

Season's
Greetings

PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL
UNITED STATES COAST GUARD

The printing of this publication has been approved by the Director of the Bureau of the Budget, January 14, 1955.

Vol. 13

December 1956

No. 12

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

Proceedings of the

MERCHANT MARINE COUNCIL

Published monthly at Coast Guard Headquarters, Washington 25, D. C., under the auspices of the Merchant Marine Council, in the interest of safety at sea. Special permission for republication, either in whole or in part, with the exception of copyrighted articles or pictures, is not required provided credit is given to the Proceedings of the Merchant Marine Council.

The
Merchant Marine Council
of the United States
Coast Guard

VICE ADMIRAL ALFRED C. RICHMOND,
USCG, *Commandant*

REAR ADMIRAL HENRY T. JEWELL,
USCG, Chief, Office of Merchant
Marine Safety, *Chairman*

CAPTAIN R. A. SMYTH, USCG
Assistant Chief, Office of Merchant
Marine Safety, *Vice Chairman*

REAR ADMIRAL K. K. COWART, USCG
Engineer in Chief, *Member*

CAPTAIN S. H. EVANS, USCG
Deputy Chief of Staff, *Member*

CAPTAIN L. T. JONES, USCG
Chief, Merchant Vessel Personnel
Division, *Member*

CAPTAIN C. P. MURPHY, USCG
Chief, Merchant Marine Technical
Division, *Member*

CAPTAIN C. H. BROACH, USCG
Chief, Merchant Vessel Inspection
Division, *Member*

CAPTAIN WILLIAM L. SUTTER, USCG
Chief, Port Security and Law En-
forcement Division, *Member*

CAPTAIN EUGENE A. COFFIN, Jr., USCG
Executive Secretary and Member

Mr. K. S. HARRISON, *Chief Counsel*

LIEUTENANT B. F. RUSH, USCG, *Editor*

CONTENTS

FEATURES	Page
Significant Marine Casualties of the Past Year.....	187
Nautical Queries.....	193
Marine Section, National Safety Council.....	194
Payment to Beneficiary.....	195
APPENDIX	
Merchant Marine Personnel Statistics.....	196
Amendments to Regulations.....	197
Articles of Ships' Stores and Supplies.....	198
Numbered and Undocumented Vessels.....	198
ANNUAL INDEX	
Volume 13.....	199
FRONT COVER	
Traditional Christmas cover of Amelia Island Light flashing season's greetings to the American Merchant Marine.	
BACK COVER	
A fair weather job! Picture shows seaman slushing standing rigging on the SS Hillyer Brown. Photo courtesy Standard Oil Company of California.	
DISTRIBUTION (SDL 63)	
A: a a a b c d (2); remainder (1)	
B: e (35); c (16); f (4); h (3); g (2); remainder (1)	
C: a b (less Quonset Pt.) c d e f g i m o w (1)	
D: i (5); a b c d e f g h j k m (1)	
E: o (New London only) (1)	
List 141M	
List 111	

Holiday Greetings

The peaceful conduct of world trade is a continuing service toward the betterment and unity of mankind.

At this season of good will, I send greetings to those who, at sea and on shore, keep the American flag flying on the trade lanes of the globe.

To you and your families, my best wishes for a Merry Christmas and a Happy New Year!

Dwight D. Eisenhower

The growth and development of the American Merchant Marine in the year that has passed has been substantial and significant. To those whose skills and experience have contributed toward the advancement of American world trade and commerce upon the high seas, the Nation is indeed grateful. May I add my best wishes for a Happy and Joyous Christmas and a Bright and Prosperous New Year.

Charles F. Munn
Maritime Administrator

I am happy to preface this holiday season with my best wishes to every member of the American Merchant Marine, and to gratefully acknowledge the many helpful ideas and suggestions that have been received from readers of the PROCEEDINGS. My best wishes for a Joyous and Peaceful Christmas and continued smooth sailing for the New Year.

A. C. Richmond

Vice Admiral, U. S. Coast Guard
Commandant

SIGNIFICANT MARINE CASUALTIES OF THE PAST YEAR

By Commander R. F. Barber, USCG

THE fiscal year ending June 30, 1956, was highly favorable from the standpoint of marine safety in that there were only eight major casualties requiring Coast Guard Marine Boards of Investigation. In the preceding year there were 18 such major casualties. In addition to this encouraging trend in the number of major casualties, and more important, there was a considerable reduction in loss of life. Fifty-three lives were lost as a result of major marine casualties in fiscal 1956 as against 113 in 1955. However, of the 53 lives lost in the past year, 35 were lost in only 2 of the casualties. Excluding these 2 worst cases, the average number of persons who died in the remaining 6 cases was only 3, a truly remarkable record which fully reflects the efforts of responsible officials in the marine industry to make American vessels safe.

The eight major casualties which did occur in the past year consisted of the foundering of a passenger-carrying sailing schooner, an explosion and fire which completely destroyed a tank vessel, the foundering of a C-3 freighter which had broken in two, a nonfatal explosion and fire in a tank vessel, a nonfatal but serious collision between 2 freighters on the Great Lakes, a collision between 2 freighters off the Pacific coast, the foundering of an American fishing vessel off Mexico, and the foundering of a dredge under tow in the Great Lakes.

"LEVIN J. MARVEL" DISASTER

Marine casualties in which passengers are killed are always the most tragic, due, no doubt, to the presumed helplessness of the passengers to help themselves in the moment of peril. Such was the case when the ancient wooden sailing schooner *Levin J. Marvel* came to her dramatic end on the afternoon of August 12, 1955. This 125-foot craft had served in many different trades in the years since she came off the ways in 1891, and in recent years had served as an excursion vessel, carrying tourist-type passengers on leisurely 1-week cruises about Chesapeake Bay, basing at Annapolis, Md. (See Figure 1.) She was fitted out as a three-masted baldheaded schooner with no means of propulsion other than sails, although a 20-foot motor yawl, taken along on all cruises to furnish launch service, was sometimes used to push or tow the *Marvel* when winds were light or contrary.

On her fateful last voyage, the



Photo Courtesy of Carl Sidell

Figure 1. Last known picture of the wooden sailing schooner *Levin J. Marvel*.

Marvel had on board a total of 23 passengers, the unlicensed master, and 3 crew members of uncertain qualifications. Hurricane "Connie" was approaching the mid-Atlantic States and the weather was a matter of no small concern to all yachtsmen and seafarers in the Chesapeake area.

As the hurricane threat diminished on August 11, the official Weather Bureau hurricane alert was canceled about noon. However, Northeast storm warnings were still being issued for the area. At 2 p. m., in spite of the warnings of severe weather ahead, the schooner left the sheltered waters of Cambridge, Md., on a final leg of her return to Annapolis to terminate the week's cruise. During the night passage up Chesapeake Bay, weather conditions worsened considerably, with winds up to 45 miles per hour. By 7 a. m. the weather was so severe that the *Marvel* was forced to run for the nearest shelter. She came to anchor off Fairhaven, Md., about 9:30 a. m. off a lee shore with the storm increasing.

As the fateful morning wore on, considerable quantities of water entered the old wooden hulk being buffeted by heavy seas. The anchor held, but leakage through ancient bottom seams and flooding through defective airports could not be controlled. A radiotelephone on board was defective and the plight of the 27 souls facing the perils of the tempest remained unknown to the outside world. There were no lifeboats or rafts on the vessel. By 2 p. m., with the bow almost awash, the master gathered the passengers aft and prepared to abandon ship. There was no panic as the 27 strapped on life preservers and eyed the distant shore, where the crashing surf could be seen intermittently through the gale. About 2:30 the *Marvel* suddenly rolled heavily and lay on her beam ends. The ship's company was now at the door of eternity, tossed shoreward by heavy seas with the slender thread of life held only by 27 pieces of cork and canvas. It was certain that not all would reach the shore alive.

When the grim business was done several hours later, the bodies of 14 passengers lay dead in the waters of Fairhaven Bay. Seven men, 5 women, and 2 children, thrown by fate into a personal struggle with an angry sea, had failed to meet the supreme challenge. Amidst tragedy, there was also heroism. Two bystanders on shore, William McWilliams of North Beach, Md., and George Kellam, of Arlington, Va., manned an open 14-foot outboard motorboat and set out through the storm-blown surf. With exceptional bravery and at great personal risk, these 2 men made 2 trips and safely hauled in 6 survivors, most of whom would otherwise undoubtedly have perished.

In approving the bill which was signed into law on May 10, 1956, as Public Law 519, 84th Congress, and familiarly termed the Ray bill after Congressman John H. Ray of New York State, the House Committee on Merchant Marine and Fisheries emphasized that the new law, in addition to requiring Coast Guard inspection of most small vessels carrying more than 6 passengers, would also require such inspection of sailing vessels carrying more than 6 passengers. It is to be expected that the tragedy of the *Marvel*, which at the time of her sinking was not subject by law to any Government inspection requirements, will never be repeated.

"SALEM MARITIME" FIRE

The second great marine tragedy of the past year was enacted at the *Cities*

Service refinery docks near Lake Charles, La., on January 17, last winter. The war-built T-2 tanker *Salem Maritime*, lying peacefully at the terminal loading a mixed cargo of No. 2 heating oil, kerosene, and gasoline, was transformed suddenly into a raging inferno, a molten steel pyre for 18 members of her crew and 3 terminal employees. Before this holocaust was finished, the ship lay in ruins, a sunken hulk of a ship, 3 nearby tank barges were badly damaged, damage to the adjacent docks and shore property was estimated between \$1 million and \$2 million, and 21 men were dead or dying. (See Figure 2.)

Reconstruction of the exact circumstances of loading leading to the explosion, in order to deduce the cause of ignition, was extremely difficult since every member of the crew who had in any way been involved in the loading operation was killed. However, the available evidence indicated that gasoline from No. 9 tanks was leaking through a defective bulkhead into No. 8 tank. When the loading of kerosene under pump pressure into No. 8 tanks was begun, it is certain that the turbulence and agitation thus caused generated considerable gasoline vapor in this tank. The limited available evidence indicated that there was a timely discovery of the gasoline leaks in No. 9 tanks and that the master decided *not* to load any kerosene in No. 8 port and starboard wing tanks. It is not clear whether this decision included No. 8 center tank. The time was 10:20 p. m.; 10,000 barrels of

kerosene remained to be loaded. While it was being pumped in at a line pressure of not over 100 p. s. i. in the completing stages of No. 7 across or the first stages of No. 8 center, a terrific explosion took place. Flames spewed over the entire after end of the tanker and soon enveloped the vessel from end to end.

Flaming oil flowed over the water, transmitting fire to the three tank barges moored about 500 feet downstream and to the dock and cargo transfer equipment. Firefighting equipment of the *Cities Service* terminal was brought into action immediately, but it was over 40 hours before all fire was extinguished. Of the crew of 43 men, 18 were ashore when the fire began. Of the 25 men aboard when the explosion occurred, only 8 escaped alive from the vessel, the other 17 perishing in the flames. One man who made it safely ashore later died of severe burns. Three shoreside employees of the terminal received fatal burns. The deliverance of three men who were trapped by flames in the tanker's engineroom was next to miraculous. Driven in desperation to the lower engineroom to escape the terrible heat, they discovered fresh air somehow flowing in through a ventilator and were able to breathe and exist here for 4 hours, although adjacent shell plates above the water line were glowing red.

The most logical conclusion as to the source of ignition of this costly fire was static discharge on or near the surface of the kerosene, caused by splashing and turbulence and the



Figure 2. Remains of the *Salem Maritime* after her catastrophic explosion and fire.

presence of small amounts of water left over from Butterworth, with gasoline vapor probably supplying most of the original explosive charge.

"ESSO PATERSON" EXPLOSION

Another explosion on a T-2 tanker did extensive damage to the ship but, fortunately, took no lives. The *Esso Paterson*, built in 1942, was rent by a terrific blast on the evening of March 29, 1956, as she was being loaded at the *Humble Refining Co.* docks, Baytown, Tex. The explosion originated in No. 8 port wing or No. 8 center tank, ripping out the weather deck and side plating, and structural parts. (See Figure 3.) The bulkhead between No. 8 port and center tanks was found 100 feet from the ship. Excellent fire-fighting by the ship and the terminal confined fire damage to the immediate area. Studies of this casualty are not yet complete. However, it is apparent that the explosion occurred in a tank into which kerosene had begun to flow under pump pressure, which had contained gasoline on the last voyage, and which had not been gas freed although filled with salt-water ballast, prior to loading at Baytown.

The Coast Guard and the entire petroleum transportation industry have become increasingly concerned with the inherent hazards involved in handling kerosene and similar products, such as JP4 jet fuel, as evidenced by the two disastrous explosions on tank vessels this year and other similar explosions in recent years. The preliminary report of an oil industry committee now studying, at the request of the Coast Guard, the special hazards of loading and discharging kerosene and jet fuel indicates that additional precautions may be required. Although the study has not been completed, it would appear that a very real problem of static electricity discharge may exist on or near the surface of kerosene under certain conditions of turbulence and the presence of water. To avoid the possibility of the static discharge triggering an explosion, the committee suggested that any tank which previously contained a low flashpoint product should be gas freed or inerted before loading kerosene. In addition, contamination of kerosene with gasoline or other low-flash product should be avoided since contamination will probably result in greater explosive vapor generation during loading. More complete information on the avoidance of kerosene and jet fuel explosions and fires is to be expected during the coming year.

"WASHINGTON MAIL" FOUNDERING

A dramatic casualty involving the total loss of an 8,000-ton freighter in the Gulf of Alaska occurred on March 3 this past winter. Happily there were no lives lost and no serious injuries. The *SS Washington Mail*, a C-3 freight ship, built in 1945 at Pascagoula, Miss., was en route to the Orient from Seattle with a full load of general cargo including a deck load of lumber. At 1:15 p. m. on the 3d of March, with the vessel turning up approximately 13 knots into a moderately rough head sea (see figure 4), a loud deep rumbling sound from the vicinity of No. 3 lower hold was heard accompanied by a distinct sagging amidships. Moments later, a fracture appeared completely across the weather deck directly along the after section of No. 3 hatch, and the vessel broke in two.

The bow section, with no persons on board, soon capsized and sank. (See Figure 5.) The after section, with 51 crew members and 9 passengers on board, remained afloat for 8 hours, largely due to the commendable and energetic efforts of the officers and crew in controlling the damage and flooding. Every person on board safely abandoned the after half in the *Washington Mail's* lifeboats and were taken on board the *USNS General Freeman* about 1 hour

before the derelict half sank. An emergency full-speed, 65-mile run by the *Freeman* after she picked up the initial distress call of the *Washington Mail* was a large factor in this magnificent rescue at sea.

This was the first structural failure with serious consequences of a C-3-S-A2-type vessel in almost 13 years' operation of this class. As a result of a study by the Coast Guard and the American Bureau of Shipping based largely on the probable fractures which occurred on the *Washington Mail*, action has recently been taken to reinforce the upper part of the hull girder on all all-welded ships of the C-3 class by conversion to rounded hatch corners on hatches Nos. 2, 3, and 4 and by the installation of crack arrestors or riveted straps on the weather deck and the sheer strake abreast these three hatches.

LOSS OF A FISHING TRAWLER

During May there occurred a casualty off the western coast of Mexico of a type which has plagued the west coast for many years—the total loss of a fishing vessel. However, the stranding and breaking up of the 166-ton American wooden seiner *Western Explorer* on May 14, 1956, on the shores of Socorro Island was unlike the normal pattern of fishing vessel accidents since five men



Figure 3. Inboard view of the *SS Esso Paterson* showing extent of explosive force which catapulted bulkhead between No. 8 port and No. 8 center tanks almost 100 feet from the ship.

were drowned. There was no mysterious element involved. The vessel simply went ashore on a rocky coastline at 3 in the morning when the wind shifted and her anchor dragged undetected by the deck watch. Before aid from other fishing vessels in the vicinity could be rendered at daylight, the strand was a total wreck and five of her crew had perished in the surf. Had it not been for the foresightedness of the master in issuing life preservers to all hands immediately after the grounding, the loss of life would probably have been much greater.

TWO SERIOUS COLLISIONS

During fiscal 1956 there were two major collision cases with heavy property loss in each. In the first collision which happened at 2:18 a. m., May 14, 1956, on a clear dark night off Point Sur, Calif., the bow of the SS *Marine Leopard*, a 10,800-ton C-4 freighter, struck the starboard side of the small 39-year-old lumber freighter SS *Howard Olson* (see figure 6) with such force that, within minutes, the bow section of the *Olson* broke off and the stern section capsized and sank. In spite of heroic and strenuous efforts by the crew of the *Leopard* using two lifeboats to rescue survivors, and by the crew of the nearby steamer SS *John B. Waterman*, four men from the *Howard Olson* died in the water or after being picked up. The causes of this collision were as old as the history of collisions; uncertainty by the navigators of two vessels approaching each other on reciprocal courses at night as to the intentions of the other, reluctance to make a major course change well before a dangerous situation is generated, and, at the last moment, a decision by one to turn hard left instead of hard right. The failure of one vessel to blow whistle signals upon altering course to avoid collision as required by the International Rules of the Road was also a large contributing factor.

The second severe collision case was, happily, not attended by loss of life, but it did result in one of the most heavily traveled waterways in the United States being blocked or partially blocked for 19 days by one vessel which sank within minutes of the accident. Upbound in the St. Clair River, Mich., about 40 miles above Detroit, on April 19, 1956, the Great Lakes bulk freighter *E. M. Ford* was suddenly confronted with a jammed steering engine with 5° left rudder and the downbound heavily laden bulk freighter *A. M. Byers* closing at a relative speed of 20 miles per hour about 1,000 feet away on the port

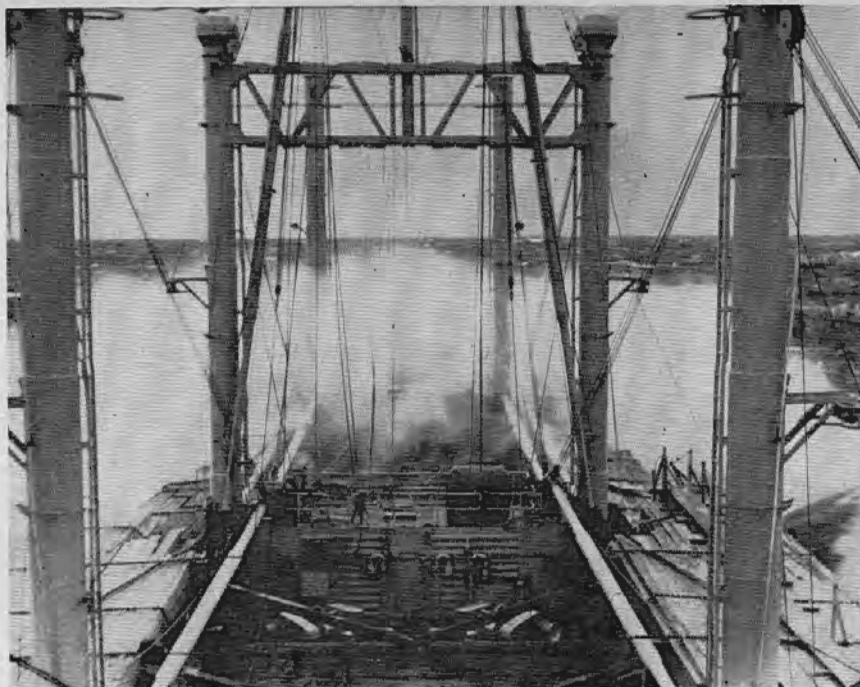


Photo Courtesy Time, Inc. (c) Life

Figure 4. Dramatic picture snapped just seconds before the SS *Washington Mail* broke in two.

bow! In spite of the competent and intelligent actions of the masters of both vessels during the next minute and a half, collision was inevitable, the bow of the *Ford* plowing head-on into the port bow of the *Byers*. Sinking within 13 minutes, her collision bulkhead pierced, the *Byers* rested on the bottom of the river, partially blocking the tremendously important movement of Great Lakes freight until she was raised on the 8th of May. The jamming of the steering engine on the *Ford* was finally traced to two bolts connecting vital parts of the reciprocating steam steering engine—the bolts had backed out of a rapidly moving eccentric arm, undetected. An \$800,000 loss in vessel repairs alone traceable to two bolts worth less than \$1.

FOUNDERING OF A DREDGE

A marine casualty of calamitous proportions occurred on Lake Michigan on May 23d of this year when a 110-foot dredge capsized during a storm, drowning nine men of her crew. The uninspected barge-type *Dredge No. 906* was under tow by the similarly uninspected 80-foot diesel towboat *E. James Fucik*. Foul weather had developed on the lake and the tug and tow were making for the safety of Milwaukee Harbor. Sea water entering the nonwatertight hull of the dredge pounding into heavy seas steadily decreased her buoyancy

and stability to the point that, when a guy wire on her immense dredging boom parted and the boom and bucket swung heavily to one side, the dredge capsized and sank, casting her crew of 19 into the turbulent waters of Lake Michigan. There being no lifeboat or liferaft provided on the dredge, these men had only life preservers with which to struggle for life in the heavy seas. Only 10 of the 19 aboard survived. A particularly tragic element of this case was the lack of any positive means for the 19 desperate men on the dredge to communicate with the tug or the outside world and make their perilous plight known.

All in all, fiscal year 1956 was a bad year for dredges being transferred on seagoing voyages. On the 31st of August 1955, the 500-ton, barge-type dredge *Fairlee* sank at sea while being towed from West Palm Beach to Venezuela by a modern seagoing diesel tug. Eighteen days later, the 344-ton barge-type dredge *B-29* started to sink at sea while being towed from New Orleans to Venezuela by the same diesel tug. On this occasion the tug was able to tow the *B-29* to the entrance of Tampa Bay before it capsized and sank in shallow water, where it was refloated a month later. On the 2d of March 1956 the 1,500-ton dipper dredge *Hellgate* sank at sea in the Pacific while being towed from Honolulu en route to the Panama Canal and thence to New Orleans. Fortu-



Figure 5. Forward section of SS Washington Mail seen in background just before sinking. Picture taken from after section still afloat.

nately there were no lives lost in any of these three sinkings, although the financial loss was estimated at close to \$2 million. A principal factor in these sinkings was the unsuitability of the dredges, designed for use in protected waters, to undergo the hazards and stresses of a sea voyage even though certain alterations and additions were made in each case to attempt to make them seaworthy for such a voyage. Early this year the Coast Guard instituted new measures to inspect and certificate such dredges and barges to insure, insofar as possible, that they are suitable to navigate open waters with safety.

TWO CLASSES OF VESSELS MOST UNSAFE

Based upon casualty reports received by the Coast Guard throughout the year, the two categories of vessels which furnish the most trouble and sorrow are small uninspected motor towboats or workboats, and outboard motorboats. A high acci-

dent rate in outboard motorboats is easily understood in view of the millions of operators and the carelessness or ignorance of some which is bound to exist. But the alarming casualty rate in small motor towboats

or workboats is more difficult to understand. Of the thousands of such small vessels in operation on our inland and coastal waterways, not requiring any inspection under present Federal law, a large percentage can be described as floating menaces, with safety almost a last consideration. These vessels are definitely not the type operated by reputable experienced towing companies. Too often they are operated by small firms which have little or no interest in towing as a profession and want only to get a job done as quickly and cheaply as possible. Used for specialized purposes such as short-range harbor or inland towing, tending marine dredging, construction, and salvage equipment, moving working parties and their gear, carrying supplies to drilling rigs or other marine sites, and running geological surveys, many of these nondescript motor vessels display an appalling disregard of the fundamentals of marine safety. Unseaworthy and unstable hulls, insufficient power for the tow jobs undertaken, minimum freeboard, a complete lack of bulkheads or watertight closures, dangerous fire hazards, no lifeboats or liferafts, radio inoperative, unqualified or poorly qualified crews, lack of fire-fighting equipment or know-how—it is these conditions that are so frequently reflected in multiple drownings and deaths from fires, explosions, collisions, capsizings, and foundering in this class of vessels. It is to be hoped that the operators of small uninspected motor tugs and workboats of this unsavory character will eventually realize, as a result of aroused public opinion, expensive lawsuits, operating interruptions, and the anger of the bereaved, that the safe way is, in the long run, the best and least expensive way.

The problem of motorboat safety is still growing by leaps and bounds as



Figure 6. The 39-year-old SS Howard Olson taken in a happier day.

each year thousands more take to the water. At the present time, the Bonner Committee, that is, the House of Representatives Committee on Merchant Marine and Fisheries, is holding hearings before yachting and boating groups throughout the country as part of a congressional study of the national situation on motorboat safety to determine the need for additional legislation to obtain increased safety in this field.

As indicated for several years, casualty records show a steady increase in outboard motorboat accidents and resulting deaths. Although the accident increase in 1956 is probably roughly proportional to the increase in unit sales in this booming industry, analysis of individual outboard motorboat casualties indicates that most of them were caused by ignorance, foolish or careless operation, or reckless disregard of the simplest rules of seamanship and common sense (they just never should have happened) and therefore the casualty rate is far too high every year for the degree of hazard normally involved. An outstanding example of the extreme foolishness of some outboard motorboat operators occurred in Hawaii this past August. A 14-foot 8-inch outboard skiff set out across Kaneohe Bay with 16 persons on board and no life preservers. When the inevitable swamping occurred, 1 man and 3 young boys were drowned.

Outboard motorboat accidents involving loss of life which were reported to and investigated by the Coast Guard for the past 5 years are as follows:

Fiscal year:	Accidents	Deaths
1952-----	24	36
1953-----	69	109
1954-----	77	139
1955-----	97	151
1956-----	129	190

Although the number of such casualties reported to the Coast Guard is known to be only a fraction of the total number of casualties occurring throughout the country, it is likely that the proportion of accidents reported remains about the same each year. Thus an increase of 39 percent in outboard motorboat deaths in 1956 over 1955 is a matter of grave concern on a nationwide basis.

LONGSHOREMEN AND HARBORWORKERS

A factor of marine safety which has held the serious attention of marine-minded persons for many years is the unfortunate accident rate amongst longshoremen and shoreside employees working on board ship. Longshoring is currently among the three most hazardous occupations in this country. This problem has become of increas-

ing concern to vessel operators, longshoring contractors, underwriters, the Coast Guard, and everyone else concerned with safety aboard ship. During the past year a special study of longshore safety has been undertaken by the National Research Council at the behest of Government and industry. It is apparent that the solution of how to improve the poor safety record is highly complicated, and a downward trend in accident rates may be expected only after intensive efforts by all concerned. Greater safety-consciousness by the workers themselves is one of the foremost needs.

Coast Guard casualty records show a total of 88 deaths of longshoremen and harborworkers during calendar 1955 as opposed to a total of 74 in the previous year. Of this increase of 14 deaths in 1955, the individual categories of accidents which showed the greatest change were: (a) deaths due to falls into cargo spaces from the main deck or 'tween decks which rose from 6 in 1954 to 10 in 1955; and (b) deaths due to being struck by falling or swinging cargo pieces or drafts which rose from 1 to 11. In 1955 as in 1954, falls were the greatest cause of death. It is interesting to note that falls overboard (usually resulting in drowning) were the largest single cause of death, as they were in 1954, there being 14 deaths in this category in each year. A copy of the tabulation of these deaths by causes is

included as an appendix to this paper.

In summation, it is believed that the larger total of longshoremen and harborworkers deaths in Coast Guard records for 1955 does not represent an unfavorable trend in the accident rate. The increase is due, rather, to a higher total employment, particularly on foreign vessels in United States ports, on which the safe condition of ship's equipment is frequently a matter of conjecture, and to better accident-reporting procedures developed by the Coast Guard which result in fewer fatal accidents remaining unreported.

During fiscal year 1956, 1,764 non-major marine casualties were investigated by the Coast Guard as opposed to 1,529 in 1955, an increase of 15 percent. This increase occurred principally in the categories of small motor towboats and motorboats. During the same period, 764 persons lost their lives on board vessels as opposed to 730 in the previous year, an increase of 5 percent. Of the 1956 total, 331 (327 in 1954) persons died as a direct result of marine casualties, 234 (also 234 in 1955) persons died from personal accidents as a result of marine hazards, and the remaining 199 (169 in 1955) died from natural causes, including suicides and unknown causes. During this period, one passenger lost his life due to a marine casualty on an inspected passenger vessel. This was a small party-fishing motor vessel which was struck by a freighter.

LONGSHOREMEN AND HARBORWORKERS DEATHS

Calendar Year 1955

Legend: P—Accident caused by error or failure of personnel.
M—Accident caused by a material failure of gear, vessel, or vessel ap-
purtenance.
N—Death due to natural cause, including heart failure, pneumonia, cancer,
etc.

Falls:	P	M	N
(1) Into cargo spaces from hatch covers-----	2	—	—
(2) Into cargo spaces from deck or 'tween deck-----	10	—	—
(3) Into cargo spaces from ladder-----	1	—	—
(4) Overboard—drowning-----	14	1	—
(5) Overboard or off ship onto object—died of injuries-----	5	—	—
(6) From height above main deck-----	1	—	—
Struck by objects:			
(7) By falling objects (other than cargo or rigging)-----	4	1	—
(8) By falling or swinging pieces or drafts-----	11	—	—
(9) By falling rigging, blocks, hooks, booms, etc-----	3	2	—
(10) Crushed or struck by lines—mooring and rigging-----	1	—	—
Vessel accidents:			
(11) Burns from steam, fire, explosion-----	1	—	—
(12) Injured by cargo handling or other machinery-----	5	2	—
(13) Accidents involving ship's gear—lifeboats, davits, fire extinguishers, etc-----	—	1	—
(14) Suffocation or asphyxiation in tanks, holds-----	4	1	—
(15) Killed by explosions-----	2	—	—
(16) Accidental electrocution-----	1	—	—
Miscellaneous:			
(17) Miscellaneous cargo handling accidents-----	1	—	—
(18) Miscellaneous injuries, infections, medical compli- cations-----	1	—	—
(19) Natural causes, overexertion, heart failure, etc-----	1	—	21
Totals-----	68	8	12
Total deaths-----	88	—	—



nautical queries

Q. (a) Why do chain falls hold a load in position usually without necessity of securing the hauling part? Why do turnbuckles hold a weight without securing against turning or walking back?

(b) What effect does vibration or motion have upon such devices as chain falls or turnbuckles?

A. (a) Devices such as chain falls and turnbuckles in which the efficiency is under 50 percent will hold up their load without walking back.

(b) Vibration and motion may cause chain falls and turnbuckles to walk back under load.

Q. What is meant by the "pivoting point" of a vessel? Where will it usually be found in a vessel? Knowing the location of the "pivoting point," state why experienced shiphandlers will observe the stern while turning in constricted waters.

A. The "pivoting point" is the point about which the vessel turns when the rudder is applied. The "pivoting point" is usually located in the forward one-third of the vessel's length. As the vessel turns about the "pivoting point," the stern will swing outside of the circle described by the pivot point and thus form the extreme radius of the vessel's swing. The turning of the vessel is usually more perceptible astern than looking forward due to the relative distance from the bridge and "pivoting point."

Q. What special manifest must be aboard vessels transporting explosives or other dangerous articles or substances? How must the stowage of dangerous cargoes be indicated when necessary for officials concerned with maintaining safety of port areas?

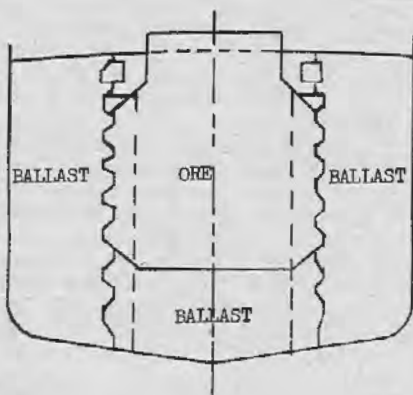
A. A "Dangerous Cargo Manifest" or "Dangerous Cargo List" must be aboard when transporting explosives or dangerous substances. In addition, a "Dangerous Cargo Stowage Plan" or "Dangerous Cargo Stowage List" should be available to indicate stowage to officials concerned.

Q. How many board-feet of dunnage do you estimate would be in a draft 4 feet high, 2 feet wide, and 10 feet long?

A. 960 board-feet. Answer is approximate, based on the assumption that the quantity of cubic feet multiplied by 12 equals the number of board-feet.

Q. Explain how the tonnage capacity of a given refrigeration compressor is affected by a decrease in the suction pressure.

A. The tonnage capacity of a given compressor decreases rapidly as the suction pressure decreases. Expanding the gas to the lower pressure greatly increases its volume and lowers its weight per cubic foot, hence there will be a reduction in the weight of refrigerant circulating through the system for the same speed of the compressor.



Q. Illustrated is a typical transverse section of a vessel built to carry ore. Assuming: (1) The weight of ore and ballast is the same, (2) The vertical center of gravity of ore and ballast is at the same height, . . . would the rolling period of the vessel be longer carrying ore or ballast? Why?

(See answer on page 196)

Q. Why is it difficult to accurately determine the oil level in the crankcase of a Freon-12 compressor? When should the oil level be checked?

A. It is difficult to accurately determine the oil level in the crankcase of a Freon-12 compressor because the lubricating oil will absorb appreciable quantities of Freon-12, and the percentage of Freon-12 in solution cannot be determined by observation. The ideal time for checking the oil level is after a prolonged period of operation and the level observed as soon as the compressor stops.

Q. Explain whether or not it is good practice to operate two compressors in parallel on a common Freon-12 cooling circuit.

A. Parallel compressor operation on a common cooling coil circuit should never be permitted unless an emergency exists. Parallel operation could permit transfer of lubricating oil from one compressor to the other with the possibility of serious damage to all compressors involved through lack of lubrication or excess oil pumping.

Q. Explain the relative importance of the specific heat and the latent heat of the refrigerant, in the absorption of heat at the refrigerated areas, for both the direct and indirect expansion system.

A. In the direct expansion system the latent heat of the refrigerant is the main factor in the absorption of heat from the refrigerated area. This occurs as the liquid boils to a gas in the evaporator. The comparatively slight amount of heat transferred to the gas before it leaves the evaporator, and causing superheat, is a function of the specific heat of the gas.

In the indirect system the specific heat of the secondary refrigerant is the relatively important factor, in the absorption of heat at the refrigerated areas while the latent heat of the primary refrigerant is utilized in the removal of heat from the secondary refrigerant.

Q. What precautions should be taken after adding a large charge of Freon-12 to the refrigeration system?

A. The compressor should be stopped and the oil level in the crankcase checked frequently after restarting the system because Freon-12 will absorb appreciable quantities of lubricating oil and carry it through the system. Oil should be added as necessary to keep the level half in the glass.

Q. What is the advantage in subcooling the liquid refrigerant before passing it through the expansion valve?

A. Subcooling is advantageous, in that less of the liquid refrigerant need flash into vapor at the expansion valve to reduce the temperature of the liquid, thus leaving more liquid refrigerant to be boiled in the coils and increasing the refrigerating effect of each pound of refrigerant in circulation.

MARINE SECTION, NATIONAL SAFETY COUNCIL

HIGHLIGHTED by enthusiastic attendance and spirited discussion, marine and Government officials from all parts of the country attended the Marine Section of the National Safety Council's 44th Annual Safety Congress and Exposition in Chicago, Ill., October 22-26.

After welcoming and opening remarks by John D. Rogers, executive vice president, Esso SHIPPING Co., who acted as general chairman, the meeting commenced with the ship operator's session. This was followed by the annual business meeting, the Coast Guard session, a second ship operator's session, and concluded with a joint luncheon with the Propeller Club of Chicago.

Vice Adm. A. C. Richmond, Commandant of the Coast Guard, with Rear Adm. F. A. Leamy, Commander, Ninth Coast Guard District, and Rear Adm. H. T. Jewell, Chief, Office of Merchant Marine Safety, headed a large group of Coast Guard officers and safety engineers who took part in the activities of the Marine Section. Vice Adm. John M. Will, USN, Commander, Military Sea Transportation Service, and a number of his safety representatives also took part in the proceedings.

In the opening session, talks were presented by John L. Horton, assistant manager, marine department, CLEVELAND-CLIFFS IRON Co., on "Accident Prevention on Great Lakes Vessels"; HARRY E. AVERY, safety engineer, MATSON NAVIGATION Co., "Accident Prevention for Passengers and Crew on Board Passenger Vessels," in which he showed how safety precautions aboard his company's vessels have cut costly and time consuming accidents. F. A. Mechling, executive vice president, A. L. MECHLING BARGE LINES, presented a talk on "Accident Prevention on River Dry Cargo Barges and Towboats." "Accident Prevention on Government-Owned Merchant Vessels," by Capt. Martin I. Goodman, United States Maritime Administration, concluded the initial session.

At the business session Mr. Rogers relinquished the gavel to Jones F. Devlin, general manager, UNITED STATES LINES, newly elected general chairman of the Marine Section. In the next ship operator session, talks were presented by Capt. R. E. Mackey, assistant manager, operations division, marine department, THE TEXAS Co., on "Protecting Tanker Crews From Accidents"; Earle Smith, manager, safety department, WATERMAN STEAMSHIP Co., "Protecting Crews

From Accidents on Cargo Ships"; and J. E. Stoveken, general manager, inland waterways department, Esso STANDARD OIL Co., "Accident Prevention on River Tank Barges and Towboats."

COAST GUARD BREAKFAST

After a brief welcome by Vice Admiral Richmond, the Coast Guard breakfast proceeded under the direction of Rear Admiral Jewell, who made general comments on the progress of marine safety in the past year and introduced the other speakers from Coast Guard Headquarters. Comdr. L. E. Penso, Merchant Marine Technical Division, spoke on "Maintenance of Lifesaving Equipment"; Comdr. R. F. Barber, Casualty Review Section, Merchant Vessel Inspection Division, "Significant Marine Casualties of the Past Year"; and Lt. B. F. Rush, editor, *Proceedings of the Merchant Marine Council*, "Narcotics—A Progress Report."

Thomas E. Stakem, Jr., newly appointed member of the Federal Maritime Board, was the guest speaker at the joint luncheon with the Propeller Club. The luncheon was presided over by Maxwell E. Oie, president, Propeller Club, Port of Chicago, and included a message on safety cooperation in the marine industry by Leigh R. Sanford, president, Shipbuilders Council of America.

At the completion of the sessions it was agreed that the attendance and discussions were the best in recent years. The papers presented were considered timely, thought provoking, and well presented.

CONVENTIONS

The Government of the United Kingdom has advised this Country that acting as the depository nation, it received acceptance of the International Convention for Safety at Sea, 1948, from the People's Republic of Bulgaria on August 17, 1956, and that, in accordance with provisions of the Convention, the Bulgarian acceptance became effective November 17, 1956.

The Government of the United Kingdom has advised this Country that acting as the depository nation, it has received notification of acceptance by the Government of the Argentine Republic for the Safety of Life at Sea, 1948. The Argentine acceptance became effective October 31, 1956.



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 EVENSEN.

On August 16, 1943, his ship, the SS *Benjamin Conlee*, while en route from Bone, Algeria, to Oran with 1,800 prisoners-of-war was struck by an aerial torpedo.

On July 15, 1944, the President of the United States conferred the Merchant Marine Distinguished Service Medal on CAPTAIN EVENSEN, in accordance with the following citation:

For distinguished service in the line of duty.

His ship, the SS *Benjamin Conlee*, while carrying 1,800 prisoners-of-war, was struck at night by an aerial torpedo from an enemy dive bomber which glided in with stilled engines.

The torpedo struck the forward holds in which 900 prisoners were confined, blew off the hatches, and killed and injured more than 300. The ship immediately began to settle by the head as the sea rushed in the gaping hole. The surviving prisoners swarmed out of the holds, overpowered the guards, and commandeered the lifeboats. Exercising forceful command, Captain Evensen herded the panic-stricken prisoners to the afterdecks. Then, releasing the remaining 900 from the after holds, he flooded those holds to bring his ship on an even keel. Supported by the fine discipline of a loyal crew, he was able to bring his ship into a safe port and to deliver the prisoners into military hands.

Captain Evensen's complete mastery of a critical situation prevented a tragedy of huge human and material proportions. His courage, seamanship, and disciplinary control in a time of grave danger were in keeping with the finest traditions of the United States Merchant Marine.



MERCHANT MARINE ACADEMY

Adoption of an appointment system for the selection of midshipmen cadets for the United States Merchant Marine Academy was announced recently by Clarence C. Morse, Maritime Administrator, United States Department of Commerce.

Under the new selection system by which the class convening August 19, 1957, will be chosen, each United States Senator and Representative may nominate not more than 10 candidates to participate in the college entrance board tests to be held throughout the United States and Territories, Saturday, March 16, 1957.

To be eligible for participation in the tests the candidate must be a male United States citizen between the ages of 17 and 22. He must possess a high-school education and be of good moral character and meet the physical requirements required.

The Academy is an accredited institution offering a 4-year course at the college level, leading to an examination for a third mate's or third assistant engineer's license issued by the United States Coast Guard. Graduates will receive a bachelor of science degree and may be commissioned in the United States Naval Reserve.

Further information may be obtained by writing the Superintendent, U. S. Merchant Marine Academy, Kings Point, Long Island, New York.

HIGH-VELOCITY TIPS

An inexpensive method to prevent high-velocity tips on combination solid stream and water spray fire hose nozzles becoming plugged or frozen has been submitted by a reader of the PROCEEDINGS.

It is suggested that the tip be enclosed in a small canvas bag which can be made up on the ship. So placed, the bag will protect the nozzle from weather and would help eliminate the possibility of the tip plugging.

Notwithstanding the value of a bag as described, it must be emphasized that all such equipment aboard a ship should be tested periodically and the tips lubricated to prevent "freezing." These nozzles are subjected to extensive tests prior to approval to check for performance, ruggedness, resistance to corrosion, and operation of the self-cleaning strainer, but the guarantee of good operation in service remains the responsibility of the ship.



Photo Courtesy United States Lines

RESCUE CITED: Captain Fred Fender of the SS America is shown above receiving the United States Lines distinguished service medal from R. M. Hicks, executive vice president of the company, for a heroic midocean night transfer of an injured seaman from the Finnish motorship *Kirsti H* to the sanctuary of the America. Captain Fender and 11 members of his crew received the award at a shipboard ceremony in New York.

PROPER SUPERVISION

Shipboard accident reports concluding with the old bromide "lack of proper supervision" has been listed by the United States P. and I. Agency as "being the handiest way to pass the buck to somebody else without the necessity of solving the problem."

Department heads cannot assume anything where safe practices are concerned. True, some men may resent being checked out on fundamental safety, but a ship must be 100 percent cooperative to be 100 percent safe. A steward who instructs a new cook to be careful in cutting meat, handling pots of hot soup, not to use the cleaver to open cans, and related functions is performing his primary job of supervision.

Furthermore, a supervisor cannot shirk his responsibility by assuming that the other fellow knows enough to make supervision unnecessary. Many of us have heard the old mess-room wisecrack, "This hamburger tastes funny." "That's not the hamburger; that's the cook's finger!" Had the supervisor ever warned the cook against keeping his hands out of the meat grinder? Had he made sure the proper tamp was provided and used? You have to check up and follow through. All the time.

PAYMENT TO BENEFICIARY

Although in legal language every person (apprentices excepted) who shall be employed or engaged to serve in any capacity on board a merchant vessel shall be deemed and taken to be a "seaman," there are times the most "unseamanlike" crew members must take it upon themselves to use their heads to avoid disaster.

Occasions when steward personnel are concerned with routine deck functions may be few and far between, but there are times that all hands, in the interest of their own well-being, must give a second look to gangways, ladders, and obstructions.

In the case in point, an upright wooden, runged ladder, like a carpenter's or painter's ladder, was used to board a vessel. It was lashed at the upper rung to the ship's rail with a small line made of hemp. The lower end rested on the dock. The vessel, however, swung away from the dock, and the ladder fell against the side of the ship, supported only by the light lashing.

Several seamen returned to the ship at this time, and one, a member of the stewards department, started to climb aboard. The lashing broke, and the ladder with the seaman upon it fell between the side of the ship and the dock. The seaman was killed.

The district court found the vessel unseaworthy, and that those in charge of her were negligent. The seaman was found not negligent. The decedents received a settlement as a result which was upheld in the United States Court of Appeals.

There is no question the use of this makeshift rig for boarding was poor seamanship, but points up a prime example to "look before you leap." No matter the hour or the circumstances, any "seaman" should assure himself (or herself) that the gangway is safely rigged. Payment to beneficiary is poor solace.

HIGHLIGHTS ON THE RULES

Bend Signal. In the case of *Standard Oil Co. v. Calmar Steamship Corp.*, et al, 1955 A. M. C. 845, District Judge Boldt commented:

When a vessel gives a proper bend signal as required by ARTICLE 18, RULE V, and receives no response, those navigating such vessel have the right to assume that the channel and bend are clear and may proceed in reliance upon the assumption that the vessel will be permitted to enter and pass through the bend without obstruction or interference by other craft required to heed and respond to the bend signal under the rule.

CIGARETTES AND FIRES

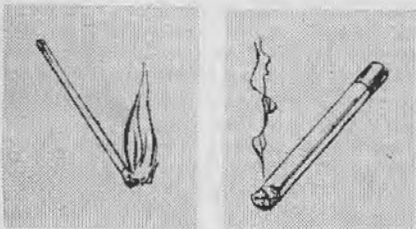
Why do cigarettes cause so many fires?

The answer is—by sheer numbers. Extensive tests conducted by the California State Fire Marshall showed that, on the whole, cigarettes proved to be a relatively poor source of ignition, able to start fires only under limited conditions.

Lighted cigarettes were dropped into wastebaskets and boxes filled with rubbish and fanned to make conditions most favorable for burning. They were puffed near flammable gases and liquids, and pinched so their glowing coals fell through flammable vapors. They were laid on samples of clothing, padding, and cushioning, and left to burn until they went out.

The results of the tests were surprising. Although some materials burned, and some vapors exploded, the discarded cigarette showed itself as dangerous due to the almost astronomical numbers that are consumed. The report indicated that more than 400 billion, about 760,000 a minute, were smoked in 1955. Broken down, the tests show that approximately one cigarette in 2 million causes a fire.

If you are a cigarette smoker, the best course to follow is to regard every cigarette you light as the one in 2 million. Be careful with that smoke! Never smoke in bed! Never discard a lighted match or butt! On shipboard, never throw a lighted butt overboard. It might be blown through open air-port or open hatch.



ANSWER TO QUERY

A. With the vertical center of gravity at the same height, carrying ore or carrying ballast, the vessel would have the longest rolling period in ballast due to the larger transverse radius of gyration. This might be stated simply by saying she would roll easier with the weight "winged out" as in the ballast condition.

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 3,022 cases during the third quarter of 1956. From this number, hearings

MERCHANT MARINE PERSONNEL STATISTICS

MERCHANT MARINE OFFICER LICENSES ISSUED

QUARTER ENDING 30 SEPTEMBER 1956

DECK

Grade	Original	Renewal	Grade	Original	Renewal
Master:			Third mate:		
Ocean.....	85	718	Ocean.....	110	106
Coastwise.....	5	10	Coastwise.....		
Great Lakes.....		6	Pilots:		
B. S. & L.....	5	58	Great Lakes.....		3
Rivers.....	8	33	B. S. & L.....	199	92
Radio Officer licenses issued.....	26	86	Rivers.....	54	7
Chief mate:			Master: Uninspected vessels.....	15	15
Ocean.....	31	145	Mate: Uninspected vessels.....	18	11
Coastwise.....		8			
Mate:			Total.....	582	1,431
Great Lakes.....					
B. S. & L.....	2		Grand total.....	2,013	
Rivers.....	10	17			
Second mate:					
Ocean.....	34	118			
Coastwise.....					

ENGINEER

Grade	Original	Renewal	Grade	Original	Renewal
STEAM			MOTOR—continued		
Chief engineer:			First assistant engineer:		
Unlimited.....	56	643	Unlimited.....	4	18
Limited.....	17	213	Limited.....	1	1
First assistant engineer:			Second assistant engineer:		
Unlimited.....	43	260	Unlimited.....	1	26
Limited.....	3	16	Limited.....		
Second assistant engineer:			Third assistant engineer:		
Unlimited.....	29	256	Unlimited.....	116	5
Limited.....			Limited.....		
Third assistant engineer:			Chief engineer: Uninspected vessels.....	3	5
Unlimited.....	170	246	Assistant engineer: Uninspected vessels.....	2	2
Limited.....	1	2			
MOTOR			Total.....	467	1,879
Chief engineer:			Grand total.....	2,346	
Unlimited.....	11	95			
Limited.....	10	91			

WAIVER OF MANNING REQUIREMENTS

Waivers	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Total
Deck officers substituted for higher ratings.....	3	1			4
Engineer officers substituted for higher ratings.....	3	2			5
O. S. for A. B.....	1	2	1		4
Wiper or coalpassers for QMED.....			1		1
Total waivers.....	7	6	1		14
Number of vessels.....	5	5	1		11

before examiners resulted involving 52 officers and 211 unlicensed men. In the case of officers, 4 licenses were revoked, 5 were suspended without probation, 25 were suspended with probation granted, 5 licenses were voluntarily surrendered, 3 cases were dismissed after hearing, and 4 hearings were closed with admonition. Of the unlicensed personnel, 22 documents were revoked, 22 were suspended without probation, 77 were suspended with probation granted, 161 documents were voluntarily surrendered, 21 hear-

ORIGINAL SEAMEN'S DOCUMENTS ISSUED

Type of document	Atlantic coast	Gulf coast	Pacific coast	Great Lakes and rivers	Total
Staff officer.....	38	12	33	35	118
Continuous discharge book.....	256	19		1	276
Merchant mariner's documents.....	1,530	790	824	1,931	5,075
AB any waters unlimited.....	121	48	76	24	269
AB any waters, 12 months.....	43	15	24	92	174
AB Great Lakes, 18 months.....	5		2	36	43
AB tugs and towboats, any waters.....					
AB bays and sounds.....					
AB seagoing barges.....	1				1
Lifeboatman.....	420	6	120	5	550
QMED.....	435	39	69	127	670
Radio operators.....	2	6	2		10
Certificate of service.....	1,484	788	826	1,905	5,003
Tankerman.....	8	36	8	77	129
Total.....	4,352	1,758	1,984	4,233	12,327

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

ings were closed with admonition, and 14 cases were dismissed after hearing.

APPENDIX

AMENDMENTS TO REGULATIONS

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

Subchapter D—Navigation Requirements for Certain Inland Waters

[CGFR 56-34]

PART 82—BOUNDARY LINES OF INLAND WATERS

GULF COAST; EDITORIAL CHANGES

In the description of the boundary lines of inland waters from Mobile Bay, Alabama, to Sabine Pass, Texas, in 33 CFR 82.95 and 82.103, Pass a Loutre Lighted Whistle Buoy 4 is used as a reference point. This buoy is being relocated because of shoaling in Pass a Loutre.

Other buoys used as reference points in 33 CFR 82.95 and 82.103 are also subject to relocation, from time to time, for similar reasons.

In order to prevent confusion as to the location of the boundary lines established and published in the FEDERAL REGISTER of December 8, 1953 (18 F. R. 7893), it is necessary to correct editorially the description of reference points in 33 CFR 82.95 and 82.103 by substituting fixed geographical points for floating aids to navigation which are subject to change.

The amendments to 33 CFR 82.95 and 82.103 are editorial changes for the sole purpose of redescribing the location of such boundary lines. Although new reference points are used in lieu of Pass a Loutre Lighted Whistle Buoy 4 and other floating aids to navigation, these changes do not change the location of the boundary lines established and published in the FEDERAL REGISTER of December 8, 1953.

Because the amendments in this document are editorial in nature, it is hereby found that compliance with the Administrative Procedure Act respecting notice of proposed rule making, public rule making procedures thereon, and effective date requirements thereof, is impracticable and unnecessary.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Order No. 120, dated July 31, 1950 (15 F. R. 6521), to promulgate rules and regulations in accordance with the statutes cited with the regulations below, the following amendments to the regulations are prescribed and shall become effective upon date of publication of this document in the FEDERAL REGISTER:

§ 82.95 *Mobile Bay, Ala., to Mississippi Passes, La.* Starting from a point which is located 1 mile, 90° true, from Mobile Point Lighthouse, a line drawn to a point 5.9 miles, 210.5° true, from Mobile Point Lighthouse; thence to Ship Island Lighthouse; thence to Chandeleur Lighthouse; thence in a curved line following the general trend of the seaward, highwater shore lines of the Chandeleur Islands to the southwestern-most extremity of Errol Shoal (lat. 29°35.8' N., long. 89°00.8' W.); thence to a point 5.1 miles, 106° true, from Pass a Loutre Abandoned Lighthouse.

§ 82.103 *Mississippi Passes, La., to Sabine Pass, Tex.* A line drawn from a point 5.1 miles, 106° true, from Pass a Loutre Abandoned Lighthouse to a

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)				
			½ and below	¾	1	1½	2
Metal & Thermit Corp., 120 Broadway, New York 5, N. Y. (Arcrods Corp. Manufacturer).	Filler.....	E6020			2	2	
Harnischfeger Corp., 4400 West National Ave., Milwaukee, Wis.....	70LA-1.....	E6016	1	2	2	2	3

ACCEPTABLE HYDRAULIC CAST IRON VALVES

Hydraulic cast iron valves, gasket-mounted, which have passed high impact shock tests and accepted under the provision of 46 CFR 55.07-1 (e) (3).

Manufacturer	Valve type	Identity	Drawing No.
Vickers, Inc., Detroit 32, Mich., Division of Sperry Rand Corp.	Relief.....	Model CG-06-B-10.....	R-134239.
	Relief.....	Model CG-10-B-10.....	R-134239.
	Press Control and Check.....	Model RCG-06-B2-10.....	R-133103.
	Press Control and Check.....	Model RCG-10-D2-10.....	R-133103.
	Flow Control.....	Model FG-02-125-10.....	I-130078.
	Pilot Operated—4-way.....	Model DG384-062-A-20.....	R-134201.
	Pilot Operated—4-way.....	Model DG384-102C-20.....	R-134193.
	Solenoid Control—4-way.....	Model DG584-062-A-20.....	R-129484.
	Solenoid Control—4-way.....	Model DG584-102C-21.....	R-134989.
	Check.....	Series C2G-815.....	I-82163.
	Check.....	Series C2G-825.....	I-99948.
	Check.....		
	Check.....		
	Check.....		

point 1.7 miles, 113° true, from South Pass West Jetty Light; thence to a point 1.8 miles, 189° true, from South West Pass Entrance Light; thence to Ship Shoal Lighthouse; thence to a point 10.2 miles, 172° true, from Calcasieu Pass Entrance Range Front Light; thence to a point 2.5 miles, 163° true, from Sabine Pass East Jetty Light.

(Sec. 2, 28 Stat. 672, as amended, 33 U. S. C. 151)

Dated: July 25, 1956.

[SEAL] A. C. RICHMOND,
Vice Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 56-6170; Filed, July 31, 1956; 8:46 a. m.]

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 1 October 1956 to 31 October 1956, 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:

Penetone Co., Tenafly, N. J., Certificate No. 274, dated October 15, 1956, "INHIBISOL."

Penetone Co., Tenafly, N. J., Certificate No. 275, dated October 15, 1956, "PENOLENE 643."

AFFIDAVITS

The following affidavits were accepted during the period from 15 September 1956 to 15 October 1956:

The Standard Tube Co., 24400 Plymouth Road, Detroit 39, Mich., PIPE AND TUBING.

The Hydraulic Press Mfg. Co., Division of Koehring Co., Mount Gilead, Ohio, VALVES.

FUSIBLE PLUGS

The regulations prescribed in Subpart 162.014, Subchapter Q, Specifications, require that manufacturers submit samples from each heat of fusible plugs for test prior to plugs manufactured from the heat being used on vessels subject to inspection by the Coast Guard. A list of approved heats which have been tested and found acceptable during the period from 15 September 1956 to 15 October 1956 is as follows:

The Lunkenheimer Co., Cincinnati 14, Ohio. Heat Nos. 544, 545, 546, 547, 548 and 549.

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 September 1956. 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.....	15,942
	(1) Portland, Maine.....	9,282
	(2) St. Albans.....	942
	(5) Providence.....	4,638
	Total.....	30,504
2 (St. Louis)	(45) St. Louis.....	10,912
	(12) Pittsburgh.....	2,398
	(34) Pembina.....	128
	(35) Minneapolis.....	2,500
	(40) Indianapolis.....	5,572
	(42) Louisville.....	2,982
	(43) Memphis (part).....	5,742
	(46) Omaha (part).....	352
	(47) Denver.....	38
	Total.....	30,672
3 (New York)	(10) New York.....	49,182
	(6) Bridgeport.....	9,652
	(11) Philadelphia.....	20,852
	Total.....	79,686
5 (Norfolk)	(14) Norfolk.....	16,412
	(13) Baltimore.....	23,652
	(15) Wilmington, N. C.....	8,452
	Total.....	48,516
7 (Miami)	(18) Tampa (part).....	24,742
	(16) Charleston.....	1,512
	(17) Savannah.....	2,342
	(49) San Juan.....	462
	(51) St. Thomas.....	112
	Total.....	29,168
8 (New Orleans)	(20) New Orleans.....	21,342
	(18) Tampa (part).....	562
	(19) Mobile.....	8,212
	(21) Port Arthur.....	4,532
	(22) Galveston.....	9,412
	(23) Laredo.....	1,602
	(24) El Paso.....	22
	(43) Memphis (part).....	62
	Total.....	45,768
9 (Cleveland)	(41) Cleveland.....	10,032
	(7) Ogdensburg.....	2,802
	(8) Rochester.....	5,862
	(9) Buffalo.....	4,252
	(26) Duluth.....	2,662
	(37) Milwaukee.....	4,032
	(38) Detroit.....	21,972
	(39) Chicago.....	8,582
	Total.....	60,212
11 (Long Beach)	(27) Los Angeles.....	12,822
	(25) San Diego.....	2,232
	(26) Nogales.....	144
	Total.....	15,302
12 (San Francisco)	(28) San Francisco.....	14,502
13 (Seattle)	(30) Seattle.....	20,912
	(29) Portland, Oreg.....	8,832
	(33) Great Falls.....	612
	Total.....	30,354
14 (Honolulu)	(32) Honolulu.....	3,622
17 (Juneau)	(31) Juneau.....	8,002
	Grand total.....	396,412

ANNUAL INDEX—VOLUME 13

	Page		Page		Page
Admiral Shephard Retires.....	35	Emergency Steering Gear		Special Circumstances.....	142
Affidavits.....	43, 59, 91, 111, 130,	Drill.....	89	Tail Shaft Adrift.....	70
147, 171, 183, 198		Equipment Approved By The		The Breath of Life.....	20
A New Approach to Gas-		Commandant.....	59,	The Conductor was Human..	22
Freecing.....	36	75, 91, 111, 130, 158		The Steward and the Ghost..	88
Amendments to Regulations:		Fatal Two Minutes.....	88	Think First—Turn Valve	
33 CFR: Chapter I—Coast		Final Fatal Flash.....	53	Later.....	104
Guard, Department of the		Fire Extinguisher Explosion..	26	Tragic Accident.....	156
Treasury:		Fisherman's Luck.....	168	Trial by Fire.....	12
Subchapter B—Military		Flag Etiquette.....	84	Unsafe Practices.....	188
Personnel.....	75, 145	Funereal Fumes.....	18	Wages of Carelessness.....	29
Subchapter D—Navigation		Gangplank Accidents.....	25	Wanted, Sea Room.....	28
Requirements for		Ground Tackle.....	47	Manila.....	53
Certain Inland Waters..	197	Grounds For Life.....	24	Man Overboard.....	182
Subchapter G—Navigation		Hard Starboard—Full Astern..	79	Marine Safety Contest.....	120
Requirements for Cer-		He Lowered The Boom.....	179	Marine Safety Legislation..	117
tain Inland Waters.....	75	Highlights On The Rules.....	51, 86	Marine Safety on the Delaware	
Subchapter K—Security of		High Octane.....	14	River.....	115
Vessels.....	106, 125	Holds a Surprise.....	181	Marine Section, National	
Subchapter L—Security of		Hot Emissions.....	121	Safety Council.....	194
Waterfront Facilities.....	125	Hot Work.....	123	Merchant Marine Awards and	
46 CFR: Chapter I—Coast		How They Perform.....	64	Medals.....	167
Guard, Department of		Instruction of Green Lookouts..	26	Merchant Marine Officers.....	137
the Treasury:		Introducing the Proposed New		Merchant Marine Personnel	
Subchapter F—Marine		American Rules of the Road..	83	Statistics.....	58, 110, 158, 196
Engineering.....	42, 91	Invisible Death.....	71	Nautical Queries.....	52,
Subchapter I—Cargo Mis-		Kerosene Barge Blast.....	40	69, 82, 119, 139, 155, 178, 193	
cellaneous Vessels.....	109, 144	Lessons from Casualties:		Navigation and Vessel Inspection	
Subchapter N—Explosives		An Exigence of Oxygen.....	11	Circulars:	
or Other Dangerous Ar-		Another Boiler Casualty.....	17	No. 5-56.....	170
ticles or Substances and		Arson, Barratry, Fraud.....	30	No. 6-56.....	171
Combustible Liquids on		Before His Time.....	21	No. 8-56.....	183
Board Vessels..	58, 90, 130, 183	Blue Christmas.....	13	New Chief of Office Merchant	
Subchapter O—Regula-		Boiler Negligence.....	16	Marine Safety.....	63
tions Applicable to Cer-		Bridge Against Bridge.....	38	Notice to Small Boat Owners..	87
tain Vessels During		Caught in the Bight.....	25	Numbered and Undocumented	
Emergency.....	75, 158	Check Before you Depend.....	72	Vessels.....	59, 111, 159, 198
Americans Win Lifeboat Race..	154	Cracked Ship and Iron Men..	3	One Hand For Yourself.....	90
An Exigence of Oxygen.....	11	Danger, Man in Drum!	16	Overtaking in Narrow Waters..	6
Another Boiler Casualty.....	17	Dangerous, Beware Loose		Patent Log.....	143
Arson, Barratry, Fraud.....	30	Dog.....	26	Poor Judgment.....	6
Articles of Ships' Stores and		Death from Dry Ice.....	21	Power of Suggestion.....	120
Supplies.....	43, 59, 91, 111,	Dry Cleaning or How To Die		Red Hot Deck.....	4
147, 158, 198		Cleaning.....	158	Reliable Are the Rules.....	7
Attack Imminent!.....	163	Emergency Steering Gear		Relief Officers.....	140
Before His Time.....	21	Drill.....	89	Rubber Liferrafts.....	141
Blue Christmas.....	13	Fatal Two Minutes.....	77	Side Light Screens.....	103
Boiler Negligence.....	18	Final Fatal Flash.....	53	Significant Marine Casualties	
Bridge Against Bridge.....	38	Fire Extinguisher Explosion..	26	of the Past Year.....	187
Cancellation of Certification of		Fisherman's Luck.....	168	Special Circumstances.....	142
Articles of Ships' Stores and		Funereal Fumes.....	18	Tail Shaft Adrift.....	70
Supplies.....	43, 91	Gangplank Accidents.....	25	Tell It to the Coast Guard.....	151
Caught in the Bight.....	25	Grounds for Life.....	24	The Breath of Life.....	20
Changes in Lights for Out-		He Lowered the Boom.....	179	The Conductor Was Human..	22
boards, Inboards, and Aux-		High Octane.....	14	The Merchant Vessel as an Aid	
iliaries.....	131	Holds a Surprise.....	181	in Ditching.....	135
Check Before You Depend.....	72	Hot Emissions.....	121	The Steward and the Ghost..	88
Congressional Hearings.....	153	Hot Work.....	123	Think First—Turn Valve Later..	104
Conventions.....	74, 103	Instruction of Green Look-		Towing Casualties.....	95
Costly Custom.....	175	outs.....	26	Traditions of the Sea.....	39,
Cracked Ship and Iron Men..	3	Invisible Death.....	71	82, 102, 119, 136, 153, 181, 194	
Danger, Man in Drum!.....	16	Kerosene Barge Blast.....	40	Tragic Accident.....	156
Dangerous, Beware Loose		Manila.....	53	Trial by Fire.....	12
Dog.....	26	Overtaking in Narrow Waters		Turning Circles.....	177
Death From Dry Ice.....	21	Patent Log.....	143	Unsafe Practices.....	168
Dry Cleaning or How To Die		Poor Judgment.....	6	Wages of Carelessness.....	29
Cleaning.....	156	Red Hot Deck.....	4	Wanted, Sea Room.....	28
		Reliable are the Rules.....	7		

