

PROCEEDINGS

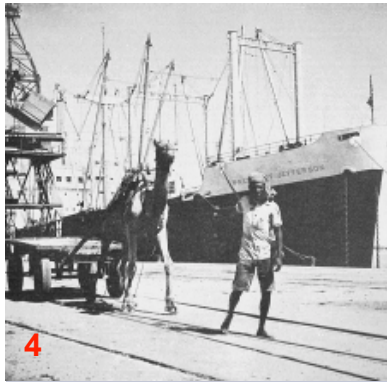
of the Marine Safety Council

January-March 2001 Volume 58, Number 1



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Front cover: Under one of the new SS *Santa Rosa's* propellers is seen the present SS *Santa Rosa*, which was diverted from its regular run to participate in the ship launching event in the Newport News, Va. shipyard. The new ship is expected to be in regular service this year between the United States and South American ports (Feb. 1958). (Photo courtesy Grace Line)

Back cover: Lykes Brothers safety winners display their awards aboard the SS *Tyson Lykes* (July 1967).



Assistant Commandant's Perspective

By RADM Robert C. North
Assistant Commandant For Marine Safety & Environmental Protection

Marine Safety Council Proceedings was first published in January 1944. Conceived during World War II when America's merchant fleet sailed to war, the magazine was then titled *Proceedings of the Merchant Marine Council*. The goals and scope of the magazine are not very different today from what they were then.

In that first issue, Commandant of the Coast Guard VADM Russell R. Waesche, aptly stated:

"It is incumbent upon the Coast Guard, as the agency of the federal government charged with administration of the laws governing navigation and vessel inspection in the interest of safety at sea, to discharge its responsibility in this regard intelligently, fairly, and openly to the end that there may be a proper balancing of the public interest and the interests of all branches of the industry with the least possible interference with normal operations. It is with this objective in view that the Merchant Marine Council, with its panels representing all elements of the industry, was created to advise and assist the Commandant on matters relating to navigation and maritime safety, and to provide a forum in which all interested parties may express their views on actions taken or contemplated. It is hoped that the 'Proceedings' will prove to be of value to the maritime community."

In that same issue of *Proceedings*, the Merchant Marine Council commented:

"In the Commandant's statement, he points out that the Merchant Marine Council, with its special panels, is his advisor on all matters relating to merchant shipping. With the inauguration of this publication the Coast Guard is, in some measure, reestablishing what was once issued in the Department of Commerce as the Merchant Marine Bulletin. The scope, however, will not be limited to the marine inspection activities of the Coast Guard, but will cover other functions affecting safety of navigation, such as aids to navigation, port security, rescue facilities, and the like. It is hoped to include herein matters of information and interest which, by their dissemination, will make for greater safety at sea."

Today's *Proceedings* continues to serve the shipping industry and seafarers and we will strive to continue to improve the magazine's quality and effectiveness as we enter the 21st century.

A handwritten signature in black ink, appearing to read "R. C. North".

Admiral James M. Loy,
USCG Commandant

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By the Way . . .

Editor's

Point of View

This issue is a retrospective of *Proceedings* from World War II to Vietnam. Lack of space precluded a lengthier timeframe.

A number of today's mariners who were on deck and in the engine room during that period remember those years with a certain nostalgia. Seafarers—many with combat experience—seemed a more colorful lot, city harbors had downtown berthing and bustle, and the American flag still flew on a sizeable number of merchant vessels. Sometimes forgotten, however, were the polluted harbors, lack of adequate safety procedures, and the scarcity of hi-tech gizmos such as computers and satellite navigation, that makes today's seamanship safer and more efficient.

World War II articles focused on wartime priorities: port security, explosives transport, liberty ships, and wartime safety and emergency requirement. Following the war, *Proceedings* detailed implementation of new technologies such as radar, radio and satellite navigation and communications. Other new technologies were also reviewed: aluminum ship construction, nuclear power, double-hull construction, container vessels, and supertankers. Conventions and conferences on safety and environmental protection were discussed. New lifesaving gear and equipment, more vigorous training and licensing requirements, and better monitoring techniques were published. The only thing constant was change.

Just as diesel-powered vessels replaced river steamers and wooden sailing vessels of an earlier century, the next 100 years will see profound changes and new challenges. For instance, faster vessels will demand greater collision prevention measures. Increasing dependence on computers will require greater security. Threats of terrorism will shape new protective measures. Better training will need to be balanced with cost and time factors. While it is difficult to predict the future of maritime technology, advances in the near future will likely continue in communications, navigation, vessel architecture, data collection and interpretation, fuel efficiency, safety, human factors, and automation.

During the next 100 years, *Proceedings* will keep pace with this new technology, offering the latest in safety information and requirements. To help us better serve you, please complete the attached survey. Your responses will be published in the next issue of *Proceedings*, and presented to the G-M Editorial Board (comprised of Marine Safety and Environmental Protection officials) for consideration.

Our next issue theme will be fishing vessel safety.

P

● June 27, 1940 - President Roosevelt invoked the Espionage Act of 1917 to govern the anchorage and movement of all vessels in U.S. waters and to protect vessels, harbors and waters. This was the beginning of port security activities in World War II.

- Feb. 19, 1941 - Coast Guard Reserve established.
- March 11, 1941 - Lend-Lease Program inaugurated.
- March 17, 1941 - USCGC *Cayuga* left Boston with South Greenland Survey Expedition on board to locate airfields, seaplane bases, radio and meteorological

For more timeline events, including those from the birth of the U.S. Coast Guard to pre-World War II, go to: http://www.uscg.mil/hq/g-cp/history/Chronology_index.html

Lifesaving Suits

Jan. 1944 - The regulation requiring lifesaving suits aboard merchant ships of over 1,000 gross tons is still in effect. Formerly, the only difference was that all replacements had to be with the present standard Neoprene suit. Suits of other types previously approved and on which the approval has been withdrawn may be continued in use so long as they are still in good and serviceable condition.

Lately, reports have indicated the existence aboard ship of an increasing number of defective old-type suits. It has been found that several suits have been torn or ripped when subjected to hard usage. For this reason, it is believed that these suits may have been stowed adjacent to radiators or steam pipes, or that they may have come in contact with oil or grease, either of which conditions would tend to cause deterioration of the material.

Temporary Permits

Jan. 1944 - Temporary permits are now issued by the Coast Guard to professionally qualified men to act in the capacity of licensed officers or registered staff officers, in the American Merchant Marine. These temporary certificates carry the same authority and responsibility as the usual license or certificate form which is withheld pending favorable result of the character check now required.

These temporary permits are not issued because of the delay in checking applications for Headquarters approval, required before the licenses or certificates of registry are issued.

Black-out On Ships

Jan. 1944 - A complete black-out on ships traveling under wartime conditions is absolutely essential to protect the ship from enemy attack. When it is borne in mind that even the glow from a cigarette may be seen as far as a half-mile distance on a clear, dark night, the reasons for utmost precaution become even more

obvious. An imperfectly blacked-out ship is an invitation to torpedo attack if traveling alone and, if in convoy, is a menace not only to herself but to the entire convoy.

Green Lookouts

March 1944 - The posting of a lookout at night or in low visibility is a basic safety precaution which no master neglects. But the mere stationing of a hand in the bow, or upon the bridge or elsewhere if the bow station is unsafe, is not sufficient. It is the responsibility of the officer in charge of the ship to assure himself that the lookout is, in fact, performing his duties vigilantly throughout his watch.

For example, during a collision occurring between two steamers on a dark night and in clear weather, the prescribed complement of one of these vessels was such

The cover of the first issue of *Proceedings* (Jan. 1944) is a painting by LCDR Anton Otto Fischer, USCGR, of the liberty ship *Henry Lomb*.



stations, and aids to navigation in Greenland.

- April 10, 1941 - Ten cutters sailed to England, in the interest of national security.
- June 1, 1941 - South Greenland Patrol organized with three cutters and a Navy vessel.

- June 3, 1941 - President Roosevelt signed an executive order making 2,100 USCG officers and men available to man U.S. Navy transports and other vessels.
- Aug. 18, 1941 - Coast Guard enforced law to protect walruses in Alaska.

that an ordinary seaman was standing lookout watch. Unfortunately, it was this seaman's first trip to sea. The two ships came together through unskilled handling on both sides.

The part played by the lookout had little or no bearing on the actual collision since the lights of both vessels had been clearly visible for some time. Nevertheless, the lookout had made no report and, upon examination, testified that he did not know what reports to make or how to make them.

No watch officer should take for granted his lookout's performance.

Hold Those Rafts

April 1944 - Life rafts should not be released until so directed from the bridge. Instances were cited where the rafts had been cast loose upon being torpedoed while the vessel was still forging ahead and when the vessel was actually stopped the rafts were too far astern to be of any use. The vital need for a man to obey orders should be impressed upon everyone.

Routing Orders

April 1944 - A serious casualty occurred as a result of deviation from routing orders by the master of a vessel proceeding independently. This vessel was given a prescribed course which the master neglected to follow. Apparently, he decided to save time and take a shortcut, not knowing that a large convoy was also under way in the vicinity. Because of his disregard of orders designed to keep his vessel out of danger, he cut into the course of the convoy, was struck by one of the oncoming ships, and sank.

The master and eight other members of his crew lost their lives, together with one man from the colliding vessel who jumped overboard to help rescue some of the survivors of the sunken ship. In addition, the colliding vessel had to return to port for repairs, to the detriment of the war effort.

Obey routing orders! There is a reason back of them!

Survival Recipes

June 1944 - There is a sad dearth of information on what the prospective survivor as an individual should do in order to further his chances of attaining that survival at sea. Yet, the grim fact that in every well-regulated war

some ships are bound to be sunk, compels the admission that the subject merits serious consideration. It is not being unduly timorous or pessimistic to prepare ahead of time for such a misadventure. Indeed, self-salvation is a positive duty.

Probably the first step to prepare oneself against the necessity of taking to the deep and briny, is to learn the ship thoroughly. Even in such a relatively small community as a war vessel, the paths of travel from bunk to mess to duty station tend to take routine patterns along the shortest usually traveled routes. The larger the ship, the more likely is the individual to miss knowing alternative routes to various parts of the vessel.

The problem of what to wear is usually settled by circumstances—you wear what you have on at the time, unless you are involved in one of those leisurely shipleavings which admit of a choice of apparel. Such are not the rule. However, if you happen to be torpedoed while partially disrobed, by all means try to grab a shirt and pair of trousers on your way out. Clothes have several advantages. They'll spare you much barked hide while you're going over, whether you go down a rope, climb along a canted hull, or follow the more decorous procedure of getting into a boat.

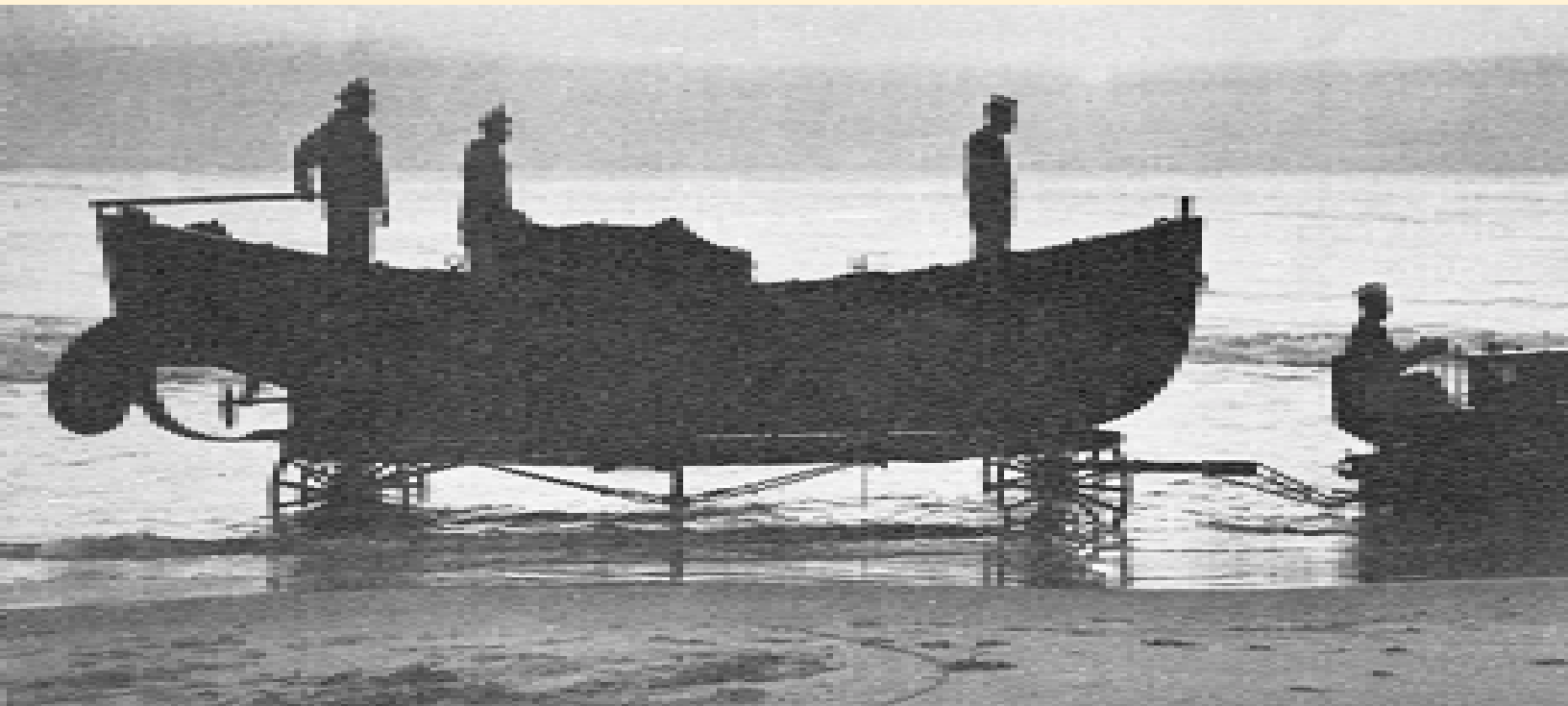


U.S. Coast Guard inspectors hold lifeboat drills on a foreign liner used as transport (May 1944).

● Sept. 12, 1941 - After the Danish government in exile asked the U.S. to protect Greenland, the cutter *Northland* seized the Norwegian sealer *Buskoe*, with Nazi agents on board trying to establish radio and weather stations, in MacKenzie Bay, Greenland. The capture of the *Buskoe* was the first U.S. naval capture of World War II.

● Nov. 1, 1941 - The Coast Guard began operations as part of the Navy.

● Dec. 7, 1941 - Japanese attacked Pearl Harbor—USCGC *Taney*'s screen of anti-aircraft fire prevented Japanese planes from destroying Honolulu's power plant.



Coastguardsmen haul lifesaving equipment along the beach with a tractor (May 1944).

Of prime importance are gloves. You may have to tear away debris, climb over jagged or hot wreckage, or take to a rope. One cannot afford injury to the hands, principal tools of salvation. A pair of light leather gloves, habitually carried in the hip pocket of one's trousers when not being worn, will prove worth more than their weight in gold in abandoning ship.

Now, for getting over the side. *Don't jump*, unless there's no alternative. A leap from any appreciable height is an invitation to a broken neck or to getting yourself knocked out by the slap of the life belt against your jaw. Further, you cannot be certain that just below the surface there isn't some obstruction, such as a projecting hull fitting, which may end right there your efforts to reach safety.

First choice is a fire hose, if there's one rigged which reaches close to the surface. Because of its "squeezability," the hose offers a surer grip than does a rope. But, if you use a hose, look out for that nozzle at the end. Don't let it sneak up on you unawares during your downward progress. It can be very painful. Lacking a hose, you will have to take a rope. First, be certain it has been belayed!

Once on the rope or hose, remember the cardinal rule: *Don't slide*. Go down hand-over-hand. If you slide,

you may not be able to stop. And, if you have not provided yourself with a pair of stout gloves, your efforts to stop will result in reducing your hands to a pulpy, seared mass. Be always alert for any tendency to slide unintentionally (ropes become slippery from water, oil, and blood), and snub up promptly before the slide develops.

Arriving at the end of the line, ease yourself into the water. *Don't jump*. Under stress of abandoning ship, with familiar marks dislocated by rolling or listing, it is all too easy to misjudge the distance to the water. Try not to let go until your feet are immersed. Then get under way smartly on the previously determined course, putting as much distance as possible between yourself and the ship with an initial speed run. You want to get well clear (a couple of hundred yards) as soon as you can. It is near the ship that the almost inevitable leaking fuel oil is thickest, with consequent danger of fire on the water. One way to determine that you are beyond this latter peril is to look at the oil in the water. If it is broken up in small, isolated globules instead of forming an unbroken sheet, you are reasonably safe from fire.

If you are picked up by a destroyer or similarly small vessel, *get below* decks right away. Sure, you'd like to stay topside, and see what's going on. But a destroyer

● Jan. 30, 1942 - The capsized hulk of the USCGC *Alexander Hamilton* was sunk by the U.S. Navy after she was torpedoed off the coast of Iceland by the German sub *U-132* the previous day. She was the first cutter sunk by enemy action during World War II, with the loss of 26 of her crew.

● Jan. 30, 1942 - USS *Wakefield* (USCG-manned), having disembarked 20,000 British troops, was bombed by the Japanese in Singapore. Five were killed. The ship later evacuated 500 women and children to Bombay before the port fell to the Japanese.

that has taken aboard 600 or 700 survivors (and individual tin cans have rescued that many), is in a precarious state of balance. People staying topside may well cause the ship to turn over.

There is a large element of that imponderable factor called luck, in surviving the destruction of one's ship. But luck alone cannot be counted upon to effect your salvation. When the time comes, you're going to have to think your way out. And the more thinking you've done ahead of time the more likely you are to be in a position to tell your grandchildren highly embellished account of what happened.

Duties and Missions

June 1944 - On Aug. 4, the U.S. Coast Guard began its 154th year of service to the nation and to American shipping. Originally founded to protect legitimate shipping from the murderous competition of smugglers, it has advanced with technological progress in marine engineering and with the commercial progress of maritime trade to act also as a preventive agency for increasing the safety of lives and property at sea. Today, under normal circumstances, it is the federal agency charged with the maintenance of all physical aids to the building and retaining of a healthy and prosperous Merchant Marine. Its main concern is preventing disasters at sea and, if disasters happen despite all precautions, to lessen the material loss in lives and property by rendering prompt assistance. Under wartime conditions, however, the Coast Guard has assumed many additional duties of a more transitory nature.

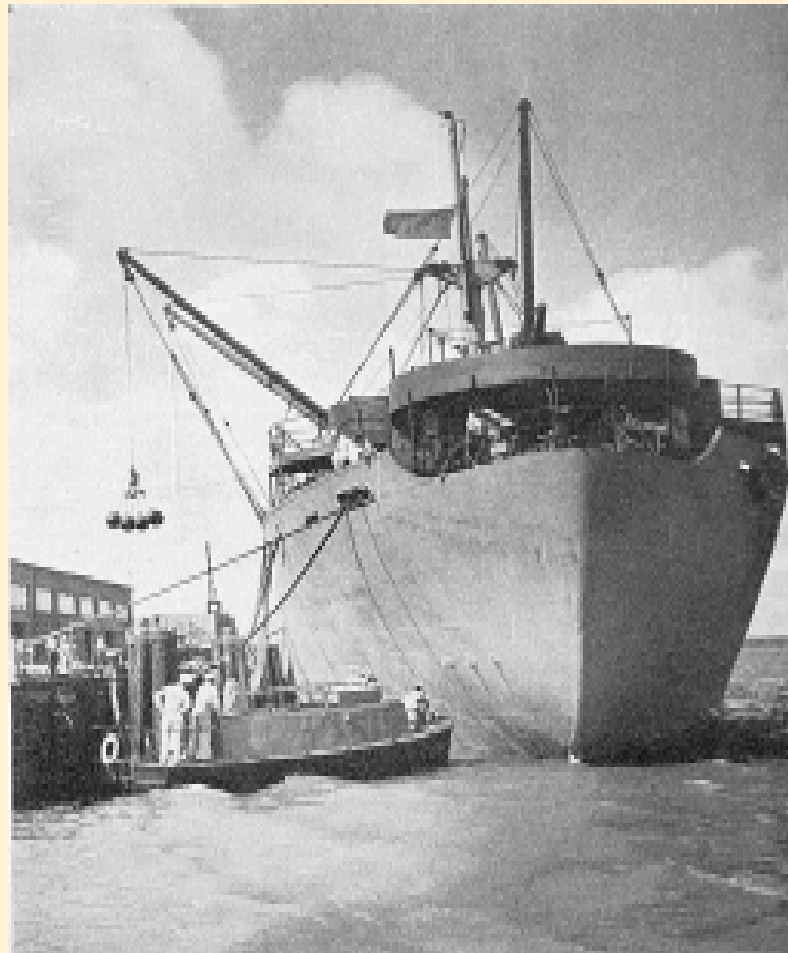
The Coast Guard's peacetime responsibility for the enforcement of navigation laws and those having to do with the anchorage and movement of vessels in harbors gain added significance in time of war as part of the port security program. So, too, with vessel documentation and the certifying of ship's manifests. In one port alone, during a single month of the present war, approximately 1,000 vessels found a berth. The speedy examination and certification of ship's papers under such circumstances is an important wartime obligation that contributes directly to the effectiveness of fight fronts, thousands of miles distant.

The diversity of the Coast Guard's functions result from the fact that the present Service represents the combined functions of four distinct federal agencies—the original Revenue Cutter Service, the Life-Saving Service, the Lighthouse Service, and the Bureau of Marine

Inspection and Navigation.

The Revenue Cutter Service originated in Alexander Ramilton's Tariff Act of 1790, which authorized the construction of armed sailing vessels to ensure the collection of the customs. When the U.S. Navy was established in 1799, it was specified that the Revenue Cutter Service should always be attached to the Navy during time of war.

This change-over from Treasury control to Navy jurisdiction is automatic on the opening of hostilities, but it may be hastened by presidential action. As war clouds thickened over the Western Hemisphere in 1941, the president on Nov. 1, of that year, placed the Coast Guard under the Navy for the duration of the "emergency." As a functioning unit the Service was placed under the jurisdiction of the Secretary of the Navy with the



Mariners load 1,000-pound bombs under Coast Guard supervision. In the foreground is a Coast Guard fireboat (May 1944).

- Feb. 6, 1942 - USCGC *Nike* rescued 38 from *China Arrow* off Ocean City, Md.
- Feb. 25, 1942 - Wartime port security delegated to Coast Guard.
- Feb. 28, 1942 - Certain duties of former Bureau of

Marine Inspection and Navigation transferred to the Coast Guard.

- Feb. 28, 1942 - U.S. Maritime Service transferred to Coast Guard from War Shipping Administration.
- March 15, 1942 - USCGC *Acacia* shelled and sunk

commandant of the Coast Guard continuing to administer the Service, but directly under the chief of Naval Operations.

Supervision of the anchorage and movements of vessels in United States ports, now vested in the Coast Guard, came about through a series of measures starting in 1915. On Feb. 25, 1942, the President directed the secretary of the Navy to take all necessary steps to safeguard the port and waterfront facilities in the United States, its territories and possessions. Responsibility for port security was then delegated to the captain of the port organization by the commandant of the Coast Guard.

Supplementing port security is the Beach Patrol, established shortly after the outbreak of the war to patrol and guard the country's more than 40,000 miles of coast line and inland waterways. While the activities of this force in some respects resemble the duties performed by the peacetime lifesaving beach patrols, its purpose is quite different, as are the members' training

and operational methods. It is primarily a security force, designed to protect the country's coasts and inland waterways against saboteurs, especially those who might be landed from enemy submarines and also to detect the presence of subs in coastal waters or any other signs of enemy or "fifth column" activities along our shores. The Beach Patrol, therefore, is distinctly an innovation of this war, without previous service counterpart.

Following the International Conference on the Safety of Life at Sea held in London in 1913, the President delegated to the Coast Guard the maintenance of an International Ice Observation and Ice Patrol service.

The Alaska patrol is no longer in operation, but the familiarity of Coast Guardsmen with this region of treacherous storms and difficult navigation was of immense benefit to the amphibious forces battling the Japanese invaders of the Aleutians. Coast Guard vessels have played an important part in later offensive operations conducted from Alaskan bases.

The Greenland patrol, on the other hand, proved its worth in time of war when the first convoys began passing

through the North Atlantic on their way to Britain. The experienced personnel drawn from the ice patrol have played an increasingly important role in escort duty, submarine-detection work, and in manning many of the military vessels in convoys. In this area the Service has seen action and sustained losses in accordance with its long tradition of valor and endurance.

Another peacetime function of the Coast Guard, servicing of aids to navigation, has been of great aid in the prosecution of the war, especially in areas such as the Southwest Pacific where little known channels and newly won naval bases require navigational markings and identification.

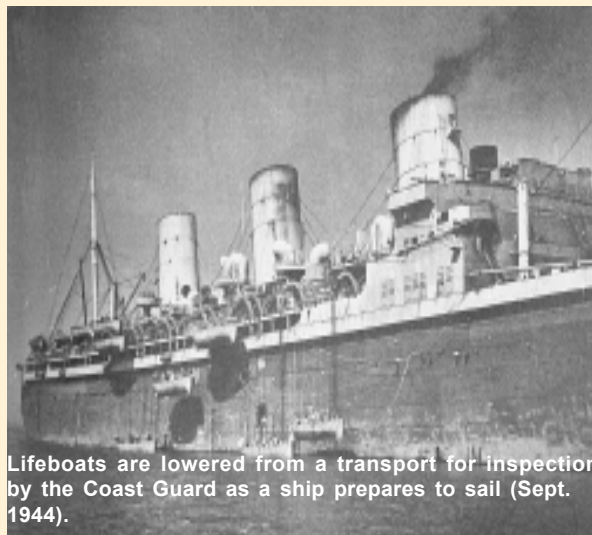
The transfer of most functions to the former Bureau of Marine Inspection and Navigation to the Coast Guard, opened a vista of wartime responsibilities and opportunities from two directions: one having to do with the inspection of ships and their cargoes and of problems connected with seamen and the other concerned with the

development of better safety and rescue equipment and devices for use aboard vessels and lifeboats.

Coast Guard aviation, which had performed a variety of duties before the war in conjunction with fast rescue boats, is now the chief medium of air-sea rescue work, saving hundreds of survivors of air crashes and of wrecked or torpedoed ships. Coast Guard planes and air stations have also engaged, to a large extent, in patrol work of a military significance.

Among special wartime functions of the Service are those it performs as part of the nation's naval forces, such as manning troop transports and invasion craft. These operations, together with the escort and patrol activities of armed Coast Guard vessels, belong to the combat records of the Service and have accounted for the greater part of the casualties it has sustained.

In looking toward the future and a return to its primary functions at the war's end, the Coast Guard is becoming increasingly conscious of the opportunities that lie ahead for fostering a strong Merchant Marine through increasing operating efficiency by simpler and sounder safety



Lifeboats are lowered from a transport for inspection by the Coast Guard as a ship prepares to sail (Sept. 1944).

by German sub *U-161* in the Caribbean.

- March 30, 1942 - Coast Guard designated as a service of the Navy to be administered by the Commandant of Coast Guard under the Secretary of Navy.
- May 2, 1942 - Coast Guard prewar search and

rescue procedures discontinued for security reasons.

- May 4, 1942 - USCG Auxiliary organized into an anti-submarine patrol force, which became known as the Corsair Fleet.
- May 9, 1942 - USCGC *Icarus* sank German sub

methods. The trend is more and more toward preventing the loss of ships, the loss of men, the loss of cargoes, and the loss of time through conceivable disasters. For the only standard of the Coast Guard's efficiency is the efficiency of its sister service, which it was created to serve: the Merchant Marine.

Reverting to Treasury

Nov. 1944 - The Coast Guard will revert to the Treasury Department at the conclusion of the war, according to a declaration made by James Forrestal, Secretary of the Navy. "Coast Guardsmen stepped into the Navy, filled many billets that we should have found otherwise most difficult to man, and have discharged their duties in harmony with the highest tradition of the Naval Service," Forrestal said.

Lifeboat Radio

Nov. 1944 - At present, lifeboats and rafts carry signal

flags, orange-colored sails, daylight smoke signals, parachute flares, distress signals, and signaling mirrors. These are, however, only of value for attracting the attention of someone already within visual range, which is necessarily short. For longer range use each cargo ship is required to carry a portable battery-powered transmitter, capable of working on 500 kilocycles, which is to be placed in one of the lifeboats before launching, and which uses an antenna wrapped around a sprit for the mast.

It is obvious that the provision of an all-purpose hand-operated portable transmitter will be of the utmost value in peacetime as almost guaranteeing that men in a boat or on a raft will not be minute specks on a boundless ocean, but will be the center of a radionic circle which will have an effective range, if need be, of thousands of miles.

Danger Lurks

Dec. 1944 - One of the many unpleasant habits of our enemies in this—and, for that matter, the previous war—is that of leaving behind them various "boobytraps"



Lifeboat loaded to wartime capacity; 29 persons (Sept. 1944).

U-352 off Charleston and took 33 prisoners, the first German prisoners taken in combat by any U.S. forces in World War II.

- June 13, 1942 - John C. Cullen, seaman 2/c discovered Nazi saboteurs landing on beach at Amagansett, Long Island.

- June 13, 1942 - USCGC *Thetis* sank German sub *U-157* in Atlantic.

- June 30, 1942 - Beach Patrol Division established at Coast Guard Headquarters.

- July 8, 1942 - USCGC *McLane* and USS *YP-251*

when forced to abandon territory. These are charges of explosives attached to some object likely to be moved by personnel of the advancing forces, in such manner as to be detonated by movement or investigation. All military personnel are carefully warned against booby traps and cautioned that desirable looking battle souvenirs form one of the most fruitful baits for such infernal machines.

Personnel of the Merchant Marine do not receive such warnings because they will normally not approach a battlefield or beachhead until expert specialists have cleared it of land mines, booby traps, and similar dangers that have been intentionally strewn in the vicinity by the enemy. But the debris of battle contains many hazardous objects apart from those deliberately created and the amphibious type of warfare makes battlefields out of beaches upon which merchant seamen frequently land. Thoughtlessness, or ignorance of the danger, prompts such seamen to garner as souvenirs, shells or fuses which still contain their explosive charges and which subsequently cause death or injury to the possessor. The Coast Guard's casualty records indicate the frequency of such occurrences, which a few examples are cited.

On Tinian a party of seamen on shore leave from a U.S. merchant vessel strolled about in search of items of interest and one man found an unexploded mortar shell. He called to his companions to inspect his find. A passing Marine warned him not to handle the shell. At just that moment it exploded, killing the finder, seriously injuring one companion and setting fire to the clothes of the Marine.

Near Bizerte, a seaman from a tanker found the nose of a German 20mm shell and brought it back to his ship. He apparently was endeavoring to disarm the fuse with his knife when it detonated, blowing off part of his right hand and inflicting seven chest wounds. An identical casualty was incurred by a messman on a ship lying in Cherbourg who also indulged in amateur tinkering with a similar nose fuse.

An oiler on another ship at Cherbourg found a whole German shell, brought it on board ship, and started to dress it down on the emery wheel. The immediate result was the loss of most of the fingers of his right hand. In still another case the casualty was not even traceable to enemy materiel. A fireman on a ship in the South Pacific tried to cut open a 20mm shell from the ship's own ammunition with a hacksaw. He lost his right thumb and forefinger and received serious chest wounds in the inevitable explosion.

Even those men merely injured will be seriously handicapped for life by the crippling of their right hands. That is a heavy price to pay for careless acts. There are standing orders in all military areas against bringing live or unexploded ammunition on board ship except as authorized. The foregoing shows part of the reason why. If a battlefield souvenir is not known to be harmless, it should be treated as the gun that "is loaded," and let alone.

Liquid Death

Feb. 1945 - Review of personnel casualty reports discloses the lengths to which some seamen will go to get what they believe to be a drink of intoxicant and their utter ignorance of the effects of some of the mixtures. Wood alcohol, since it is carried by most ships as part of the paint locker stores, is the most common ingredient. Apparently there seems to be prevalent a fallacious belief that if wood alcohol is filtered through a loaf of bread, its toxic properties are removed. There is, of course, absolutely no foundation for this belief, but nevertheless, case after case shows that somebody gambled his life or his eyesight upon it.

The casualty reports make pretty grim reading, for



Coast Guardsmen check moorings for buoys and light-ships (Nov. 1944).

(USCG-manned) sank Japanese sub *RO-32* off Sitka, Alaska.

● July 11, 1942 - U.S. Maritime Service transferred back to War Shipping Administration after being under the Coast Guard since Feb. 28, 1942.

● July 28, 1942 - Coast Guard plane V-214 sank German sub *U-166* in the Gulf of Mexico.

● Aug. 27, 1942 - USCGC *Mojave* rescued 293 men from the torpedoed transport *Chatham* in the Strait of Belle Isle.

death by methyl alcohol is an agonizing one. A ship's maintenance man mixed hair tonic and wood alcohol and died six hours after drinking it, first having lost his sight; a ship's cook, who abstracted it from the paint locker, died after two days of agony; a boatswain, who secured his supply from the same source, mixed it with fruit juice with the same fatal result.

Sometimes the casualty is due to lack of knowledge that the ingredient is poisonous, though this would never be the case when the alcohol comes from the paint locker. For example, two seamen arranged to purchase what they thought was grain alcohol from a Navy seaman at the base where the ship was discharging. Actually it was wood alcohol stolen from that ship's cargo. One of the seamen died and the other was hospitalized with permanent loss of sight.

The urge for drink leads to utter disregard of elementary caution. Thus, a second mate died from drinking carbon tetrachloride which happened to be in a half-filled beer bottle. The odor should have told him that it certainly was not liquor. Perhaps the most remarkable case involved a first assistant who believed that the steward had some liquor in his medicine cabinet, and finding there a bottle marked "Poison," announced that he wasn't going to be fooled by that trick and took a drink. The contents happened to be sulphuric acid!

Part of the safety measures taken aboard every ship could well be a warning to the crew as to the ghastly and certain effects that flow from drinking wood alcohol or any other so-called intoxicant whose origin is unknown.

Line-Throwing Devices

June 1945 - The history of line-throwing appliances, for rescue purposes, dates back over 150 years. In 1791, a LT Bell of the British Royal Artillery experimented with a mortar, firing a 60-pound ball to which a line was attached. He succeeded in attaining a range of 400 yards but experienced difficulty in the attachment of the line to the cannon ball. CAPT O. W. Mandy of the Royal Navy continued the work, experimenting with an iron rod let into the shot to keep the line from burning and also with various shaped shots for securing increased range. He also seems to have devised a grapnel projectile which could attach itself to a wreck. For night-firing he fitted fuses in holes in the rear of his shell so that its flight could be followed, thus creating the forerunner of the tracer bullet.

In the meantime, the British Army had developed and were using in battle self-propelled rockets of considerable range. Their military effectiveness does not seem to have been very great—they were employed without much result at the Battle of New Orleans—but they offered a substitute for the line-carrying projectile that had to be shot from a gun, since their initial velocity, and hence impact on the line, was less and their trajectory was flatter. As a result, rockets were extensively used for lifesaving purposes in Britain, in preference to mortars.

In the United States, for lack of a federal agency charged with responsibility for lifesaving and rescue work, experiments with line-carrying devices did not begin until



Coast Guards' line-throwing gun, shell, and line-box (June 1945).



Firing a bazooka with line-throwing attachment installed (Jan. 1946).

- Sept. 9, 1942 - USS *Muskeget* (USCG-manned) sank without a trace. Nine officers and 111 enlisted men were lost.
- Sept. 27, 1942 - Douglas A. Munro, Signalman 1/c gave his life evacuating Marines at Matanikau Point, Guadalcanal. President Roosevelt posthumously

awarded him the Medal of Honor, the only person in the Coast Guard to earn this highest decoration.

- Dec. 17, 1942 - USCGC *Natsek* disappeared in Belle Isle Strait. There were no survivors. It was thought she capsized due to severe icing.

1877, when the Army loaned LT D. A. Lyle to the U.S. Revenue Marine, as the Coast Guard was then called. Lyle developed the type of mortar which bears his name and which is still used, substantially without change, by Coast Guard lifesaving stations and as required equipment on board ship.

Shortly after Lyle's experiments, one E. S. Hunt patented a projectile which carried its own line, paying it out in flight, like a guess-warp. The projectile was made of a short, heavy shot and a long hollow case, open at the mouth and in which the line was compactly coiled. The obvious advantages were that a line box was unnecessary and that range was greater, since the shot did not have to pull an increasing amount of line in its flight. However, only a very light line could be used and in the small shell case the friction of this line was considerable. The Hunt shell was never used in service.

While a mortar with line-carrying shot is standard

equipment for shore-based Coast Guard rescue parties experienced in its use, the value of such a device on board ship, specifically for passing a line to another vessel, is somewhat less demonstrable. The fact that other means of passing the line are precluded and that a gun must be resorted to, indicates serious weather conditions and generally assumes that one craft is disabled. Under such circumstances the relative drift of the two craft may result in bringing too heavy a strain upon the messenger before a hawser can be gotten across. Comments of experienced shipmasters are to the general effect that floating down the hawser by lifeboat or other buoyant means would offer the best chance of success. Shoulder guns, firing a metal slug attached to a small cotton line, were in use before the war and have been extensively used by vessels underway for passing messages or to make first connection for a breeches buoy fueling operation. In such cases however, both vessels are under control so that the



Ships and piers are still vital today (July 1945).

● Feb. 3, 1943 - The USCGC *Comanche* and *Escanaba* responded after the transport *Dorchester* was torpedoed. The crew of *Escanaba* used a new rescue technique when pulling survivors from the water. This retriever technique used swimmers clad in wet suits to swim to victims in the water and secure a line

to them so they could be hauled onto the ship. Although *Escanaba* saved 133 men (one died later) and *Comanche* saved 97, over 600 men were lost, including the four chaplains.

● Feb. 15, 1943 - USCGC *Calypso* removed 42 persons from the lifeboat of SS *Buarque* east

distance between them is slight and constant. The British Board of Trade requirements sped line-carrying rockets with a range of 200 yards in calm weather, but the line to be carried is only one-half inch in circumference, about the same as that for a shoulder gun. The use of nylon lines will result in a gain strength in a small line, but whether this will be sufficient to offset the practical difficulties involved in getting a towing hawser to a disabled ship in a heavy sea is open to question.

Warnings Ignored

July 1945 - In the article "Liquid Death" (Feb. 1945 *Proceedings*), we vividly depicted the foolhardiness of some seamen who engaged in the fatal drinking of methyl alcohol, or wood alcohol as it is often called. Incredibly, this has happened again, resulting in the death of five men and the hospitalization of another in a serious condition.

Some members of the crew gathered one evening in one of the staterooms to enjoy a few drinks. The ingredients for the drinks were methyl alcohol, procured from the engine storeroom and fruit juices obtained from the steward.

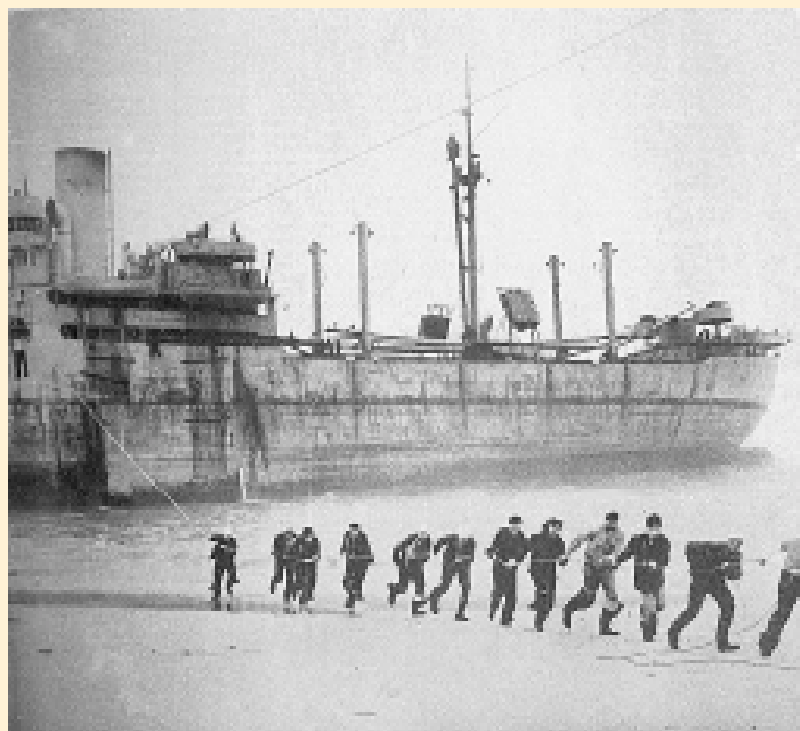
The following morning several members of the crew complained of severe headaches and stomach cramps but none of them seemed to consider their condition as serious. During the afternoon the heavier drinkers appeared to be in a drunken stupor but they continued to do their work about the ship. In the early evening some of the individuals were found groaning and in a dazed condition. They soon fell into a coma and died without regaining consciousness.

The amazing fact is that some of the ship's officers participated in this drinking party and paid no heed to the label and its warning that the contents were poisonous. Licensed officers are supposed to possess qualities of leadership as well as good judgment, but those concerned were certainly devoid of both.

Deaths of 2 Polliwogs

Oct. 1946 - There's nothing so tragic as the needless and purposeless deaths of men as the result of unfortunate actions on the part of their fellows. Such a tragedy recently occurred on the high seas when two young members of the crew of a ship sailing from San Francisco to Chile died as the result of an Equator crossing initiation.

The initiation had been the subject of much discussion by the shellback members of the crew for several



Coast Guardsmen land a crew member from a stranded ship (June 1945).

days previous to the crossing of the line. Along with the various other indignities planned for the ceremony, the suggestion had been made that the polliwogs be given a dosage of saltpeter, which the chief steward had found in the storeroom.

On the day of the initiations, the polliwogs, 14 in number, were blindfolded, painted with tincture of merthiolate, fish oil, and gentian violet, and were given a couple of cascara sagrada tablets. They were then made to lie down on their stomachs on the deck and pretend to swim as a saltwater stream was played on them from a firehose. Their hair was then cut in weird shapes or completely removed with scissors. To all intents that was to be the end of the initiation but someone, whom no one can recall, mentioned the saltpeter. Accordingly, the chief steward asked the chief cook to go below to the storeroom and bring up the bag of saltpeter. This bag was later described as a manila paper bag, sealed with a strip of gummed manila paper on which was labeled, in pencil "3' Salt Petre."

The cook returned with the bag, handed it to the steward, who in turn gave it to a fireman who volunteered to prepare the dosage. The fireman mixed a solution of

of Cape Henry.

- Feb. 21, 1943 - The USCGC *Spencer* sank German sub *U-225* in the North Atlantic.
- Feb. 22, 1943 - The USCGC *Campbell* rammed *U-606* in the North Atlantic when the German U-boat

was forced to surface after being attacked by the Polish destroyer *Burza*. The *Campbell* rescued five of the *U-606*'s crew.

- March 19, 1943 - British Steamer *Svend Foyn* was a victim of an iceberg collision off the southern tip of



A Coast Guard motor surfboat with a lifeboat in the background (Aug. 1945).

approximately 1.5 pounds of saltpeter to a gallon of water, which he gave to five of the Polliwogs. Two of the men spit out the entire portion given to them; one drank a very small quantity; and the remaining two, a messman and an ordinary seaman, drank quantities estimated to be from a quarter to half a cup. Within a short time the messman and the seaman collapsed on deck. During the remainder of that afternoon and early evening all possible medical attention was given to the stricken men. However, the efforts were to no avail and the men died that evening,

The bodies were placed in the ship's refrigerator and upon arrival at Chile autopsies were performed. The autopsies stated that the deaths were caused by saltpeter.

The vessel proceeded to Rotterdam where an investigation was conducted by a Coast Guard officer. He could not reconcile the results of the autopsies in Chile with his own belief that saltpeter, in the amounts consumed the victims, could not have caused the deaths. He caused a sample taken from the chemical used in the initiation to be analyzed with the result that it was identified as sodium

nitrite, a deadly poison. Further weight was given his contention by the records of deaths in Rotterdam by sodium nitrite, which listed symptoms identical with those of the messman and the ordinary seaman. He promptly forwarded his findings to the proper authorities who took steps to prevent reoccurrence of this casualty on other ships.

It cannot be expected that as a result of these casualties Equator initiation ceremonies should, or will, be abandoned. From the most lavish passenger ship to the lowliest tramp, these ceremonies are looked forward to as a break in the monotony of the voyage and an occasion for relaxation. The "old man" has plenty of ship's business with which he is occupied, without adding to his duties the supervision of initiation ceremonies when crossing the line. However, the master deeply concerned with the welfare of his crew might, as a result of this casualty, see to it in an unobtrusive manner that such ceremonies are guided by the older and more responsible members of the crew.

Greenland. The Coast Guard rescued 145. International Ice Patrol was suspended during this period (1942-1945).

- March 27, 1943 - CG-85006 (ex-Catamount) exploded off Ambrose Light. Nine lost.

- June 13, 1943 - USCGC *Escanaba* was lost off Ivigtut, Greenland, with only two survivors. Cause of the sinking has never been determined.

- Dec. 26, 1943 - Landings were made at Cape Gloucester by USCG-manned LSTs.

Carelessness Bats .500 at Sea

Dec. 1946 - Wait a minute, mate! Take five minutes and read this little article, for it concerns and benefits you. For months unusual and spectacular stories have been told about casualties at sea and deaths of seamen in freakish accidents, for they make interesting articles and the lessons they contribute are valuable. But the more commonplace accidents, even though greater in number, are often neglected. They are the accidents that produce the cripples and the maimed; that are not fatal, but still take away a man's earning power temporarily or permanently.

A seaman's duties are sometimes hazardous. Perhaps it's more than just coincidence that has led cartoonists to depict old "salts" as characters with peg legs. There are times when it is necessary to take chances, a hazardous job that must be done. If you're assigned to such a job, do it in the most prudent possible manner, so that you'll be around another day to do it again.

Don't turn to the next page! This isn't just another one of that interminable number of dry safety lectures. This time, you're getting the straight inside information; not about the accident that happened on your ship, nor those that happen in your company's fleet, but about those accidents happening every day on American ships all over the world.

And, in getting in on the inside, you too will conclude that accidents don't just happen, they are caused. You, too, will conclude that it isn't only the Coast Guard's problem and the company's problem, but in the greatest measure the problem of those who can benefit the most by their curtailment—the seamen.

When little "Butch," age nine months, has an "accident" at home, mother rectifies it with a flick of a wrist and he's ready for more adventures. But shipboard accidents have more severe results and cannot be treated so lightly.

In tabular form to the right is an analysis of 155 recent shipboard injury cases. Don't look at them as merely a lot of figures in a little box—look behind and see the picture of agonizing days spent in hospitals, the income lost to the seaman and his family, and in some cases think of the future of those permanently disabled. Not to mention the loss sustained by the vessel operator.

What else does the chart show? Several facts can be proved:

1. That experience and knowledge are great teachers, for it is shown that the younger men, those 20 and under,

who have not had much experience, suffered the most severe casualties and that 65 percent of their accidents were caused by negligence.

2. That the officers, with their greater experience, were involved in less accidents due to negligence.

3. That the injury resulted in laying up victims on an average of one week per accident. However this figure is low as the Coast Guard receives many reports showing only that the man has been hospitalized, sometimes overseas, and has no record of the length of the hospitalization. In such cases we have listed three days as the time lost, whereas in most instances it was undoubtedly greater.

Age group (years)	Licenced		Unlicenced		Suffering loss of appendage or eye		Due to carelessness			
	No.	%	No.	%	Licenced	%	Unlicenced	%	Man-days lost	Avg. man-days lost
>21	-	40	9	22.5	-	-	26	65	299	7.5
21-30	3	21	4	16.6	1	33	10	47.6	159	6.6
31+	7	84	10	10.9	2	28.5	38	45.2	730	8
Σ	10	145	23	15.8	3	30	74	51	1188	7.6

Analysis of 155 shipboard injury cases incapacitating men for 72 hours or more.

DDT Kills Pests

Jan. 1947 - To suppress insect infestation on vessels, continuous control measures are necessary while at sea as well as in port. While there are many chemical compounds that will kill insects, one must not be overdependent on them. Efficient insect control still demands clean-up with plain soap and water. The neglect of routine measures of sanitary disposal of human waste, garbage, and trash will present insect problems.

Dichloro-diphenyl-trichloroethane, popularly known as DDT, has the remarkable ability to kill a wide variety of insect pests, even when it is applied in very small quantities. It is unique in that it will kill many insects that walk on it weeks and months after it has been applied to a surface.

In addition to killing cockroaches, flies, mosquitoes, weevils and bedbugs, DDT can kill body lice, head lice and crab lice when rubbed in powder form on clothes and

- Jan. 3, 1944 - Plasma was flown in a Coast Guard HNS-1 helicopter from Brooklyn to a hospital in Sandy Hook, N.J., in the first recorded mission of mercy conducted by a rotary wing aircraft.
- March 9, 1944 - USCG-manned USS *Leopold* (DE-319) torpedoed off Iceland. All 13 officers and 148 (out

of 186) enlisted men lost.

- May 3, 1944 - An acoustic torpedo fired by German sub *U-371* hit and destroyed the stern of the USCG-manned destroyer escort USS *Menges* while she was escorting a convoy in the Mediterranean, killing 31 of her crew.

the body.

DDT is deadly to insects, but it is not harmful to man when it is used as recommended. All DDT containers should be clearly labeled "Poison" and stored in the paint locker. If DDT is swallowed accidentally, the victim should be required to drink some mustard water immediately. It is made by adding one tablespoon of mustard to one glass of warm water. Or, stick the finger down the throat. Either causes vomiting, which empties the stomach.

Courtesy Inspections

Jan. 1947 - A courtesy boat inspection service to be conducted by especially selected and trained members of the Coast Guard Auxiliary has been authorized by the commandant. This service is available only upon request of the boat owners, many of whom know little about the legal requirements applying to equipment and operation of motorboats.

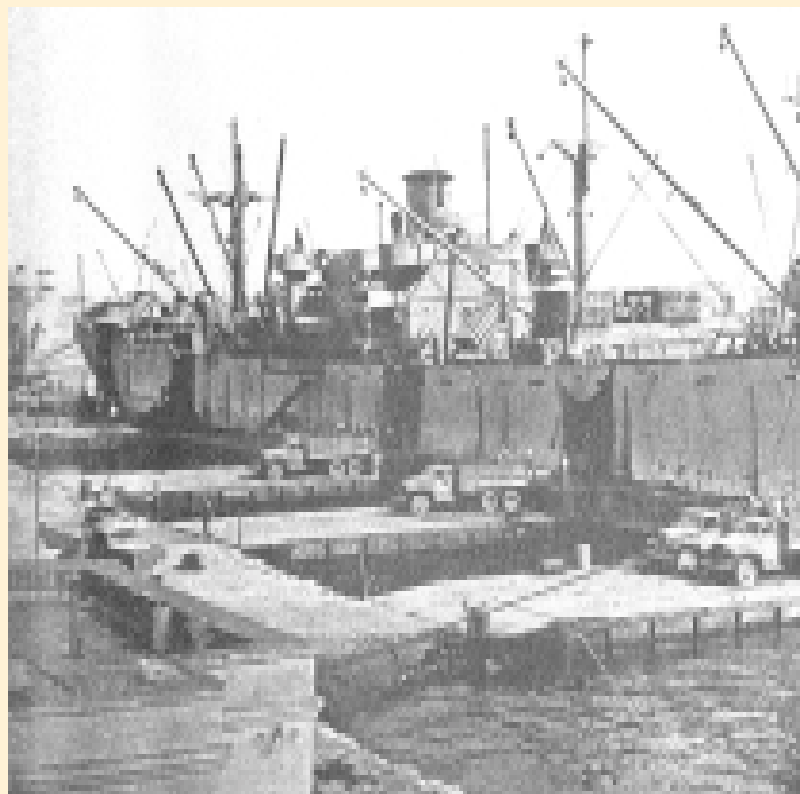
While the program got way to a slow start, it met with a most enthusiastic reception throughout the country as, in effect, it was a step toward assisting the conscientious small craft owners in complying with the law as well as a move toward self-regulation of this activity.

Auxiliary inspecting teams will be prepared to not only conduct courtesy inspections, but will be ready to actually instruct the numerous new owners in safe operation of their vessels, if such service is requested. It is planned to make available to the field a specially designed Auxiliary courtesy inspection sticker, the color of which will be changed annually and will indicate to regular personnel on inspection duty that the vessel meets the legal requirements relative to equipment.

Unless a violation in operation or equipment is apparent, it is the commandant's desire that regular personnel assigned to boarding duty consider that small craft exhibiting this inspection sticker are in compliance with motorboat law and regulations.

Aluminum Ships

Jan. 1947 - A new cargo-carrying ship, constructed wholly of aluminum, has been announced and design and engineering work has been completed. An aluminum freighter will be built for the Aluminum Company of America, and present plans call for it to be utilized in carrying bauxite ore, from which raw aluminum is derived, between the company's mines in Dutch Guinea and reduction plants in Trinidad.



A liberty ship discharges army cargo directly into trucks (July 1945).

This will represent the first all-aluminum construction thus far attempted by the maritime industry of the United States. The lightness, durability and great strength of aluminum have brought about its adoption for marine use.

Use of Oil

Jan. 1947 - Oil spread on water may help to calm a rough sea, but oil on the surface of water in the vicinity of docks and anchorages is out of place and creates very dangerous conditions.

Poor Joe

Feb. 1947 -

*An engineer named Joe
Assembled brasses on a dynamo
To get them in plumb
Required the use of his thumb
His thoughts went astray
And the consequences he did pay
No thumb—poor Joe.*

- May 4, 1944 - USS *Pride* (DE-323) (USCG-manned) with three other escorts sank German sub *U-371* in Mediterranean.
- May 21, 1944 - *LST-69* (USCG-manned) exploded at Pearl Harbor.

- June 6, 1944 - USCG CAPT Miles Imlay took command of one of the assault groups attacking Omaha Beach. He directed the invasion from his command LCI(L). LCI(L)s 85, 91, 92, and 93 (USCG-manned) were lost at the Allied landings on Normandy, France.
- June 29, 1944 - CDR Frank A. Erickson landed a

This accident actually happened. The first assistant engineer was reassembling crosshead brasses on a steam dynamo. He used his thumb and somehow got it jammed between the crosshead and the connecting rod. He lost the first joint and spent six days in the hospital recuperating.

To Joe, the reassembling of crosshead brasses was an “old” job and it may be that “familiarity breeds contempt.” He relaxed his attention and in a brief second it happened, and another preventable accident occurred. Stay alert—don’t get hurt!

‘Horse Play’ at Work

March 1947 - Stunts may often seem funny in your imagination, but could, when carried out, have serious consequences. Many shipboard injuries are the result of occupational hazards but injuries of varying degrees often result from accidents of the “boys will be boys” variety.

There’s the case of the able seaman who, after visiting all the high spots on Lime Street in Liverpool, came back with a friend of the evening—a horse. The A. B. insisted that his new found friend should go aboard and he tried to lead him up the gangway. The job was too much. The A. B. slipped, fell, and suffered skull contusions.

The horse, when questioned as to his part in the accident, denied having had anything to drink and, being quite a character himself, opined that it was fortunate the ship had not been in India, saying, “Suppose he had tried to get an elephant up there instead of me.” After it was all over, the horse returned ashore and the A. B. spent a long time in a hospital thinking about his experience.

In another case a crewman was reported as standing alongside the No. 5 hatch when someone called his attention to some girls on the beach. In order to get a better view he climbed to the top of the hatch, slipped, fell, and broke his ankle. It is no fun to use crutches even temporarily and such accidents can and do “ground” the best seamen.

Humorous or not, depending on your viewpoint, these accidents did happen on American ships. The lesson to be gained is that unsafe acts performed in jest or seriousness, on watch or off, eventually lead to unfortunate results.

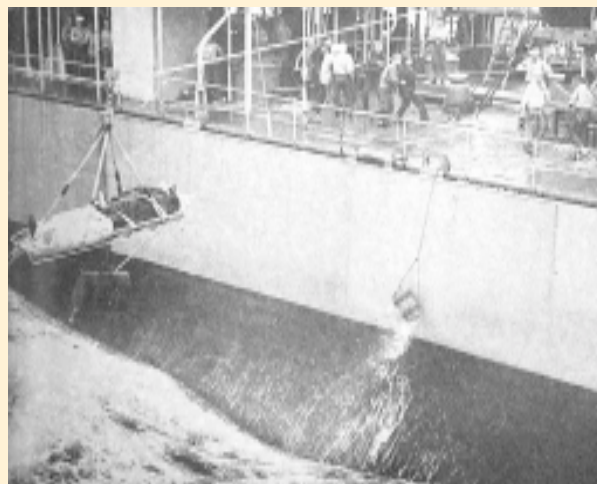
Cleaning Boiler Tubes

July 1947 - It might have happened at Coast Guard headquarters, but the chief of the office having jurisdiction

over such matters swears that the advice below was not given:

Someone had wired a government bureau in Washington asking whether hydrochloric acid could be used to clean a given type of boiler tube. The answer was: “Uncertainties of reactive processes make use of hydrochloric acid undesirable where alkalinity is involved.”

The inquirer wrote back thanking the bureau for the advice, saying he would use hydrochloric acid.



Somewhere in the Atlantic, a sick seaman rides through the air from a cargo vessel to a Coast Guard combat cutter via a litter (Jan. 1946).



A Coast Guard officer gives mariners of a large merchant vessel an abandon ship drill session (June 1946).

helicopter on the flight deck of USCGC *Cobb*. This was the first rotary-wing shipboard landing by Coast Guardsmen.

● Sept. 14, 1944 - *Lightship 73* on Vineyard Sound Station foundered during the same hurricane that sank the *Bedloe* and *Jackson*; all 12 of her crew perished.

● Oct. 15, 1944 - USCGC *Eastwind*, supported by *Southwind*, captured the German trawler *Externsteine* in East Greenland, 800 miles south of North Pole off Shannon Island, after destroying a Nazi radio station on Little Koldewey Island.

● Dec. 1, 1944 - Office of Air-Sea Rescue set up by the

The bureau wired him:

“Regrettable decision involves uncertainties. Hydrochloric will produce submuriate invalidating reactions.”

Again the man wrote thanking them for their advice, saying that he was glad to know that hydrochloric acid was all right. This time, the bureau wired in plain English:

“Hydrochloric acid will eat hell out of your boiler tubes.”

Seaplane Takes a Ride

Sept. 1947 - When an inanimate object does by itself what could hardly be done while under the controls of man, we are apt to say “impossible.” Yet the report of a collision between a seaplane without a pilot and a motor ferry vessel on the St. Clair River is so unusual it seems incredible. As a matter of record, here is the pertinent part

of the investigating officers’ report, which reads as follows:

“On 9 Aug. 1947, the pilot of a small plane had been making short flights with his plane until around 1800, when he secured the plane at the dock of a city in Michigan.”

“The seaplane NC 2309—E is a 65 horsepower Aeronca—7 A. C. S. At 1915, the pilot decided to fly his plane to Pearl Beach to moor it for the night. He then examined his mooring line and found same in good condition. He proceeded to turn on the ignition on both magnetos and crack the throttle, and then step out on the pontoon and crank the propeller.

“The motor of the plane failed to respond at first and the operator continued to make alternate adjustments and cranking the propeller until finally at approximately 1945 the engine suddenly started. At that particular instant large swells, caused by passing motorboats, were rolling in and caused the seaplane to surge or bounce. This bounce, and sudden forward motion of the plane when



SS *America* resumes her role as America’s luxury liner (Jan. 1947). (Photo courtesy *New York Daily News*)

Coast Guard.

- Jan. 29, 1945 - USS *Serpens*, an ammunition ship, exploded off Lunga Beach, Guadalcanal, killing 193 Coast Guardsmen. This was the largest single disaster suffered by the Coast Guard in World War II.

- March 16, 1945 - USCG-manned destroyer escorts USS *Lowe*, *Menges*, *Pride*, and *Mosely*, which comprised Task Group 22.14, located the submerged German sub *U-866* off the coast of Sable Island and sank it with a loss of all hands.

- Sept. 2, 1945 - Japanese signed articles of surren-

the engine started, put a severe strain on the mooring line and caused said line to part. The forward motion of the plane threw the operator off the pontoon into the river. He tried to hang on to the pontoon, but the sharp metal edges cut his hand and prohibited him from holding on.

“The plane then taxied out into the river, and, after making several complete circles in the river, headed directly toward the ferryboat *WIT*.

“At about 100 yards from the ferryboat, the plane struck some swells which caused it to bounce three or four times, with the next bounce being aboard the ferryboat. It struck the apron and came to rest on the after end of the vessel, with the motor still running.

“The motor vessel *WIT* had aboard some 30 passengers and crew of two, plus one automobile. Said vessel was on a scheduled trip from Smubra, Ontario, to Marine City, Mich., at the time of the collision. There were no personal casualties aboard the *WIT*.

“The *WIT* then completed her crossing and moored at her berth in Marine City, where the plane’s operator came aboard and shut off the plane’s engine. The seaplane was last inspected at the Detroit seaplane base on 28 July 1947 and the pilot has 600 hours successful flying time.”

Of Fools and Drunks

Sept. 1947 - The saying, “The Lord takes care of fools and drunks,” is being refuted by records of the lives lost on merchant vessels. During the past six months, 24 seamen lost their lives by falling from gangways or ladders. Of this number it was definitely established that 14 were under the influence of intoxicating liquors. These figures do not include those seamen who were injured while boarding their vessels and subsequently died while in a port hospital. Neither does it take into account those seamen who, while under the influence of intoxicants, successfully negotiated the gangways or ladders but later fell overboard or into open hatches because of their condition.

To help prevent serious accidents and loss of life should be the concern of the seamen as well as the operators. The following precautions may, to some extent, improve safety:

1. Either the quartermaster or watchman on duty at the gangway ladder should be on the alert to notice the condition of seamen returning to the vessel. When it is obvious that the condition of a seaman is such that considerable risk would be involved in permitting him to ascend a ladder or gangway, steps should be taken to



Icebound vessels on the Great Lakes (Dec. 1947).

prevent his coming aboard, or assistance rendered to permit him to safely board the vessel.

2. Seamen should not be permitted to climb ladders while carrying bundles or packages, and it is suggested that a basket or bucket on a line be available for heaving such items on board.

3. Manropes and rails should be in place and the gangway well lighted at night.

4. The gangways and ladders should be kept clear and free from grease or oil at all times.

Keep Charts Current

Feb. 1948 - After all the many years of marine navigation, no chart has yet been devised which is automatically self-correcting.

In an age harassed by complicated machines and push-button controls, we place compensating mechanisms and automatic safety features on practically every piece of modern navigational equipment, but still the mariner must correct his own charts. Failure to do so leads not only to personal embarrassment, but to the possibility of a major disaster as well.

Quite recently, a seasoned mariner grounded his vessel near the entrance to a Gulf Coast port. He innocently hauled in on a red flashing buoy (every 10 seconds) when he should have made the haul on a white flashing light

der aboard USS *Missouri*, ending World War II.

- Jan. 1, 1946 - The Coast Guard, which had operated as a service under the U.S. Navy since Nov. 1, 1941, was returned to the Treasury Department.
- Jan. 1, 1946 - The International Load Lines Conven-

tion, which had been suspended since Aug. 9, 1941, was restored to the Coast Guard.

- March 9, 1946 - LST-767 (USCG-manned) was damaged in a typhoon off Okinawa and was decommissioned.



Big Mama (July 1948)

(Photo courtesy Esso Standard Oil Co of New York)

- April 1, 1946 - A tsunami swept away the light station at Scotch Cap, Alaska. The entire five-man crew was killed.
- June 30, 1946 - The World War II demobilization task was completed, resulting in a reduced Coast Guard of 23,000 officers and enlisted from a wartime peak of

171,000 on June 30, 1945.

- June 30, 1946 - All lightships removed from their stations as a war measure were restored, except for the Fire Island Lightship, which had been replaced by a large-type whistle buoy offshore and a radio-beacon on shore at Fire Island Light Station, N.Y.

(every 10 seconds). Investigation revealed that he failed to keep his charts corrected to date, and did not consult the latest light list.

Although the vessel grounded in soft mud without apparent damage or injury to personnel, it required three tugs to re-float her 20 hours later.

The incident occurred during the wee hours of Christmas morning (the master may have been thinking of Old St. Nick at the time). The lesson: charts and publications must not only be kept up to date, but must be consulted when necessary, in order to serve the purpose for which they are intended.

Farewell, *Big Mama*

July 1948 - *Big Mama*, the world's biggest and most powerful river towboat, has been kicking up a muddy spray along the Mississippi River for 45 years. But early this spring her pilot rang "stop engines" for the last time. For *Big Mama*, foretelling the end of a colorful era, gave way to new streamlined diesel boats and she went into retirement.

There was no other boat on the river quite like *Big Mama*, as she was fondly nicknamed by the river men who regarded her as the mother of all towboats. The September issue of *The Lamp*, publication of Standard Oil Co. (New Jersey), describes her prowess as the Mississippi's "shovingest" craft and her unusual features which distinguish her from other vessels.

Displacing 1,500 tons and measuring 315 feet long and 62 feet wide, "*Big Mama*" pushed heavier and longer large tows than any other Mississippi craft. More than 100 persons could be seated comfortably at dinner in the main forward cabin. Her famous stern paddlewheel, a massive structure 37 feet in diameter, turned on a 40-ton shaft and as one of her own pilots once remarked, "when it pushes water, something's sure got to move."

The big river steamer, whose real name was the *Sprague*, appeared on the Mississippi when river transportation was changing from fast passenger travel to slow mass movement of heavy freight. She was built in 1902 in Dubuque, Iowa, for the coal trade out of the Ohio River to New Orleans, and made her first trip in time to exchange whistled greetings with the last of the great white fleet of swift packetboats that had made Mississippi River steamboating famous.

And *Big Mama's* whistle, like her sizeable proportions, is something to remember. No other vessel's whistle could roll such deep and sonorous echoes so far

along the river. She was the only boat on the river who, by long-established custom, could cross her two big searchlight beams to form a great, shining X. Even the pilots of airliners knew this unique night display and blinked their landing lights in recognition.

Big Mama's service for the petroleum industry began in 1925 when she started to move crude oil from the Smackover field in Arkansas to the big refinery at Baton Rouge. Five years later she was transferred to the job of pushing refined oil products upriver.

Early in her career, she set a mark no other boat has ever equaled, by pushing 61 barges of coal from Cairo to New Orleans. The tow was 1,100 feet long and carried enough coal to fill 1,500 railroad cars.

In April 1926, *Big Mama* set another mark by shoving 19 steel barges loaded with crude oil from Grand Lake, Ark., to Baton Rouge. There was enough oil in that tow to load a tank car train 10 miles long.

The popular river boat also used her great power to save lives and to help win wars. In 1927, when the Mississippi burst its banks near Greenville, Miss., *Big Mama*, with two empty barges, swung out of the raging main channel and steamed inland more than a mile, battering her way over treetops to rescue almost all of Greenville's stranded population.

In World War I, the big vessel participated in the government's great effort to move millions of tons of vital materials to tidewater for shipment overseas. In World War II, she shoved so much vital oil cargoes so regularly that she was called "the only pipe line running lengthwise of the Mississippi."

Big Mama traveled more than a million miles on the river, a distance equal to about 40 trips around the world. In her 22 years in the petroleum trade she had only two major mishaps, once in 1927 when she struck a bar during a windstorm and three of her barges burned, and again, years later, when a gigantic whirlpool seized her and her tow, spun them around twice and smashed them against the river bank.

Because of the tremendous size of *Big Mama* and her tows, which together measured as much as 1,000 feet long, the pilot had to have much knowledge of the river and an uncanny memory of the bottoms and banks. Although longer than the *Queen Mary*, the vessel and her tow were taken through narrow, tortuous channels that were less than 1,000 feet wide with a current 10 mph.

After *Big Mama* made her last trip, her work for the Louisiana Division of the Esso Standard Oil Company was given to the diesel boats.

- April 16, 1947 - The French-owned liberty ship *Grandcamp* exploded while loading ammonium nitrate at Texas City, Texas. Over 500 died and thousands were injured.
- May 28, 1947 - The Coast Guard announced the disestablishment of all U.S. Coast Guard merchant

marine details in foreign ports. During World War II, 36 foreign merchant marine details had been activated to perform “on-the-spot” preventive aspects of safety of life and property of the U.S. Merchant Marine. These functions reverted to U.S. ports with U.S. marine inspection offices.

But *Big Mama* will not disappear completely. She has willed her famous whistle to another steamer, and so those deep-toned echoes will be rolling down the Mississippi for some years to come.

Before and After

Dec. 1948 - It has often been said that one picture is worth a thousand words. On the front and back covers of this month’s *Proceedings* are two pictures (shown on the right), the study of which will tell more than pages of literature. The front cover picture is that of a trim little motorboat, running merrily along about its business. The picture on the back cover is of the same motorboat—afterwards.

The altered condition of this motorboat was caused by an explosion of gasoline vapors which had accumulated in the engine and bilge space.

The irony in this case is the fact that the vessel was fully equipped with all the requirements of the Motorboat Regulations, including natural and mechanical ventilation in the machinery space.

The circumstances immediately preceding the accident were, briefly:

The mechanical ventilation was turned off, the engine had received too rich a mixture of gasoline, which caused an overflow from the carburetor, the vessel was backing so that the natural ventilation failed to carry off the gasoline vapors as the ventilator cowls all faced forward. The source of vapor ignition was not determined; it may have been from the generator.

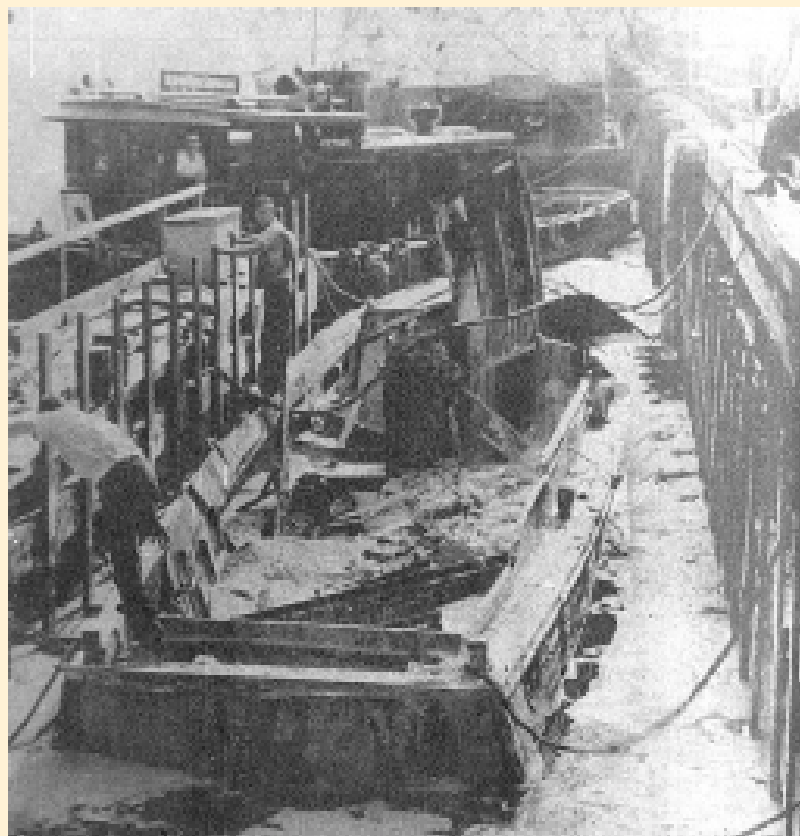
In the explosion and resulting fire, seven passengers in the boat received very severe injuries and burns. Although the vessel was a total loss, two 100-gallon gasoline tanks that were lagged with asbestos did not explode or burn.

In the majority of cases, explosions in engine spaces on motorboats occur when the motor is started after having been idle for some time. Usually there is a failure to ventilate the spaces prior to starting. Presumably in this instance the mechanical ventilation system had been used prior to starting and the bilges had been cleared of any gasoline vapors that may have been present. During the operation of the boat, however, natural ventilation could have been better provided for all conditions if the forward or after cowls had been trimmed aft if they were of the trimmable type.

In order to prevent explosions and fires of this nature, it is well to remember the characteristics of petroleum



Before the fire and explosion.



Same motorboat after the fire and explosion.

- July 23, 1947 - Personnel of the former Bureau of Marine Inspection and Navigation were integrated into the Coast Guard. There now was a single unified organization to carry out its mission which, prior to 1939, was divided among three federal agencies: the Coast Guard, Lighthouse Service, and Bureau of

Marine Inspection and Navigation.

- July 25, 1947 - The Women's Reserve of the Coast Guard Reserve (SPARS) was deactivated.

- Sept. 24, 1947 - The Coast Guard returned all U.S. buoys, lights, and other aids to navigation to peace-

vapors when mixed with air. Many experiments have proved that the explosive range for petroleum vapors mixed with air starts at a point where 1 percent, by volume, of saturated petroleum vapors is mixed with 99 percent of air. The explosive range ends where the petroleum vapor is 6 percent and the air is 94 percent by volume. This very narrow range to produce explosive mixtures of petroleum vapors and air is evident in the delicate adjustment required for the carburetor of a car and the ease with which an automobile engine may be flooded.

Keep in mind the tremendous volume of explosive gases which are produced by one unit of a petroleum product such as gasoline. One cubic foot of gasoline will produce 8,000 cubic feet of explosive vapors or gas. Or one gallon of gasoline will produce 8,000 gallons of explosive gas. A half pint of gasoline allowed to vaporize in the bilge or other closed compartment may create a potential explosive power of five pounds of dynamite.

It must be distinctly borne in mind that all petroleum vapors are heavier than air and consequently accumulate in the lowest part of the spaces containing them, where, being below head level, they are not readily detected by sense of smell and are unsuspected. It is imperative to prevent the accumulation of explosive mixtures, first by keeping gasoline leakage or spillage to an absolute minimum; second, by providing adequate means for ventilating closed compartments and bilges; and third, to eliminate all sources of vapor ignition from spaces containing possible explosive mixtures.

Our Flag

Oct. 1950 - Under present world conditions every American merchant vessel that touches foreign soil is an official ambassador of American good will. At this time, it is imperative that we, as American citizens, give more thought to our flag—our national emblem. Here are the regulations for displaying the flag:

In the U.S.—in Port

Every day:

All flags go up at 0800. First up is the “ensign” on the flag staff. The “jack” is hoisted on the jackstaff on approved vessels of the U.S. Naval Reserve. On some freight ships, it is the custom to hoist the “jack” only on sailing day, which is incorrect. The “house” flag is hoisted on the main truck with the Naval Reserve pennant above it. On some freight ships, it is the custom to hoist the

Naval Reserve pennant only on sailing day, and then on the triatic stay; this is not correct procedure. The “house” flag and Naval Reserve pennant are generally secured to sticks so that when hoisted aloft, they will fly clear and not be fouled of stays, etc.

At sunset, haul down all flags. The “ensign” will always be hauled down last. The “ensign” should never touch the deck and old “ensigns” are always burned.

Sailing day:

At 0800, the everyday flags go up as usual with the addition of the following: the flag of the country you are to sail for goes up on the foremast truck (it is a common practice to secure this flag also on a stick so that it will fly clear); the “blue Peter” on the starboard yardarm; and the U.S. Mail flag, on the port yardarm. If, by chance or through error, the Naval Reserve pennant is hoisted only on sailing day, it should be flown from the starboard yardarm and the “blue Peter” on the triatic stay. The pilot flag, if any, will be flown from a convenient halyard, where it will fly clear and free.

When the last line is let go, the flagstaff “ensign” comes down and a gaff “ensign” goes up on the gaff, and if the vessel does not have a gaff, the “ensign” remains on the flagstaff. The “jack” and “blue Peter” are also hauled down when the last line is cast off. All flags except the pilot flag are hauled down at sunset; or if the pilot station is well out, haul down all remaining flags after the pilot is away.

Arrival day:

Just before arriving at the pilot station, the following procedure should be followed: the ensign hoisted on the gaff; the flag of the country you sailed from (excepting your own country) hoisted on the foremast truck; the house flag with the Naval Reserve pennant on the main truck; and the U.S. Mail flag on the port yardarm. The pilot flag “G” is hoisted on the triatic stay. If the run from the pilot station to the berth is a long one, the flags (with the exception of the pilot flags) are not hoisted until shortly before arriving at the quarantine station. Then, the appropriate quarantine flag is also hoisted on the starboard yardarm. Of course when the pilot comes aboard, the pilot flag “H” takes the place of the pilot flag “G.” When pratique is granted, the quarantine flag is hauled down and the watch officer must be kept alert to see if the quarantine flag has been hauled down before proceeding to berth. When the first line is ashore, the “ensign” at the gaff is

time use.

- Oct. 14, 1947 - USCGC *Bibb* rescued 62 passengers and seven crew of the transatlantic flying boat *Bermuda Sky Queen* in the mid-Atlantic.
- Jan. 31, 1948 - Fannie M. Salter, keeper of the Turkey

Point Lighthouse in upper Chesapeake Bay since 1925 and the last woman keeper of a lighthouse in the U.S., retired from active service. Thus, ended nearly 150 years during which women were employed as keepers of U.S. lighthouses.

- June 22, 1948 - Floating ocean stations that

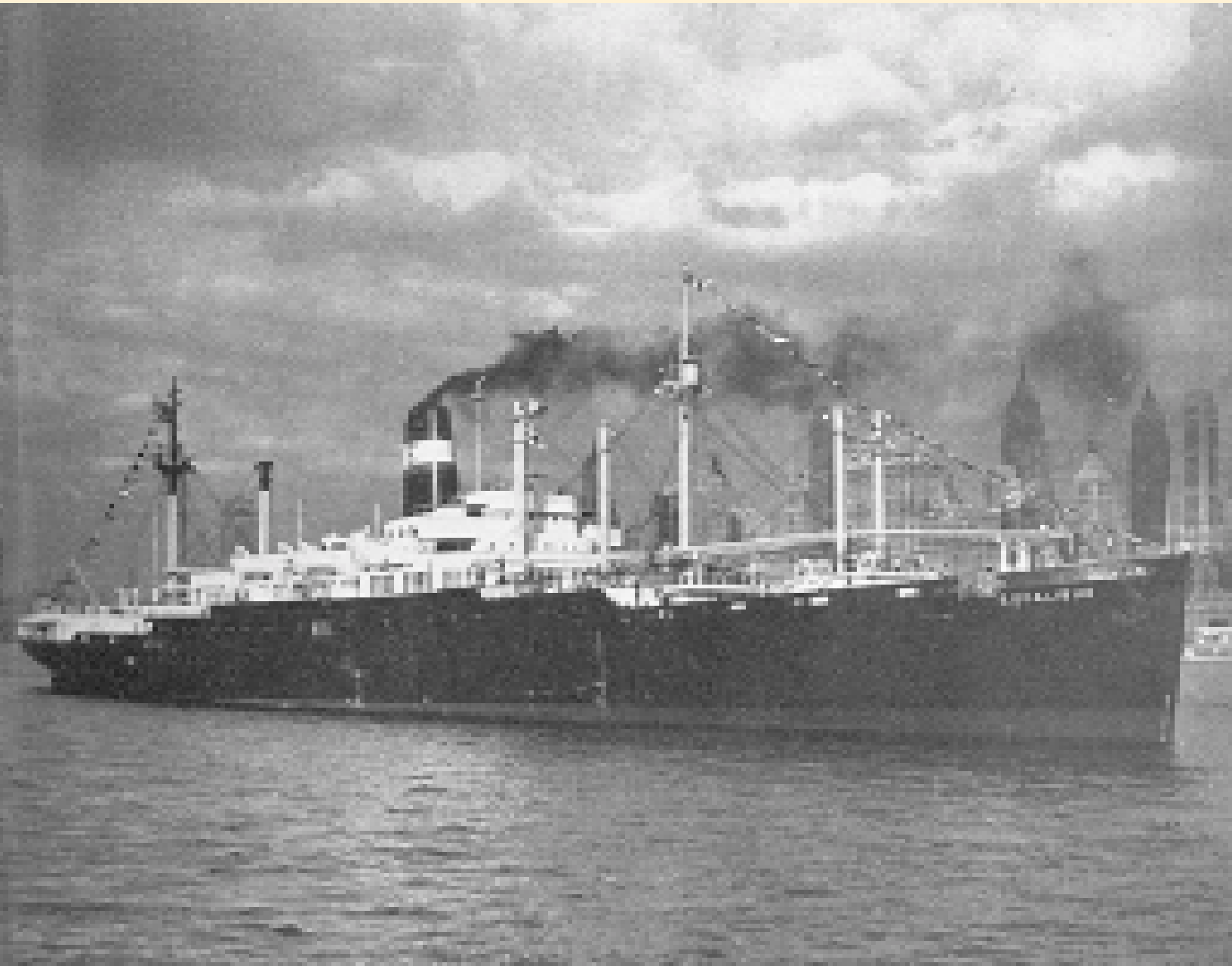
hailed down and the flagstaff “ensign” is hauled up, and the “jack” is also hauled up on the jackstaff. When hoisting the “jack,” always be sure that the two pointers of the stars point down and one up.

At anchorage:

At anchorage, arriving at or leaving, the same

procedure is carried on as for arriving at berth or leaving berth. The anchor takes the place of the first line ashore and when the anchor is aweigh, it is the same as when the last line is cast off.

Do not neglect to haul down the pilot flag when he leaves the vessel. When shifting ship, it is not necessary to raise the pilot flag “H” if a pilot or docking pilot is aboard. However, as a matter of courtesy, ask him and be



The SS Excalibur in New York Harbor displays its flags and pennants (Feb. 1949). (Photo courtesy American Export Lines)

provided search and rescue communications, air-navigation facilities, and meteorological services, became operational.

- June 26, 1948 - The Coast Guard began operating LORAN stations essential for the armed forces and maritime and air commerce of the United States.

- Sept. 15, 1948 - After making a night-long high speed run to reach the hurricane-ridden Portuguese schooner *Gasper* some 300 miles off the southern tip of Newfoundland, USCGC *Bibb* launched two 20-man rubber lifeboats in heavy rain and swell to rescue 40 survivors and one dog from the doomed ship.

governed by his orders.

Foreign Ports

Arrival day:

The same as arriving in a U.S. port, with the following exception:

The flag of the country you are entering must always be hoisted at the foremost truck—and kept flying during daylight hours, from 0800 to sunset while in that port. This is a sign of courtesy to said country and all foreign ships entering U.S. waters hoist the U.S. “ensign” at the fore truck. In some foreign countries, there is a fine incurred for not following this procedure. Local rules should be obtained from the pilot and strictly obeyed.

Sailing from foreign ports:

Same as the procedure for sailing from a U.S. port. On leaving a foreign port, the flag of that country is flying from the fore truck. This is done for the same reason as on arrival day in a foreign port.

NOTE—“Ensigns” are never made up and broken out. When it is necessary to hoist your vessel’s international call flags, they may be hoisted on the triatic stay or on any convenient halyard where they will fly free and clear.

Decorating Ship

When decorating ship, it is very important that all flags and pennants are ready to go up together at 0800. This is difficult to do on most ships, due to cargo being discharged, booms in the way, etc. The everyday flags are hoisted as usual, with the following additions: A gantline should be rigged as follows: one from the eyes of the ship to the foremast truck, with the haul-down by the foremast (secured to this gantline) should be the flags of the international code, every fourth one, a pennant. A long gantline must be rigged from the foremast truck to the mainmast truck with a haul-down at each mast. The distance between the two masts must be known so that when this gantline is hauled taut from both ends, with the international code flags attached, they will all fly clear. Raising this gantline properly with code flags attached is a difficult maneuver. Place several men at certain places to clear the gantline. Use several bites of heaving lines along



- Jan. 19, 1949 - The tanker *Gulfstream* collided with USCGC *Eastwind*. The collision and resulting fire resulted in the deaths of 13 men, nine of whom were chief petty officers.
- April 27, 1949 - When a C-47 of the Military Air Transport Service developed engine trouble and

ditched near USCGC *Sebago* on Weather Station DOG, 380 miles from Newfoundland, a motor self-bailing boat from the cutter immediately picked up the plane's crew of four. Although the C-47 sank within 12 minutes, there were no injuries or casualties.



USCG photo by PA1 Pete Milnes

Flags aboard the U.S. Coast Guard Training Cutter *Eagle* (WIX 327).

the length of the gantline to clear the wireless aerial. With these bites the gantline can be pulled clear of the aerial and then the heaving lines may be removed. Another gantline should be run from the base of the flagstaff to the mainmast truck with the haul-down by the mainmast and rigged similarly to the others. A number of international code flags should hang over the stern from the base of the flagstaff with a weight attached and so rigged as to be just clear of the water.

When decorating ship, use only international code flags with certain additions as given.

In the U.S.

A second “ensign” should be hoisted to the foremast truck. On government vessels in a U.S. port, all masts should have an “ensign.”

Foreign Ports

Same as the United States except that the flag of the country you are in is always hoisted to the fore truck.

NOTE—If you arrive in any port, army or navy base, or a U.S. maritime commission base and find that all ships are decorated or that all ships are flying their “ensigns” at half mast, wait until you are secured to your berth before decorating ship or before you haul your flag to half mast.

At sunset, all flags should be hauled down at the same time, under all conditions.

Ensign

When the colors are to be placed at half mast, they should always be hoisted close up first and then down to the half mast. Also, when the colors are hauled down from the half mast, they must be hauled up close first and then back down. This is very important as it really shows that the officer on watch is alert.

The “ensign” is always up first and down last. At sunset when the ship is decorated, haul the “ensign” down slowly so that it will not be hauled down before the rest of the flags.

Saluting

There appears to be considerable misunderstanding on the part of merchant marine officers as to what classes of naval vessels should be saluted. Although this matter is not set forth explicitly, usage has determined that all

- July 14, 1949 - Coast Guardsmen removed 690 persons from the excursion steamer *Nantasket*, which ran aground in a thick fog off Peddock's Island, in Boston Harbor.

- Aug. 4, 1949 - Congress approved Public Law 207, which specified the duties and functions of the Coast Guard.

- Nov. 1, 1949 - The Women's Reserve of the Coast Guard Reserves (SPARS) was reestablished.

men-of-war, including Coast Guard cutters, should be so recognized. Of course, as a matter of courtesy, there is no harm in saluting any auxiliary naval vessel, merchant vessel, or MSTTS vessel. It is not necessary to salute naval combatant vessels when in inland waters.

It is, of course, necessary and a matter of good taste to salute any vessel flying the flag of any civilian, member of the armed forces, or member of any foreign delegation or representative of a foreign government—who, under law, is entitled to fly his own flag.

Shortly before a man-of-war is abeam of you, haul the “ensign” to the dip (meaning half way down the flagstaff or half way down the signal halyard on the gaff). When the man-of-war has hauled colors close up after he has dipped, you do likewise. Be sure your man at the halyards understands your directions thoroughly. The best procedure to follow is to have the man at the halyards haul the colors to the dip when you blow your whistle and then when you blow the second time haul the “ensign” up close again.

When you visit a man-of-war, the following is the correct procedure whether you are in uniform or not:

When you reach the top platform of the gangway, place your heels together and smartly salute the colors. Next, right or left face and salute the officer of the deck. On leaving the man-of-war, salute the officer of the deck, and salute the colors last. Occasions may arise where you cannot see the colors. If so, just salute in the general direction of them.

At 0800 colors and at sunset, all men in uniform or out of uniform (on orders from the master) will face the colors and salute. If in civilian clothes, they will uncover and place their hats by the left shoulder with the right hand. If wearing no hats, they will stand at attention. In freezing weather, the hat need only be slightly lifted by the right hand. When the national anthem is played, stand, face the music at attention, and proceed as for colors.



USCG photo by PA2 Mike Brock

The U.S. Coast Guard Training Cutter *Eagle* (WIX 327) was built in 1936 in Hamburg, Germany, and commissioned as *Horst Wessel*. Early in World War II it was converted to a cargo ship, transporting men and supplies throughout the Baltic Sea. The ship is said to have downed three aircraft in combat. Following the war, it was taken as a war prize by the United States. A Coast Guard crew—aided by the German crew still on board—sailed the ship in 1946 from Bremerhaven to its new home port in New London, Conn. The *Eagle* now serves as a U.S. Coast Guard training vessel. It is one of five such training barques in the world. Sister ships are: *Mircea* of Romania, *Sagres II* of Portugal, *Gorch Fock* of Germany, and *Tovarich* of Russia.

- Aug. 8 1950 -The Coast Guard commenced screening merchant seaman signing on American vessels where the vessels were foreign bound. Those seamen designated as poor security risks would not be signed on.

- Aug. 9, 1950 - Congress charged the Coast Guard

with the function of port security.

- Aug. 25, 1950 - USHS *Benevolence* collided with *Mary Luckenbach*. USCGC *Gresham* and other vessels responded and 407 persons were saved.

- Oct. 20, 1950 - President Harry S. Truman issued an



Preparations to lower the Higgins boat *PA33-21* in the water gets underway in New Orleans on Nov. 6, 1999, after its christening and commissioning ceremony. The *PA33-21* has been commissioned into active, historical service in the U.S. Coast Guard. The Higgins boat was constructed by volunteers for the National D-Day Museum after authentic Higgins LCVPs (Landing Craft Vehicle Personnel) were found to no longer exist, except for a few wrecks that were beyond repair. The Higgins boats played a significant role in the World War II Normandy landings.

USCG photo by PA3 Patrick Montgomery



USCG photo by PA1 Keith Alholm

After 57 years of service, three wars, eight homeports and more than a half-million nautical miles past the propeller, the Coast Guard Cutter *Ironwood* was retired from military service on Oct. 6, 2000. The 180-foot "B" Class (also known as Mesquite class) buoy tender, was commissioned on Oct. 11, 1943, primarily to conduct aids to navigation duties for the Coast Guard. It has been stationed in Boston, San Francisco, Monterey, Calif., Guam, Honolulu, and Homer, Adak, and Kodiak, Alaska. The cutter served in World War II, Korean War, and Vietnam War, and was the only United States ship left on active duty to be awarded the Korean Service Medal. It was the second oldest commissioned cutter in service behind the Coast Guard cutter *Storis*.

executive order tasking the Coast Guard with port security.

● May 14, 1951 - USS *Valcour* was rammed by the collier *Thomas Tracy*. CGC *Cherokee* assisted in extinguishing the resulting fires and towing the *Valcour* to Norfolk. Thirty-seven sailors perished.

● Feb. 18, 1952 - During a severe nor'easter off New England, the T-2 tankers SS *Fort Mercer* and SS *Pendleton* broke in half. Coast Guard vessels, aircraft, and lifeboat stations, working under severe winter conditions, rescued 62 persons from the foundering ships or from the water with a loss of only five lives.



(Photo courtesy Mississippi Steamship Co.)

SS *Del Norte*, the first major U.S. liner built since the end of the war (Feb. 1947).

The Sea is a Woman

Nov. 1950 -

By Frank H. Keith

The sea is a woman,
charming and deep.
Haunting a million of men
though they sleep—
A sweetheart whose bosom
is pulsing and warm,
A vixen who taunts them

in tempest and storm!
A mother-like being,
she gives from the heart
The catch for a crew,
and fish for the mart;
And often she dances
beneath a great moon
While a sailor is singing
a voyager's tune...
I know she's a woman—
she has to be,
For so many men
are in love with the sea!

● Jan. 18, 1953 - A Coast Guard PBM seaplane crashed during takeoff after having rescued 11 survivors from a ditched U.S. Navy aircraft shot down off the coast of mainland China.

● July 12, 1953 - Coast Guard aircraft and surface craft of the Search and Rescue Group at Wake Island participated in an intensive search for a Transocean Air Lines DC-6 aircraft last reported about 300 miles east of Wake Island. The scene of the crash was located, and 14 bodies were recovered.



Three ore carriers on the St. Clair River (March 1949).

(Photo courtesy Lake Carriers' Assoc.)

Lower Risk

Feb. 1951 - The accident record aboard ships is aggravated by many "unseaworthy men" suffering from diseases in no manner connected with their employment, such as epilepsy, acute alcoholism and psychoneurosis, plus a liberal supply of dope addicts.

Also, the present exigencies of our national defense should require that unseaworthy men, physical and mental defectives, human derelicts, and alien-minded agitators should be eliminated without delay as being "unsafe" humans aboard any vessel. Their certificates should be withdrawn until they are cured of their diseases of mind and body. We should all unite in the common effort to

make the American Merchant Marine a credit to the United States and not something for which we have to apologize and make excuses.

Sabotage Alert

Feb. 1951 - How secure are our ships, piers, shipyards, and other maritime facilities against Red sabotage?

On the very day that Communists, pinks, Red-Fronters, and/or left wingers were petitioning the government to make the U.S. Coast Guard relax its measures for the protection of the shipping industry against sabotage, new documentary evidence was uncovered

● Jan. 1, 1954 - The Regulations for Preventing Collisions at Sea, 1948, commonly known as the Revised International Rules of the Road, became law. These were a result of the International Conference on the Safety of Life at Sea, 1948.

● May 27, 1954 - The aircraft carrier *Bennington*, with

about 2,000 persons aboard, suffered an explosion and fire 35 miles south of *Brenton Reef Lightship*, injuring 100. Coast Guard aircraft assisted in the rescue.

● Aug. 13, 1954 - The Coast Guard relinquished to the FCC responsibility for issuing safety radiotelegraphy

aboard several American merchant vessels which brought to light the most insidious Communist weapons of subversion, violence and revolution ever to penetrate our ships.

The sabotage documents were written in Spanish and found concealed in sardine cans. The misleading subject of the manual was “football” (futbol), and the end page listing the “small sport collection” (pequena coleccion deportiva) of sabotage instructions. The latter included subjects of “official regulations (reglamento oficial del juego) on hockey (de hockey), boxing (de boxeo), tennis (de tennis), ball (de pelota), and basketball (de baloncesto).

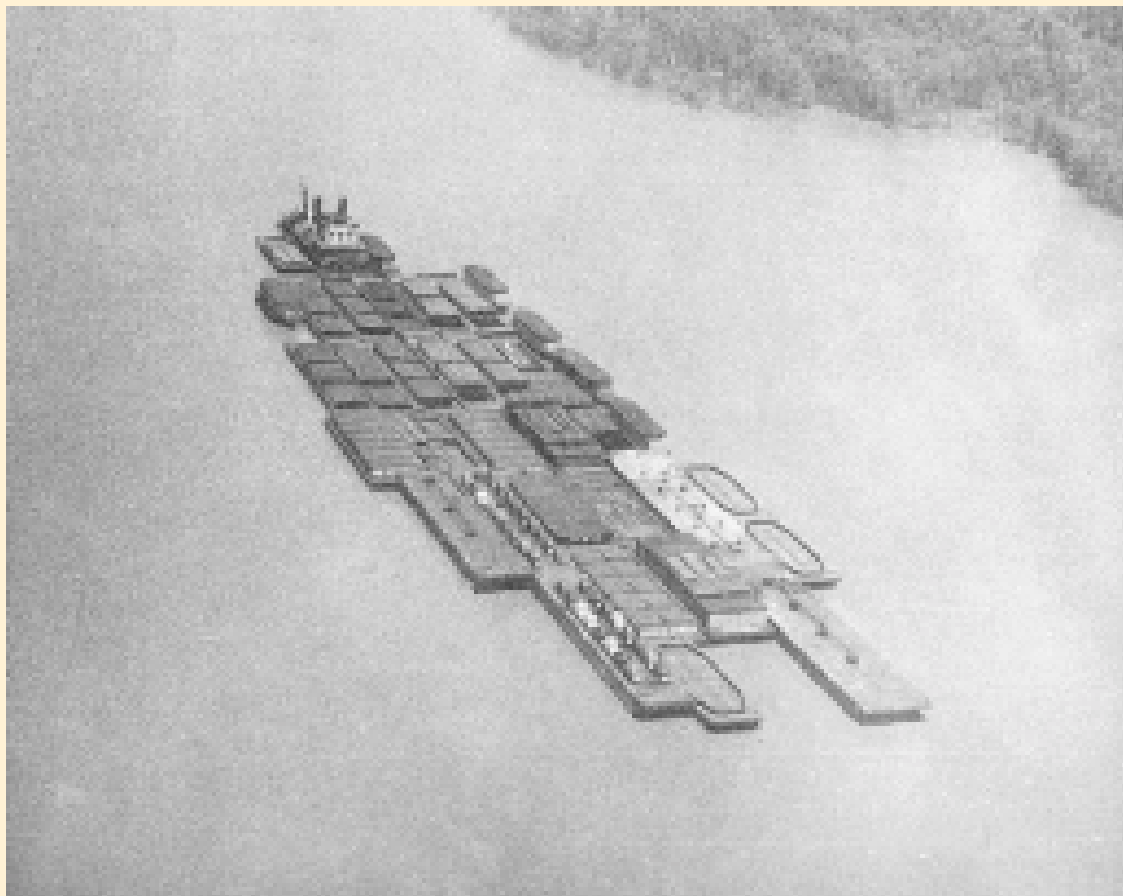
Immediately following the dummy title page was a frontispiece of Stalin, and inside an address delivered by Stalin on Feb. 9, 1946 to the voters of his Moscow constituency.

During the investigation of the “sardine can”

documents, crewmen of the vessels concerned related that some of their shipmates, avowed Communists, had continually tried to stir dissension between the masters, officers, and crew members. Incidentally, this type of subversion has been long existent but never before has documentary evidence been uncovered exposing the Communist plot to completely subvert and sabotage our vessels. Each vessel unquestionably has one or more Communist agitators and saboteurs aboard. Therefore, the timely need and emergency to take “counter-subversive and sabotage measures” to prevent future disruption and/or disaster to our American merchant vessels. Eternal vigilance is the price of safety.

Random excerpts from the manuals are representative of the theme of the entire “sports” library. The “futbol” manual tells how to short circuit electrical lines to cripple the electrical plant; how to burn up vital transformers by tapping their oil supplies; how to disable generators by putting sand in the bearings; how to make vicious delayed-action “Molotov cocktails” to wreak destruction; how to place hidden detonating charges in the desk of “a citizen in whom we are interested in causing harm or death,” such as the master or chief engineer of the vessel; how to mix sugar and common chemicals into little hatband bombs whose delayed action will shatter a victim’s head; how to murder by stealth, ignite fires without being detected, batter a turbine into uselessness, cripple bottleneck machinery with emery dust, sulfuric acid, or ordinary gasoline; how to cause explosions, etc. In short, a complete catalog of sabotage methods and techniques to blast the productive heart and war potential of a nation.

The “hockey” manual,



(Photo courtesy Army Corps of Engineers)

Steamer *Indiana* near Sycamore Chute, Tenn., bound downstream with 35 barges in tow (June 1949).

and safety radiotelephony certificates and exemption certificates under the International Convention for Safety of Life at Sea.

- March 12, 1955 - All foreign and domestic ships were required to give 24-hour advance notice to the local Coast Guard captain of the port before entering

U.S. ports. This order was designed to improve the Coast Guard port security program without material inconvenience to shipping.

- Nov. 11, 1955 - When 60 to 70 mph winds and heavy seas with 30-foot swells made it impossible to launch lifeboats 50 miles off Cape Lookout, Oregon, the



The SS *United States* and the SS *America* pass in majestic review in New York Harbor (July 1955).

published, like the others, by the “National Council of Sports,” dealt with the manufacture and use of explosives and fuses. “Boxeo” gave additional data on fuses, explosives, caps, and detonating devices. “Tennis” contained further material on construction of charges, bombs, and incendiary grenades. “Pelota,” or game of ball, covered electric-ignition systems, the sabotage of batteries and dynamos and the destruction of firefighting facilities. “Baloncesto” detailed the sabotage of electrical lines, switchboards, etc.

Besides the sabotage manuals, the sardine cans contained ideological directives, all similarly disguised. One of them, published by “Herboristeria Moderna,” or Modern Herb Shop, was titled “25 curas por las plantas”—

“twenty-five cures by plants.” These “cures” tell how to pit class against class and mass against mass; in short, how to completely break down all systems of productivity, loyalty, and cooperation by terrorist methods—a general undermining of our capitalistic system.

We must NOW invoke countermeasures for self-defense and for the detection and prevention of subversive warfare. Time is running out.

Curiosity Kills 5

March 1951 - How “curious” can people be? In a recent casualty three people were killed; two missing; one seriously burned; and seven others were injured just

USCGC *Yocona* pulled alongside the sinking fishing vessel *Ocean Pride*, allowing its crew to jump aboard the cutter to safety.

- Dec. 24, 1955 - Coast Guardmen saved over 500 persons during flooding in Northern California.

- April 25, 1956 - The USCG issued new regulations for security screening of merchant seamen.

- May 10, 1956 - All previously uninspected vessels on navigable waters carrying more than six passengers for hire fell under inspection laws. These were chiefly party-fishing motorboats, excursion sailboats and ferry

because one person wanted to find out if an oil slick in a harbor area would burn.

On a Sunday afternoon six people were rowing about in a port harbor area watching various port activities. At this time an American tanker was discharging various petroleum products including 100 octane gas, 91 octane gas, regular gasoline, kerosene, and fuel oil. Particular attention had been made to see that none of these products created any oil pollution in the water. However, from other sources there was a considerable oil slick floating on the surface of the water, out from the dock for approximately 400 feet into the harbor area.

The six people in the rowboat saw this film of oil on the water and one probably exclaimed: "Let's see if it will burn." Whereupon he lit a match and held it over the oil slick. The oil slick immediately burst into flames, which ranged from the surface of the water to over 60 feet in the air. In the rowboat, three persons were burned to death, two others were never found, and one was able to swim ashore, but in so doing was severely burned.

Great Mystery

May 1951 - On Nov. 7, 1872, the brig *Mary Celeste* left New York Harbor under CAPT Benjamin S. Briggs, laden with alcohol, bound for Genoa; five weeks later, found abandoned in the Atlantic, with all sails set, 591 miles west of Gibraltar. Crew never heard from.

Short Short

June 1951 -

"Injury," said the workman.

"Inattention," said the supervisor.

"Inflammation," said the physician.

"Incurable," said the hospital.

"Incredible," said the mourners.

"In PEACE," said the tombstone.



Industrial scene in the Pittsburgh district as the towboat *Cap'n Howder* pushes six heavily-laden coal barges (March 1951).

barges.

- July 25, 1956 - The Swedish liner *Stockholm* collided with the Italian liner *Andrea Doria* off Nantucket. *Andrea Doria* sank 10 hours after the collision that resulted in 52 deaths.

- Oct. 16, 1956 - CGC *Pontchartrain* on Ocean Station November rescued the passengers and crew of Pan American Clipper Flight 943, which ditched between Honolulu and San Francisco.

- July 1, 1957 - USCGC *Storis*, *Bramble*, and *Spar* departed Seattle for traversal of the Northwest Pas-



Looking forward on the SS *Esso Scranton* as she steams along with a fair wind (April 1956).

sage. The three arrived in Boston after successful passage on Sept. 19.

- July 18, 1958 - Automated Mutual Assistance Vessel Rescue became operational. By 1971, its reach was world-wide.

- Oct. 22, 1960 - SS *Alcoa Corsair* and SS *Lorenzo Marcello* collided near the mouth of the Mississippi River. The *Alcoa Corsair* suffered eight fatalities and one missing.

- Nov. 14, 1963 - The freighter *Fernview* and the tanker *Dynafuel* collided in Buzzards Bay. Coast Guard

Price of Survival

Feb. 1952 - Safety can be dull as dishwater or mighty exciting if your life is involved. Just a few points worth remembering:

INTERNATIONAL ORANGE—Rescuers at sea have discovered it's much easier to spot drifting dories if they are painted international orange. Crews on a number of boats have recently painted their dories this color. But there are still too many on the waterfront carrying dories whose faded color could easily be missed bobbing around at sea.

RELEASE GEAR—It is obvious dories should be rigged so they can be released quickly. Still, there are quite a few boats with dories carelessly rigged. They would take precious time to launch—if they could be launched at all.

RADAR TARGET—Wooden hulled vessels make a much better target on the radar screen of a searching vessel if they have some large metal object hoisted to the foremast. If you are drifting and waiting for a search vessel to locate you, hoist any large metal object as high up the mast as possible.

RADIO USE—Quick use of radio recently brought help to the *Wind's* survivors in two hours. Proper functioning of radio equipment is all-important today. It should be checked prior to making every trip. It is also a good insurance policy to see that every man aboard knows how to operate the radio and how to transfer from the ship-to-ship frequency to the distress frequency if necessary.

THE SEA—Probes endlessly for weak points in man's defense of his life. Forehandedness—a few minutes careful checking of

detail—pays off in survival.

Oil Spillage Zones

Nov. 1954 - The International Conference on Oil Pollution, held in London this year, provides for the establishment of zones, wherein the discharge of oils—crude oil, fuel oil, heavy diesel oil, and lubricating oil—into the seas would be prohibited. The U.S. delegation to the Conference did not sign the Convention.

Return of Moby Dick?

Feb. 1955 - Ever since the days of Jonah's memorable adventure, mariners have been blaming countless unexplainable misfortunes on whales. Captain Ahab, after losing his leg in the gaping maw of Moby Dick, spent his life in relentless pursuit of the great white marauder. Even in modern times, large ships have reported lost or damaged propellers caused by striking whales. Fishermen have



There was real weather along the Illinois Waterway last month (April 1951), where three Coast Guard-sponsored icebreakers were on 24-hour duty to clear a path through heavy ice and thus facilitate an adequate supply of fuel oil to residents of Chicago. Here, the skipper of the *Illini* had to reverse the customary procedure, pulling the barges instead of pushing.

units evacuated all aboard the disabled vessels before the *Dynafuel* capsized and sank.

- Feb. 24, 1964 - A Coast Guard ice skiff rescued 25 persons from an ice flow that had broken loose from the shore near Camp Perry, Ohio. A similar rescue took place almost simultaneously at St. Clair Shores, Mich.

when another Coast Guard ice skiff and a police helicopter removed five more from an ice flow.

- March 12, 1965 - The Coast Guard participated in *Operation Market Time*, designed to interdict resupply of Communist forces in South Vietnam by river and coastal routes.

blamed large mysterious rents in expensive nets on the depredations of whales. One fishing vessel, operating recently off the coast of lower California, had good reason to remember its encounter with a whale. Neither the vessel nor the whale has been seen since.

Sailing from a port in Southern California, the 42-foot fisherman cruised southward for the fishing grounds off Guadalupe Island, Mexico. The low-speed, heavy-duty diesel chugged along nicely at a steady speed of eight knots, the crew of three men busy in preparation for the strenuous task of boating a load of mackerel. On the second night out, the master suggested that his two crew members

turn in early for a good rest to be ready for fishing early the next morning. They went below to their quarters, through the galley and down a short companionway. Putting the vessel on automatic steering, the master climbed to the top of the pilothouse to try and take a radio direction finder bearing on another vessel known to be located just south of Guadalupe Island.

Just as he picked up the radio microphone to call the other vessel, his own vessel suddenly took a mighty heave, the forward end rose about two feet, and the vessel capsized to port. The master had only two or three seconds in which he shouted a name into the mike, and then he was



View over New York's East River (May 1956).

(Photo courtesy The Port of New York Authority)

● Jan. 15, 1966 - When winds of 30 to 50 knots hit the Southern California coast, the Coast Guard rendered assistance to six grounded vessels, three disabled sailboats, three capsized vessels, and they also responded to seven other distress cases. A Coast Guard helicopter rescued the five-man crew of the vessel *Trilogy* that had gone aground and broken up

on Santa Cruz Island.

● June 20, 1966 - USCGC *Point League* attacked and crippled a North Vietnamese junk attempting to run the Navy's blockade. The action continued into the next day as the junk stranded itself on the shore and its crew fired a demolition charge, destroying their ship.

thrown into the drink. Luckily, there was a pleasure cruiser only about a half mile distant and, even more luckily, the operator of the cruiser was alert.

He related later how he had noticed the fishing vessel's port side light, masthead light, and starboard side light disappear, in that order, from sight. Taking alarm, he immediately headed in the direction in which he had seen the lights doused, and began to search for survivors. Within minutes, the master had been pulled from the water, drenched and shivering but alive and safe. There was no sign of the fishing vessel, nor, sadly enough, of the two crew members who had turned in below and must now be presumed to have gone to a watery grave. On the following morning a Coast Guard seaplane from the San Diego air

station made an offshore landing and removed the master for hospitalization ashore, where he made a rapid recovery.

The fishing vessel was equipped with an automatic electric bilge alarm which was in good working order and adjusted to sound an alarm when water in the bilges reached a depth of three inches. The alarm did not sound before the casualty. There had been no unusual sound from or near the vessel before, during, or immediately after the casualty. No smoke, flame, explosion, or flash was detected, nor was there any jar or impact. The only possible logical explanation for the disastrous upheaval was that a large whale had surfaced directly under or almost under the vessel, resulting in its destruction. Whether the perfect aim of the whale was by accident or by design could only



The SS *Independence* undocking in New York Harbor (June 1956).

(Photo courtesy Towline)

- April 1, 1967 - The Coast Guard ended its 177-year association in the Treasury Department to enter the newly-created Department of Transportation.
- Feb. 9, 1968 - USCG vessels helped thwart a Communist attempt to run four trawlers through the *Market Time* blockade. The defeat of this attempted

re-supply was hailed as the most significant naval victory of the Vietnam War.

- Dec. 7, 1968 - USCGC *White Alder* sank after colliding with the M/V *Helena* near White Castle, La.— 17 Coast Guardmen were killed.

be left to surmise as the whale apparently took one look at the havoc it had created and departed immediately for parts unknown, presumably with a backache. Many whales had been seen in the vicinity of Guadalupe Island and near-misses had occurred.

It is difficult to draw any moral or “lesson” from such a disaster as this. Until the day arrives when whales can be trained to observe the Rules of the Road, blow whistle signals, or at least carry a radar reflector, the only advice of value to seamen on small vessels is to be especially alert on fishing grounds known to be frequented by whales. Steering by hand in such areas would give at least half a chance to make a quick turn to avoid a sudden-rising whale, whereas operation on automatic pilot in such

an event might delay the turn until too late. Better to veer sharply away and try to convince your friends later about the size of the one that got away, than to suffer the consequences of being whaled. You may not live to tell such a whale of a tale.

Prediction

July 1956 - “Our survival in a global war will be largely dependent upon merchant shipping, which is available during the critical initial period. It is also my candid opinion that it would be folly for us to depend on the shipping anti-shipbuilding facilities of other nations in the event of war. We must have our own American



(Photo courtesy Marine News)

Aerial view of part of the Hudson River Reserve Fleet. Of the fleet of 176, 97 vessels, including these, are being used for the stowage of grain (Aug. 1956).

- Dec. 27, 1968 - The Coast Guard began providing Loran-C coverage to the Air Force in Southeast Asia.
- Jan. 19, 1969 - The USCGC *Absecon*, rescued all of the crew of the sinking *M/V Ocean Sprinter*.
- Jan. 21, 1969 -USCGC *Point Banks*, while on patrol

south of Cam Rahn Bay received a call for help from a nine-man ARVN detachment trapped by two Viet Cong platoons. Petty Officers Willis Goff and Larry Villareal took a 14-foot Boston whaler ashore to rescue the ARVN troops. In the face of heavy automatic weapons fire, all nine men were evacuated in two trips.



The chief mate of the *SS Pennsylvania Sun*, Howard W. Quigley, fights to save his ship after it was torpedoed off the Atlantic Coast on July 15, 1942. See hole from explosion in lower left corner.

Merchant Marine and it must be strong and adequate.”
—*Navy Secretary, Charles S. Thomas*

Powerful Detergent

Sept. 1956 - The chances are that everyone makes at least one potentially fatal, foolish mistake in his lifetime and, if he is lucky, lives to tell the story.

Recently, the bosun on a T2 Tanker used up his quota of foolish mistakes.

One bright, clear Sunday, a few days out of port, he decided to do a thorough house cleaning job in his

forecastle. One of the tasks that confronted him was what to do with the oily dungarees and skivvies that were standing in the corner. He realized these were beyond the soap and water stage and he would have to use a strong cleanser—what could be better than gasoline?

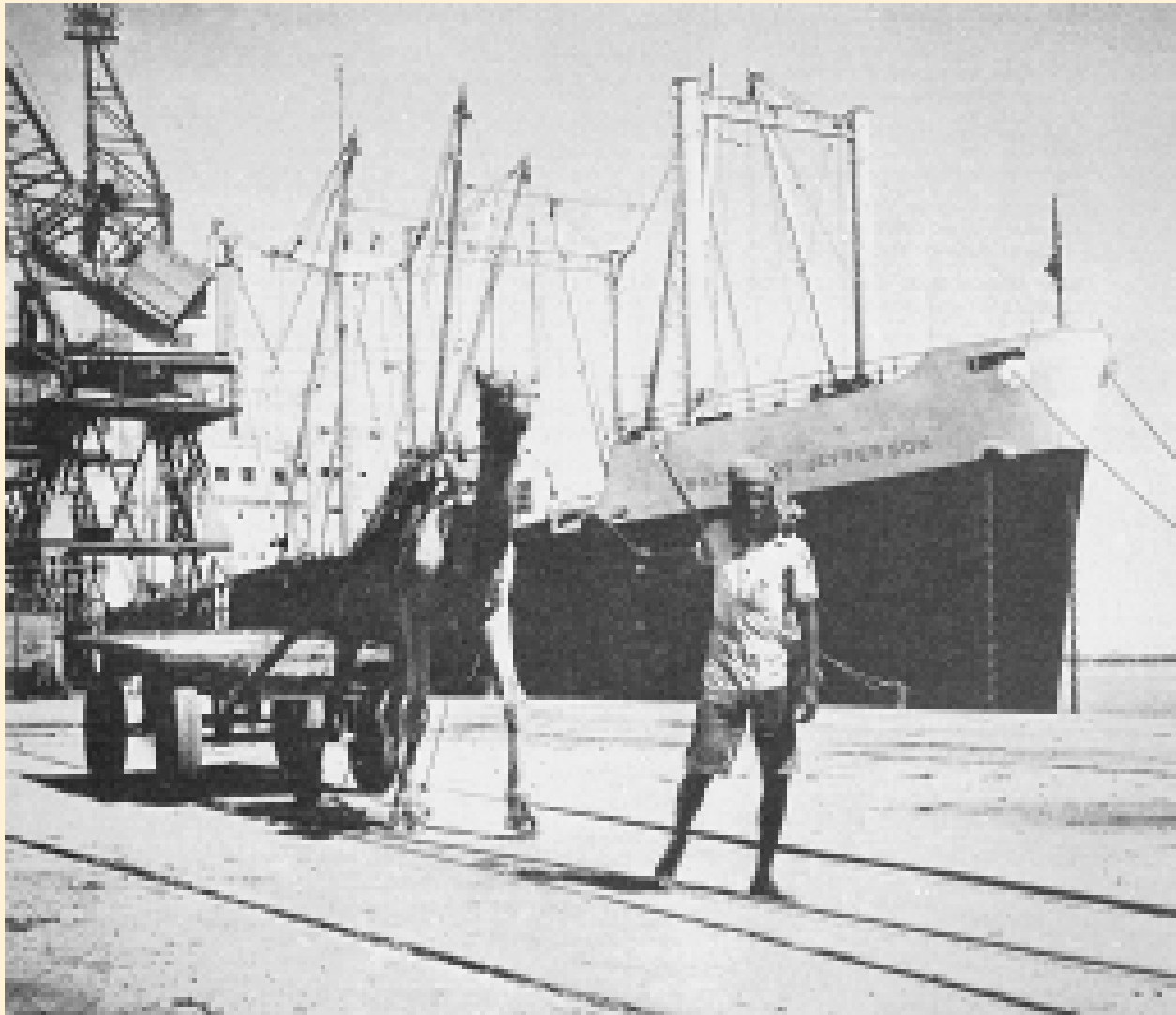
It so happened that a drum of aviation gasoline had been left on board at the last port of discharge and had been stowed in the paint locker. With a bundle of clothes in one hand and a 5-gallon can of gasoline in the other he proceeded to the washroom.

The washroom was equipped with an electric, agitator-type, washing machine. He poured the gasoline

- Feb. 13, 1969 - The National Transportation Safety Board issued its Study of Recreational Boat Accidents, Boating Safety Programs, and Preventive Recommendations.
- Nov. 23, 1970 - Simas I. Kudirka, a Soviet fisherman, attempted to defect from his Soviet fishing vessel to the

cutter *Vigilant*, during a meeting between the Soviets and the U.S. on fishing rights. The cutter's commanding officer allowed other Soviets to board the cutter and forcibly remove Kudirka.

- Aug. 10, 1971 - President Nixon signed the Federal Boat Safety Act of 1971.



(Photo courtesy American Waterways Operators, Inc.)

East meets West on the dock in Karachi, Pakistan. The SS *President Jefferson* forms a backdrop for a native worker and his camel cart (Nov. 1957).

into the machine and put in a load of clothes. The first batch came out reeking but spotless, and the bosun, an energetic soul, went back to his forecandle for any odds or ends of clothes he might have overlooked.

As he loaded the machine for a second wash, an ordinary seaman noticed the spotless dungarees hanging from a line and stepped inside the washroom for a look.

“What you doing, bosun?”

The bosun replied, “Dry cleaning,”

“Buono! That is how we do it in Puerto Rico.”

Just then a tremendous “whoosh” put an end to the conversation. The washing machine disintegrated in a mass

of flame. The two men were flung to the deck by the force of the explosion. Fortunately, neither was fatally hurt, although they suffered severe burns. The fire was quickly extinguished. Since the men were not smoking, it is believed that the gasoline vapor was ignited by a spark from the switch when the machine was started.

The “lesson” to be learned from this casualty is all too obvious. Although it is the first such accident to be reported in a long time, it is possible that it has become a practice to dry clean with gasoline. Ships’ officers should make sure that such “dry cleaning” is not a practice on their ship.

- March 8, 1973- The first Coast Guard-controlled drug seizure took place when the cutter *Dauntless* seized the sport fishing vessel *Big L*, which was carrying one ton of marijuana.
- Nov. 17, 1973-The largest icebreaker in the Free World, the USCGC *Polar Star*, was launched.

- Aug. 11, 1974- The Coast Guard adopted modernized boiler and pressure safety standards aboard ships.

- Nov. 10, 1975- The Great Lakes ore-carrier *Edmund Fitzgerald*, caught in an unexpected storm on Lake Superior, sank with a loss of all 29 hands.

Survive a Nuclear Attack

Oct. 1956 - When you hear a steady blast lasting three to five minutes—the Civil Defense alert signal—or when directed by the Coast Guard in the event of a nuclear attack, execute the merchant vessel dispersal instructions prescribed by the Coast Guard for the port you are in and take the following action:

If the instructions tell your ship to disperse:

1. **PROCEED.** Get underway as rapidly as possible and carry out the dispersal instructions.
2. **RADIO GUARD.** Set a radio guard on 500 or 2,182 kilocycles for further instructions from the Coast Guard. Tune in a broadcast receiver on 640 or 1240 kilocycles for Civil Defense bulletins. Do not operate your radio transmitters except in case of distress.
3. **BATTEN DOWN.** Secure all unnecessary blowers and close external openings, such as ventilators, hatches, doors, and ports.
4. **FIRE HOSES.** Rig as many fire hoses as possible, preferably with fog spray nozzles so that a protective blanket of spray is maintained over sections of the ship containing personnel and so that the running water will wash away any radioactive fallout striking the ship.

5. **PROTECT PERSONNEL.** Keep all personnel not needed to operate the ship below decks, out of the line of possible flying debris and away from steamlines and other piping or equipment under pressure.

6. **KEEP POWER ON ENGINES.** After you get to the dispersal area keep power on the engines so that you can move immediately, if directed, to avoid fallout.

7. **AWAIT INSTRUCTIONS.** Stay in the dispersal area after the attack until you receive further instructions.

Note: The Civil Defense take cover signal is a wailing or warbling note, or a series of short blasts, lasting three to five minutes. When you hear this signal, have all hands take cover immediately in the best available shelter on board or ashore.

A Stew Not for Boilers

Nov. 1956 - Over the course of the years various ideas have been advanced for preventing scale in boilers, and there was a time when many strange boiler compounds were developed and marketed. However, we can't remember a more unusual one than that which follows, of which the origin is unknown, but for which a patent was granted many years ago. We pass it along without recommending it.



(Photo courtesy Grace Lines)

SS *Santa Cristina* passes through Eisenhower Lock at Massena, N.Y. on her inaugural trip through the St. Lawrence Seaway (Oct. 1959).

- Dec. 15, 1976 - The Liberian tanker *Argo Merchant*, carrying 7.5 million gallons of oil, grounded on a shoal southeast of Nantucket. The cutters *Sherman* and *Vigilant* responded, along with other vessels, but heavy weather prevented containment of the spill.
- March 4, 1977 - ENS Janna Lambine became the

Coast Guard's first female pilot.

- June 22, 1977 - The Coast Guard sent 14 women to sea, the first ever such duty.
- Oct. 20, 1978 - The cutter *Cuyahoga* sank after colliding with M/V *Santa Cruz II* near the mouth of the

- 250 lbs. potatoes
- 175 lbs. cabbage
- 75 lbs. carrots
- 50 lbs. turnips
- 25 lbs. celery
- 125 lbs. caustic soda (76 percent)
- 17 lbs. kerosene
- 1 lbs. graphite

The ingredients should be placed into a suitable cooker, boiled from six to 12 hours until solids dissolve, and then used as necessary. If the last three items are omitted, the formula ought to produce a suitable soup—but not for boilers.

Atomic Power

March 1957 - Unlike the situation which existed when the change occurred from sail to steam, there are few ship owners today who ridicule the idea of nuclear powered merchant vessels.

Economic propulsive power is still some years away, but in our fast moving world we have found that five or 10 years is practically tomorrow. In fact, technological accomplishments have come at such a rate in recent years that we are more often than not economically unprepared to accept them.

A question arises at the outset. Why should the United States undertake a program to build nuclear propelled commercial ships? There are several reasons. Some concern national security. A nuclear propelled maritime fleet would not be dependent on foreign fuel sources. It would also help to conserve our dwindling supplies of fossil fuels. A major reason for this country's interest is our belief that maritime ship propulsion is one of the most economically promising applications of nuclear energy.

It is expected that nuclear ships will be able to achieve higher sustained speeds over longer runs than conventionally powered ships, factors which will add to gross income. Since refueling will not be required, moreover, nuclear ships will require less time for turn-around in port, further adding to their earnings efficiency. Factors such as these are believed to have a total effect more than offsetting what might at first be relatively higher fuel costs for nuclear-propelled ships as compared with ships using conventional fuels.

Danger Lurks

July 1957 - Swimming is a grand sport and thousands of young Americans have learned to love it and practice it at every opportunity. Going in over the side from a merchant ship cannot qualify as an "opportunity."

Beware. There are a lot of unpleasant things under the surface of inviting water that inexperienced fellows don't know or don't think about. There are many varieties of sharks and barracudas up to eight feet long, and other voracious fish. In the Persian Gulf, there are numerous poisonous aquatic snakes scooting around. In many places, seaports are located at or near the mouths of rivers that, in effect, are nothing but huge open sewers. They have swept through thousands of miles of densely populated lands and carry the accumulated corruption, pollution, and infection of millions. It is not healthy to swim in such water in spite of the innocence with which it sparkles under a blue sunlit sky.

We noticed a case the other day where a cook in his early thirties, joined three or four shipmates swimming over the side about noon, while the ship swung from a buoy in port at the mouth of a great Asiatic river. It was a river with all the drawbacks mentioned above, except no barracudas. But there was a five-knot tide running and the



(Photo courtesy Pan-Atlantic Steamship Corp.)
Newest addition to the maritime scene is the lift-on, lift-off trailer ship (Jan. 1958).

Potomac River. Eleven Coast Guardsmen were killed.

- Feb. 18, 1979 - Coast Guard HH-3F helicopter 1432 crashed 180 miles southeast of Cape Cod, killing four of its five occupants. The helo was preparing to airlift a 47-year-old crewman from the Japanese fishing vessel *Kaisei Maru* #18.

- April 12, 1979 - LTJG Beverly Kelly assumed command of the USCGC *Cape Newagen*, becoming the first woman to command a U.S. warship.

- Jan. 28, 1980 - The cutter *Blackthorn* sank in Tampa Bay after colliding with the tanker *Capricorn*. Killed were 23 Coast Guardsmen.



(Photo courtesy Inland Steel Co.)

A tight squeeze for the *Edward L. Ryerson*, the largest ore vessel ever built for the Great Lakes' service. The 26,600-d.w.t. vessel requires considerable navigating skill in getting her huge hull between narrow bridge spans and around a sharp river bend on her way from the Manitowoc Shipbuilding Yards to Lake Michigan (Nov. 1960).

survivors said the undertow was bad. The cook lasted about two minutes and then became a statistic. His body was recovered five days later. He left a widow and two children.

When swimming is not authorized, it must be forbidden. Notices and signs must be posted, stating clearly that it is forbidden. It might do no harm to pass the word around as to why it is forbidden. If you fail to carry out such precautions, your inertia may cost your ship a valuable man—and your owners—a lot of money.

Useful Oil

Feb. 1958 - The British Ministry of Transport and

Civil Aviation has published a notice to owners, masters and skippers relative to the use of oil in rescue operations which is quoted below:

“The Court of Formal Investigation into the loss of *M/V Tresillian* stated that as a result of the fuel oil which had been pumped overboard by rescuing ships in order to calm the seas, some, if not all, of the survivors experienced difficulty in the water. In its report, the Court, without criticizing what was done on that occasion, pointed out that when survivors of a casualty are likely to be in the water, the pumping of oil in quantity should only be carried out when absolutely necessary, and then with the greatest of care.

“Experience has shown that vegetable oils and

● Feb. 7, 1980 - The USCGC *Cape Horn* saved all six crewmen of the *Hattie Rose* in a dramatic night-time rescue. The crew was forced to abandon their 75-foot fishing vessel in 25-foot seas and 45-knot winds, 15 miles east of Provincetown.

● April 21, 1980 - Boats with Cuban refugees on board

departed Mariel, Cuba. The first two boats arrived in Miami the same day, marking the largest Cuban migration to the U.S. to date. Cuban leader Fidel Castro then declared the port of Mariel “open,” increasing the number of boats involved. This was to become the largest Coast Guard operation ever undertaken.

animal oils, including fish oils, are most suitable in such circumstances. If they are not available, lubricating oils should be used. Fuel oil should not be used unless absolutely unavoidable. Oils of the former types are less harmful to men in the water and are very effective quelling agents. Recent tests carried out by an independent company have shown that 45 gallons of lubricating oil discharged slowly through a rubber hose with an outlet just above the sea while the ship steams at slow speed can be an effective agent for quelling seas over an area of at least 50,000 square feet.”

Walk—Don’t Leap

Jan. 1959 - It’s fine to be young and full of zip with springs in your legs. You come to a gap in your path and you don’t walk around it or wait for it to close, you jump right over it. It’s even fun to jump across voids when there’s a wee bit of danger if you fall. Along the waterfront

and on river craft, that element of danger may not be so “wee;” it may be disastrous.

“Look before you leap!” That admonition has been preached down through the centuries ever since man learned to leap. In the caveman age mothers dinned it into the ears of their young. Monkey mothers exhorted baby monkeys before that: “Look before you leap!” But where seamen and rivermen are concerned, “BETTER NEVER LEAP!”

You’re standing on a barge that is closing in on another barge. The barges are 20 feet apart and there is no temptation to see if you can jump it. But as the distance between the barges narrows, you lean forward, your leg muscles tense, and first thing you know, you’ve taken oil and are in the air.

Where—and how—you land, is something else. If you land topside up where you wanted to land, all well and good. If you land some other way or you land some place you didn’t figure on landing, it’s not so good. No use then to think about how much more sensible it would have been to wait until the barges came together, when you could have stepped across.

Same thing when you’re coming alongside a river bank or dock. Perhaps you are in a hurry to go home. Again, you take off on that premature jump. Maybe you make it, only to find out too late that your landing place is a lot more slippery than it looked. You can think a lot of thoughts while you’re sliding or falling backward into the water. Fish can jump out of water but you can jump only into it.

If it is foolish to jump when a tug or barge is closing in, certainly it is just as much so to jump when the craft is pulling out. No matter how late you may be or what may happen if you miss sailing, it can be a lot worse if you fall in the water as the result of a missed jump. Don’t forget that a few drinks may make that jump look shorter than it really is. “A leap in the dark” may mean good night forever. A good safety rule is that if you cannot walk on board, wait until you can.

Even a jump over water of not more than a foot or so, particularly at different levels, can lead to disaster. Many a man on the golf course has missed a shorter putt than that and many a jumper has missed that distance, too.

A one-foot jumper has been known to become a one-footed jumper when he slipped or tripped and fell between barges or between barge and dock, instead of jumping it safely.

Another jump that is not on the safety list is the one an eager beaver takes down the bottom two or three ladder



(Photo courtesy Lykes)

Lykes Bros. Vessels in line at New Orleans (May 1966).

- Dec. 31, 1981 - Fourteen LORAN-A stations closed, ending coverage that began during World War II.
- Jan. 13, 1982 - Air Florida Flight 90 crashed into the Potomac River. The Coast Guard assisted in the rescue of surviving passengers and recovery of the wreckage.

- Feb. 4, 1982 - Attorney General William Smith said at a press conference that Operation Tiburon was “the most successful international marijuana interdiction effort to date.” The operation, in which the Coast Guard participated, began in November 1980, and accounted for the seizure of 95 vessels.

rungs onto the deck. Perhaps he didn't see so good and it's three or four rungs instead of two or three. Maybe he didn't notice those loose boards which slid out from under him when he alit, or that patch of grease on deck which landed him where it would do the most harm.

Such things do not happen to a man every time he jumps. In fact, they don't happen most of the time. They only have to happen once to make you a has-been as a jumper—or a has-been, period.

One of the dictionary definitions of to jump is “to hazard or expose to danger.” When you get old enough, you get over that urge to jump. Your legs no longer tempt you—in fact, they warn you “don't take a chance.” Until you reach that stage, you'll have to learn to restrain yourself, no matter how much those traitor legs may tempt you.

Nylon Wonder Lines

Aug. 1959 - Ever wrestle with a boa constrictor? Or even worse, with a twisting, waterlogged, jackass-stubborn coil of hawser? Anyone who has ever had to drag one of these manila backbreakers from fo'c'sle head to rope locker can take heart, for there's good news tonight!

After two years of sea trials by the Navy's Bureau of Ships and Military Sea Transportation Service, the nylon so fashionable with the ladies, bids fair to replace the muscle-bound manila line of sail and pirate days. Tests aboard the USNS *Darby* and the USNS *Kingsport Victory* show nylon mooring lines to be far lighter, more flexible, less bulky, and easier to handle and stow, than manila.

Other advantages reported by *Darby's* First Officer A. M. Ekblad and *Kingsport Victory's* skipper, CAPT Philip Stanich:

Nylon is nonabsorbent; sheds water, ice.

Easy to splice. Worn sections may be cut out and new sections spliced in without worry about hidden deterioration from rot in the remaining portions.

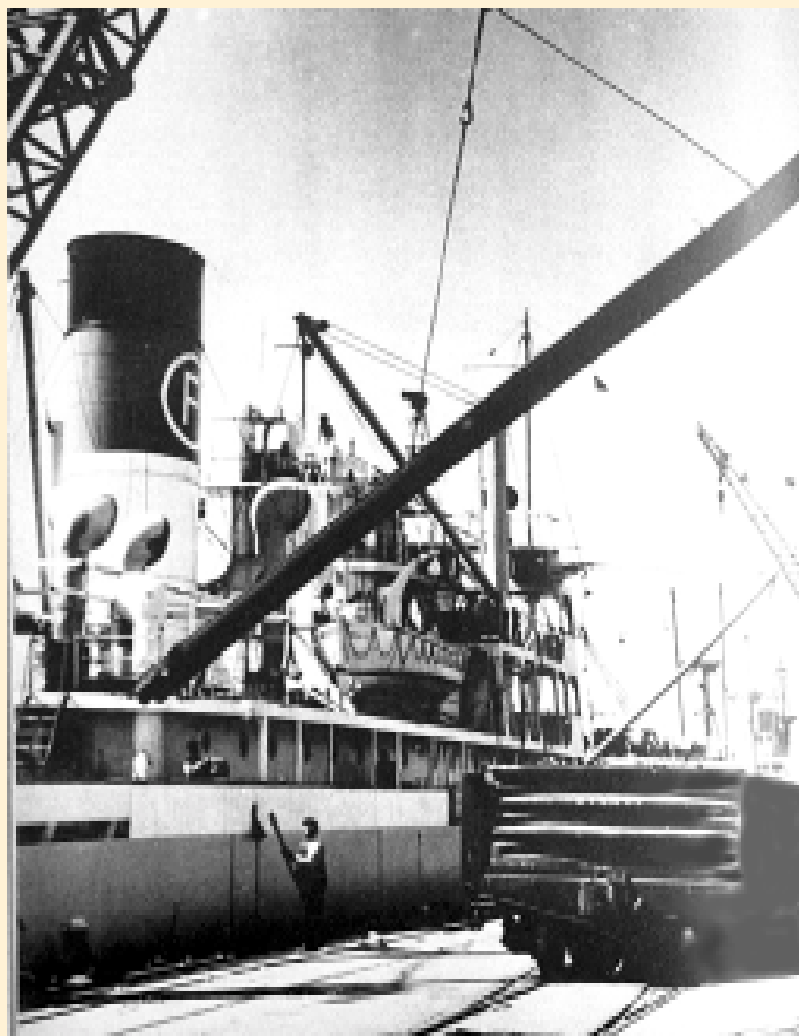
Unaffected by mold—no dry-rot problem.

It s-t-r-e-t-c-h-e-s safely as much as 40 percent, yet returns to its original length; a distinct advantage where impact and shock loads are encountered (but look out for backlash if it breaks).

Heat from bitt friction when it is necessary to surge or slack away will cause nylon to smoke, but it has a relatively high melting point.

No insect problems.

Reports the *Darby*: “The nylon mooring lines have now been in use almost two years aboard this ship. After an overall survey, all mooring lines still remain in good



(Photo courtesy Lloyd Gregory and Associate)
Cargo is worked at the Port of Houston (April 1967).

condition, and in our opinion the nylons are far superior and five times as durable as the manila or sisal ropes.”

In addition to verifying the longer life feature, *Darby* says nylons averted mishaps. Two instances are cited:

During the fall of 1957, in Casablanca, a tug towing the ship parted a nine-inch manila line in a matter of seconds. A 6 ½-inch nylon line was quickly passed to the tug, and the mooring operation continued without mishap.

In the spring of 1958, again in Casablanca, the first officer reported a heavy swell outside the harbor, causing all ships moored within the harbor to surge dangerously. He noted that a French passenger liner near the *Darby*, using grass ropes for auxiliary mooring lines, surged badly. But the *Darby* barely moved, as the spring action of the nylon ropes kept her in place.

- Aug. 9, 1982 - The Department of Defense approved the use of Coast Guard law enforcement detachments on board Navy vessels during peacetime.
- Jan. 15, 1983 - A C-130 from Air Station Barbers Point made the first aerial seizure in Coast Guard history when it ordered the Japanese fishing vessel *Daian*

Maru #68 to sail to Midway Island to await a Coast Guard boarding team.

- March 10, 1983 - The Coast Guard retired the last operational HU-16E Albatross, ending the era of seaplanes for the service.

Savings as a result of such replacements are expected to run into the hundreds of thousands—not to mention the saving in aching backs. Nylon lines cost approximately three times more than manila, but with proper care will give four or five times the service life. One thing is sure: These nylons won't run!

Seaway Problems

Oct. 1959 - The opening of the St. Lawrence Seaway with its 27-foot controlling depth has presented the ocean operator a challenge entirely different from those previously encountered. Where the owner is free to sail the seven seas, "The Eighth Sea" cannot be entered without some extensive preparations.

An operator could very easily spend as much as \$250,000 to outfit an existing C2 or C3 cargo vessel for Great Lakes service were he to follow all the rules and recommendations given in existing publications.

Passing through the various locks of the Great Lakes St. Lawrence system is quite different from locking through the Panama Canal for example. While the Panama Canal

system utilizes mules on both sides of a vessel to gently maneuver a vessel through the locks without damage and with little responsibility on the part of the ship-master, the Lakes' system requires each vessel to assume tremendous responsibility.

Upon approaching a lock or a series of locks, a vessel must first tie up alongside a seawall. This may necessitate waiting to pass through. Tugboats are unheard of for this operation so it is necessary to approach the seawall with sufficient headway to maintain rudder control and while still underway to put seamen ashore. This is done by means of a long horizontal landing boom immediately abaft the forecastle head. The seamen handle lines and the vessels ahead motion is checked by means of heavy wire cables between bitts on the shore and winches on board. This is a somewhat spectacular operation.

The vessel is then hauled alongside the concrete wall and into the locks with her own equipment, with her own crew, and when directed by the lock master. This same general type of operation is required for docking and undocking at loading berths. While this is routine for Great Lakes shipmasters, it is a radical departure from convention for deep-sea personnel.



"Excuse us again" (March 1964).

Signs of Suicide

Jan. 1960 - The third worst killer aboard U.S. commercial vessels in fiscal 1959 was suicide, with a total of 34 deaths. Obviously, this has become a particularly serious problem and one that is most difficult to do anything about, particularly aboard ship. Without entering the realm of the psychiatrist, however, a review of these cases has revealed that most individuals so disposed gave definite prior indications of mental disorder. The most common and easily recognized symptoms were aural and visual hallucinations. Others were feelings of persecution, abnormal religious preoccupation, and abnormal feelings of insufficiency. In many instances the individuals appeared to return to normal shortly before they went overboard.

A person afflicted with a mental disorder is dangerous to himself and possibly others. In addition, if a man goes overboard, the safety of others may be risked when rescue is attempted. The various manifestations of mental illness are indexed in the *Ship's Medicine Chest and First Aid at Sea* under mental diseases and insanity, depressions, hallucinations, excitement, and delirium. This text should, of course, be consulted for detailed guidance in every mental case but in addition, the following basic

- May 31, 1983 - Jack Dempsey passed away at the age of 87. He had served in the Coast Guard during World War II.
- Dec. 8, 1983 - Four cutters arrived off of the island of Grenada to replace U.S. Navy surface forces conducting surveillance operations after the U.S. invaded the

island earlier that year.

- July 5, 1984 - The Bureau of Navigation was created under the Treasury Department with the task of administration of American navigation laws. The bureau was responsible for numbering of vessels and the preparation of the annual list of merchant vessels

steps should be considered whenever this problem arises at sea:

1. Set a round-the-clock watch on the man and have at least two men with him when on deck.
2. See that he is treated with patience, tact, and firmness.
3. Radio for medical advice.

If these precautions are taken, the appalling death rate from this cause should be materially reduced.

Inflatable Liferafts

Dec. 1960 - The modern automobile has tires in which we, the motoring public, have the utmost confidence. Seldom do we think of tires as we cruise along our superhighways at 60 mph or better. This has not always been the case.

It was not too many years ago when a mere 20 mile automobile trip without a flat tire was considered to be quite an achievement. I also remember when I bought my first car. Tires had improved a great deal by that time, so flats were less common, but it was still a standard operating procedure to put air in the tires each time gas was bought. Now, I venture to say, we almost completely forget our tires. All of this shows the vast improvements and developments that have been made in the rubber and synthetic rubber fields, so that now we place remarkable reliance in tires and other pneumatic devices.

One such device that has had a comparable history is the inflatable liferaft. Due to its obvious advantages in size and weight compared with the conventional lifeboat or liferaft, early attempts were made to invade the marine field. The acceptance of pneumatic devices in the marine safety field has been very deliberate and rather slow.

The idea of using inflatable equipment for flotation is not new. Thousands of years B.C., bladders of goats and other animals were blown up and made into rafts for ferrying armies across swollen rivers. Later on, in the time of Nelson, sailors frequently used inflated animal bladders as a means of lifesaving.

Work and developments on inflatable liferafts have been going on in the United States since 1917. The first patented inflatable liferaft in this country was built about 1920. However, it wasn't until 1929, when some of the larger rubber companies and aircraft people entered the field, that real progress was made. These companies are considered by many to be the pioneers in liferaft manufacture and design.

As a result of this pioneering work, the first Navy



(Photo courtesy Moran Towing Co.)

The *American Contractor* of U.S. Liner is boarded by the docking pilot in New York (May 1967).

Specification for inflatable rafts was written in 1930. Since that time, there have been numerous amendments to the basic specification to keep abreast with new materials and improvements. Probably one of the most important improvements was the development of the first workable automatic inflating mechanism. This mechanism replaced the old fashion fireplace bellows method of inflation, which sometimes required 20 to 30 minutes to fill the air chambers.

During this same period, many foreign countries, England and Italy in particular, were developing rafts independently using different techniques and materials. In spite of the many improvements, the United States law and international agreements such as the 1929 and 1948 Safety of Life at Sea Conventions still prohibited the use of inflatable equipment in the marine field.

Studies made by the British at the conclusion of World War II disclosed the following facts concerning casualties during the war:

- (a) Two-thirds of all naval deaths were caused by exposure and drowning.
- (b) The R.A.F., using inflatable rafts had saved 26,000 lives.

These facts and other studies made it obvious to the maritime people that inflatable liferafts could and should be used in the marine field.

In anticipation of the 1960 Convention, the Coast Guard initiated action to amend the U.S. law so as to remove

of the U.S.

- Jan. 1, 1985 - The cutter *Citrus* was rammed by the M/V *Pacific Star* during a boarding incident. The *Pacific Star* then sank after being scuttled by her crew. There were no casualties. The seven crewmen were arrested on drug charges.

- March 29, 1985 - The *Nantucket I* was decommissioned, ending 164 years of lightship service.

- July 31, 1985 - The Coast Guard conducted a fleet dedication ceremony for the new 110-foot patrol boats in Lockport, La.

our national prohibition against inflatable equipment. At the same time, we joined with the marine industry and actively participated in the establishment of the U.S. position which was taken to the 1960 SOLAS Convention regarding the construction and use of inflatable liferafts.

Two Tales of Woe

Dec. 1960 - The Military Sea Transportation Service has drills which simulate real emergencies. Steering casualty drills are always conducted in broad open expanses of water away from the shipping lanes.

In one such drill, the damage control instructor, who was conducting the drill, cut off the power to the rudder angle indicator on the bridge. The master was the only one on the bridge who was aware that the ship was answering her helm. The mate mistook the rudder angle indicator failure for a steering power failure and ordered the steering casualty team into action. They rushed to the steering engine room, secured the power to the steering motor, started to hook up the hand steering aft, and frantically searched for indications of the trouble.

Meanwhile the ship made lazy circles in the sea. The master put an end to all of this by ordering power back on the steering engine. He then took the helm himself and waited for the red-faced mate to return to the bridge.

Years ago, a somewhat similar happening put a tanker on the beach in the Willamette River. The engineers were working on the IC generator which supplies juice to the rudder angle indicator, the engine room telegraph, and the hand electric steering gear, as well as to other controls.

When they were finished, they started up the generator and shut the other one down, *but* they neglected to put the first generator on the line.

The ship was being steered by the hydraulic telemotor control and was unaffected by all this until the quartermaster glanced at the rudder angle indicator and found it hard over in the off position. He concluded that he had no helm and sang out to that effect. Actually, the steering gear was working perfectly. The master put the steering gear in hand electric and had the bypass opened on the telemotor.

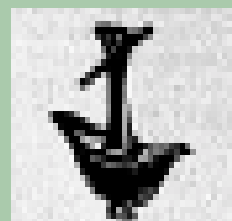
Right then things started happening. The ship headed for the shore. The current was off the engine room telegraph. The buzzer, which is supposed to ring when current goes off the telegraph, wasn't working. Precious seconds were lost getting the engine room on the phone. They finally got her going astern, and the mate dropped



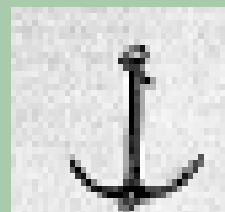
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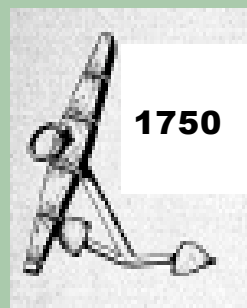
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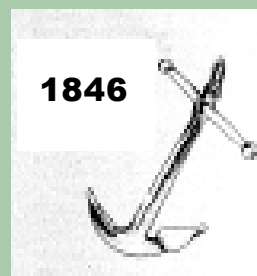
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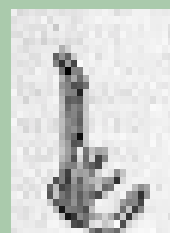
1066



1750



1846



1866



1916

- Jan. 28, 1986 - NASA's space shuttle *Challenger* exploded after liftoff, killing the crew. Coast Guard units conducted the initial search and rescue operation and later assisted in the recovery of much of the shuttle's wreckage.

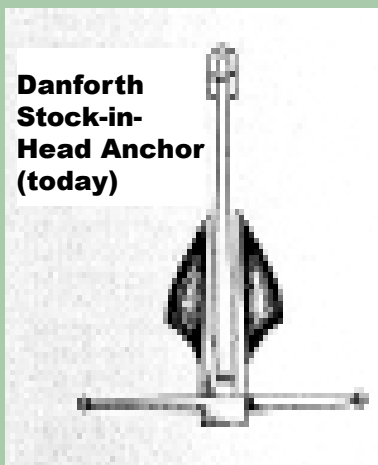
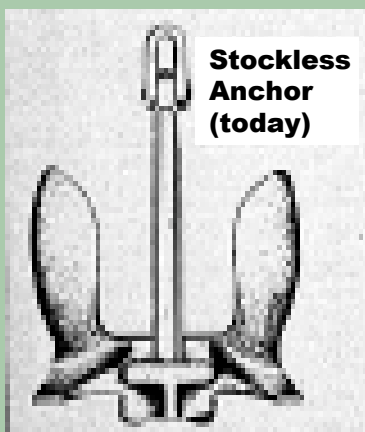
- July 3, 1986 - The Statue of Liberty centennial

celebration took place in New York Harbor. The Coast Guard was in the forefront of the celebration.

- March 14, 1987 - Coast Guard helicopters rescued the 37-person crew of a sinking Soviet freighter *Komsomolets Kirgizii*, 220 miles off the coast of New Jersey.

DEVELOPMENT OF THE 'HOOK'

June 1955



both anchors, but to no avail. She piled up on the beach, high and dry.

Fortunately, the beach was soft, and, after lightening her cargo off, they were able to pull her free with tugs. Miraculously, the ship was not damaged. Subsequently, orders were sent to the ships that they were not to make routine repairs to critical operating machinery involving switchovers when the ship was in narrow waters. These orders still stand. Another lesson obvious from above is that failure of the rudder angle indicator does not necessarily mean that the ship cannot be steered.

Small vs. Large Boats

April 1961 - Many yachtsmen and small boat operators have shaken their heads in disgust or their fists in anger at the masters and pilots of large ships who they feel have failed to yield or give to them their so-called right of way in navigating circumstances involving risk of collision.

Likewise, many masters and pilots of large vessels have cursed silently to themselves or loudly for all to hear about the apparent lack of knowledge of the rules of the road, or the failure to correctly apply the rules of the road and the lack of good seamanship on the part of the small boat operators in situations involving risk of collision with large vessels.

That many members of the Pleasure Boating Group and the Professional Seafaring Group are contemptuous of the opposite Group's navigating skill and ability is fact and not fiction. Another frequent source of complaint is the lack of courtesy of the nautical road displayed by some operators and navigators.

A review of the collision cases involving large ships and small boats clearly indicates and makes obvious the fact that differences of opinion exist as to what one thinks his rights are under the pilot rules and what one is expected to do by his fellow boatmen or ship masters under the same set of rules.

Most differences of opinion are due in general to misinformation or a lack of information on the subject under discussion. The differences of opinions which result in the collisions or near collisions under consideration at this time are for the most part caused by a lack of information or misinterpretation of the pilot rules. A strong contributing factor is the average boatman's lack of information or appreciation of the operating or maneuvering characteristics of most of the larger ships.

- May 8, 1987 - Coast Guard units, including the cutter *Ocracoke*, seized 1.9 tons of cocaine.
- Jan. 16, 1988 - Coast Guard units responded to a report of a murder on board the container vessel *Boxer Captain Cook*. The ship's first officer apparently murdered the captain and threw his body overboard.

- May 31, 1988 - The first search and rescue agreement with the Soviet Union was signed.
- Oct. 13, 1988 - The first U.S. Merchant Marine World War II veterans received their Coast Guard-issued discharge certificates. Congress gave the merchant mariners veterans status and tasked the Coast Guard

Billions of dollars have been spent over a period of years to improve the inland waterways of this country. Basically, much of this money was and is being spent to provide wider and deeper channels in order that larger and more heavily laden ships may fully utilize the facilities of our harbors as expeditiously as possible. After all, it should be realized by all that a busy shipping industry is essential to a sound economy and a sound economy is essential to the maintenance of our large fleet of pleasure boats.

Speed is a paradox today. Yachtsmen want speed. The ship owner wants it. The freight forwarder wants it. Everybody wants it. Despite our clamor for speed and more speed we are reluctant to admit that it presents any problems. Generally speaking, speed is not a problem in open water. It is, however, the major contributing cause of more collisions on restricted inland waters than any other cause.

Many, perhaps most, pleasure boat operators do not appreciate the full significance of the operating characteristics of a large, fast moving merchant ship. It is not uncommon for a large fast heavily laden ship to require eight-minutes and a distance of over a mile in which to make an emergency stop. The turning circle of these ships is frequently in excess of one-half mile. The draft of these vessels is generally about 30 feet or all that the channels will permit. It should not require much imagination on the part of the small boat operator to realize that a large merchant vessel on inland waters is severely handicapped with regard to maneuvering ability to avoid a collision with a small craft.

Flammable Tools

July 1962 - Not long ago, an electrical equipment manufacturing plant in the east put in a stock of plastic-headed mallets. Within a short time, three of them caught fire, flashing up with sudden intensity. Two were ignited from small bench-type torches, and one from a soldering iron. Two of the mallet users were lucky, but a third suffered a badly burned hand.

A match was then experimentally touched to one of the mallets, and it immediately burst into flames and burned like a torch! The plant wasted no time in replacing the mallets with a type of nonflammable nylon plastic. Next, they consulted the local fire commissioner who found that a nitrocellulose base in the plastic made it highly inflammable. He also found that toxic fumes were produced when this material burned.

Plastic mallets are commonly used for electrical work, as they do not conduct electricity, and they are also popular because of their nonsparking quality. Other tools might contain this same dangerous material, as well as home utensils. If any plastic mallets or plastic-handled screwdrivers or other tools are used on your vessel, find out if they're flammable!

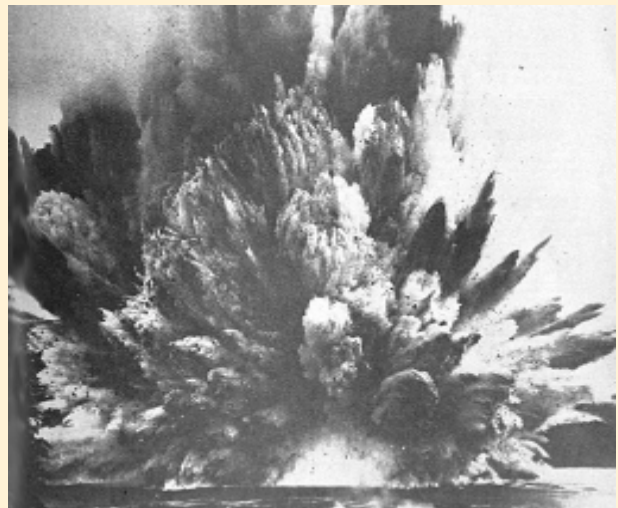
In another incident, an employee of Knolls Atomic Power Laboratory noticed white smoke coming from a plastic handle of a screwdriver. He immediately picked it up and put the handle under running water but it continued to burn. There were no open flames or electrical devices near the tool; it had ignited spontaneously,

Investigation concluded that certain plastic handles contain varying amounts of cellulose nitrate. It was found that certain brands of screwdrivers come in two different shades of amber color, the darker of which would support combustion.

It is advisable that samples of screwdrivers obtained on purchase orders be tested for combustion. Prevailing brands of screwdrivers in stock and in use should be sampled similarly.

The End of Ripple Rock

Aug. 1962 - Ships in the brisk intercoastal Alaskan trade usually follow the 850 miles of sheltered inland waterway along Canada's west coast. For most of the way, it's easy sailing with ample maneuvering room and plenty of deep water. Between Quadra Island and the northeastern



Explosion eliminates Ripple Rock as a menace to navigation.

with administering the discharges.

- Feb. 24, 1989 - Coast Guard units searched for survivors of United Airlines Flight 811 after it crashed off the coast of Hawaii.
- March 24, 1989 - The tanker *Exxon Valdez* grounded

on a reef in Prince William Sound, Alaska, spilling 10.1 million gallons of crude oil. The Coast Guard prevented more oil from spilling and assisted in the cleanup. This was the worst oil spill in U.S. history. The spill provides the impetus for the passage of the Oil Protection Act in 1990.

coast of Vancouver Island, however, a two-mile throat exists which narrows the waterway to less than 2,500 feet. Through this slot tidal currents frequently run in excess of 14.5 knots, and whirlpools, estimated to be 30 feet in diameter and 15 feet deep, frequently imperil small vessels.

In the very middle of Seymour Narrows the twin peaks of Ripple Rock soared upward from the bottom to within nine feet of the surface, creating an obstruction which, since 1875, caused the loss of, or damage to, over 100 ships and the loss of some 114 lives. The passage was so treacherous that ships would anchor at each end of the Narrows to wait for slack water. Then, as many as could would sail through during the 30-minute period of comparatively quiet water while the rest waited for the next change of tide. Since vessels using the route annually carried over 175,000 passengers and transported goods valued in excess of \$100 million, the costs of such delays were staggering.

Previous to the successful blast of April 5, 1958, two attempts were made to destroy Ripple Rock; one in 1943, the second in 1945. On each occasion, drilling barges were anchored over the peaks and holes were drilled into the rock, but the steel anchoring cables snapped so frequently that work had to be abandoned. During the 1945 attempt, 93 five-foot holes were loaded and shot. The result was the removal of some 3,000 tons of rock, causing only a slight indentation in the total mass.

Many suggestions for removing the twin peaks were offered—aerial bombardment, torpedoing, an atomic bomb—all were considered, but rejected as impractical. In 1953 the Canadian Research Council proposed a totally different plan, the setting of explosives inside the peaks, rather than on their surfaces. This was accepted.

At the 570-foot level a horizontal, seven-foot square, 2,900-foot long tunnel was driven from Maud Island, through solid rock toward the base of the peaks. Four hundred feet from South Rock, the tunnel divided, extending to the base of each peak. All along the way, diamond drills probed at least 100 feet ahead of the work. From each end of the divided tunnel, vertical shafts were driven upward to a level 100 feet below mean water. At the top of each shaft, an intricate network of small “coyote” tunnels, just big enough for a man to crawl through, were built. Once more, diamond drills probed outward and upward in all directions, providing a margin of safety and establishing a more accurate contour of the twin peaks.

As soon as the “coyote” tunnels were completed, workers began charging them with Nitramex 2H, a relatively new, and extremely powerful, explosive developed by the

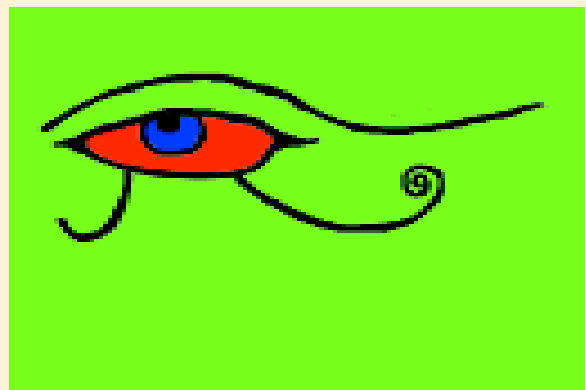
Du Pont Co. For four weeks, day and night, the work went on until a total of 2.75 million pounds of the explosive disappeared down the Maud Island shaft to find its way to the little tunnels within the twin peaks. Finally the detonating cord was placed.

The ensuing blast churned and boiled the water in Seymour Narrows for 30 minutes. Four hours after the blast, word came through that 370,000 tons had sheared off the twin peaks of Ripple Rock to a minimum depth of 50 feet. The channel was clear.

Signs Afloat

March 1963 - The first recorded sign affixed to a ship’s hull, the Eye of Horus, dates back to ancient Egyptian history. Horus, God of Health, lost an eye in a fight with Set, the demon of evil. The eye was restored by miraculous means and it formed the design for a charm or amulet which was second only to the scarab as a mascot of ancient Egypt. It had an elaborate design originally. Later it became conventionalized as something resembling a capital R and was placed on all objects associated with danger such as ships, chariots, and prescriptions.

Whether man’s emancipation from superstition has anything to do with it or not, the Eye of Horus is no longer used aboard ship. If one looks closely at the midship section of a vessel, though, one will see a sign which, on first glimpse, might be taken for an Egyptian hieroglyphic. This sign is the International Load Line. It is known familiarly among English-speaking seamen as the Plimsoll mark, in honor of Samuel Plimsoll who introduced before the British Parliament a bill for limiting the lading of oceangoing vessels. The efforts to make the provision a law was a long and bitter battle. When one affluent British shipowner was asked where he thought the loadline should be placed,



The Eye of Horus

- Sept. 18, 1989 - Hurricane Hugo hit Puerto Rico and later Charleston, S.C., on the 21st. Coast Guard units conducted search and rescue as well as relief operations.
- Sept. 21, 1989 - Coast Guardsmen rescued 61 survivors of U.S. Air Flight 5050 after it skidded off a

runway at New York's LaGuardia Airport and into the Rikers Island Channel. Two persons were killed.

- Aug. 10, 1990 - Coast Guard units, including reservists, called-up for Operation Desert Storm, maintained security zones and ensured safe loading of the vessels.

he stated, "On the bloody smoke stack."

The struggle to legislate the limitation of lading was so lengthy and acrimonious that it became one of the historical landmarks of maritime legislation. A few years ago an ingenious newspaper writer referred to the furor aroused over the shortening of the hemline on women's dresses as, the Battle of the Plimsoll Line." Men knowledgeable in maritime history smiled over that facetious reference.

Most of the signs seen aboard the modern ship are required by law. Every American vessel must have its name in three places; on each side of the bow, on each side of the navigating bridge, and on the stern. The name of its port of registry must be placed beneath the name on the stern. Draft marks must be painted at the bow and stern, from the keel upward. Some foreign nations use Roman numerals and the metric system. American ships use Arabic numbers and feet. Each draft number is six inches high and the distance between numbers is six inches. The draft is read from the bottom of the number.

Many steamship companies paint the name of the line on the side of their ships; however, this is not mandatory. An interesting story is told about a large foreign line that has a white bordering line painted on its ships in addition to the firm's name. An unwary chief mate requested of the owner that he be allowed to paint over the labor-consuming line.

"That white border is there in memory of my deceased wife and it will remain there as long as I own the line," the owner answered the embarrassed chief mate.

Perhaps the most conspicuous sign on the modern ship is the one on the smokestack. A great many companies paint their smokestacks with the insignia used on their house flags. As with the name on the hull, there is no legal requirement for painting the smokestack. Some companies just paint it a monolithic black, green, or red color.

The U.S. Military Sea Transportation Service is experimenting with a lighted sign on its ships which flashes an arrow across the forepart of the bridge to indicate the direction it is turning when in close proximity to another vessel. The introduction of this visual experiment was the result of the many tragic collisions on the waterways in the past few years. It is too early yet to evaluate the efficacy of the study.

A great many new signs have been introduced aboard ship in recent years because of the increased interest in safety. They are of various sizes, colors, and materials. Some of the prefabricated signs for use inside are made of luminous material. Yellow is becoming a

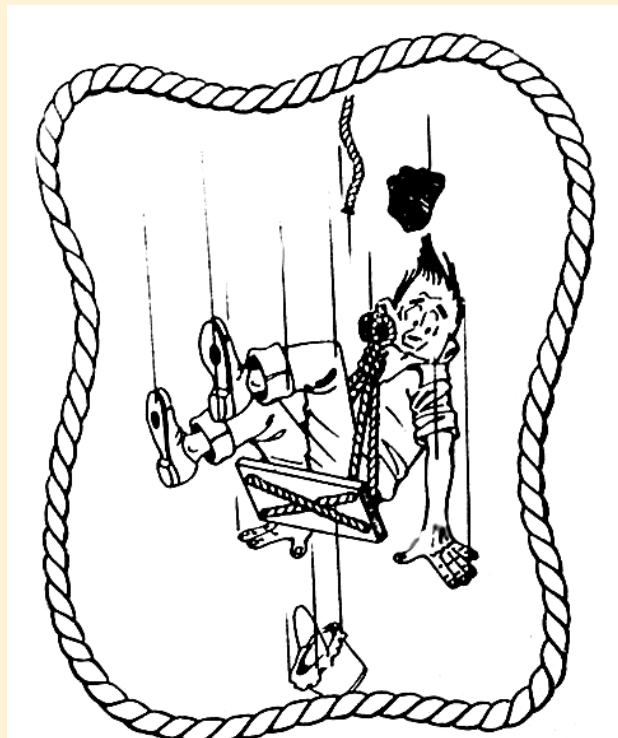
predominant color because of its apparent aid to the vision. Prefabricated signs manufactured by companies ashore are becoming increasingly more prevalent aboard ships. Until recent years most of the signs used aboard ships were made by the seaman with stencils furnished by the owners.

Hardly anyone questions the efficacy of signs these days, but one ironic old salt was heard to grumble recently, "If they keep posting signs aboard this hooker, she's soon going to look like *Billboard* magazine."

Marlinspike Seamanship

Aug. 1964 - It was a beautiful day as the outward bound ship knifed through the calm Pacific. A seaman was aloft in a bosn's chair, slushing down a topping lift. It was about an hour after dinner and he was a little more than half through his job when suddenly he dropped, still sitting in his chair, falling on the lumber deckload. Fortunately he did not roll overboard although he was badly injured about the head and back.

Investigation showed that the shackle was still around the topping lift wire. No lines had carried away and the bosn's chair was undamaged. The same gear had been used all morning without mishap and was used



Seaman aloft in bosn's chair takes a fall.

- Aug. 17, 1990 - Coast Guard boarding teams committed to Operation Desert Shield.
- Jan. 26, 1991 - The Coast Guard assisted the Saudi government in oil spill clean-up operations.
- July 1, 1991 - The Coast Guard seized 70 tons of

hashish from the *MV Lucky Star*.

- Nov. 1, 1991 - Three vicious storms, including Hurricane Grace, converged in the North Atlantic to form what was described as “the perfect storm.” That description became the title of a book and a best selling movie.

throughout the following day. There was nothing wrong with it. The injured man had been going to sea for 20 years and was considered a good seaman.

The fall was due to the fact that the knot which secured the bosn’s chair to the gantline came undone. The knot was a double sheet bend, tied either by the injured man or his predecessor on the job. The injured man denied tying the knot himself but said that it had looked all right to him when he inspected it before going aloft. “It was a double sheet bend with the pin of the shackle led through the first turn of the gantline as it come through the eye of the chair,” he said.

Unfortunately, the tail end of the gantline was short—only a few inches. Now if you want to try an interesting experiment, see if you can reproduce this rig with the shackle pin inserted under that section of the gantline hauling part that jams the two round turns of a double sheet bend. Leave a tail of not more than eight inches. Then slacken off the gantline to lower the chair and jerk the rig around a little. The chances are that suddenly that short end will pop through the bend, the knot will dissolve, and the chair will drop.

The injured man said, “I never heard of a double sheet bend slipping before.” A lot of men will echo that, but in our experience, there have been a number of serious accidents which occurred in precisely this manner with either a single or double sheet bend when a shackle pin was put through the knot and the tail was short. It is simply bad seamanship to put a shackle pin through a holding knot, particularly when the tail is short. As a matter of fact, it is not good seamanship to tie any kind of holding knot with a short tail.

A preferred rig is one in which the shackle pin is inserted through the supporting lines of the bosn’s chair above the throat seizing and under the double sheet bend knot. The bow of the shackle should always be the rubbing part against the shroud or topping lift wire. If the pin does the rubbing it may become unscrewed by friction. Another good precaution is to take a final half hitch with the bitter end around the standing part of the gantline, provided it is long enough.

Deserters Take Heed

July 1966 - Unlike land-based

workers, a seaman cannot just up and quit his job whenever he feels like it.

A seaman, by his choice of calling, subjects himself to the rigors of shipboard discipline, and the unreasonable quitting of his ship may amount to the statutory offense of desertion, with the prescribed punishment and lingering stigma which follow.

The law is laid down in a statute which comes to us from a time when most mariners were serving under sail. Section 701 of the U.S. Code’s Title 46 begins:

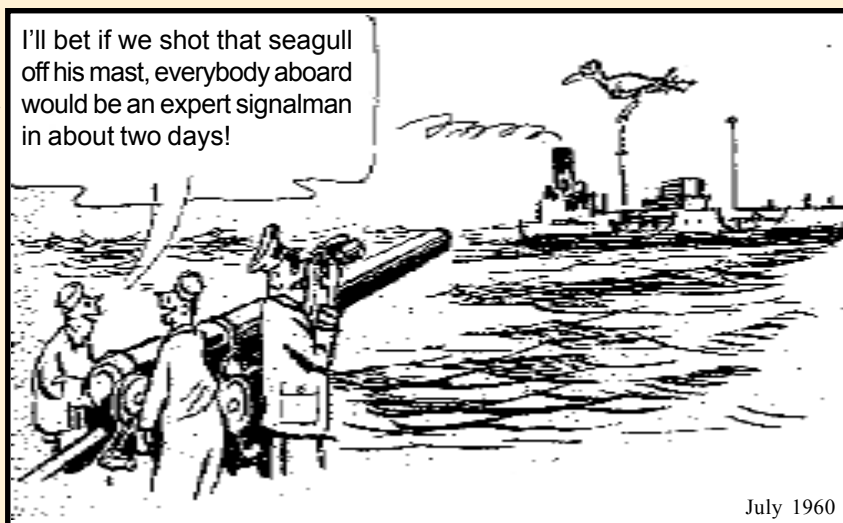
“Whenever any seaman who has been lawfully engaged or any apprentice to the sea service commits any of the following offenses, he shall be punished as follows:

“First, for desertion, by forfeiture of all or any parts of the clothes or effects he leaves on board and of all or any part of the wages or emoluments which he has then earned.”

The statute goes on to define and prescribe punishments for various other offenses, including, “willful disobedience to any lawful command at sea” (for which the culprit may be “placed in irons until such disobedience shall cease”), and for continued disobedience or “willful neglect of duty at sea” (for which he may be “placed in irons on bread and water, with full rations every fifth day...”).

A seaman’s duty to his vessel commences from the time he signs the shipping articles, and from such time he may incur the penalty of desertion.

Desertion itself involves a continuing intentional absence from the ship, constituting a quitting of the service of the vessel, rather than lesser absences from the ship without leave or sufficient reason, for which less drastic



- Feb. 10, 1992 - Retired Coast Guard Chief Journalist Alex Haley, internationally noted author and the first person ever to hold that rate in the Coast Guard, died of a heart attack.
- Aug. 26, 1992 - Hurricane Andrew hit Florida and the Gulf Coast states, causing extensive damage. The

Coast Guard conducted search and rescue, relief, and transport operations.

- Jan. 15, 1993 - The Coast Guard launched Operation Able Manner in response to the Haitian refugee boat fleet. It was the largest search and rescue operation ever undertaken by the Coast Guard up to this time.

penalties are prescribed.

Like the statute, many of the cases thereunder were decided in the great days of sail. Thus, a seaman is justified in leaving his vessel through fear induced by cruel treatment and threats, and such departure does not constitute desertion. On the other hand, a master may inflict “moderate chastisement” on a member of his crew for disobedience of orders, and a single act of such kind, which does not exceed the bounds of moderation, will not justify the seaman in leaving the vessel before the expiration of his term of service.

Similarly, a seaman’s sickness will justify his departure, which brings us down to modern times and the most recent case under Section 701.

In January 1964, one Knutson signed on as an able bodied seaman for a foreign voyage and return aboard the SS *Wilderness*. At Singapore, in April, the master of the vessel recorded in the official log book that Knutson had deserted. His wages were forfeited and were deposited in the registry of the district court in Oregon. Knutson brought a petition seeking the return of the wages on the ground that they were improperly forfeited.

His basic contention was that his actions in Singapore amounted at most, to a refusal to join his vessel without reasonable cause (one of the lesser charges under Section 701) and that he was subject to forfeiture of not more than two days’ pay. This lesser penalty is applicable only when the seaman’s conduct does not amount to desertion.

The court listed the salient elements of desertion as the abandonment of duty by quitting a ship before the termination of the engagement without justification and with the intention of not returning.

The court summarized the evidence as follows: Knutson demanded to be paid off at Singapore and, as a result, was taken to the American consulate. At the consulate, Knutson said that he did not want to be paid off, but insisted that he was unfit for duty and should be hospitalized.

Knutson was then examined by two doctors, both of whom found him fit for duty. Knutson was taken by launch back to the vessel just prior to her departure. He refused to go aboard even after being warned that if he persisted in his refusal, he would be logged as a deserter.

The district court found that “although Knutson was drunk at the time (just as he was when he testified in court), he was in possession of his mental faculties and he knowingly and intentionally refused to return to the vessel.”

The court found that the master had properly recorded Knutson as a deserter, held his wages forfeited, and directed that they be paid to the U.S. Treasury.

USCG Goes Transportation

March 1967 - A new era in transportation in the United States dawned on Jan. 16, 1967, with the swearing in of Alan S. Boyd as the first Secretary of Transportation. The Cabinet-level Department of Transportation will become officially operational April 1, 1967. Thus, the long-needed effort to end diffusion among several federal agencies concerned with transportation will reach the fruition stage as the various existing components of the new Department are drawn under a common umbrella from their many bases within the government.



If transfer goes according to schedule, the first day of April 1967 will see the Coast Guard leaving the Treasury Department after an association of nearly two centuries.

In announcing the appointment of Secretary Boyd, President Johnson characterized him as “the best equipped man in the country” for the position.

Crew Training

March 1967 - Although a modern merchant ship may be equipped with the most updated safety devices, if the crew is not properly trained to use the equipment and act promptly and decisively, the ship may be lost or a comparatively small accident turned into disaster. However, the difficulties of training crews can be immense.

The change-around in crews often negates effort put into training. After several experiences of this nature, officers sometimes lose enthusiasm. As a master, one must constantly encourage the officers and petty officers and give them every help to maintain discipline and continue every effort to pass on their knowledge to other members of the crew.

When signing on crew in passenger vessels, in addition to handing every man a card listing his fire and emergency station (on the back of which is printed the alarm signals, etc.), he also gets an additional notice which alerts him to his responsibilities.

- June 6, 1993 - *M/V Golden Venture* ran aground on a beach in New York with some 300 illegal Chinese migrants on board. Most were rescued by the Coast Guard and local agencies.
- Feb. 16, 1993 - The Haitian passenger ferry *Neptune* sank, sending 1,215 Haitians to their deaths. The

Coast Guard participated in the search and rescue operation but found no survivors. They then assisted in recovering the bodies of those killed.

- Aug. 23, 1993 - The USCGC *Yocona* and the Russian icebreaker *Aisberg* participated in the first ever Russian-U.S. search and rescue exercise.

The first drill is carried out in port after a muster of all hands, amidst an atmosphere of storing and getting ready for sea.

The next presailing drill is a muster stations with the passengers. All drills thereafter, if possible, are carried out at sea, with the exception of any required in port by the Coast Guard.

By the third drill (this time at sea), special lists will have been prepared, covering each deck individually, with every man's position noted. Officers are then detailed to inspect each deck and any discrepancies discovered at the time can be corrected. Various parties of men are sent to deal with imaginary outbreaks of fire, and boats are swung out and prepared for lowering.

The engine room then exercises emergencies. After this drill, the ship can be considered reasonably secure, even if the crew is new or a much-changed-around one. Of course, during the initial stages, one can always rely on a nucleus of officers and men who know their jobs thoroughly, but by this third drill everyone should know his job.

Later, further efforts are made with lectures and demonstrations to small groups.

All officers, not only the executive officers, but also engineroom, purser, and catering officers are made alive to their responsibilities in emergencies and their enthusiasm is obtained. This is of vital importance, as the officers will pass on alertness to the lower ranks and ratings, and the ship gains the vitality of efficiency. The ship is then an integrated whole.

When we think that every man knows his job, begin to run drills without checking that everyone is at his station, to gauge the response, which is usually good. The idea is to make drills interesting and not keep men hanging around, thus avoiding waning attention.

In a fire, recognize the fact that boats may be required for abandoning ship, both at sea and in harbor. A special party of ABs, with an officer, are detailed to prepare all boats for lowering, including those on the side adjacent to the dock in port, where they can be used as elevators for escape, or to bring shore apparatus on board. This party also fights fires on the upper decks.

When the schedule allows, a man overboard drill is carried out at sea. A marker buoy is tossed overboard and the ship executes a Williamson turn, at the same time preparing two boats for lowering. The ship is steered right up to the buoy and the boat is often able to recover it without letting go the painter.

All drills are carried out under the full view of the

passengers, which may be stimulating to an efficient crew and also adds to the passengers' feelings of being looked after securely.

End of an Era

Jan. 1968 - When *Ambrose Lightship* (WLV-613) blasted a mournful foghorn farewell as the U.S. Coast Guard placed into operation the new permanent Ambrose Offshore Light Structure on Aug. 23, 1967, it signaled the end of a succession of red lightships that had guarded the entrance to New York Harbor since 1823.

The 128-foot, 540-ton *Ambrose* (WLV-613), built in 1952, was the last lightship built. No others are likely to be built in view of the Coast Guard's long-range program of replacing lightships with permanent offshore towers. With the reassignment of the WLV-613 to a new sentinel post along the New England coast, replacing an older lightship



(Photo courtesy Jim Crowley)

Ambrose Lightship (WLV-613) after retirement.

- Jan. 7, 1994 - The barge *Morris J. Berman*, carrying a cargo of 750,000 gallons of oil, struck a reef off Puerto Rico. The Coast Guard responded.
- Jan. 17, 1994 - Coast Guard units and family members assisted those in need after an earthquake hit Los Angeles.

- May 6, 1994 - The last HH-3F Pelican helicopter in Coast Guard service was retired. This ended the Coast Guard's capability of making water landings.
- July 17, 1994 - The *Polar Sea* departed Victoria, British Columbia and became the first U.S. surface vessel to reach the North Pole. She then transited the

due for retirement, there presently remain only 13 permanent lightships and four relief lightships in the entire service.

Vietnam Service

April 1968 - In 1967, the Coast Guard reinforced its coastal surveillance of South Vietnamese waters by dispatching five 311-foot oceangoing cutters to this area. Known as Squadron 3, the new force supplements the activity of the 26 82-foot cutters which have been on patrol duty in Southeast Asia since July 1965.

In its more than two years of activity in Vietnam, the

Coast Guard has made an impressive record. While taking part in Operation Market Time, the service has inspected and boarded over 252,000 junks, taken into custody 226 suspicious looking native crafts and 4,188 persons suspected of assisting the enemy.

Cutters on patrol duty have provided gunfire support for allied forces ashore and have often shot it out with enemy craft. One hundred nineteen Viet Cong craft have been destroyed, including steel-hulled vessels heavily laden with materiel destined for the war fronts.

The larger cutters of Squadron 3 have put more muscle into the Coast Guard's sea arm in Vietnam and extended surveillance much farther offshore than is



A cutter on patrol off Vietnam (March 1966).

Arctic Ocean back to her homeport in Seattle.

- Aug. 12, 1994 - "Team Coast Guard" was created when the reserves were integrated into the operations, missions and administrative activities of the regular Coast Guard, effectively eliminating the differences between the two service components.

- Aug. 19, 1994 - Operation Able Vigil commenced during a massive influx of Cuban refugees fleeing Cuba. It was the largest joint peacetime operation in Coast Guard history.

- Sept. 26, 1994 - Coast Guard forces departed for

possible for the 82-foot cutters.

Besides maintaining coastal surveillance, the Coast Guard in Vietnam carries out port safety functions, handles merchant marine personnel problems, supervises the loading of explosives and other dangerous cargoes, and maintains aids to navigation. Nearly 1,500 Coast Guardsmen are now on duty in Vietnam, out of a total service enrollment of 36,000.

Shipboard Health

July 1969 - A century ago, shipboard life was one of unbelievable hardship. Wet, unheated quarters, poor food and intolerable working conditions were responsible for ill health and shortened lives of seamen. Conditions aboard ship today are in marked contrast. Quarters are clean, dry, and warm, and the food is equal to any ashore.

However, a number of reports of serious diseases to relatively young seamen make it appear that seamen still should take more care of their own physical fitness. Kidney disease, stomach disorders, heart conditions and liver involvement are all too common.

What, then, is the trouble? Perhaps a combination of too little exercise and chronic overeating at sea, coupled with the normal desire to "blow off a little steam" in port after being cooped up aboard ship for an extended period that frequently ends up with an excess intake of alcohol of questionable quality. All too vividly comes to mind the "sandpaper gin" of the Philippines, the "monkey rum" in the Canal Zone, or the "genuine Scotch whiskey" the Algerians used to peddle that would literally etch the bottles it was in.

Seamen get exercise, but too frequently it is the wrong kind—heavy hard work for short periods. Sea air and a rolling ship build up a fine appetite which certainly must be satisfied. However, after seeing a 400-pound wiper heave himself up the gangway and have to rest at the top all out of breath, you wonder if the satisfaction of stuffing himself three times a day compensates for his real physical infirmities and the shortened life he will lead.

Somewhere, each individual should draw the line between satisfaction and satiation, between the pleasant aura of well being after a couple of leisurely drinks in pleasant company and the stupefaction of drunkenness.

Eat well and try to get some moderate exercise after a meal. Walking the deck for half an hour is ideal. That rubber tire amidships will disappear with a few regular exercises. Perhaps knee bends, push ups, etc., provided the weather is right. Proper rest and moderation during

periods ashore make the next day a lot easier.

Don't Lose Your Head

March 1971 - A CTC ship reported this unusual accident that happened during tank mucking operations. The bos'n was struck heavily on the head by a free-

Mope and Dope



March 1953

"Pretty? Yes, but stunts like that are risky around a crowded harbor."

Haiti in support of Operation Restore Democracy.

- March 31, 1995 - Coast Guard Communication Area Master Station Atlantic sent a final message by Morse Code and then signed off, officially ending more than 100 years of telegraph communications.

- Jan. 19, 1996 - The tug *Scandia* and its barge, the *North Cape*, ran aground on the shores of Rhode Island, spilling 828,000 gallons of oil. This was the worst spill in that state's history. The Coast Guard rescued the entire crew, pumped off 1.5 million gallons of oil and conducted skimming operations.

swinging, tank cleaning light. A sediment bucket hauling line became fouled in the electric cable of the tank light and the bos'n was attempting to clear it. He climbed on a web frame and untied the whip line snubbing the light to the skin of the ship. The greasy line slipped through his gloved hands and the light swung pendulum fashion and struck squarely against his safety hat.

The bos'n was stunned momentarily but managed to keep his feet. The safety hat cracked under the impact but it absorbed the force of the swinging lamp. The safety hat protected the bos'n from serious head injury and possibly a fatal fall to the tank bottom.

From the ship's report: This was a "Stewart-Browne" USCG-approved, explosion-proof tank-cleaning light weighing approximately 16 pounds. On a free-swinging six-foot arc, this weight can deliver a fatal blow to an unprotected head. This is another good example as to why the regulation that requires safety hats to be worn during tank cleaning should be followed without exception.

Proceedings Name Changes

May 1971 - The new name of this magazine is *Proceedings of the Marine Safety Council*, a change from the old name: *Proceedings of the Merchant Marine Council*.

The Merchant Marine Council, after almost 30 years of advisory work with the Coast Guard's regulatory responsibilities, has been reorganized. Effective March 10, 1971, the Council began operating with six permanent members under the new title, Marine Safety Council. The Council will continue, however, to advise the commandant on proposed changes to Coast Guard regulations.

Ill Tempered Vessel

April 1972 - The M/V *Mercator*, a 210-foot, 1,258-gross ton vessel, was known as a very temperamental



The M/V *Mercator* lists 61 degrees to starboard, resting on the bottom and against the pier. The vessel was heavily loaded on the maindeck and above. Some of that cargo—motor vehicles, steel round stock, and 55-gallon drums of oil—can be seen above. Much of this cargo slid into the water as the vessel capsized.

- Feb. 6, 1996 - Coast Guardsmen recovered 189 bodies from Alas Airlines Flight 301, which crashed into the sea near the Dominican Republic.
- Feb. 8, 1996 - Coast Guardsmen provided assistance during severe flooding in the Pacific Northwest.

- July 6, 1996 - Coast Guardsmen responded to calls for assistance when Hurricane Fran hit the East Coast. Two months earlier, Hurricane Bertha had come ashore.
- July 17, 1996 - TWA Flight 800 crashed off New York with no survivors. Numerous Coast Guard units

vessel while moored. She was rarely on an even keel; and, when left as a dead ship with a few degrees list to one side in the evening, she would be found the next morning listing five to eight degrees to the opposite side. Occasionally her operations manager would receive calls at home from personnel who had seen the vessel listing and who were concerned for her well-being.

At midnight on Sept. 10, 1971, the vessel's chief engineer felt the *Mercator*—moored starboard side to Pier 4, Fisherman's Terminal, Salmon Bay, Seattle, Wash.—suddenly heel farther to starboard from a previous starboard list. No one else noticed any movement. A short while later, the engine room watch stander and two other men went forward to check oil transfer operations which had been commenced to right a starboard list. As they passed down port side of the main deck, they saw a lug wrench slide off the steel-topped workbench in front of them. The port hatch cover to the No. 2 fuel oil had fallen closed. Checking the starboard tank, they saw water coming in the scuppers and flowing into the open hatch to Nos. 1 and 2 fuel oil tanks. The men who were aboard quickly abandoned ship to the safety of the pier. Before leaving the ship, the chief engineer looked down the fidley, but saw no water. However, the engine-room deck plates are solid, so the outboard sides of the engine room are not visible through the fidley.

Just after 1230, the watchman at Fisherman's Terminal saw the *Mercator* listing badly to starboard and her crew standing on the pier. He notified his supervisor who came to the scene and watched as the vessel capsized, black smoke pouring from her stack. He returned to the office and called the fire department at 1240. The vessel continued to roll slowly to starboard, finally coming to rest on the bottom and against the pier with a list of 60 to 61 degrees to starboard.

At about 1500, a log boom was placed around the *Mercator* in an effort to abate pollution. At 1538, a violent explosion occurred in the fo'csle area of the main deck, throwing a ball of fire 60 feet in the air. The fire department extinguished the resulting fire. At 1635, two more explosions occurred in the same area of the ship.

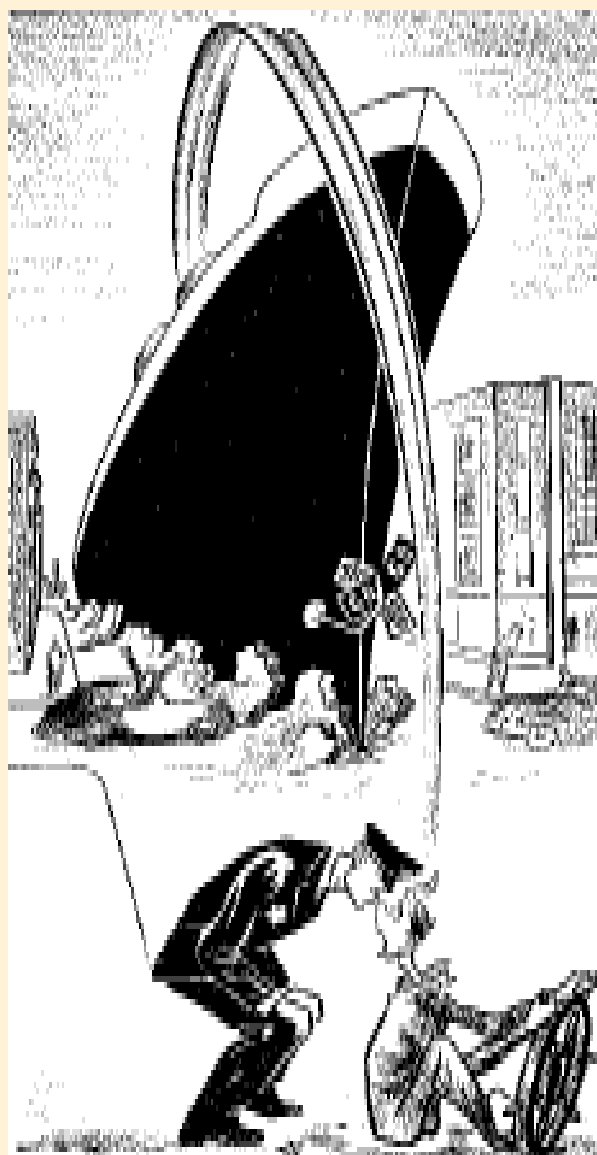
The vessel was righted and refloated, but was considered a total constructive loss. In addition, damage to or loss of her cargo was estimated at \$192,000 and the resulting oil pollution cleanup cost an estimated \$130,000. Fortunately all of the ship's personnel were able to get off her before she capsized.

A history of the M/V *Mercator* show that she was built in 1925 as a single-deck tankship, but in 1956 was

converted to an uninspected crab processing vessel, with a much heavier structure and equipment affixed topside, thereby decreasing stability.

Outdated Communication

Aug. 1973 - In each of man's journeys to the moon, through hundreds of thousands of miles of space, U.S. astronauts seldom have been out of touch with Earth. Television pictures beamed to Earth have been seen on millions of TV sets—while the astronauts described in



Sloppy navigation—wasn't it sir!!

Sept. 1951

conducted search and rescue operations to no avail.

- Oct. 1, 1996 - Operation Frontier Shield, the largest counter-narcotics operation in USCG history, began.
- Dec. 14, 1996 - The M/V *Bright Field* collided with the New Orleans Riverwalk, causing substantial damage

to the vessel and the Riverwalk.

- Feb. 12, 1997 - Three of four crewmembers of MLB 44363 out of the Quillayute River Motor Lifeboat Station were lost when responding to a distress call from the sailing vessel *Gale Runner*.

living color what they saw and their reactions to it.

And yet, those who sail the Earth's seas in ships still depend upon messages sent and received in Morse code, a system developed in 1838, at a rate far below man's normal speaking speed of 120 words a minute.

Lack of modern maritime communications is especially significant when one considers the fact that ships carry 98 percent of the world's products by volume.

Compare maritime communications with those existing in the air industry—which enable air controllers to contact aircraft worldwide in minutes—and one wonders if the maritime industry is not missing a bet.

In a report to the American Institute of Merchant Shipping, Edward P. Fitzgerald, an Exxon official, indicated just that. "Never," he said, "has there been a time that a technology has so far advanced beyond the implementation of its capabilities by the maritime industry."

Need for more effective communications between ships, and ship to shore, is evident. In the past two years, at least five large commercial vessels have gone to the bottom without successfully sending a distress message. In each case, at least 20 lives were lost.

Ship explosions, fire or breaking up generally result in loss of power which accounts for inability to send a distress signal. Other reasons include equipment failure

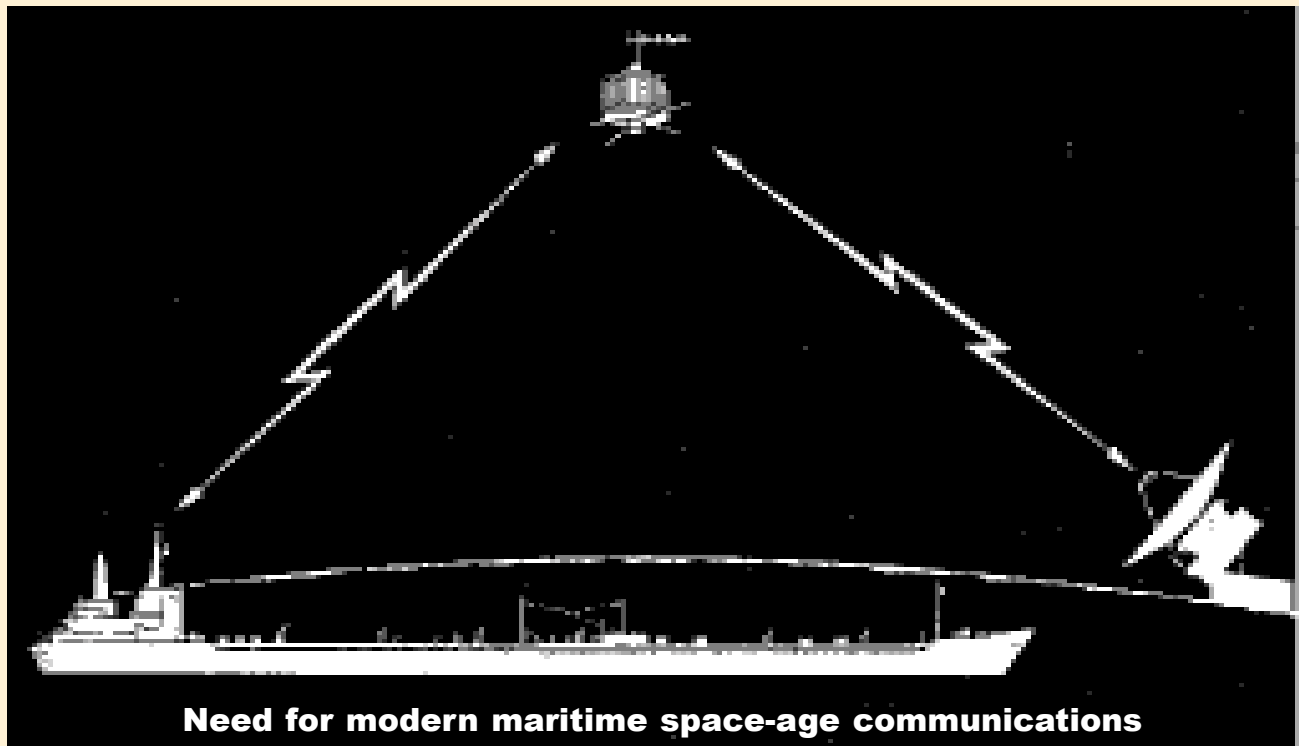
or improper operation of equipment because of seamen's lack of familiarity with it.

Crew morale is another reason. With better communications, crewmen could be more promptly notified of family emergencies. Same goes for emergencies aboard ship which require medical assistance or guidance. Vessel movements and diversions could be better controlled if a rapid communications system were in operation, and needed repairs could be scheduled before a ship arrived in port. Current weather forecasts would help save lives and damage, and transmission of up-to-date information would enable fleet owners to make more intelligent and cost saving decisions which are required every day.

Hundreds of lives lost and millions of dollars squandered could have been saved if the maritime industry had made the investment required to develop marine communications systems comparable to those existing in other transportation fields.

But something is being done. Unfortunately, much of the effort takes the form of studies. And studies, as any student of human endeavor can tell you, share a characteristic with the angeworm. Divided into several parts, they continue to exist and proliferate. Studies too often generate bucketsfull of worms—and few solutions,

The U.S. Navy is a stride ahead of the merchant



● March 15, 1997 - Operation Gulf Shield, counterpart to the counter-narcotics operation Frontier Shield, began.

● April 20, 1997 - Dikes along the Red River in North Dakota gave way, causing dangerous floods. The Coast Guard rescued more than 200.

● Aug. 6, 1997 - USCGC *Basswood* and *Galveston* assisted in the rescue of the survivors of the crash of Korean airliner Flight 801, in Guam.

● Sept. 30, 1997 - Omega Navigation Station Hawaii ceased operation, coinciding with the end of worldwide Omega transmissions.

marine efforts to provide 20th century communications for ships, with a Global Rescue Alarm Net already developed. Compact and simple transmitters will link Navy ships with space satellites which can relay messages literally around the world, instantaneously.

Captain Jack Clarifies

Jan. 1974 - There is often confusion over nautical lingo on the Great Lakes. You might say that people connected with the Great Lakes shipping industry have kind of become bilingual since the opening of the St. Lawrence Seaway in 1959. It's no secret that the nautical lingo of the Great Lakes differs considerably from that on the high seas.

While the saltwater seafarer thinks of "going to sea," a Great Lakes seaman thinks of "going sailing" or "steamboating"—and on a "boat" rather than a "ship." A lakes seaman similarly thinks of seagoing as "sailing on saltwater" or "sailing down the coast."

An oceangoing vessel, regardless of its size, should always be referred to as a "ship." To the saltwater sailor, a "boat" is simply the lifeboat hanging in its davits on the "boat deck."

Lake freighters, on the other hand, have been called "boats" for more than 100 years and "boats" they continue to be, even though their lengths have reached 1,000 feet.

It has also become tradition throughout the Great Lakes—Seaway region to identify oceangoing ships as "salties" and lake freighters as "lakers."

The term "master" is appropriate on the high seas, but is rarely heard on the lakes. And, the duties of the senior officer are to "command" his ship. On the lakes, the senior officer is almost always referred to as "captain" and he "sails the boat" or "has a boat to sail." Both master and captain are commonly called "old man" by their respective crews, but never when within earshot.

On the lakes, the "helmsman" or "quartermaster" is known as the "wheelman." The "lookout" is a "watchman" and lesser deck ratings are "deck watch" or "deck hands." Thus, the deck crew spends the season "wheeling," "watching," or "decking." As for the engine room, the terms "oiling" or "firing" apply to both salties and lakers.

All freighters sailing the lakes are either "upbound" or "downbound." On the "trip" (the term "voyage" is seldom heard on the lakes) from Lake Erie to Lake Superior and return, this is easy to visualize. But other lake trips are more confusing, especially if you attempt to correlate status of upbound and downbound with the status of whether a vessel is light and going after a cargo, or whether it is

loaded and coming back.

For instance, a "light" vessel to Lake Superior for iron ore or grain is always upbound, and coming back loaded is always downbound. But a light vessel sailing from Buffalo to Chicago for cargo is upbound while sailing westward and sometimes southwestward on Lake Erie. The vessel is also upbound while sailing northward on Lake Huron, but is downbound on the same trip sailing southward on Lake Michigan. Part of the upbound traffic on Lake Superior is headed well to the southward and part of the downbound traffic is headed well to the northward.

On most ocean vessels, both the deck and engine departments are housed in one main superstructure. On lakers, the deck department is known as the "forward end" and the engine department as the "after end."

To all saltwater seamen, ocean vessels have their "main deck" at "deck line," or at the level of the top of the sheer strake. On the lakes, however, this is the "spar deck." The "main deck" of a laker is at a level of the tops of the side tanks, or one deck below the spar deck. While the bottom of the cargo hold on salties is the "cargo deck" or "hold deck," this deck on lakers is simply the "tank top."

Ocean ships have "passageways" and "ladders" while lakers have "hallways" and "stairs." There is one exception. Lakers have a "boarding ladder" while the salties have a "gangway."

When vessels transit locks of the Seaway, Welland Canal or Sault Ste. Marie, they "lock up" or "lock down." An upbound passage is toward higher water levels. Never mind that freighters locking upbound through the Welland Canal toward Lake Erie are proceeding almost due south.

In contrast to the ancient sailing concept of going to the right and passing port-to-port, the recommended courses are so laid out in Lakes Huron and Superior that upbound vessels are close to the U.S. shore and downbound vessels are 10 miles or so further out in the lake, creating the impression, at least to the newcomer, of passing to the left, or starboard-to-starboard. However, the reason for keeping the heavy laden vessels out in deeper water is readily apparent.

In narrow channels or rivers, vessels keep to the right and pass port-to-port, or, as lake sailors say, "pass on the one-whistle side."

Finally, we can advise that it is entirely appropriate to ask oceangoing seamen about rough weather sailing on the high seas and to ask lake sailors about a good blow on the lakes. On the other hand, never attempt to tell lake sailors about how tough sailing may be "on the coast" or North Atlantic. Save your breath.

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USCG photo by PO1 Keith Alholm,
artist rendering by David Vergun



**The
Human
Element**

By Jennifer Blain,
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PTP: A Retrospective

Before PTP

The human element has always been a contributing factor of maritime accidents. But the focus on the human element as the *leading* factor was an idea not fully explored until the mid-1990s. Thirty years ago, the focus was on technical improvements. An accident would happen and people would rush to find the equipment failure that was the root cause. In response, new regulations or guidelines would be written to keep that particular accident from happening again. It wasn't until some people stopped looking solely at the technical side to find the root cause of accidents that the human element in accidents started to gain more recognition.

The underlying rationale for the Coast Guard refocusing efforts stemmed from the handling of past incidents in which human element failure played a pivotal role. A classic example occurred in 1973, with the collision of the cargo ship *Sea Witch* with the anchored tank ship *Esso Brussels* in New York Harbor. The resulting massive oil spill and fire claimed the lives of 16 mariners and disrupted harbor traffic for days.

During the investigation, the apparent cause of the accident was determined to be a technical problem — the *Sea Witch* had a steering failure that occurred when a simple locking device holding the control shaft coupling fell out. The device known as a woodruff key, which had a history of falling out on the *Sea Witch*, caused the vessel to swing uncontrollably into the anchored tanker. Blame for the collision therefore focused on the design of the steering gear coupling and the 5/16th inch woodruff key. Future efforts by the Coast Guard were directed toward improving steering gear inspections and structural fire protection design.

But there was much more involved in the accident than the woodruff key. The ship's log had documented more than 10 failures of the steering mechanism in the two years prior to the accident, but crew maintenance efforts had focused on quick fixes by simply reinstalling the failed parts. Furthermore, the captain, knowing of the poor reliability of the steering system, could have compensated for this with operational controls such as slower transit speed. But no efforts were made, and 16 mariners paid the ultimate price.

Establishment of PTP

In 1994, the Coast Guard, recognizing that the human element was not being adequately addressed in maritime accidents, formed a Prevention Through People (PTP)

Quality Action Team (QAT) to refocus prevention efforts. The team conducted data analysis and examined operations from a maritime perspective, including an assessment of vessels, facilities, and waterways. The result of these efforts, published in July 1995, formed the basis of the strategy and implementation plan for the PTP philosophy and program.

The study concluded that human error accounted for at least 80 percent of marine casualties. The predominant human errors were classified into five key areas:

1. Management controls: (e.g., faulty standards and legislation and inadequate communications or coordination)
2. Operator status: (e.g., inattention or carelessness, fatigue)
3. Working environment: (e.g., poor equipment design, hazardous natural environment)
4. Knowledge: (e.g., inadequate general technical knowledge/shipboard operations)
5. Decision-making: (e.g., poor judgement, inadequate info)

With input from the marine industry, the QAT then developed a model that suggested a balanced approach to address human factors. The approach, still relevant today, looked to create a new safety culture that included four key pillars, all based on a solid foundation of standards: 1) Management, 2) Work environment, 3) Behavior, and 4) Technology.

The solid, level foundation requires well-conceived and fully implemented international regulations, class rules, and industry standards, as well as support from non-governmental organizations such as class societies, industry standards making bodies, and insurers. The organizational management pillar sets the stage for safe operations. It establishes the corporate culture, goals, and the commitment to safety. The work environment pillar refers to those external factors that affect people's judgment, efficiency, and effectiveness. This can include the ship's physical layout (e.g., bridge), distractions, man/machine interfaces, waterway conditions, congestion, weather, time of day and personal interaction. Those factors that affect people's performance comprise the behavior pillar. Examples include personal leadership, aptitude, health, values, work load, stress, fatigue, training, attitude, physical capability, experience and prejudices. The fourth pillar involves the introduction of technology into the work environment. It includes research and development, design, materials, equipment and systems, and information management. Technology must be

designed for compatibility with human abilities and limitations.

PTP Strategy

Using the approach described above, the QAT then developed a strategy incorporating a comprehensive and balanced approach to human error prevention. The strategy included four key elements: 1) collaboration by government agencies, mariner organizations, classification societies, and the maritime industry, to address human error from an overall systems perspective; 2) Coast Guard use of risk management tools to identify root causes and cost-effective preventative measures for casualties and near-miss events; 3) employment of human error detection, assessment, and prevention techniques as part of Coast Guard marine safety activities of boardings, examinations, and inspections; and 4) improvement of investigative methods, data collection, analyses, and feedback.

Implementing PTP

Once the strategy was developed, implementation became the focus. For the Coast Guard, this meant shifting the focus away from detailed inspection and testing, and toward quality partnerships that established and implemented measurable safety improvements in maritime industry operations. The role of the Coast Guard broadened from that of regulator to that of public and industry facilitator, auditor, and educator, while enabling the industry, mariners, the public, and the insurance industry to be the safety program implementers and benefactors.

It was quickly realized that the most effective way to tackle the issue of the human element in maritime accidents was through government and industry working together, through partnership. Under these auspices, PTP quality partnerships began forming. These partnerships were determined based on four essential criteria: 1) quality, 2) commitment to common goals, 3) mutual trust, and 4) open and frank communication. They required that the common issues being addressed focused on the human and organizational factors involved, and that the solutions developed must be non-regulatory in nature.

PTP Today

Today PTP is being firmly entrenched in the culture of the Coast Guard and the maritime industry. To date, eight formal PTP partnerships have been established with various organizations within the maritime industry, and there are also numerous informal cooperatives between the Coast Guard and industry. The Coast Guard has coordinated its efforts with industry steering committees, port and regional focus groups, and working groups at

the International Maritime Organization. The principles of PTP have been applied in such major issues as risk-based decision-making, crew alertness, shortage of qualified mariners, the Coast Guard human factors inspectors course, and much more.

Above all, people have come to recognize the undeniable role that the human element plays in preventing (and causing) maritime accidents. PTP is a long-term approach, requiring long-term thinking and planning. We must engage the talents and experience of the industry to help install a culture of safety throughout the marine transportation system, a culture that influences the way we think and perform. And the reason behind the creation of PTP has become clear — the focus on people in the safety equation saves lives and prevents pollution.

From the beginning, the PTP vision statement has been “to achieve the world’s safest, most environmentally sound and cost-effective marine operations, by emphasizing the role of people in preventing casualties and pollution.” This is an idealized view of where PTP would like to be in the future. This is also an enormous endeavor, which, to accomplish, will involve a continuous devotion to the cause. Key to PTP’s success will be the development of a culture that makes each component accountable for safety and recognizes that through shared participation, this vision can be reached.



Nautical Queries

Engineering Questions

- The heat identified by only a change in temperature is known as _____.
 - sensible heat
 - latent heat
 - total heat
 - residual heat
- A vacuum is initially created in a flash type distilling plant by _____.
 - the flashing of the feed water
 - the condensation of the saltwater feed
 - air ejectors, eductors, or a separate vacuum pump
 - condensation of the distillate
- An indicator card or pressure-volume diagram, shows graphically the _____.
 - compression ratio of the engine
 - volume of the engine
 - relationships between pressure and volume during one stroke of the engine
 - relationships between pressure and volume during one cycle of the engine
- A circuit breaker for a 300 KW alternator is rated at 470 amperes of full continuous load. The amount of over-current allowed is 125 percent. Which of the following conditions will trip the breaker?
 - Sustained current flow of 470 amperes
 - Sustained current flow of 500 amperes for 10 minutes
 - Momentary starting load of 550 amperes
 - Sustained current flow of 590 amperes
- One of the basic rules applying to the operation of a single-pass main condenser, is that the _____.
 - cooling water overboard should be about 10 °F higher than the inlet temperature
 - vacuum must be maintained at 29.92" of Hg. under all operating conditions
 - quantity of reheating steam flow through the condenser must be maintained at maximum under all operating conditions
 - condensate temperature must never be allowed to drop below 104 °F
- Feedwater supplied to a flash type distilling plant will flash to vapor in the first-stage due to _____.
 - flash chamber pressure being lower than the saturation pressure corresponding to the feedwater temperature
 - temperature being higher than the evaporation temperature of the supplied feedwater
 - heat exchange surfaces being directly in the path of entering feedwater
 - orifices finely atomizing the heated feedwater entering the flash chamber
- Cast iron pistons used in large propulsion diesel engines are constructed with _____.
 - no taper whatsoever
 - the skirt being tapered and smaller than the crown
 - the skirt being tapered and larger than the crown
 - the crown being tapered and smaller than the skirt
- Which of the following actions should be taken to re-establish a "blown" air ejector loop seal?
 - Increase the condensate flow through the air ejector
 - Momentarily close the valve in the loop seal line, then reopen slowly
 - Shut off the steam to the second stage air ejector momentarily then open it again
 - Decrease the steam pressure to the air ejector nozzles
- Theoretically, a double suction impeller is in hydraulic axial balance. In actuality this balance is rarely achieved due to _____.
 - an unbalanced force exerted from the direction of the impeller nearest the driving motor
 - unequal or non-uniform flow to suction eyes of the impeller housing
 - excessive sealing water flow to the stuffing box
 - flexible shaft design, which causes rapid wear of the outboard shaft
- An important consideration in selecting lubricating oil for use in a refrigeration compressor is for the oil to _____.
 - have a high viscosity index
 - mix readily with refrigerant
 - have a high freezing point
 - have a low pour point

Nautical Queries

Deck Questions

1. According to the “T-Boat” regulations, the permanent marks placed on each side of a vessel forward, aft, and amidships to indicate the maximum allowable draft and trim are called _____.
 - A. loading marks
 - B. the air draft
 - C. depth marks
 - D. Plimsoll marks
2. Which davit type may be operated by one man?
 - A. Quadrantal
 - B. Gravity
 - C. Sheath-screw
 - D. Radial
3. What best describes how long a gas-free test is good?
 - A. For as long as is indicated on the gas-free certificate
 - B. For the instant that it is made
 - C. Until valves in line with the tank or compartment are re-opened
 - D. Until changes in temperature or pressure affect the vapor content in the space
4. INLAND ONLY You are meeting another vessel head-on and sound one short blast as a passing signal. The other vessel answers with two short blasts. What should be your next action?
 - A. Pass on the other vessel’s starboard side
 - B. Sound the danger signal
 - C. Pass astern of the other vessel
 - D. Hold your course and speed
5. Which would you NOT use to report the amount of anchor chain out? “Three shots _____.”
 - A. at the water’s edge
 - B. on deck
 - C. on the bottom
 - D. well in the water
6. Most GPS receivers use the doppler shift of the carrier phase to compute _____.
 - A. latitude
 - B. longitude
 - C. speed
 - D. time
7. Your vessel is being assisted through an ice field in Thunder Bay by the Canadian Coast Guard icebreaker Alexander Henry. The starboard lookout reports that the icebreaker has run up the code flag “N” (November). What action should you take?
 - A. Reduce speed
 - B. Stop your engines
 - C. Reverse your engines
 - D. Stop your vessel instantly
8. The officer responsible for the sanitary condition of the engineering department is the _____.
 - A. master
 - B. chief mate
 - C. chief engineer
 - D. first assistant
9. When signaling a course using the International Code of Signals, the signal _____.
 - A. must be followed by “T”, “M” or “C” to indicate if it is true, magnetic or compass
 - B. should be preceded by the letters CSE
 - C. should include the compass deviation if a compass course is signalled
 - D. always indicates a true course unless indicated otherwise in the message
10. You are ascending a river and exchanging navigational information via radiotelephone with a descending vessel. If the descending vessel advises you to “watch for the set” above point X, what would you expect to encounter above point X?
 - A. An increase in current velocity
 - B. Slack water
 - C. Shallow water
 - D. A sideways movement of your vessel

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



Mariner's Seabag

PERFORMANCE ON THE WESTERN RIVERS

By MSTC Trub Seyahsed

The Western Rivers Performance Plan for Marine Safety & Environmental Protection (the Core Plan), was jointly developed between December 1999 and July 2000 by Marine Safety Offices (MSO) Huntington, Louisville, Memphis, Paducah, Pittsburgh, and St. Louis. The purpose of the plan is to align the goals, strategies, activities and measures of Western River MSOs with those found in the Coast Guard's Annual Performance Plan, the commandant's (G-M) Marine Safety & Environmental Protection Business Plan, and the Eighth Coast Guard District's Tactical Performance Plan.

"The Core Plan is a groundbreaking accomplishment for the Western Rivers Region," said CAPT Ron Morris, deputy chief of the Eighth Coast Guard District's Marine Safety Division. "It is going to ensure an unprecedented degree of consistency among Western River MSOs in carrying out their missions and measuring results."

LCDR Scott Bornemann, executive officer at MSO Pittsburgh, thinks the plan will produce a number of important benefits. "The Core Plan addresses the missions, programs and challenges that are common to all six Western River MSOs," said Bornemann. "It's going to encourage the MSOs to benchmark their performance with each other, promote the free flow of best business practices, encourage the use of Commandant's Quality Award criteria, and eliminate the duplication of effort in the development and update of unit business plans."

LCDR Mike Gardiner, executive officer at MSO Memphis, is enthused with the results of the first edition of the Western River Core Plan. "We wanted to produce a performance plan that everyone at the unit could understand and use," said Gardiner, "from the most junior seaman up to the commanding officer. Some recent Coast Guard performance plans have been criticized as being too complicated and too lengthy—often trying to squeeze-in too many goals. The Core Plan, on the other hand, is very focused and easy to read."

The plan's eight performance goals are categorized into one of four strategic goals. These goals can otherwise be thought of as the "ideal" goals that one would want to achieve if he or she lived in a perfect world. These are:

- Safety: Eliminate deaths, injuries and property damage associated with commercial maritime operations.
- Security: Eliminate marine transportation and river security vulnerability.
- Human and Natural Environment: Eliminate environmental damage associated with maritime transportation and operations on and around the nation's waterways.
- Economic Growth and Trade/Mobility: Maximize the availability of safe, efficient, and environmentally sound waterways for all users by eliminating interruptions and impediments that restrict the movement of goods and people.

LCDR Brian Bubar, executive officer at MSO Paducah, said that the Core Plan is tightly integrated into the Coast Guard's family of plans. "All of the Core Plan strategic goals are clearly aligned with those set by the Eighth District commander,

commandant, and secretary of transportation. The plan clearly establishes the ultimate outcomes we expect from our day-to-day work in the field," said Bubar.

Perhaps the best feature of the Core Plan is that it provides a regional snapshot of marine safety statistics in any given year. The Western Rivers region is comprised of all main channels and tributaries of the Mississippi, Illinois, Missouri, and Ohio rivers. For the first time, senior level decision makers will know how the six Western River MSOs performed cumulatively, with regard to supporting the commandant's safety and environmental protection goals. "Until now, Western River MSOs were left to their own devices when it came to defining performance," said LCDR Burt DeShayes, executive officer at MSO Louisville and project leader for the Core Plan effort. "Typically, this meant that we had six MSOs developing six different business plans, none of which could be compared in any meaningful way. "Most units took a qualitative approach instead of a quantitative one, which made obtaining a concise regional snapshot of performance virtually impossible," said DeShayes"

The Core Plan development team took some novel steps in the way of measuring results in the areas of economic growth, trade, and mobility. One of the plan's goals is to reduce the number and duration of unplanned river closures and restrictions. "The development team recognized that historical data regarding unplanned river closures (e.g., emergency safety and security zones) and unplanned river restrictions (e.g., one-way traffic only, daylight transits only) were not available from the Coast Guard's Marine Safety Information System," said LCDR Bob Hennessy, executive officer at MSO Huntington. "The team overcame this limitation by developing a spreadsheet template to capture data at the unit level."

As of Oct. 15, 2000, the Western Rivers region has seen 15 unplanned closures and 18 unplanned restrictions since the beginning of the calendar year. The duration of unplanned closures is approximately 188 hours, whereas the duration of unplanned restrictions is approximately 605 hours. Not surprisingly, the team found that 70 percent of all closures and restrictions were caused by human error; the remaining 30 percent were attributed to environmental causes such as high/low water events or silting of the navigation channel.

The economic importance of the Western Rivers is not going unnoticed by the Coast Guard. "Thanks to the Core Plan, Western River MSOs are now in a better position to monitor river closures and restrictions with a view toward minimizing the economic impact on the towing industry," said CDR Eric Washburn, executive officer at MSO St. Louis. Gene Allsmiller, operations manager for locks and dams at the Army Corps of Engineers Louisville District, agreed. Allsmiller estimated that for every hour a typical tow is delayed, it costs the company \$400 in terms of spent wages, fuel and miscellaneous fixed costs. Applying this rule-of-thumb, the Western Rivers towing industry incurred a loss of more than \$317,000 as a result of 793 hours of unplanned river closures and restrictions during the year 2000.

A copy of the Western River Core Plan can be obtained at <http://www.uscg.mil/d8/mso/louisville>.

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A sailing vessels in the outer harbor of Boston on the eve of the Sail Boston, held on July 11, 2000.

USCG photo by PA3 Brent Erb

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