no proper marine firefighting training. In spite of this (and perhaps due to plain luck), the numbers of personal injuries and fatalities reported are relatively few. This limited number of personal injuries, however, is no justification to wait for more deadly incidents to occur before we take action to prevent them. Through proper application of training, the aforementioned losses can be significantly reduced.

The Coast Guard's Interim Final Rulemaking for the Licensing of Maritime Personnel, published in the *Federal Register* on October 16, 1987, requires applicants for certain licenses (original, upgrade, or increases-in-scope) to complete Coast Guard-approved basic and advanced firefighting training (as of December 1, 1988). Those licenses include the following:

1. Any engineer license.
2. Any mobile offshore drilling unit (MODU) license.
3. All Masters and Mates licenses for service on vessels over 200 GT.
4. All Masters licenses for service on vessels under 200 GT in ocean service.
5. All Operators of uninspected towing vessels licenses for ocean service (domestic trade).

It is important to note that this requirement is a "one-shot" deal": the training must be completed once, and only once, before any of the aforementioned licenses are issued as original or upgraded licenses. Although the Coast Guard encourages periodic refresher training, there is no renewal or recertification requirement. The fact that the training may be experienced just once by some mariners is also important when the Coast Guard is considering what should or should not be included in an approved basic and/or advanced firefighting course.

To assist organizations seeking to provide approved firefighting training, the Coast Guard has published guidelines, and a model course. They are available to the public, free of charge by writing to Commandant (G-MVP-3), U.S. Coast Guard, 2100 Second St., SW, Washington, DC 20593-0001; or by calling (202) 267-0224.

The guidelines and model course result from a combination of several documents. The International Maritime Organization's guidelines for the "Training of Crews in Firefighting," the Maritime Administration's (MARAD's) "Merchant Seaman Fire Training Program," MARAD's "Advanced Fire Fighting Model Course," and a number of other sources were used in developing the Coast Guard's guidelines and model course. The package was drafted, duplicated, and distributed for comment to training facilities with Coast Guard-approved firefighting courses, Coast Guard regional

Mr. Spears is an Instructional Systems Specialist in the Coast Guard's Merchant Vessel Personnel Division.

examination centers, all of the Coast Guard District Commanders, and to other organizations that conduct firefighting training.

Many valuable comments were received, and the draft documents were modified. The finalized guidelines and model course were distributed to the same people previously mentioned, as well as a number of other organizations and companies expressing interest after the initial distribution. As previously stated, the documents providing detailed guidance are available upon request.

Because of limited availability of Coast Guard-approved *advanced* firefighting training, the Coast Guard will continue to accept certificates from all but two of the currently approved firefighting training courses as satisfying the basic and advanced training requirements. The unaccepted two are approved "barge" courses that do not cover all of the topics and exercises required in a basic course. After December 1, 1989, there should be sufficient numbers of approved "advanced" and "basic and advanced" firefighting training courses, so both courses or a combined course will have to be completed. Anyone completing the currently approved training before December 1, 1989, does not need to attend further firefighting training after that date. Copies of the list of approved courses may be obtained at the previously stated address and phone number.

Again, satisfactory completion of Coast Guard-approved firefighting training is a one-time requirement; as such, it must be comprehensive and set a firm foundation for shipboard drills which are required to be conducted weekly on all U.S. vessels. It is common knowledge that these drills in most cases have plenty of room for improvement. One of the objectives of the advanced course is to enable merchant officers to conduct better fire drills.

Several training issues should be addressed. First, the Coast Guard will evaluate and consider for approval any firefighting training alternative (i.e., small vessel or barge courses) presented in writing to the nearest Regional Examination Center. Of course, if such a program were approved, a limited firefighting endorsement would be issued. Then, if the people who completed the limited training want to upgrade their licenses, the standard firefighting training would have to be completed. Anyone considering such a program should start with the Coast Guard's guidelines and model course and not reinvent the wheel.

Second, some mariners want to know why individuals graduating from maritime academies by a specified year are exempted from completing the fire training. The Maritime Administration is primarily responsible for supervising and certifying academy curricula. The agency requires that the academy curricula include firefighting training. In essence, it was determined that the academies have been giving their students instruction and exercises at least equivalent to approved basic firefighting training courses. Naturally, after December 1, 1989, students who have yet to complete firefighting training will need to have an approved advanced course or the equivalent added to their existing program.

License applicants who have completed firefighting courses not approved by the Coast Guard have not satisfied the training requirement. U.S. Navy fire or damage control school courses, which are not Coast Guard approved, are among these. Courses must be submitted to the Coast Guard for evaluation before they can be designated as approved.

Perhaps you agree that required firefighting training for licensed personnel is a step in the right direction. The Coast Guard believes the logical next step is a requirement for unlicensed crew members. The soon-to-be-published tankerman regulations proposal incorporates firefighting training courses as qualification requirements. A future rulemaking to revise Part 12 of Title 46, Code of Federal Regulations, which governs the certification of seamen, is likely to propose basic firefighting training for all other rated crew members.

Your questions, comments, and suggestions on this topic continue to be encouraged; all of us stand to benefit by improving marine industry safety.∎

Chemical of the Month **J. W. Mauger**

Butane

As a direct result of technological modernization during the past century, petroleum has become one of our most versatile natural resources. Petroleum's use in producing fuels, plastics, and other goods has given it a long list of products and by-products. One such by-product is butane. Butane, a liquefied hydrocarbon, is a member of the liquefied petroleum gas (LPG) family. In its purest form (99.95 percent, used for research), butane is a colorless and odorless gas. In its industrial form (97.6 percent) however, mercaptans or disulphides are often added, giving it an odor similar to gasoline, to facilitate easy detection of leaks.

Butane's primary use is in industry. It is one of the major raw materials used in producing synthetic rubbers. Its chemical structure makes it an excellent feedstock of hydrogen in producing similar chemicals such as butenes, butadienes, isobutane, and isobutene. Another of butane's chemical qualities is its low boiling point, which allows it to be used as a refrigerant in cooling systems. Aside from its chemical composition, butane is easily combustible and ecologically safe. Because butane burns quickly and cleanly, it has become a major component in industrial fuels, which are needed to operate heavy machinery. Butane's use in fuels also extends into the commercial sector as well -- in particular the automobile engine. One of the problems of autoignition combustion engines is the knocking caused by the spark emitted from the spark plug. To quiet the noise, high octane fuels are used, of which butane is a major ingredient. Butane has also found its way into the recreational aspect of consumer goods. It is used in disposable lighters, small cooking stoves, hot-air balloons, and as an additive in some foods, which brings up the question of health and safety standards.

Butane is non-toxic, but it has a slightly anesthetic effect if inhaled. Vapor inhalation could cause dizziness or difficult breathing, but the gas is not irritating to the mucous membranes of the eyes, nose, throat, mouth, or skin. However, contaminants found in refined butane can cause dermatitis. Liquid butane, because it is so cold, will cause frost burns if it comes in contact with skin. These burns can be treated according to the standard procedure for the treatment of frost burns. Butane's main safety hazard is its flammability. In case of a fire, the best thing to do is stop the spread. It is also important to remove any other containers in the immediate area of the fire. Flashbacks could occur along the vapor trail, and the vapor may explode if ignited in an enclosed area. Any conventional means can be used to fight the fire; however, in most cases it will burn itself out. Butane floats and is able to burn on top of water, so shipboard leaks can be particularly dangerous. Its high flammability potential requires that special safety precautions be taken when transporting it, to prevent explosions.

When transporting by rail, air, or sea, butane must be marked with a "flammable gas" label. It is most commonly transported in cylinders or insulated tanks kept at 0oC (vapor phase). When shipped in bulk, butane is regulated by the Coast Guard under 46 CFR Subchapter O. DOT regulates package shipment of butane under 49 CFR Subchapter B. Butane is classified as a flammable gas 2.0 by IMO in the IMDG Code.

On land, butane can be stored both above and below ground in metal cylinders or domes, such as those used at refineries. Even though butane leaks pose a potential threat to humans, they have no negative implications upon aquatic life or waterfowl, and their overall effect on the biological food chain is negligible.

J.W. Mauger was a Fourth-Class Cadet at the Coast Guard Academy when this article was written as a Special Project in Chemistry for LT Thomas Chuba.

In summary, butane plays an important role in our industry and commerce. But like all petroleum products, butane's supply is limited, so conservation measures must be taken to ensure its availability in the future.

Chemical Name: Butane

Formula: $C_4H_{10}(H_3CCH_2CH_2CH_3)$

Synonyms: n-butane
liquefied petroleum gas

Physical Properties:
boiling point: 0.5°C (31.1°F)
freezing point: -135°C (-126°F)
vapor pressure: 290 KPA (at 15°C)
18.8°C (2.0 ATM)

Threshold Limit Values (TLV)
time-weighted average: 800 ppm
short-term exposure limit: not available

Flammability Limits in Air
lower: 1.9%
upper: 8.5%

Combustion Properties
flashpoint (c.c.): -60°C
autoignition temperature: 405°C

Densities
vapor (air = 1): 2.01
specific gravity at 0/20°C:
liquid 0.60
vapor 20
density
(at 4°C): 0.60

Identifiers
U.N. Number: 1075
CHRIS Code: BUT
Cargo Compatibility Group:
31 (Paraffins)

Nautical Queries

The following items are examples of questions included in the Third Mate through Master examinations and the Third Assistant Engineer through Chief Engineer examinations:

Engineer

1. When you check the specific gravity of battery electrolyte with a hydrometer, you should know that _____.

A. the battery is fully charged when the indicator floats low in the electrolyte
B. any water that has been previously added to the cells will dilute the solution and give a false reading
C. a hydrometer reading is inaccurate if taken immediately after water is added to the cell
D. temperature has no effect on hydrometer readings

Reference: NAVPERS 10086-A, *Basic Electricity*

2. The primary function of a fuel delivery valve assembly is to _____.

A. deliver proper fuel quantity to the injection nozzle
B. affect rapid fuel injection cutoff
C. control fuel quantity entering the pump body
D. control fuel pressure delivered to the combustion chamber

Reference: Stinson, *Diesel Engineering Handbook*

3. The source of metal particles adhering to the magnets in a lube oil strainer is probably the _____.

A. shaft journal
B. bearing shell
C. reduction gears
D. babbit material

Reference: Gunther, *Lubrication*

4. Positive displacement helical gear pumps are well suited for pumping oil because _____.

A. stuffing boxes eliminate the leakage problems usually associated with other gear pumps.
B. it is not necessary to closely maintain design clearances in this pump.
C. helical gear pumps are essentially self-priming, and produce a high section lift
D. helical gear pumps are designed with extreme tooth angles

Reference: Osbourne, *Modern Marine Engineer's Manual, Vol. I*

5. If a cargo tank which is not gas free must be entered, _____.

A. safe entry without a breathing apparatus may be made at the top of the tank since petroleum vapors are heavier than air
B. a man may work safely without a breathing apparatus in cold weather as vapors are less volatile
C. a breathing apparatus would not be necessary in an emergency as you would only be in the tank a short time
D. a fresh air breathing apparatus should always be used

Reference: MARAD, *Marine Fire Prevention, Firefighting and Fire Safety*

Deck

1. You take an RDF bearing on a vessel requiring assistance. The position of the vessel requiring assistance is LAT 30'00'N, LONG 140'00'W. Your position is LAT 25'00'N, LONG 135'00'W. What is the conversion angle you must apply to the RDF bearing to convert it into a Mercator course?

A. -1.0'
B. +1.0'
C. -1.3'
D. +1.3'

Reference: Bowditch, *American Practical Navigator*

2. The capacity of any liferaft on board a vessel can be determined by _____.

A. examining the Certificate of Inspection
B. examining the plate on the outside of the raft container
C. referring to the station bill
D. referring to the shipping articles

Reference: Seaman's International Union, *Water Survival Manual*

3. According to regulations, how many B-II hand portable fire extinguishers are required in the cargo tank area of a tank barge engaged in transferring grade B flammable liquids?

A. one
B. two
C. three
D. none

Reference: 46 CFR 34.50-10(a)

4. What is the difference between net tonnage and gross tonnage?

A. Net tonnage is the gross tonnage less certain deductions for machinery and other areas.
B. Net tonnage is tonnage of cargo compared to tonnage of whole ship
C. Net tonnage is the net weight of the ship.
D. There is no difference.

Reference: Turpin, *Merchant Marine Officer's Handbook*

5. You are at latitude 30 degrees 10' S and sight a star bearing north at transit whose altitude is 34 degrees -02'. The declination of the star is _____.

A. 24-48N
B. 24-48S
C. 55-58N
D. 58-50S

Reference: Bowditch, *American Practical Navigator*

(answers on next page)

Answers

Engineer
1-C; 2-B; 3-C; 4-C; 5-D
Deck
1-C; 2-B; 3-B; 4-A; 5-A

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

Keynotes

Supplemental Notice of Proposed Rulemaking

CGD 86-034, Hazardous Materials Pollution Prevention (June 9)

The Coast Guard is considering making changes to its proposed regulations for waterfront facilities which transfer oil or hazardous materials in bulk. These changes were recommended by a commenter to the notice of proposed rulemaking for hazardous materials published in the *Federal Register* on June 13, 1988. This supplemental proposal is intended to help simplify the administration and enforcement of the existing waterfront facility regulations by consolidating the Coast Guard's safety and pollution prevention requirements for bulk liquid terminals.

For further information, contact Gary Chappell, Office of Marine Safety, Security and Environmental Protection, (G-MPS-3), telephone (202) 267-0491.

Final Rule, Suspension of Implementation Date

CGD 86-067, Programs for Chemical Drug and Alcohol Testing of Commercial Vessel Personnel; Suspension of Implementation Date (June 23)

This final rule suspends the implementation date for pre-employment drug testing by marine employers having 50 or more employees. The U.S. District Court for the District of Columbia has requested a delay to allow for consideration of the pending cases in light of recent Supreme Court decisions and anticipated decisions of the Circuit Court of Appeals for the District of Columbia Circuit.

This rule is effective on June 21, 1989. For further information, contact CDR John Koski, Office of Marine Safety, Security and Environmental Protection, Marine Investigation Division, telephone (202) 267-2215.

Final Rule

CGD 89-048, Vessel Numbering and Casualty Reporting (June 27)

The Coast Guard is correcting statutory citations and restatements of legislative text to conform to changes made during recodification of Title 46 of the United States Code. The Coast Guard is also updating the lists of Issuing Authorities and Reporting Authorities. Since the lists of issuing and reporting authorities were last corrected, the Coast Guard has approved several State numbering and casualty reporting systems. The Coast Guard remains the issuing and reporting authority only for the State of Alaska. The effect of this rulemaking is to update statutory citations and restatements of legislative text related to reciprocity, and to accurately identify the appropriate issuing and reporting authority for each State.

This rule is effective on June 27, 1989. For further information, contact Mr. Carlton Perry, Office of Navigation Safety and Waterway Services, telephone (202) 267-0979.

CGD 85-208, Floating Electric Waterlight (June 27)

The Coast Guard is revising its regulation for designing, constructing, testing, and approving a floating electric waterlight by replacing the existing detailed requirements with the incorporation by reference of Underwriters Laboratories Inc. (UL), ANSI/UL 1196, Standard for Floating Waterlights. Also, the Coast Guard is replacing the plan approval process for a waterlight with an approval procedures which uses a test performed by an independent laboratory and a manufacturer certification method. Incorporation by reference

of ANSI/UL 1196 allows a waterlight to be designed using the most current technological innovations. The end results will be the development of an improved waterlight design, and a reduction in time delays and administrative procedures

This regulation is effective July 27, 1989. The incorporation by reference of certain publications listed in this regulation is approved by the Director of the *Federal Register* as of July 27, 1989.

For further information, contact Mr. Randall N. Crenwelge, Office of Marine Safety, Security and Environmental Protection, Marine Technical and Hazardous Materials Division, telephone (202) 267-2206.

Notice

CGD 89-0541, Specific Trade Exemptions; Moratorium on New Issuances and Modifications (July 27)

Due to recent casualties involving tankships, the Coast Guard is reviewing existing regulations and policies concerning tanker construction and operations. Under 33 CFR Part 157, Subpart F, certain tankers may currently be granted exemptions from specific construction or equipment requirements if certain operating conditions are met. During this review, the Coast Guard will not issue new or modified exemptions under this Subpart. Vessels currently operating under existing exemptions may continue to operate under the terms of those exemptions.

For further information, contact Mr. Stephen M. Shapiro, Merchant Vessel Inspection and Documentation Division, telephone (202) 267-1181.

Notice of Study and Requests for Comments

CGD 89-057, Pilotage Study (July 26)

This notice announces a Coast Guard study of issues relating to pilotage requirements. The study will consider whether to recommend any changes to existing laws and regulations. It is anticipated that the study will be concluded by October 1989. The Coast Guard will publish a notice of study completion in the *Federal Register* and will make the final report available to the public for comment.

For further information, contact Mr. John J. Hartke, (202) 267-0217.