

PROCEEDINGS OF THE MERCHANT MARINE COUNCIL

UNITED STATES



COAST GUARD

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This copy for
not less than
20 readers.
PASS IT ALONG

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of the United States
Coast Guard

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and three Marine Inspection Officers are
designated as members by the Commandant.

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"If a man does not know to what port he is steering, no wind is favorable for him."

—Seneca

"The advent of the atom does not alter our dependence upon the need of workaday merchant ships crossing the seven seas. A great deal of hard work is necessary before marine atomic power can be produced at a cost equal to power from fossil fuels."

—The Secretary of the Navy, Charles S. Thomas

"The disturbed situation of Europe, and particularly the critical posture of the great maritime powers, whilst it ought to make us the more thankful for the general peace and security enjoyed by the United States, remind us at the same time of the circumspection with which it becomes us to preserve these blessings.

"It requires also that we should not overlook the tendency of a war, and even preparations for a war, among the nations most concerned in active commerce with this country to abridge the means, and thereby at least enhance the prices of transporting its valuable productions to their proper markets.

"I recommend to your serious reflections how far and in what mode it might be expedient to guard against embarrassment from these contingencies, by such encouragement to our navigation as will render our commerce and agriculture less dependent on foreign bottoms, which may fail us in the very moments most interesting to both of these great objectives."

—President George Washington, in his
second annual message to Congress

PART II

THE preceding article, Part I of this series, which was carried in the July issue of the *Proceedings*, discussed MEDICOS and the Coast Guard's role in rendering assistance generally.

In this concluding article, the actual operation of removing seamen by helicopter, amphibian, or seaplane and recommended practices to be followed by merchant marine captains will be discussed in detail.

Normally, any rendezvous with a merchant ship in response to a MEDICO, more than 50 miles at sea, will be made by an amphibian or seaplane. It should be remembered that even under ideal conditions, an open sea landing is, at best, a hazardous operation. Swells are the greatest hazard to such operation. Since the plane can be damaged by the action of the sea, it is imperative that the transfer of personnel be made as expeditiously as possible so that the aircraft will remain on the water the shortest period of time. Accordingly, the merchant ship captain should do all in his power to expedite the transfer of the patient.

First of all, one of the ship's lifeboats should be manned and ready for immediate launching, with the patient dressed and ready for transfer. The boat used should have good maneuverability, an alert crew and coxswain, and a megaphone for communicating with the aircraft. The crew of the lifeboat should be prepared to pick up survivors should the aircraft break up on landing.

The pilot may decide that the sea conditions are too unfavorable in which case he will abort the mission. Once the plane is waterborne, the lifeboat can be launched. It should be remembered that the plane will drift to leeward faster than the ship, and care should be taken to see that the ship stays well clear. The lifeboat should not approach the aircraft until the aircraft engines are stopped, or, in the event the pilot does not elect to stop engines, until hailed alongside by the pilot. Without power, the aircraft will drift to leeward rapidly with the bow in the general direction from which the wind is blowing. The coxswain should stand in toward the bow close enough to establish communications with the pilot and to ascertain which hatch the pilot elects to take the patient aboard.

The best procedure is for the boat to pass a line to the bow and discharge the patient through the bow hatch. The pilot may elect to float a rubber

lifteraft aft so that the patient can be put in it clear of the aircraft and then hauled to the side of the aircraft eliminating the necessity of the boat coming alongside. For this operation, the patient should be wearing a life preserver and he should not be strapped to a stretcher or litter unless it is buoyant.

The aircraft hull, wings, and tail surfaces are extremely fragile and should not be bumped by the boat. The slightest damage to wing and tail surfaces may make the aircraft unairworthy calling for an abortion of the pick-up and possible abandonment and loss of the aircraft.

If the pilot elects to take the patient in the starboard or port hatch, it is wise to stand off a short time and observe the action of the aircraft as it rides succeeding swells, particularly observe the rise and fall of the tail section. *Don't let your boat get trapped under this tail section.* Use no sharp or pointed devices for fending off. The hull is easily punctured.

HELICOPTER OPERATIONS

The helicopter may be used for rescue and MEDICO operations when

the merchant ship is not more than 50 miles off the coast (see fig. 1).

As soon as communication is established between the ship and the helicopter, it should be ascertained whether the patient is ambulatory or a litter case and whether the ship has a Stokes litter or desires the helicopter to lower one.

Prior to the arrival of the helicopter, the ship's captain should make sure that the hovering area (usually the after hatch) is clear of all rigging and antennae, etc. For example, boom topping lifts should be slackened off if the booms are in their cradles. All loose gear about the hovering area should be removed or secured. The hovering helicopter will produce a downdraft from the rotor blades and any loose articles might be blown into and damage the whirling rotors. For safety reasons, no more than the necessary personnel to accomplish the transfer should be on deck in the hovering area.

The ship should take a course and speed recommended by the pilot. The pilot will endeavor to position the ship in such a manner as to have a resultant wind from the port or starboard bow. He will attempt to avoid



Figure 1. An HO4S helicopter, typical of the ones used by the Coast Guard in rescue work along the United States seaboard, shown hoisting a man in a basket.



Figure 2. This demonstrates how a seaman is removed from a merchant vessel by a helicopter hovering over the after deck.

a bow wind due to turbulence created by the stacks and superstructure. For nonambulatory cases a litter will probably be used. If a litter is to be lowered by the helicopter, the pilot will hover and the litter will be lowered by hydraulic hoist. This litter will have a bridle attached. The deck crew should unhook the litter and cast the hoist free. The helicopter will then fly around in the vicinity of the ship until all is ready for hoisting, and the ship calls him in for pick-up. *Under no circumstances make the hoist hook fast to anything on the deck.*

If the ship is preparing its own litter for hoisting, it should be made buoyant by strapping several life preservers to the sides. It should be bridled so that the patient's feet will hang slightly down. He should have a life preserver on and be securely strapped in the litter.

In the event that obstructions and rigging prevent a safe hover, the helicopter pilot may request that the patient be put in a lifeboat and the pick-up made clear of the ship.

If the patient is ambulatory, the helicopter will lower a special rescue basket or a hoisting sling. Instructions are indicated thereon for their use. No special preparation of the patient is necessary for using these devices other than to have him in a life preserver (see fig. 2).

While the foregoing recommended practices are outlined for the use of merchant ships, the same general procedures should be followed by fishing vessels and other small craft.

Close cooperation and understanding between the Coast Guard and the vessel may well make the difference between a successful rescue and failure—life and death.



ACCEPTANCE OF 1948 CONVENTION

The Government of the United Kingdom has advised this country that acting as the depository nation, it has received notifications of acceptance from Monaco and the Dominican Republic of the International Convention for Safety of Life at Sea, 1948. Notifications were deposited on January 12 and March 29, 1955, respectively.

In accordance with the provisions of Article XI (c) of the Convention the Monacan and Dominican acceptance took effect on April 12, 1955, and June 29, 1955.



TRADITIONS OF THE SEA

The roll of American Seafarers who have performed their duties in an outstanding and meritorious manner in accordance with the highest traditions of the sea is long but never completed. One of the names which has a distinguished place on this roll is that of CAPTAIN PAUL BUCK.

While serving as Master of the SS *Stephen Hopkins*, his vessel was engaged in combat with two heavily armed enemy raiders, on September 27, 1942, in the South Atlantic. As a result of this action, the *Stephen Hopkins* was sunk and Captain Buck went down with his ship.

On June 28, 1944, the President of the United States conferred the Merchant Marine Distinguished Service Medal, posthumously, on Captain Paul Buck, in accordance with the following citation:

For distinguished service in enemy action. Two enemy surface raiders suddenly appeared out of the mist to attack the SS *Stephen Hopkins*. Heavy guns of one raider pounded his ship, and machine gun fire from the other sprayed her decks. He skillfully maneuvered his ship so that the heavier guns could be trained on the raider, and under his supervision his ship exchanged shot for shot with the enemy until the crew of one raider was forced to abandon its sinking ship, and the other enemy ship was forced to withdraw. His calmness under fire and his fearlessness in defending his ship were an inspiration to his crew. With boilers blown up and engines damaged, masts shot away, and ablaze from stem to stern, he reluctantly gave the order to abandon ship. The only serviceable lifeboat being overcrowded, he, unselfishly and heroically, remained on the bridge and went down with his battered ship.

His determination to fight his ship and his perseverance in engaging the enemy to the utmost, until his ship was rendered helpless and sinking, were in keeping with the finest traditions of the United States Merchant Marine.



VAPORIZING LIQUIDS

IN 1865, a noted English physician, Dr. J. Y. Simpson, wrote a medical treatise on the anaesthesia and sedative properties of carbon-tetrachloride wherein he stated as follows: "Its primary effects are very analogous to those of chloroform, but it takes a longer time to produce the same degree of anaesthesia, and generally a longer time to recover from it."

In the light of modern day medicine, this quote is something of an understatement. It is now a matter of medical record that this liquid can cause the most agonizing death unless used with extreme caution.

Carbon-tetrachloride is the most common of several similar toxic liquids that are used as fire extinguishing agents, solvents, and thinners. Some of the others are chlorobromomethane, trichloroethylene, dichlorobenzene, and mixtures of chlorinated hydrocarbons sold under various trade names or numbers. These liquids are generally referred to as "vaporizing liquids" but are specifically classified as either aromatics or halogenated hydrocarbons.

The characteristics of these vaporizing liquids are similar. For example, carbon-tetrachloride is a clear, volatile, colorless liquid with a characteristic odor. It is potentially toxic by inhalation, by contact with the stomach or mucous membranes, or by oral intake. Toxicity may result from a single brief exposure to a high concentration of vapor, or prolonged, excessive or repeated exposure.

The fire extinguishers which are approved for use on U. S. merchant vessels, which previously were referred to as carbon-tetrachloride extinguishers, are now known as "vaporizing liquid" extinguishers and may contain either carbon-tetrachloride or chlorobromomethane. Since both liquids are toxic, they should be used with care.

The first known death to occur on shipboard attributed to such a liquid, occurred in 1919 on a U. S. submarine at Portsmouth, N. H. A small fire was noticed in one of the compartments and a carbon-tetrachloride extinguisher was used to put out the blaze. The three men who used it were overcome by the fumes, and several days later died.

Unfortunately, while this death occurred over 30 years ago, many seamen are still unaware of the dangers associated with the use of this liquid and fatalities still take place.

For example, in one U. S. port, San Francisco, for the period from January 1948 to May 1951, 15 persons

suffering from carbon-tetrachloride poisoning were admitted to the U. S. Public Health Service Hospital. Of these 15, 3 died and the remainder recovered, but only after a protracted illness.

Two peculiar aspects of this poisoning are, that: (1) The use of alcohol greatly enhances the chance that a person will suffer ill effects—several cases have been reported where two seamen were exposed to the same concentration of carbon-tetrachloride fumes and yet only the seaman who had been drinking suffered ill effects. (2) Symptoms of toxic poisoning sometimes do not develop until two or three days after the exposure.

CASE HISTORIES

The following two medical case histories demonstrate these aspects:

Case 1.

"A seaman, an electrician, age 28, was admitted with a diagnosis of infectious hepatitis. Twenty-four hours after admission careful questioning led to the statement that before becoming ill he had been cleaning an electric motor with a carbon-tetrachloride spray in a closely confined space. While working he drank beer and other alcoholic beverages. A non-drinking fellow worker was not affected. The patient's symptoms were anorexia, nausea, vomiting, and dark, scanty urine, all symptoms starting 14 days before he was admitted to the hospital."

Case 2.

"A seaman, an electrician, age 47, was admitted with a diagnosis of hypertension and nephritis. On admission he complained of recurrent fever, low back pain, general swelling of the body, decreased urine output, diarrhea, and black stools. . . . The day following admission he revealed that 8 days before he had used carbon-tetrachloride to clean motors. His symptoms developed 24 hours after inhalation of the fumes. He also admitted drinking considerable whiskey before and while using the carbon-tetrachloride."

Cases of toxic poisoning have seldom occurred during fire fighting. Generally, they take place when a vaporizing liquid is used as a cleaning solvent. If it is necessary to use this liquid as a cleaning solvent, the work should be done out on deck. If that is not possible, exhaust ventilation should be provided in the compartment where the work is being performed.

SAFETY PRECAUTIONS

Since a danger exists whenever a vaporizing liquid is used, the following safety precautions should be observed:

Symptoms:

The toxic symptoms of absorption, regardless of mode of entry into the body are: Headache, mental confusion, depression, fatigue, loss of appetite, nausea, vomiting, loss of coordination and sense of balance and visual disturbances. This poisoning, depending upon severity and duration of exposure, results in injury to the liver, kidneys, adrenal gland, heart, lungs, and to the digestive and nervous systems. Toxic signs are: Rapid, irregular, or weak pulse; fever; bloody stools; suspension of urine; swelling of face; enlarged and painful liver and bloody urine.

There may be a local irritation of eyes, skin, and respiratory tract, but onset of symptoms may be delayed from two to eight days after severe exposure. Persons who have recently partaken of alcoholic beverages are particularly susceptible.

First Aid:

A person showing symptoms of poisoning should be given plenty of fresh air. In case breathing has stopped, artificial respiration should be started. Medical assistance should be obtained as soon as possible. Hot tea or coffee may be administered. **DO NOT GIVE ALCOHOL, FATS, OILS,**

(Continued on page 160)



(National Safety Council)

HIGHLIGHTS ON THE RULES

The 21st article in the *Side Lights* on the Rules series, which will continue the comparison of the International Rules with the local rules applicable to Inland Waters, Western Rivers and the Great Lakes will be printed in the next issue.

IN the last few years, Admiralty Courts, in rendering decisions in collision cases involving the use of radar, have cited certain principles set forth in the *Australia Star—Hindoo and Barry—Medford* cases.

These were the first major collisions to be adjudicated where one or both ships were equipped with radar. Since they can be considered the leading cases where the question of collision and use of radar arises, the professional student of the Rules of the Road may be interested in their discussion.

The *Australia Star* was proceeding at full speed of 15 knots, in a south-westerly direction, enroute from the United Kingdom to Cristobal. The *Hindoo* was traveling at full speed of 10 knots on a course from Guantánamo, Cuba, to Cartagena, Colombia. The ships were running blacked out through waters where the presence of enemy undersea craft was suspected. The *Australia Star* was proceeding singly with her radar in operation while the *Hindoo*, which had no radar, was escorted by the USS PC-616, which was equipped with radar.

The collision occurred at 9:32 p. m. Twenty-eight minutes prior thereto, the *Australia Star* had picked up the *Hindoo* on her radar at a range of 16,000 yards, 25° on her starboard bow.

The court found it impossible to reconcile the claimed course of the *Australia Star*, 237° true, the claimed course of the *Hindoo*, 108° true, and the four radar observations of the *Hindoo* made by the *Australia Star*, but did find that unquestionably the two vessels were on converging courses with the *Hindoo* off the *Australia Star's* starboard bow.

Testimony from the crews of both the *Australia Star* and PC-616 was that the navigation lights of the *Australia Star* were switched on 12 minutes prior to the collision. Because of careless lookout the *Australia Star's* lights were at first not seen by the *Hindoo*. Finally, ten minutes before the collision, a green light was observed, but minutes were wasted because of a search through the Signal Code in the belief that it was an aircraft warning signal being given by the PC-616. When the light was at last recognized as the starboard navigation

light of an unknown vessel, it was too late! The *Hindoo* switched on its lights, gave a blast on its whistle, and went hard to starboard, but the collision could not be avoided.

It was held that the failure of the *Hindoo* to see the *Australia Star's* lights was culpable negligence for which there was no excuse, and that insufficient lookout and failure to recognize meaning of the green light contributed to the collision.

With respect to the use of the radar by the *Australia Star* the court had this to say:

"Since the heading of a ship can be plotted from its bearing and distance at two or more points in time, the radar operator can with great accuracy plot the heading of a ship after taking a number of radar readings.

"By means of her radar the *Australia Star* could observe the *Hindoo* and determine her heading and speed with greater exactitude than if the *Hindoo* had shown her navigation lights. By means of the intelligence radar supplied, she could have navigated safely with respect to the *Hindoo* without relying on the surmises, in the one case, that the *Hindoo's* continued darkness was in fact a signal, 'I am keeping clear of you,' and in the other, that the *Hindoo* was maintaining a steady course and speed. Had the master made more intelligent use of his radar he would have known at 9:24 p. m. that he was almost certainly on a collision course and would have taken precautionary measures.

"* * * the notion that a ship, equipped with radar, may, once her navigation and range lights are bright, plunge through the seas at 15 knots in the hope that all other craft will keep clear of it can not be accepted as a rule of safe and prudent navigation.

"It has been suggested that to hold the *Australia Star* at fault is to penalize her because of her equipment with radar. That is a misconception. The conduct which is regarded as negligent on the part of a person of sound vision is not the same as that which is condemned when practiced by the blind. The fault of the *Australia Star* is that she chose to remain blind when she had the means to see.

"Prudent navigation involves taking advantage of all the safety devices at hand. * * *

In the *Barry—Medford* case, the Federal District Court ruled that a vessel was solely responsible for a collision in failing to operate her radar prior to entering a fog bank.

This was the first collision ever reported to the Coast Guard in which one of the vessels was equipped with radar. On October 21, 1945, the Army transport *Thomas H. Barry* was proceeding on an easterly course in the vicinity of George's Bank at a speed of 18 knots. A fog bank was sighted dead ahead at 1015 and was entered at 1037½ without any reduction in speed. The first fog signal was sounded on the whistle on entering the fog and a second was sounded a minute later. The collision occurred shortly after, at 1039, when the *Barry* struck the *Medford*, a trawler, on the starboard side, amidships. After the collision, the *Barry* picked up sternway in response to a full-astern bell which was not countermanded, and the bow was withdrawn from the hole in the *Medford* and the latter sank immediately, with the loss of seven men.

The *Barry* was equipped with radar and there were assigned and on board two Navy radarmen to operate the set when necessary to do so. Attempt was made to locate the radar operators by messenger in order to put the radar in operation before entering the fog but they could not be located in time. The court commented that no effort was made to contact them over another modern device, the public-address system.

Concerning the approach of a vessel to a fog bank, the courts have held that a vessel is required to give warning of its approach on a fog bank by sounding fog signals and to reduce speed before entering it.

On the use or lack of use of the radar the court had this to say: "The failure of the *Barry* to use her radar is the most serious and sinister aspect of these cases. The perfection of that device is thought to have invoked a new concept of the responsibilities attaching to vessels so equipped, touching their handling and operation in or near a fog area * * *. The stipulated proof here is that the offending ship could have informed herself of the presence and track of the *Medford*, in abundant time to have avoided by a wide margin any danger whatever of striking her. Under such circumstances, it is impossible to yield to the argument for the *Barry*, that her conduct is to be condoned to any extent, in view of her failure to employ the very device which was installed to prevent a collision, and to operate which she carried two men having special rating in the United States Navy to attest their qualifications, and who had no duty on the ship other than to operate the radar unit * * *."



nautical queries

Q. Explain how to veer under bare poles.

A. Hoist the fore-staysail and brace up the head yards as sharp as possible. Have those abaft pointed to the wind. Then, if the ship veers, she will steer under the masts and ropes only.

Q. What vessels are required to be provided with a medicine chest?

A. All U. S. vessels (over 75 tons) bound foreign or intercoastal.

Q. What is the law regarding space for hospital purposes?

A. U. S. Merchant vessels making voyages of more than 3 days duration and which carry a crew of 12 or more seamen must have a hospital compartment, separated from other spaces, having at least one bunk for every 12 seamen, but not over 6 bunks required.

Q. (a) What is the average maximum consumption of fresh water per day per person required in the interests of adequate personal hygiene?

(b) What chemical is used to treat water in order to insure its safety for drinking?

(c) How should taps be marked when washwater of doubtful purity is used?

A. (a) 30 gallons per day.

(b) Chlorine.

(c) Taps should be plainly marked "UNFIT FOR DRINKING."

Q. What precautions would you take in a port infected or suspected of being infected with plague?

A. At ports infected or suspected of being infected with human or rodent plague, special care shall be taken to prevent rodents, fleas, and infected persons from boarding the vessel and shall include the following measures:

(a) Immediately upon docking and during the entire time the vessel lies at a wharf, it shall be fended off at least six feet; all connecting lines shall be properly fitted with rat guards; gangways and other means of access to the vessel shall be well lighted, or separated from the shore at night.

(b) The vessel or aircraft shall load only cargo which has been found free from rats or has been treated to destroy fleas and rats.

(c) Prior to departure the vessel or aircraft shall be inspected for rodents and fleas. If rodents or fleas are present, measures shall be taken for their destruction.

Q. What is the purpose of quarantine inspection?

A. The purpose of quarantine inspection is to prevent the transmission of communicable disease by the personnel, passengers aboard a vessel, animals, plants, or cargo which may be aboard.

Q. Describe briefly how timber deck cargo must be stowed on a vessel with a timber load line and the precautions necessary with regard to stability.

A. All timber deck cargo is to be compactly stowed, lashed, and secured. It must not interfere in any way with the navigation and necessary work of the vessel, or with the provision of a safe margin of stability at all stages of the voyage; regard being given to additions of weight, such as those due to absorption of water and to losses of weight such as those due to consumption of fuel and stores.

Q. (a) If your vessel was listing, how would you measure the freeboard?

(b) Why is it necessary to measure freeboard accurately at the load line markings, as well as know the mean draft, when a vessel is deeply loaded?

A. (a) Measure the freeboard on both sides and take the mean of the two. If it is possible to measure the freeboard on one side only, the correct freeboard may be computed if the angular amount of the list and the vessel's beam are known.

(b) The mean of the bow and stern drafts would not show the effect of sagging or in some cases, hogging, and therefore might not reflect the true freeboard.

Q. When painting load line marks, how can you determine the correct position in case the old mark has been painted over or has been scraped off?

A. The "deck line" has been cut or center punched in the sheer strake at the middle of the perpendicular length. The distances down can be obtained from the load line certificate and the cutting or center punch markings of the load lines located, after which striking in the lines can be effected.

SUMMARY OF UNSAFE PRACTICES

The following is a brief summary of some of the unsafe practices observed by Coast Guard Marine Inspection Officers on oceans, rivers, and Great Lakes vessels during the period from July 1, 1954, through December 31, 1954:

a. LACK OF OFFICER SUPERVISION.

(1) Working overside, on stages, etc.—4 cases; 3 in Pacific ports and 1 in a Great Lakes or river port.

(2) Working with lines or rigging—2 cases in Great Lakes or river ports.

(3) Improper stowage of cargo, stores, gear, etc.—47 cases; 10 in Atlantic ports, 8 in Pacific ports, 14 in Great Lakes or river ports and 15 in Gulf ports.

(4) Vehicles on ferryboats not chocked or otherwise not properly secured—5 cases; 2 in Atlantic ports, 1 in a Great Lakes or river port and 2 in Gulf ports.

(5) Drills improperly conducted—11 cases; 3 in Atlantic ports, 7 in Great Lakes or river ports and 1 in a Gulf port.

b. UNSAFE ACCESS TO VESSEL.

(1) Gangway inadequate as to length, width, strength, etc.—17 cases; 4 in Atlantic ports, 1 in a Pacific port, 11 in Great Lakes or river ports and 1 in a Gulf port.

(2) Gangway improperly secured—17 cases; 6 in Atlantic ports, 2 in Pacific ports and 9 in Gulf ports.

(3) Gangway improperly rigged (lifelines, rails, etc.)—16 cases; 5 in Atlantic ports, 3 in Pacific ports, 4 in Great Lakes or river ports and 4 in Gulf ports.

(4) Gangway angle too steep—17 cases; 2 in Atlantic ports, 12 in Great Lakes or river ports and 3 in Gulf ports.

(5) Gangway not clear at either end—9 cases; 3 in Atlantic ports, 3 in Great Lakes or river ports and 3 in Gulf ports.

(6) Ring life buoy with lanyard not at hand—25 cases; 8 in Atlantic ports, 2 in Pacific ports, 9 in Great Lakes or river ports and 6 in Gulf ports.

(7) Water discharging onto gangway—4 cases in Gulf ports.

(8) Barrier on team gangway of ferry inadequate—6 cases in Atlantic ports.

c. UNSAFE ACCESS TO SPACES ON BOARD VESSELS.

(1) Loose or jury rigged ladders—20 cases; 1 in a Pacific port and 19 in Great Lakes or river ports.

(2) Missing or loose ladder rungs or steps—55 cases; 20 in Atlantic ports, 14 in Pacific ports, 13 in Great Lakes or river ports and 8 in Gulf ports.

(3) Ladders deteriorated to a weakened condition—18 cases; 6 in Atlantic ports, 5 in Pacific ports, 6 in Great Lakes or river ports and 1 in a Gulf port.

(4) Cluttered doors and passages—6 cases; 3 in Atlantic ports, 2 in Pacific ports and 1 in a Gulf port.

(5) Locked escape doors and obstructed ladders—17 cases; 8 in Atlantic ports, 8 in Great Lakes or river ports and 1 in a Gulf port.

(6) Obstructed ladders—2 cases in a Great Lakes or river port.

d. HAZARDS AT DECK OPENINGS, SHIP'S SIDES, CATWALKS, ETC.

(1) Inadequate or no lifelines, rails or chains—46 cases; 10 in Atlantic ports, 2 in Pacific ports, 23 in Great Lakes or river ports and 11 in Gulf ports.

(2) Weakened lifelines, rails or chains (deterioration, damage, etc.)—27 cases; 2 in Atlantic ports, 11 in Pacific ports, 13 in Great Lakes or river ports and 1 in a Gulf port.

(3) Hatch covers or beams improperly maintained or dangerously piled—11 cases; 2 in Pacific ports and 9 in Great Lakes or river ports.

(4) Hatch beam locking lugs missing or defective—6 cases; 5 in Atlantic ports and 1 in Great Lakes or river port.

(5) Catwalks not provided or in a weakened condition—5 cases; 1 in an Atlantic port, 3 in Great Lakes or river ports and 1 in a Gulf port.

(6) Defective fuel oil tank vent flame screens, check valves, etc.—32 cases; 4 in Atlantic ports, 3 in Pacific ports, 13 in Great Lakes or river ports and 12 in Gulf ports.

e. HAZARDOUS CARGO HANDLING GEAR.

(1) Safe load not marked on boom—3 cases in Pacific ports.

(2) Faulty winch brakes—3 cases in Atlantic ports.

(3) Improper maintenance of equipment—5 cases; 4 in Atlantic ports and 1 in a Great Lakes or river port.

f. HAZARDOUS CONDITIONS IN THE USE AND MAINTENANCE OF LIFESAVING EQUIPMENT.

(1) Faulty controls (limits, disconnect and control switches)—7 cases; 5 in Atlantic ports, 1 in a Pacific port and 1 in a Gulf port.

(2) Faulty boat releasing gear—13 cases; 3 in Pacific ports and 10 in Gulf ports.

(3) Lifeboat not properly secured—5 cases in Great Lakes or river ports.

(4) Poor maintenance—5 cases; 2 in Pacific ports, 1 in a Great Lakes or river port and 2 in Gulf ports.

(5) Equipment improperly secured—8 cases; 4 in Atlantic ports, 3 in Great Lakes or river ports and 1 in a Gulf port.

g. VENTILATION HAZARDS.

(1) Improper ventilation of confined spaces which may be gassy or lack oxygen—3 cases in Great Lakes or river ports.

(2) Accumulation of grease, dust, etc., in vents—14 cases; 4 in Pacific ports and 10 in Great Lakes or river ports.

(3) Gas masks, breathing apparatus, etc., improperly maintained or inaccessible—4 cases; 1 in an Atlantic port and 3 in Pacific ports.

h. LIGHTING HAZARDS.

(1) Exposed wiring or fixture connections—32 cases; 8 in Atlantic ports, 4 in Pacific ports, 18 in Great Lakes or river ports and 2 in Gulf ports.

(2) Long extension cords—44 cases; 3 in Atlantic ports, 27 in Pacific ports, 13 in Great Lakes and river ports and 1 in a Gulf port.

(3) Insufficient light at gangways, ladders, deck openings, etc.—8 cases; 1 in an Atlantic port, 2 in Pacific ports, 4 in Great Lakes or river ports and 1 in a Gulf port.

(4) Defective portable lights and cords—10 cases; 2 in Atlantic ports, 4 in Pacific ports and 4 in Great Lakes or river ports.

(5) Dead end or jury rigged wiring—41 cases; 2 in Atlantic ports, 7 in Pacific ports, 23 in Great Lakes or river ports and 9 in Gulf ports.

i. ELECTRICAL EQUIPMENT HAZARDS.

(1) Use of portable equipment without provision for grounding—6 cases; 2 in Atlantic ports, 1 in a Pacific port and 3 in Great Lakes or river ports.

(2) Absence of guard rail, rubber matting or drip shield at switchboards or other installed equipment such as controllers, resistors, etc.—19 cases; 3 in Atlantic ports, 4 in Pacific ports, 11 in Great Lakes or river ports and 1 in a Gulf port.

(3) Overfused circuits—9 cases; 2 in Atlantic ports, 1 in a Pacific port, 5 in Great Lakes or river ports and 1 in a Gulf port.

(Continued on page 160)

NOTICE

It is requested that all marine superintendents, ship's masters, and company safety supervisors ascertain whether the "Proceedings of the Merchant Marine Council" is being distributed to shipboard personnel. This publication is designed primarily for the use of those men actively employed aboard ship. Recently it has become apparent that, in many cases, copies of the "Proceedings" are not forwarded to the ships but are being distributed to shore side personnel.

The following is an abstract of a letter received at Coast Guard Headquarters which is typical of many received:

S. S. _____
June 28, 1955
Norfolk, Virginia

Dear Sir:

I would like to request that my name be put on your mailing list for the "Proceedings of the Merchant Marine Council."

I get to see a copy now and then, but would like to see it regularly.

I have been sailing as third assistant with _____

Company for over three years now, and would like to have the "Proceedings" sent to me c/o the company. Thank you,

Mr. _____
3d Asst. S. S. _____
New York, New York _____ Company

It is interesting to note that the company referred to in this letter operates some 16 oceangoing vessels and every month 50 copies of the "Proceedings" are mailed to the marine superintendent.

The Editor is of the opinion that a minimum of two copies of each issue should be furnished each seagoing vessel—so that all engineering and deck officers will have an opportunity to read it.

In the event any shipping company desires that additional copies be furnished so that there will be a sufficient number for ship distribution, a letter requesting the desired number of copies should be sent to the Executive Secretary, Merchant Marine Council, U. S. Coast Guard Headquarters, Washington 25, D. C.

LESSONS FROM CASUALTIES

RED HOT DECK

The officers and crew of the SS *Neva West* recently handled a shipboard emergency with commendable efficiency and inventiveness. A fire at sea which could have endangered the entire ship and its complement was extinguished in a few hours with minimum damage. To get at the seat of the fire, a hole was cut through the deck plating using an improvised electric welding rig.

The *Neva West*, a victory-type freighter, operated by Bloomfield Steamship Company, was enroute from New Orleans to Bremerhaven with a cargo of baled cotton, grain, and general cargo. Five days after sailing, with the ship well out in the Atlantic, fire broke out in No. 1 hold. At 5:18 a. m., the helmsman called the second mate's attention to what appeared to be smoke issuing from No. 1 hold. The mate immediately sent him forward to investigate, and called the Master, chief mate, and Chief Engineer. Black smoke by now was visible pouring from the windlass control box and the *Neva West* was quickly turned and headed downwind at slow speed.

Upon arriving at the scene, the Master, Oran L. Snodgrass, assumed charge of the fire-fighting operations. All vent covers for No. 1 hold were left intact and the hatch covers were left in place. The steam smothering line was opened and the hold flooded with steam for two hours. An attempt to enter the hold by way of the forward masthouse to ascertain the extent of the fire was unsuccessful because of the heavy smoke and heat. Then, it was noted that one section of the main deck just forward of the starboard corner of the hatch was heated more than any other portion, and was becoming red. Seeing that, the Master ordered a hole cut in the deck for the admission of a fire hose.

First the deck was cooled by a hose stream; then, using a length of welding conductor some workman had accidentally left aboard at the last shipyard visit, the Chief Engineer, Harry O. Gwin, and the ship's electrician, Edward G. Keagy, rigged up a welding circuit from the main power supply panel at the anchor windlass resistor box. A piece of metal rod was cut in the shape of a welding electrode. With a heavy current and the electric arc from the electrode, it was possible to fuse the metal of the deck plating enough to burn a hole through and then enlarge it.

Within 11 minutes a hole was cut large enough to allow a solid stream of water from a 2½-inch fire hose to be directed on the seat of the fire. Within a short time it was under control. Then, the pontoons were removed from the hatch and the crew turned to, removing the smoldering cargo. By noon there were no longer any traces of fire. Damage to the vessel was small. Some cargo had been damaged by fire and water but the total damage was insignificant compared to the value of the entire ship and its cargo, to say nothing of the lives of all aboard—all of which had been saved from the possibility of an overwhelming inferno by the plucky and intelligent efforts of the officers and crew.

The source of ignition of the fire could not be definitely ascertained. There were indications of overheating in one electrical circuit which passed through No. 1 hold, but this point was 11 feet from the origin of the fire. Spontaneous heating of the cotton was a strong possibility but could not be verified.

The problem of burning a hole through a steel plate may sound like a simple detail. However, when your ship is at sea and you have a fire smoldering under your feet and no oxy-acetylene torch aboard with which to cut a hole to get at it, the problem of making a little hole becomes a big problem. The personnel of the *Neva West*, especially the electrician, deserve praise for the efficient manner in which they coped with a shipboard emergency.

Cutting or burning metal by the use of an electric arc is an industrial process with many applications where the cut does not have to be particularly smooth or clean. During an emergency at sea when it is necessary to cut into a deck plate or sever an anchor chain, the arc cutting process could be worth its weight in gold. Materials necessary for this operation would be: Heavy conductors equivalent to No. 0000 wire (or the heaviest you can find) long enough to reach from the power source to the cutting point, an electrode, and a non-conducting handle to hold the electrode.

On a vessel fitted with DC electric auxiliaries, the most practical electrode would be a carbon rod. If the vessel is equipped with carbon-arc searchlights, rods from these searchlights would serve well. Any stick of carbon will function as an electrode. The center pole electrode from the

interior of a dry cell (especially the larger No. 6 size cell) has been used successfully for arc cutting.

If no carbon rod is available, the most practicable makeshift electrode would be a piece of steel rod of about ¼" diameter and 18" long. If no steel rod is available, steel pipe of about the same cross-sectional area would be useable. Using steel, it will be well to have spare electrodes on hand, as the steel electrode will fuse and melt away readily as the steel is being cut.

The conductor must be secured to one end of the electrode with a screw clip or heavy electrical clamp and the return conductor secured to the metal to be cut a few feet from the cutting point. In addition, there must be some manner of holding and manipulating the electrode so that the person is absolutely insulated from it. Pieces of rubber hose would be useful for such insulation.

With an electrode of approximately ¼" diameter, an electrical current of about 300 amperes is necessary to obtain enough heat for fusion. Therefore, the source of power should be one of the ship's main feeders, such as the power supply line to the anchor windlass or the deck winches, so that a heavy current can flow through this circuit without dangerous overheating. However, since the contact of the electrode with the metal to be cut in striking the original arc would create practically a dead short back through the line to the generator, it is necessary to include sufficient resistance in the line to limit the current to 300 to 350 amperes. By connecting the conductor to one side of the power supply in series with the resistors installed in the starter circuits of most heavy duty DC motors, such as the anchor windlass or deck winch motors, sufficient resistance can be obtained. The return conductor, grounded near the cutting point, should be connected to the other side of the power supply circuit. It may be necessary to bypass or install jumpers across the fuses and circuit breakers in the power supply line. Rendering safety devices inoperative or badly overheating circuits in this manner are not justified, of course, unless a true emergency exists, in which case they are fully justified.

Before attempting to make the cut, the operator should provide himself with a rubber mat on which to stand, thus insulating himself from the steel deck. If cutting is attempted on

an anchor chain, care should be taken that no person is touching it while current is flowing.

To cut the metal, the operator strikes an arc by touching the end of the electrode lightly to the base metal, quickly withdrawing it approximately $\frac{1}{4}$ inch, then holding the electrode at just enough distance from the base metal so that the electric current continues to flow. As the end of the electrode fuses and melts, the electrode is moved closer to maintain the proper arcing distance. By holding the arc at one point on the base metal, the fusing process will gradually continue into and finally penetrate through the base metal. On vertical work, the molten metal will tend to flow down and away from the cutting point, thus enabling the fusing process to penetrate through the metal more quickly. On horizontal work, the molten metal will tend to collect around the arc and remain in a puddle, complete penetration thus requiring more time. In any event, the operator should take extreme care not to touch the electrode or connection to the conductor with any part of his body, or a lethal shock may result.

Most U. S. merchant vessels built since World War II and many tankers built before or during the war are fitted with AC power for auxiliaries. On an AC ship, the improvised arc cutting method should probably not be attempted unless an experienced electrician is available, because the inclusion of proper resistance in the makeshift burning circuit from AC equipment may be considerably more complicated.

Since the molten metal running from this cutting process could be the source of additional fire, or the overheating of a ship's circuit carrying this heavy current could result in permanent damage to the circuit or even an additional fire, such risks must be carefully weighed against the exigencies of the situation. If there is really an emergency, and a hole or cut is badly needed, these risks will be small compared to the risk to the whole ship. The improvised arc cutting method may help to save your ship, someday.



WANTED—SEA ROOM

One of the most disheartening hazards of the merchant vessel navigator is the unexpected encounter with a small pleasure craft or fishing vessel. While the navigator of a merchant vessel can reasonably expect another merchant vessel to act with reason-

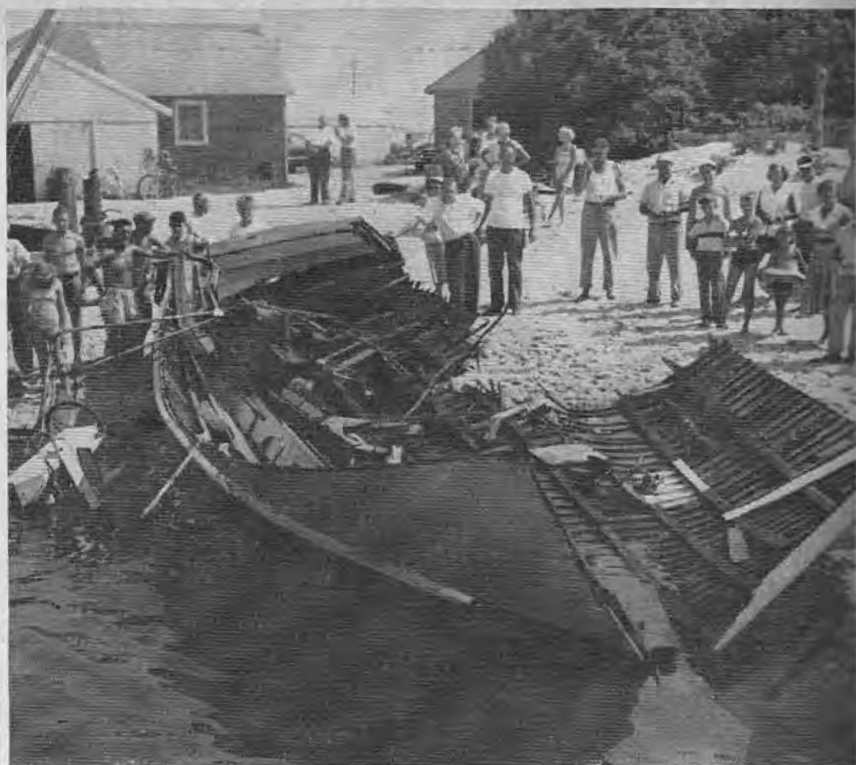


Figure 1.

able prudence and skill, he can never tell exactly what the small boat is going to do. There have been several unfortunate experiences where merchant vessels collided with small boats in the last few years; some of them resulting in death. However, no matter how unreasonable, foolish, or negligent the actions of the small craft have been, there is no licensed deck officer afloat who wants to hit one of them or hurt any of the occupants. In fog or limited visibility, a small boat can loom up under the bow of a merchant vessel with terrifying suddenness and dismaying results. Apparently, the Rules of the Road for avoiding collisions are not understood by many small-boat operators.

One such collision took place last year off the East Coast. The small craft was demolished (see fig. 1), but fortunately no lives were lost. A foreign freighter was steaming northward approximately 9 miles off shore during warm summer weather. There were scattered patches of fog with intermittent good visibility. The freighter was turning up about 14 knots and the radar had been turned off, since the mate on watch thought it would not be needed. At about 7:15 a. m., the ship was plunged into a fog bank without much warning. The mate on watch shouted to the carpenter, who was working on the fore deck, to go to the forecastle

head and act as lookout. Shortly after the carpenter arrived at the bow, he turned around, shouted, and waved his arms indicating something ahead of the vessel. The Chief Mate grabbed the engineroom telegraph and threw the engines full astern. The master came running up from his cabin.

On board the small motor craft, a party of 10 passengers and 2 crew members, having dropped the anchor in a likely spot, had started to fish. This 34-foot wooden cabin cruiser was used for sport fishing parties, and it had departed the dock early that morning. Only a few minutes after anchoring, those aboard heard a ship's whistle close by. The operator ran forward to cut the anchor line to get under way, and his assistant began to ring the boat's fog bell as hard as he could.

Before he could cut the anchor line, he glanced up and was horrified to see a freighter's sharp bow loom out of the fog. Within seconds the fishing boat was struck a death blow amidships. The tremendous force of the impact threw the occupants into the water. The wreckage settled quickly and was soon only awash. Fortunately, the operator had stowed the life preservers in an accessible location and the persons floundering in the water were able to reach them. Additional life preservers were

thrown overboard from the freighter. With the aid of these, all hands were able to remain afloat until two nearby fishing boats arrived at the scene and rescued them.

The freighter launched a life boat as soon as she was able to stop her headway, but by that time the survivors had been picked up. Except for one of the crew who suffered a broken leg, no one from the fishing party was seriously injured. The wreckage was towed ashore by the Coast Guard, but was deemed a total loss.

Another more tragic encounter between a merchant vessel and a small pleasure craft occurred off the West Coast. A foreign freighter and a 50-foot auxiliary yawl came together early one spring morning with such disastrous results for the yawl that all five occupants lost their lives. The freighter's only damage was a slight bend in her jack staff.

The weather was overcast with light drizzle and a visibility of about 4 miles as the freighter steamed along the coast at 13.5 knots. During the mid-watch, the seaman who was assigned as lookout on the foreign freighter left his station and went below to make coffee. Nobody was assigned as lookout during his absence. Suddenly, the officer on watch saw a small white light about 2 points on his starboard bow. Shortly afterwards, the helmsmen saw the white light and a red light. The rudder of the freighter was put hard left and standby was rung on the engineroom telegraph. This noise awakened the master who ran up to the bridge. Before he arrived, the freighter had smashed into and steamed through the wreckage of the yawl, still going full speed ahead. By the time the freighter had stopped, turned around, and returned to the scene, nothing could be found but small bits of wreckage, which included a chunk of the stern of the yawl's dinghy.

Of the five persons known to have been on the yawl, only one body was found, but it is certain that all four of the others also perished. Since there were no survivors, it was impossible to obtain any evidence as to the yawl navigation, intentions, or actions to avoid collision.

A tragic accident occurred one evening in a West Coast harbor when the operator of a small passenger motorboat, a converted landing craft, neither heard nor saw a foreign freighter bearing down on his starboard side. The freighter, being the privileged vessel in a crossing situation, maintained her course and speed, finally blew a one-blast signal, the danger signal, and then reversed her engines and changed course hard

right. Nevertheless, a collision occurred and the small boat sank, three passengers losing their lives.

Two collisions have occurred in the last two years in which small vessels, being overtaken by large merchant vessels, altered their courses suddenly or erratically and were struck and sunk by the larger ships with resulting loss of life. In the first instance, a fishing trawler was headed for her home port on the East Coast during a summer evening. A large tanker was headed for the same port and undertook to overtake and pass on the trawler's starboard side. At the worst possible moment, with the tanker's bow overlapping the trawler, the trawler suddenly altered course to her right! She was struck by the tanker and sank soon afterwards, one man from the trawler losing his life.

In the second instance, a tanker was proceeding down the main channel to sea on the West Coast at a speed of about 12 knots. A small fishing vessel was sighted about a mile and a half ahead, also proceeding down the channel. The tanker blew two blasts to the fishing vessel indicating a passing on her port side. Due to the inattention of the operator, or the noise of the diesel exhaust, this signal was not heard. Shortly thereafter, the fishing vessel made a pronounced change of course to the left and appeared to be headed across the bow of the tanker. The tanker blew a danger signal, went full speed astern and gave hard right rudder. As a result, the tanker's bow started swinging to the right and the fishing vessel appeared clear on her port bow, whereupon the tanker stopped its engine. Shortly afterwards, the fishing vessel made another sharp change in course, this time to the right, and before the tanker could take additional avoiding action, a collision had occurred! The fishing vessel sank with the loss of one man who was asleep in his bunk.

Another tragedy with needless loss of life occurred when a tug pushing a barge in an East Coast harbor struck a 30-foot yacht, on a clear summer night. The tug and yacht had been on converging courses and the tug pilot had taken avoiding action, finally backing down full. Apparently, the operator of the yacht had not seen the tug as he took no avoiding action. The yacht was sunk and one passenger lost his life.

An unexpected collision occurred one night on an East Coast river when a small tank vessel ran down a rowboat and two young men, aged 14 and 28, lost their lives. The two men had gone out on the river for a few hours of fishing—no doubt they were keeping little or no lookout for approaching vessels. About 4:00 a. m., the

tanker, light and with the bow riding high, approached, making 9 knots. There was no lookout posted, although the vision of the mate on watch was obscured by the high bow. Personnel on the tanker did not even know they had struck a boat until voices were heard screaming from the water. Although the tanker stopped and lowered a lifeboat, no one could be found. Both bodies were recovered at a later date.

What conclusions should be drawn from these sorrowful encounters between "the big fellow" and "the little fellow" on the waters of the United States? One obvious conclusion is that each tragedy was caused, to a large extent, by a lack of appreciation or consideration of the other fellow's problems. For instance, the small boat operator who assumes the big ship is going to keep out of his way or keep clear of him, regardless of the circumstances, is headed for trouble, in a hurry. Similarly, the big ship navigator who neglects to exercise every reasonable care and precaution toward the small boats in his vicinity is likewise headed for trouble. The old maxim: "Live and let live" is especially appropriate for application to the marine highways of the nation.

Regardless of how the small boat operator feels about the big ships hindering and interfering with his use and enjoyment of the waterways, or how the big ship navigator feels about the small boats hindering and interfering with the pursuit of commerce on the waterways, each must live with the other and each must give the other a full share of consideration. Although it is dangerous to generalize, most of these accidents can be traced to two erroneous viewpoints: (1) The large vessel navigator, who is probably proficient, does



(Courtesy Maritime Reporter)

not realize or will not admit that the small boat operator may not be an expert in the Rules of the Road and may not be proficient in handling his boat or in understanding the significance of large and small vessels approaching each other. (2) The small boat operator, who thinks he has his own craft well under control, does not realize or will not admit that the large vessel is relatively unmaneuverable and restricted in movement and may not be able to avoid him.

That many small operators do not understand the significance of a crossing situation or the requirement that the privileged vessel hold her course and speed is unquestionable. This lack of understanding and the necessity for "extremis" avoiding action which it may entail must ever be kept in mind by the large vessel navigator.

Very broadly, advice to the two classes of navigators could be stated as follows: If you are at the conn of a merchant vessel, take care for the little fellow! Anticipate and be prepared lest he do the wrong thing at the wrong time. If you are at the wheel of a small pleasure craft or fishing vessel, keep a good lookout all around and give the big fellow plenty of room. He cannot handle his ship one-tenth as freely as you can and he will be grateful for the sea room.



UNSAFE PRACTICES

(Continued from page 156)

j. HAZARDOUS "HOT WORK."

(1) Disregard of precautions while welding, burning, riveting, etc.—3 cases; 1 in an Atlantic port and 2 in Gulf ports.

(2) Lack of gas-free certificate for "hot work" around oil tanks—2 cases; 1 in an Atlantic port and 1 in a Gulf port.

k. HAZARDOUS DECK CONDITIONS.

(1) Oil spills on deck—36 cases; 4 in Atlantic ports, 2 in Pacific ports, 16 in Great Lakes or river ports and 14 in Gulf ports.

(2) Loose or oily floor plates—18 cases; 6 in Atlantic ports, 1 in a Pacific port, 4 in Great Lakes or river ports and 7 in Gulf ports.

(3) Cluttered decks—21 cases;



7 in Atlantic ports, 1 in a Pacific port and 13 in Gulf ports.

(4) Oil and debris in bilges, etc.—7 cases in Atlantic ports.

(5) Deteriorated deck plating or supports—2 cases in Great Lakes or river ports.

l. MACHINERY HAZARDS.

(1) Guards on moving machinery inadequate or missing—52 cases; 14 in Atlantic ports, 11 in Pacific ports, 16 in Great Lakes or river ports and 11 in Gulf ports.

(2) Boiler water gage glass not shielded—8 cases; 6 in Atlantic ports, and 2 in Great Lakes or river ports.

(3) Steam or exhaust pipes not lagged or improperly secured—26 cases; 13 in Atlantic ports, 4 in Pacific ports and 9 in Great Lakes or river ports.

(4) Faulty or improperly set relief valves—10 cases; 7 in Atlantic ports and 3 in Gulf ports.

(5) Defective brakes on deck machinery—8 cases; 3 in Atlantic ports, 3 in Pacific ports, 1 in a Great Lakes or river port and 1 in a Gulf port.

(6) No reducing or relief valves in reduced pressure systems—6 cases; 2 in Atlantic ports, 2 in Great Lakes or river ports and 2 in Gulf ports.

(7) Steam valves subjected to hydrostatic pressure on one side while steam in on the other side—7 cases in an Atlantic port.

(8) Improper use of grinder—2 cases; 1 in an Atlantic port and 1 in a Great Lakes or river port.

(9) Relief valves deteriorated due to lack of maintenance—17 cases; 6 in Atlantic ports, 8 in Great Lakes or river ports and 3 in Gulf ports.

m. TANK VESSELS.

(1) Ullage holes or manholes open without flame screens—27 cases; 7 in Atlantic ports, 12 in Great Lakes or river ports and 8 in Gulf ports.

(2) Vent header drains left open—3 cases in Great Lakes or river ports.

(3) Cargo tanks open but not gas free—3 cases; 2 in Atlantic ports and 1 in a Gulf port.

(4) Faulty P/V valves and flame screens—13 cases; 3 in Atlantic ports, 2 in Pacific ports, 2 in Great Lakes or river ports and 6 in Gulf ports.

(5) Improper loading and cargo handling—16 cases; 7 in Atlantic ports, 4 in Great Lakes or river ports and 5 in Gulf ports.

(6) Hatch covers not secured—3 cases in a Great Lakes or river port.

n. In addition to the foregoing there were a total of 473 other cases of unsafe practices noted including 157 cases of improper maintenance of fire-fighting equipment.

VAPORIZING LIQUIDS

(Continued from page 153)

ADRENALIN, OR EPINEPHRINE to a person who has been exposed to vaporizing liquids.

Controls:

(1) Adequate ventilation to prevent the accumulation of vapors must be provided, when possible, if vaporizing liquid is used, or transferred from one container to another. The vapors must be removed from the space, from below the point of breathing and exhausted well clear, to prevent the settling of vapors in a compartment.

(2) If thorough ventilation is not practicable, personal protective equipment consisting of hose mask or gas mask, and gas type safety goggles, must be employed. It should be remembered that all persons within the working area must be protected. Due to variations in concentration, time limits for gas mask canisters or cartridges cannot be established, although time limits of one hour for canisters and 30 minutes for cartridges are recommended.

(3) Prolonged contact with the skin should be prevented by means of protective clothing such as neoprene gloves.

(4) Any transfer of the liquid, such as the filling of fire extinguishers, should be made out of doors where winds will disperse the vapor.

(5) Small quantities of vaporizing liquid should be handled in safety cans. Uncovered containers are prohibited. Leaky containers should be immediately discarded.

(6) Gas masks must be provided as soon as possible for men using vaporizing liquid to extinguish fire whether indoors or out in the open.

(7) Certain individuals have been found unduly susceptible to carbon-tetrachloride poisoning and should not be assigned to operations involving the use of this product, even in small quantities. Exposure to carbon-tetrachloride even in concentrations known to be non-hazardous to others may be dangerous in the following cases:

(a) Alcoholics.

(b) Exceedingly fleshy individuals.

(c) Undernourished persons.

(d) Those with pulmonary disease, peptic ulcers, hypertension, liver, kidney, or heart disease.

(e) Persons with respiratory defects, either temporary or permanent.

(f) Persons who cannot readily detect odors.

(8) Warning labels should be placed on all containers regardless of size, before issue.

APPENDIX

AMENDMENTS TO REGULATIONS

[EDITOR'S NOTE.—The material contained herein has been condensed due to space limitations. Copies of the Federal Registers containing the material referred to may be obtained from the Superintendent of Documents, Washington 25, D. C.]

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

Subchapter K—Marine Investigations and Suspension and Revocation Proceedings

[CGFR 55-24]

PART 137—SUSPENSION AND REVOCATION PROCEEDINGS

SUBPART 137.04—PROCEEDINGS UNDER PUBLIC LAW 500

EFFECT OF COURT CONVICTIONS

Section 137.04-15 is amended to read as follows:

§ 137.04-15 *Effect of court convictions.* (a) After proof of a court conviction in accordance with section 2 (b) (1) of the act, but pending the determination of an appeal, the Coast Guard is not precluded from taking action based upon this conviction, and the examiner may enter an order revoking the seaman's document. A conviction becomes final when no issue of law or fact determinative of the seaman's guilt remains to be decided by the courts.

(b) Such an order of revocation will be rescinded by the Commandant

if the seaman submits satisfactory evidence that the court conviction on which the revocation is based has been set aside for all purposes. An order of revocation will not be rescinded as the result of the operation of any law providing for the subsequent conditional setting aside or modification of the court conviction, in the nature of the granting of clemency or other relief, after the court conviction has become final.

(c) After the conviction has become final within the meaning of paragraph (a) of this section, the conditional setting aside or modification of the conviction will not act as a bar to the subsequent revocation of a seaman's document under section 2 (b) (1) of the act.

(R. S. 4405, as amended, secs. 1, 2, 49 Stat. 1544, sec. 5, 55 Stat. 244, as amended; 46 U. S. C. 375, 367, 50 U. S. C. 1275)

Dated: June 21, 1955.

[SEAL] J. A. HIRSHFIELD,
Rear Admiral, U. S. Coast Guard,
Acting Commandant.

[F. R. Doc. 55-5135; Filed, June 27, 1955;
8:51 a. m.]

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 3-55

May 3, 1955

Subj: Victory class vessels; test of auxiliary boiler feed system.

1. *Purpose.* The purpose of this circular is to inform all parties concerned of a possibly dangerous condition existing on Victory class ships

due to the lack of a relief valve in the discharge piping from the centrifugal pump installed as an auxiliary feed pump and to set forth the instructions considered necessary to correct the condition noted.

2. *Background.* The Commandant has been advised by a reliable source that tests conducted on the centrifugal feed pump installed on the subject vessels revealed that under certain conditions the pump delivers a discharge pressure approaching 800 p. s. i. The approved plans for the subject installation indicated that the auxiliary feed pump was capable of producing a pressure of 600 p. s. i.; therefore, the piping was required to meet the standards necessary for a maximum pressure of 675 p. s. i. due to the limitation imposed by the relief valve setting of the main feed pump discharge. Under the authority of the rule now designated 46 CFR 55.10-10 (a) (3), it was determined that a relief valve would not be required.

3. *Action.* The auxiliary feed pump system on all Victory ships shall be tested at the next annual inspection to determine the highest shutoff pressure the particular pump is capable of delivering. In the event the pump delivers 675 p. s. i. or more, a relief valve capable of maintaining the discharge pressure at or below 675 p. s. i. shall be installed and shall be set at 675 p. s. i. (46 CFR 55.10-10).

4. *Effective date.* Upon receipt.

R. A. SMYTH,
Captain, U. S. C. G.,
Acting Chief, Office of
Merchant Marine Safety.

By direction of the Commandant

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

The following are additions to the list of electrodes which are acceptable to the United States Coast Guard for use in welded fabrications.

Distributor's and/or manufacturer's	Brand	AWS class	Operating positions and electrode sizes (inch)				
			5/32 and below	3/16	7/32	1/2	5/16
Westinghouse Electric & Mfg. Corp., East Pittsburgh, Pa.	Westinghouse XL-610	E6010	1	1	2	2	3
Do	SW-613	E6013	1	1	1	2	2
A. O. Smith Co., Milwaukee, Wis.	SW-44	E6021	2	2	2	2	3
Hobart Bros., Hobart Sq., Troy, N. Y.	Rocket 27	E6027	2	2	2	2	2
Air Reduction Sales Co., 42d St., Opposite Grand Central, New York 17, N. Y.	Airco Easyweld 12	E6024	2	2	2	2	2
General Electric Co., Schenectady 5, N. Y.	Strikeasy	E6024	2	2	2	2	2
Metal & Thermite Corp., 120 Broadway, New York 5, N. Y. Arcrods Corp. (Manufacturer).	Murex Speedex	E6021	2	2	2	2	2

¹ The same limitations as to usage applies to this electrode as to that of E6012 and E6013 electrodes.

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 5-55

JULY 14, 1955.

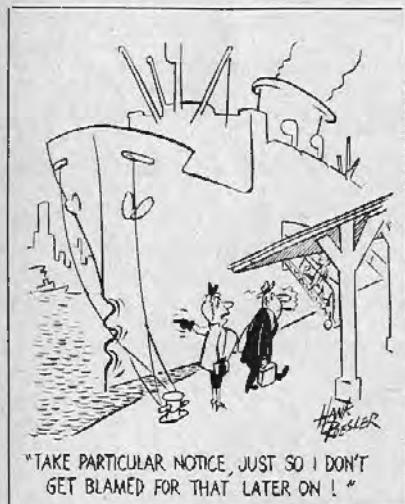
Subj: Pamphlet entitled "Miscellaneous Electrical Equipment List", CG-293, Amendment No. 2.

1. *Purpose.* The purpose of this circular is to announce the publication of Amendment No. 2 to the pamphlet entitled "Miscellaneous Electrical Equipment List," CG-293. These amendment sheets, when inserted in the looseleaf pamphlet CG-293 previously corrected in accordance with amendment No. 1, will bring the list up to date.

2. *Background.* The pamphlet entitled "Miscellaneous Electrical Equipment List," CG-293, was issued for the purpose of expediting the evaluation of drawings of shipboard electrical installations submitted for approval and to promote uniformity of action thereon. As the pamphlet is of interest to a limited number of persons, copies were distributed only on request of the prospective user.

3. *Action required.* Persons having a copy of CG-293 and desiring to maintain the list up to date may submit a request to the Commandant (MMT), U. S. Coast Guard, Washington 25, D. C., or to the nearest Coast Guard Merchant Marine Inspection Office, for a copy of Amendment No. 2 thereto.

R. A. SMYTH,
Captain, U. S. C. G.,
Acting Chief, Office of
Merchant Marine Safety,
By direction of the Commandant.



(Courtesy Maritime Reporter)

MERCHANT MARINE PERSONNEL STATISTICS

MERCHANT MARINE OFFICER LICENSES ISSUED

QUARTER ENDING 30 JUNE 1955

DECK		
Grade	Original	Re-newal
Master:		
Ocean	42	390
Coastwise	7	41
Great Lakes	7	27
B. S. & L.	16	140
Rivers	7	58
Radio officer licenses issued	20	80
Chief mate:		
Ocean	30	145
Coastwise		1
Mate:		
Great Lakes		
B. S. & L.	9	18
Rivers	14	17
Second mate:		
Ocean	31	119
Coastwise		3
Third mate:		
Ocean	70	83
Coastwise		1
Pilots:		
Great Lakes	10	19
B. S. & L.	152	34
Rivers	93	34
Master: Uninspected vessels	3	30
Mate: Uninspected vessels	3	9
Total	516	1,249
Grand total		1,765

ENGINEER		
Grade	Original	Re-newal
STEAM		
Chief engineer:		
Unlimited	39	685
Limited	10	150
First assistant engineer:		
Unlimited	41	235
Limited	3	14
Second assistant engineer:		
Unlimited	41	308
Limited	2	
Third assistant engineer:		
Unlimited	110	327
Limited	2	2
MOTOR		
Chief engineer:		
Unlimited	9	79
Limited	42	121
First assistant engineer:		
Unlimited	9	18
Limited	12	16
Second assistant engineer:		
Unlimited	5	12
Limited	2	
Third assistant engineer:		
Unlimited	45	186
Limited	1	3
Chief engineer: Uninspected vessels	5	10
Assistant engineer: Uninspected vessels	2	1
Total	380	2,176
Grand total		2,556

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 3021 cases during the second quarter of 1955. From this number, hearings

ORIGINAL SEAMEN'S DOCUMENTS ISSUED

QUARTER ENDING 30 JUNE 1955

Type of document	Atlantic coast	Gulf coast	Pacific coast	Great Lakes and rivers	Total
Staff officer	57	9	19	5	90
Continuous discharge book		32		27	50
Merchant mariner's documents	1,260	448	748	2,043	4,508
AB any waters unlimited	197	40	75	45	357
AB any waters, 12 months	44	15	28	155	242
AB Great Lakes, 18 months	8		5	89	102
AB tugs and towboats, any waters	4	1	1		6
AB bays and sounds	3		3		6
AB seagoing barges	1				1
Lifeboatman	218	28	230	121	627
QMED	213	56	50	125	444
Radio operators	7	2	9	11	29
Certificate of service	1,074	431	703	2,021	4,229
Tanker	35	40	11	68	154

12 months, vessels 500 gross tons or under, not carrying passengers.

NOTE.—The last 11 categories indicate number of endorsements made on United States merchant mariner's documents.

WAIVER OF MANNING REQUIREMENTS

Waivers	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Total
Deck officers substituted for higher ratings					
Engineer officers substituted for higher ratings				6	6
OS for AB					
Wiper or coalpassers for QMED	1			1	2
Total waivers	1			7	8
Number of vessels	1			4	5

NOTE.—In addition, individual waivers granted to permit the employment of 3 able seamen holding certificates for "any waters—12 months" in excess of the 25 percent authorized by statute.

before examiners resulted involving 37 officers and 317 unlicensed men. In the case of officers, no licenses were revoked, none were suspended without probation, 9 were suspended with probation granted, 3 licenses voluntarily surrendered, 3 cases were dismissed after hearing and 5 hearings were closed with admonition. Of the unlicensed personnel, 25 documents were revoked, 29 were suspended without probation, 131 were suspended with probation granted, 66 documents were voluntarily surrendered, 24 hearings were closed with admonition, and 29 cases were dismissed after hearing.

EQUIPMENT APPROVED BY THE COMMANDANT

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 1 June 1955 to 28 June 1955, inclusive, for use on board vessels in accordance with the provisions of Part 147 of the regulations governing "Explosives or Other Dangerous Articles on Board Vessels" are as follows:

CERTIFIED

Burnzall Company, 1432 N. Chico, Elmonte, Calif., Certificate No. 208, dated 6 June 1955, BURNZALL.

The Enequist Chemical Co., 100 Varick Ave., Brooklyn 37, N. Y., Certificate No. 311, dated 22 June 1955, ULTREX 725.

Crown Chemical Co., 150 Broadway, New York 38, N. Y., Certificate No. 211, dated 28 June 1955, DIASYN-7.

AFFIDAVITS

The following affidavits were accepted during the period from 16 June 1955 to 15 July 1955:

Packard Water Conditioner Division, Inc., Jacksonville, Florida, PIPE FITTINGS.

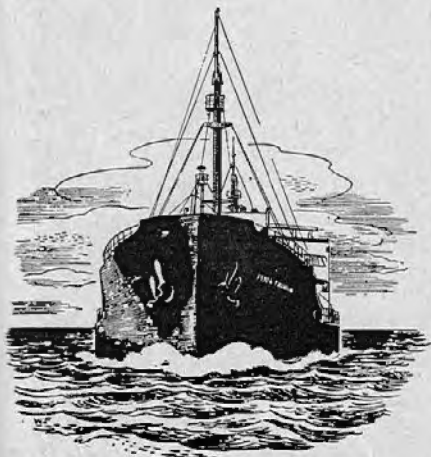
The Garlock Packing Company, Palmyra, New York, RUBBER EXPANSION JOINTS.

Olympic Steel Works, Seattle, Washington, CASTINGS.

American Chain & Cable Co., Inc., Reading, Pennsylvania, VALVES AND FITTINGS.

Pittsburgh Steel Foundry Corp., Pittsburgh, Pennsylvania, CASTINGS.

Crane Company, Chicago, Illinois, BOLTING.



NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by customs ports for the quarter ending 30 June 1955. Generally speaking, undocumented vessels are those machinery-propelled vessels of less than 5 net tons engaged in trade which by reason of tonnage are exempt from documentation. They also include all other vessels propelled in whole or in part by machinery which have not been issued marine documents by the customs, owned in the United States and found on the navigable waters thereof.

Coast Guard District	Customs Port	Total
1 (Boston)	(4) Boston	13,811
	(1) Portland, Maine	8,771
	(2) St. Albans	833
	(5) Providence	4,131
	Total	27,646
2 (St. Louis)	(45) St. Louis	9,828
	(12) Pittsburgh	2,033
	(34) Pembina	80
	(35) Minneapolis	2,148
	(40) Indianapolis	4,382
	(42) Louisville	2,623
	(43) Memphis (part)	5,007
	(46) Omaha (part)	316
	(47) Denver	25
	Total	26,452
3 (New York)	(10) New York	43,692
	(6) Bridgeport	8,425
	(11) Philadelphia	18,532
	Total	70,649
5 (Norfolk)	(14) Norfolk	15,944
	(13) Baltimore	23,135
	(15) Wilmington, N. C.	7,597
	Total	46,676
7 (Miami)	(18) Tampa (part)	23,608
	(16) Charleston	1,523
	(17) Savannah	3,003
	(49) San Juan	419
	(51) St. Thomas	99
	Total	28,652
8 (New Orleans)	(20) New Orleans	20,515
	(18) Tampa (part)	567
	(19) Mobile	7,671
	(21) Port Arthur	4,334
	(22) Galveston	8,405
	(23) Laredo	1,396
	(24) El Paso	16
	(43) Memphis (part)	65
	Total	42,969
9 (Cleveland)	(41) Cleveland	8,071
	(7) Ogdensburg	2,646
	(8) Rochester	5,036
	(9) Buffalo	3,782
	(36) Duluth	2,502
	(37) Milwaukee	3,521
	(38) Detroit	18,506
	(39) Chicago	6,843
	Total	50,907
11 (Long Beach)	(27) Los Angeles	10,864
	(25) San Diego	2,056
	(26) Nogales	115
	Total	13,035
12 (San Francisco)	(28) San Francisco	12,975
	Total	12,975
13 (Seattle)	(30) Seattle	18,707
	(29) Portland, Oregon	8,500
	(33) Great Falls	521
	Total	27,728
14 (Honolulu)	(32) Honolulu	3,144
	Total	3,144
17 (Juneau)	(31) Juneau	7,488
	Total	7,488
	Grand total	358,411

