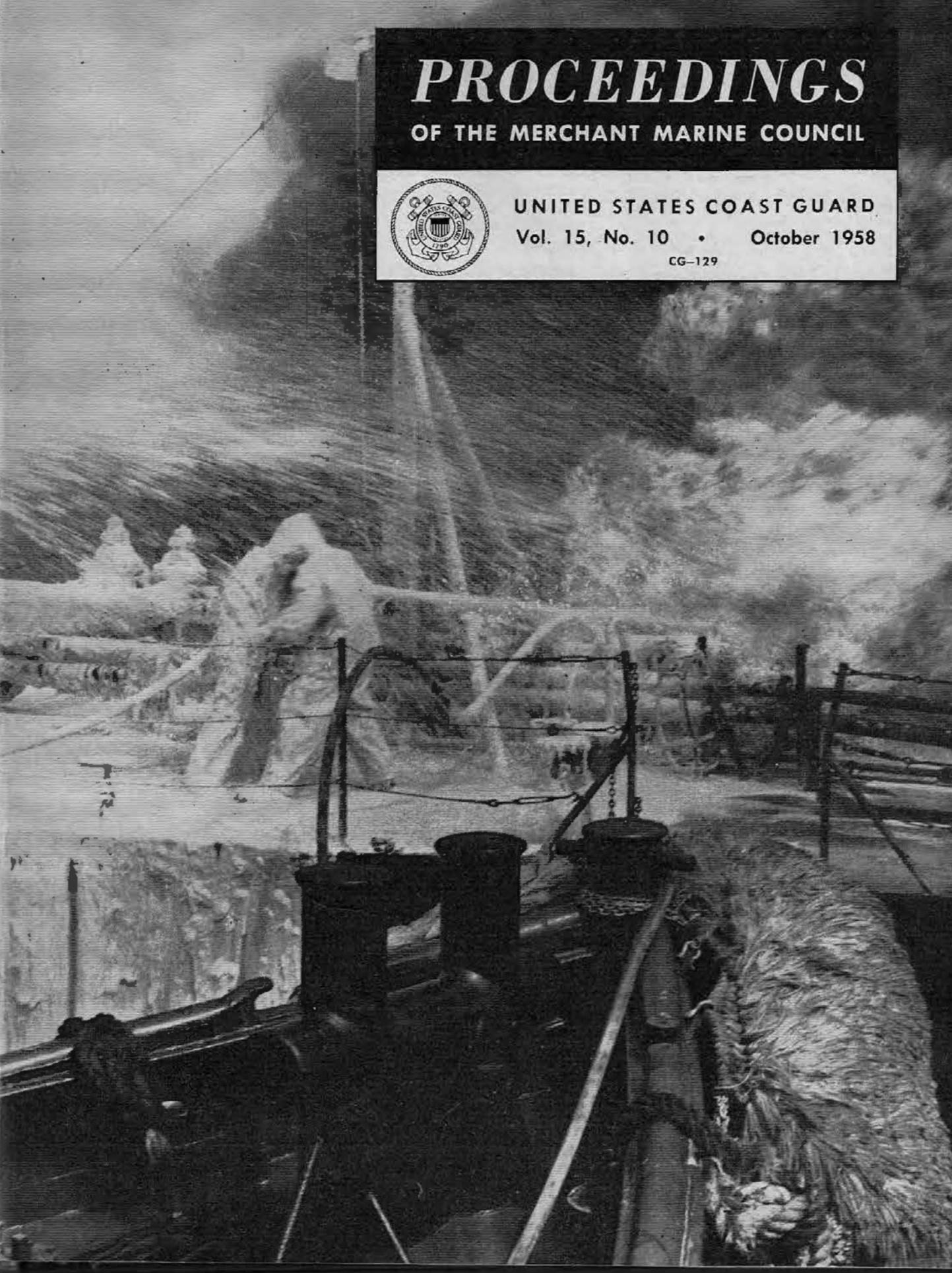
PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

UNITED STATES COAST GUARD

Vol. 15, No. 10 • October 1958

CG–129



PROCEEDINGS

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MERCHANT MARINE COUNCIL

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COAST GUARD CHANGES FIRE EXTINGUISHER REGULATIONS

Toxic vaporizing liquid type fire extinguishers will no longer receive Coast Guard approval for use aboard pleasure boats, yachts, motorboats, and certain commercial vessels, has been announced.

The announcement in the September 6 Federal Register includes carbon tetrachloride and chlorobromomethane type extinguishers.

Following a public hearing in March of 1958, the Merchant Marine Council recommended to the Commandant of the Coast Guard that this action be taken primarily because of the toxic vapors which result from the use of such extinguishers. These changes will affect vessels and boats as follows:

1. All requirements with respect to toxic vaporizing liquid type fire extinguishers are removed from the vessel inspection regulations, except for tank vessels and small passenger vessels carrying more than six passengers. (Similar amendments will be proposed to the regulations governing such vessels and will probably be included in the Public Hearing Agenda of the Merchant Marine Council for consideration at a March 1959 public hearing.)

2. After January 1, 1962, the carrying of such extinguishers on pleasure boats, yachts, etc., as Coast Guard approved equipment will not be permitted.

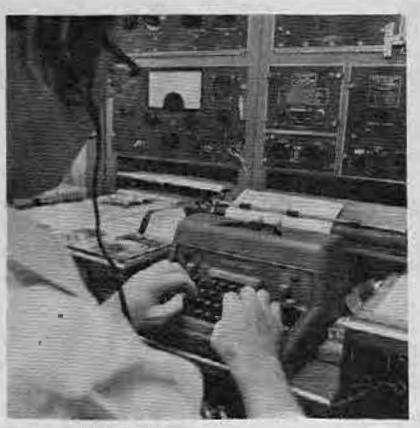
3. The use of toxic vaporizing liquid type fire extinguishers is specifically prohibited on Coast Guard inspected vessels except tank vessels and small passenger vessels carrying more than six passengers on and after January 1, 1962.

4. All current Coast Guard approval granted for the manufacture of toxic vaporizing liquid type fire extinguishers are withdrawn effective December 6, 1958. However, such extinguishers manufactured prior to December 6, 1958, and in service may be continued in service until January 1, 1962, so long as such extinguishers are in good serviceable condition.

SURVEY REVEALS AVERAGE MERCHANT MARINER

• • • DECK

• • • ENGINE



• • • RADIO

IF YOU HAVE ever wondered what the average deck, engine, or radio officer looks like aboard an American-flag merchant vessel, figures developed by the Maritime Administration in cooperation with the Coast Guard are most revealing.

He is native born, at least a high school graduate, probably owns his own home, is married, and if sailing as master is between 40 and 59 years of age.

Chief Mates generally are between 35 to 50 and other mates, 30 to 41. Engineer officers were slightly older.

Question cards were distributed by Coast Guard shipping commissioners to officers signing articles, and the shipowners, including Military Sea Transportation Service, distributed them to ships not coming before the commissioners. The survey was conducted during a period in which the number of ships in our active fleet averaged 1,061, and a total of 13,887 officers were polled. Of this number, 11,405 completed the questionnaire for an 82 percent return.

Regarded as the first manpower survey of the men who man the bridge, engine room, and radio rooms of our ships, the figures indicate the educational, professional, and background factors of officers licensed by the Coast Guard.

The survey covered 4,882 deck officers, 5,362 engineer officers, and 1,161 radio officers. In the deck category, 79 percent were native born and 27 percent were veterans; in engine, 87 percent were born in this country and 24 percent served in the armed services; and in radio, 91 percent were natives and 41 percent have seen service.

From an educational standpoint, 32.5 percent finished high school and 26.4 percent had 3 years or less. Only 266, or 2.3 percent of the men polled are college graduates, although another 12 percent had some college training. Graduates of State, Federal, or service academies accounted for 10.4 percent. Graduates from the Naval and Coast Guard Academies only accounting for .2 percent of the total.

Of the officers polled, 1,864 or 16 percent, have a military reserve status and are subject to call by the Armed Forces. An overwhelming 83 percent are without military reserve status. By service, the Navy has far and away the greatest number of men in ready and standby reserve status with 1,338 out of the 1,492 officers questioned in these reserves.

Substantial social and economic gains achieved by the Merchant Marine are reflected in the fact that 71.3 percent of the officers are married and 54.9 percent own their own homes.

Graphs produced from the question cards show that 13 percent of the masters polled were between 30 and 39; 51 percent were between 40 and 54; and 36 percent were 55 to over 70 years of age. For chief engineers, 17 percent fell in the 25–39 bracket; 47 percent in the 40–54 age group; and 36 percent, 55 to over 70.

Of interest is the following breakdown of deck and engine officers who hold high licenses:

Officers available for positions of higher responsibility in the event of activation of the reserve fleet by virtue of holding higher licenses than they currently are sailing under is shown in the following percentage breakdown:

HOLDING A MASTER'S LICENSE

78.5 percent of Chief Mates
39.9 percent of Second Mates
27.0 percent of Third Mates
24.1 percent of Junior Mates

HOLDING A CHIEF ENGINEER'S LICENSE

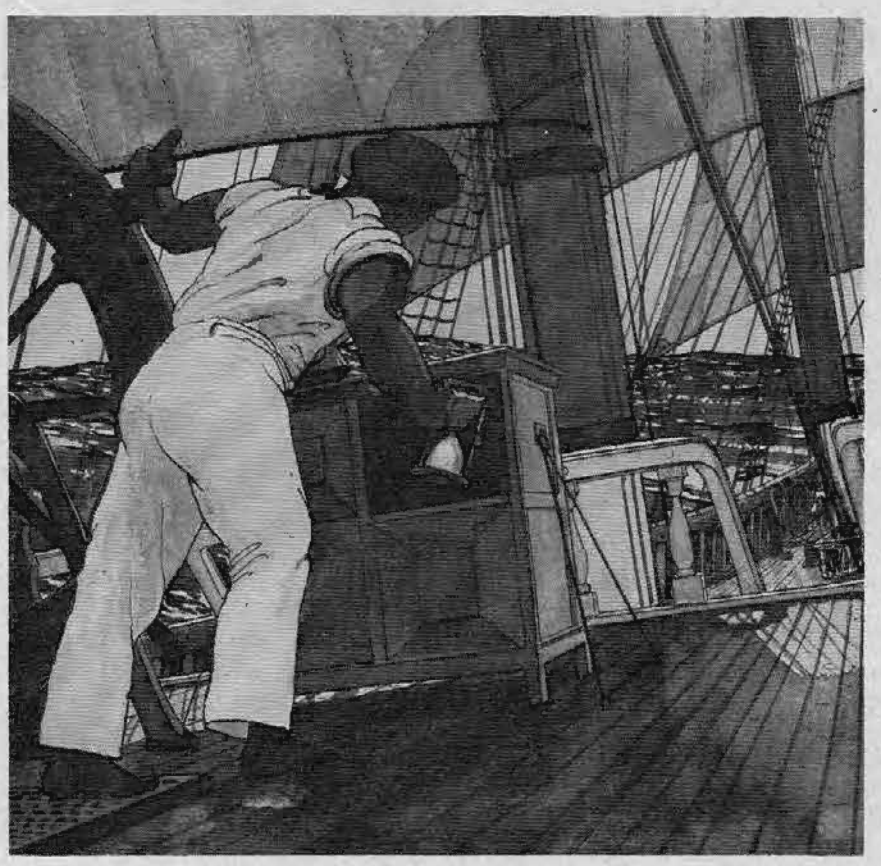
71.2 percent of First Assistants
25.0 percent of Second Assistants
20.5 percent of Third Assistants
20.1 percent of Junior Engineers

From the standpoint of years of sea service, the greatest number have been 10–14 years aboard ship. They are followed closely by the 15–19 bracket, after which the graph gradually drops off.

The lack of diesel drive ships in this country is reflected in the fact that only 29.8 percent of all the engineers questioned hold a license for both steam and diesel. Photos courtesy J. Alex Langley from *The Texaco Star*.

HELMSMAN WOULD TURN HALF-HOUR GLASS, SAYING.....

"EIGHT BELLS AND THE GLASS IS TURNED"



TIME AT sea was important to mariners long before the invention of practical mechanical timepieces. At first, crude estimates were made from the sun. Next came the sundial or horologium which, though far more precise than the weather eye of a sailor, still left much to be desired. Obviously, the main faults in both methods were their complete dependence upon weather. Daylight and the sun were needed to obtain even a rough estimate of the hour. In spite of these drawbacks, ships sailed the seas, made landfalls and carried on a brisk commercial trade; virtually the life blood of the ancient world.

The big change in time telling came with the introduction of the hour glass. This timepiece had been adopted by landlubbers long before it ever went to sea, but tradition dies hard on the oceans. Mariners in general were extremely disdainful of it; perhaps through superstition. Sailors are notoriously prone to fear the supernatural or to use any equipment that might bring on an ill wind or a stormy passage. Ridicule by shore bound humanity, however, must have caused some unknown mariner finally to try the hour glass at sea with dramatic results.

Once the glass was tried and its importance realized, word-of-mouth made its spread only a matter of time. Speculating on the thoughts of the unknown sailor who first used it, one can easily conceive of his muttering the ritual, "How could I have gone so long without it?" Actually, little is known about how the hour glass was first used for keeping time at sea. Enough is known, however, to let speculation fill in the gaps.

Several sizes of glasses were used. The largest was the master glass, able to run for four hours without turning. No one except the mate was permitted to touch it. When he did turn it the fact was noted in the log and carried the officer's initials. There also was a two-hour glass, called the half-watch glass. And finally there was the half-hour glass, under the supervision of the helmsman and standing close aboard his wheel station. Only he could turn it; and he was charged with seeing that it was turned promptly when the top was empty. Failure to turn the glass at the proper time probably earned the recalcitrant wheel watch a few "touches of the cat", providing of course he was caught.

Turning the glass was of sufficient importance to warrant special attention. Large vessels frequently employed apprentices whose sole job was to watch the glass and turn it at the precise moment, singing out, "The glass is turned". On smaller ones, the helmsman turned the half-hour glass while the mate saw to the larger ones. In order to keep a record of time, turning the glass was suitably noted in the log with the name of the officer who made the entry. Every daily

REPRINTED FROM *THE COMPASS*, SOCONY MOBIL OIL CO., INC.
ILLUSTRATIONS BY ROCKWELL BRANK.

MATE TURNED FOUR-HOUR GLASS, ENTERING FACT IN LOG.

event was recorded according to the glass. Old records show entries such as "north-east squall which blew three glasses". In the case of warships, the length of an engagement was similarly recorded. An entry from the log of the *Minotaur*, dated August 1, 1798, has this reading, "we fought eight glasses". The system was a step in the right direction toward keeping accurate records of all that transpired during a voyage, pinpointing the happenings as nearly as possible.

More modern navigators would raise a question about the accuracy of the hour glass. And well they might, for there must have been considerable difference in the time of sand flow among glasses. Temperature, humidity and sea motion must have had some effect, as did variations in the thickness of the glass. Try as our ancestors might, sealing off the glass from the elements was virtually impossible. They may have been able to attain a 90% or even 95% effective seal. Yet there was always the ever present element of dampness, which must have seeped through, slowing down the flow of sand. The resultant error might only been small each watch, but considering the length of voyages in olden times, it could grow to major proportions. The poor insulating qualities and the expansion or contraction of glass must also have produced factors which added somewhat to the overall error. Were it possible during that era to time a glass accurately, first in the tropics and then in colder climates, the difference in readings might have been greater than one would imagine. There was also a human variable which must have been the greatest error producer of all. More than once someone either forgot to turn the glass at the proper moment or turned it beforehand; more popularly known as "cheating the glass" to shorten a watch. Whether mariners ever questioned accuracy from these variables is unknown. More than likely they either did not worry about them or ignored them completely.

The four-hour glass was the probable source of dividing the day into six 4-hour watches. By the same token, the half-hour glass by the side of the helmsman was more than likely responsible for the ringing of ship's bells to signify the time to all hands. It is reasonable to picture how the familiar "ding-ding" came into being. At first, the helmsman may just have sung out, "the glass is turned." Later he might only have "passed the word" to the crew. Obviously both methods had drawbacks, particularly in a gale. It must have been a short step from this point to the substitution of bells for passing the word. Who the first sailor was that struck the bells at the turning of the glass or, for that matter, established their peculiar though familiar pattern, is unknown. Originally he just struck the bell by the wheel. Later on, the bow lookout picked up the signal and struck it off on the main ship's bell, usually located on the forecastle. Thus everyone on board, from the dim reaches of the hold to high in the rigging, knew what time it was.

The establishment of the bell patterns for signalling the turn of the glass set the routine for each watch as well as for the day. The routine has come down to this day virtually unchanged. For countless years the bells have called crews to work, to rest, to eat and to sleep. It is one of the traditions of the sea which works beautifully even in the modern era of atomic power.

Bells also provide a convenient means for making entries in the log. Since safe navigation at sea requires noting all fixes and course changes, it is reasonable to assume the navigators jumped on this time-keeping system as a means for accurately recording items in their day's work. As a matter of record, old logs constantly refer to events in the day's routine as having transpired at certain bells of each watch, pinpointing for posterity the actual time of the event.

Hour glasses in a great variety of intricately wrought cases are preserved for all to see in museums throughout the world. The same is true of ship's bells, many of which carry the name of the ship on which they served. Both are fascinating items of ship lore which marine enthusiasts take a keen delight in viewing. The hour glass has disappeared from the sea. The ship's bell, however, still has an important place today, being used as a signaling device. Modern watches now carried by all hands have eliminated the need of striking off the bells for all to hear on most vessels. Yet on others, particularly training ships and men-of-war, bells are regularly struck to mark the passing of the watch. No longer, though, does the call come ringing from the quarterdeck, "Eight Bells and the Glass Is Turned."

TUG CREWS COMMENDED BY COAST GUARD

THE COAST GUARD, as an agency vitally interested in the rescue and assistance of persons endangered by floods, takes pleasure in commending 15 crewmembers of the MV *Offshore LaFourche*, MV *Offshore LaFitte*, and MV *Offshore Orleans*.

Their initiative, perseverance, and seamanship during the period June 27–29, 1957, at Cameron, La., in rescuing and assisting survivors during hurricane *Audrey* is deserving of praise and was in keeping with the highest traditions of the American Merchant Marine.

Each of the following men received individual letters of commendation from Vice Admiral A. C. Richmond, Commandant of the Coast Guard:

Offshore LaFourche: Captain W. L. Price, C. M. Powe, Louis Webster, J. M. Christian, M. T. Gerald, and Gaston Babino.

Offshore LaFitte: Captain E. J. Gaudet, A. J. Rabalais, S. N. Pizza, and R. P. Rabalais.

Offshore Orleans: Captain H. J. Melancon, Bert Phelps, Jr., F. J. Simon, R. C. McCully, and O. M. May.

DETAILS FOLLOW

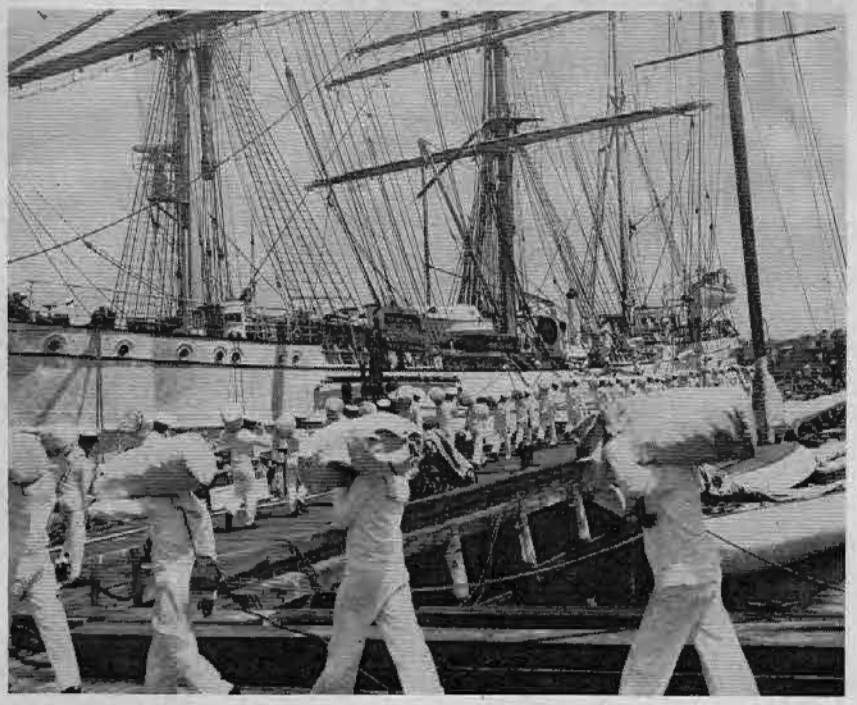
The *Offshore Lafourche* and the *Offshore Lafitte* were anchored in Old River, a little south of Lake Charles, on June 27, 1957 and rode out the storm at anchor. At 10 p. m. on June 27, the Captains of the two vessels heard information over the radio that Cameron was hard hit by the hurricane and in dire need of help. They immediately obtained blankets, cots and medical supplies from the Drilling Tender S-21 and, proceeded to the Cameron area. Upon arrival at Cameron, the vessels docked at the Magnolia Docks and the crews of the two vessels waded through water to get medical supplies, blankets, and cots to survivors who were stranded in the courthouse. They also carried many injured persons from the courthouse to the vessels in the same manner. A total of 407 survivors were taken aboard the *Offshore Lafourche* and 107 on the *Offshore Lafitte*. These survivors were taken to Lake Charles. After disembarking survivors, the two vessels immediately proceeded to Cameron where this equipment was delivered, and the crews of the vessels assisted in rescue work. At 8 a. m. on June 29, 1957, the two vessels returned to their regular duties with the California Company.

The *Offshore Orleans* was moored to the Menhaden Dock at Cameron and succeeded in riding out the hurricane without suffering disabling damage. On June 28, 1957 the vessel shifted to the Magnolia Dock and furnished fresh water to the survivors and gave all assistance possible. At about 5 p. m., after loading approximately 115 survivors, the vessel proceeded to Lake Charles. After arriving in Lake Charles the vessel was used as a communication vessel by Civil Defense until 12:30 a. m. on June 29, 1957.

THREE CREWMEMBERS of the MV *Offshore LaFourche* who took part in rescue operations during hurricane *Audrey* are pictured above. Left to right are: Marshall T. Gerald, Captain Winfred L. Price, and Raymond P. Rabalais.

CAPTAIN ELMO J. GAUDET and deckhand Arthur J. Rabalais of the MV *Offshore LaFitte* were part of the crew of this vessel who received Coast Guard Commendations for their part during the 1956 hurricane in Cameron, La.

EXAMINATIONS SCHEDULED FOR COAST GUARD ACADEMY



ONE PHASE OF CADET training at the Coast Guard Academy is the annual summer cruise to European ports aboard the three-masted bark *Eagle*. Accompanied by a large modern Coast Guard cutter, the cadets are rotated to learn the basic art of seamanship aboard the *Eagle* and modern methods aboard the cutter.

ANNUAL competitive examinations for entrance to the Coast Guard Academy will be held February 24 and 25, 1959, in 119 cities in the United States, its possessions, and selected cities abroad.

Open to young men with a love for the sea, the appointments to the Academy are made on the basis of examinations and prospective adaptability to military life. There are no Congressional appointments or geographical quotas.

The examination is open to any unmarried, qualified young man, military or civilian, who will have reached his 17th but not his 22d birthday on July 1, 1959, who is in good physical condition, and who is sincerely interested in a career as an officer in America's oldest seagoing military service.

Requests for information concerning the examination and other requirements may be addressed to the Commandant (PTP–2), U. S. Coast Guard, 1300 E Street, N. W., Washington 25, D. C. Deadline for applications is January 15, 1959.

PROCLAMATION 3253

FIRE PREVENTION WEEK, 1958

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

WHEREAS fire-prevention practices by the American people can avert much human suffering and save great loss of property; and

WHEREAS each citizen should contribute wholeheartedly to effective fire-prevention work urgently needed in every community of our land:

NOW, THEREFORE, I, DWIGHT D. EISENHOWER, President of the United States of America, do hereby designate the week beginning October 5, 1958, as Fire Prevention Week.

I call upon the people to promote programs for the prevention and control of fires; and I urge State and local governments, the American National Red Cross, the Chamber of Commerce of the United States, and business, labor, and farm organizations, as well as schools, civic groups, and public-information agencies, to share actively in observing Fire Prevention Week. I also direct the appropriate agencies of the Federal Government to assist in this national effort to reduce the loss of life and property resulting from fires.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

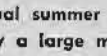
DONE at the City of Washington this sixth day of August in the year of our Lord ninteen hundred and fifty-eight, and of the Independence of the United States of America the one hundred and eighty-third.

[SEAL]

DWIGHT D. EISENHOWER.

By the President:

CHRISTIAN A. HERTER,
Acting Secretary of State.



WATERTIGHT DOORS

A watertight bulkhead is a bulkhead which has no opening in it. A bulkhead fitted with a watertight door is a watertight bulkhead only to the extent that the vessel's personnel insure, by precept and inspection, that the door is closed and securely dogged. Otherwise it is a delusion.

When a door must be opened while at sea the safety value of the entire bulkhead is lost during such time as the door is open. It might just as well not be in the ship. It is highly desirable, therefore, that the time the door is open and the value of the bulkhead thereby destroyed be kept to a minimum, and that when the door is closed it be properly secured.

Where a door must be repeatedly opened and closed, as for example, a shaft alley door, it is human nature to become careless. If the door operates stiffly, its whole purpose may be lost sight of in the desire to avoid a little effort. Every man on the ship may be jeopardized by such neglect. The particular individual who temporarily vitiates the integrity of a bulkhead should be concerned with its restoration at the earliest possible moment. The responsible officer authorizing or supervising such opening should satisfy himself of its adequate closing.

RIVER TOWING—A BIG JOB

DESPITE THE problems of restrictive widths and depths, winding bends and numerous obstructions, the towboat captain can maneuver his vessel with almost as much ease as the automobile owner out for a Sunday drive.

Nevertheless, the problems of river navigation are complex and call for thorough training and experience for all personnel from captain to deckhand.

Working in alternate 6-hour watches, the towboat crew puts in a busy day. However, working conditions aboard river boats have improved immeasurably in recent years, and aboard many towboats the crews now enjoy the advantages of air-conditioning, television and other recreational activities on their off-hours.

Modern labor-saving equipment with safety features for the protection of the crew have also made the work easier than in the era of the steamboat when the crew toiled endless hours at back-breaking work.

The river towboat runs 7 days a week, 24 hours a day. As a result, river companies provide generous time off arrangements in order that the crew may spend more time at home with their families.

Years ago relief for river boatmen was so infrequent that the crew worked many months before returning to shore. Today employees can build up off time for vacation periods.

Along with the benefits, which often include hospitalization and other typical industry aids, wages have shown a steady increase.

Today the pay of the master or captain, who, in addition to his regular watches has full responsibility for the vessel, may range between $500 and $885 a month on the larger river towboats that require additional skill and training. The pay of the pilot, who fills in for the captain on alternate watches, ranges between $435 and $730 a month, depending on the type of boat.

The chief engineer can draw between $430 and $700, while the assistant engineer's salary scale is between $350 and $600 monthly. Mates receive between $375 and $485, and deckhands' wages run between $275 and $370 a month. Cooks and laundresses earn between $285 and $400 a month.

The job of the crew begins with the makeup of the tow, except in the case of the integrated tow, in which the barges are specially built to form a single unit.

Pilothouse on a modern river towboat is designed for maximum visibility and is equipped with all modern navigational aids including radar and ship-to-shore radiotelephone.

This is the fifth of a series of articles on our inland waterways prepared especially for the Proceedings by the American Waterways Operators, Inc., a nonprofit trade association of domestic carriers and operators on the inland waters, intracoastal canals and waterways, bays, sounds, and harbors of the United States.

In the normal river tow, putting together the barges consisting of all types and sizes requires considerable time and energy.

Because the boat handling a general tow will pick up or set out loaded and unloaded barges from many points on its route, the positioning of the barges for discharge and pickup is very important.

A loud-speaker system keeps the captain in the pilothouse in direct communication with the mate at the head of the tow so each knows the other's plans, and the towboat can be maneuvered without hitch in the slow process of backing, turning and swinging barges into a single unit.

With their rigging of wire cables and ropes the deckhands knit the barges into an end-to-end formation. The job is eased by stationary ratchets and winches on each end of the barges, holding down the amount of loose rigging that must be carried. Many of the deckhands, as they swing a rope toward a loose barge, lasso their prey with as much dexterity as a cowboy bringing down a dogie.

In some operations, the makeup of the tow is done by a special crew with a smaller river workboat.

Once under way with instructions from company traffic officials, the captain puts to work the latest technological advances that have eased the burden of river navigation. Night, bad weather and fog are no longer causes for delay. With all the controls at his fingertips, the captain sets the engines rolling and steers his course.

Depth indicators, radar, radiotelephone and other navigational aids ease his handling problems. Company instructions are sent to him at regular intervals by radio. His problems are mostly concerned with maneuvering the cumbersome tow through locks and bridges, and avoiding sand bars and other obstructions as he wends the river route.

Over the years, the pilot or master becomes as familiar with his route

as the back of his hand. He knows every rock, stump, and tree in the river and follows the channel marked by the Coast Guard buoys with unerring accuracy.

The master also gathers information on river conditions from towboat captains and pilots ahead or those moving in the opposite direction. Along with information about low or high water conditions, or other navigation matters, the pilots exchange pleasantries about their families and renew old friendships in their brief radio exchanges.

The captain follows rigid rules of the road in passing and overtaking other towboats, giving the required whistle signals as the narrow confines of the channel and the delicate movement of the long tows require the maximum safety precautions.

Meanwhile, the engineer watches all the gauges and dials on his equipment, looking and listening for a sign of any trouble in the engine and other equipment. He is in charge of all repair work, ranging from a leaky kitchen faucet to a breakdown of the powerful diesel engines. Thoroughly trained in his work, he is acquainted with all of the complex machinery aboard, including the electric power plant, heating equipment, fuel system, and separate drinking and washing water equipment. The assistant engineer or striker takes the alternate watch and helps with much of the boats maintenance and repair work.

At each pickup and delivery, the deckhands are surefootedly moving on the tow, where a single misstep may mean serious injury or death, casting and securing lines, while the captain makes the intricate maneuvers with his double rudder system that enables him to move in all directions with almost equal ease.

The deckhands move from position to position in perfect timing at the direction of the mate who has charge of their activities. The mate also gives the deckhand crew instructions in the locking operation where the tow is secured to the side of the lock wall, and sometimes broken into sections for double locking.

The mate's work also includes supervision of boat's stores and supplies, in addition to providing work for the deckhands when they are not required out on the tow. In these periods, the deckhands paint, mop and scrub the boat, and work with the rigging, splicing and making up of new lines. The watchman, as the mate's relief is sometimes called, carries out the same duties on his watch.

On some of the larger boats a laundress is employed, and her duties include making the beds, cleaning the cabins and helping the cooks with the preparation of the three hefty meals needed to keep the crew in top physical condition. In addition, snacks and the proverbial coffee are always available in the boat's galley. The working crew of a towboat is fed with as much concern as the first class passengers aboard the most luxurious ocean liner.

Opportunity for advancement in the towboat crew is open and encouraged by the companies. Deckhands by passing required Coast Guard tests may acquire a mate's license. Study and certain stipulated training periods are required and the river sailor can move on to a pilot and, later, master. In the step between mate and pilot, there is a steersman's stage where the aspiring pilot is the apprentice to the master of the vessel, gaining valuable experience in guiding the vessel as well as picking up helpful tips from the veteran river voyager.

If he chooses, a boat employee may take the required steps to become a striker, or assistant engineer, and go ahead with the testing required for a chief engineer's license.

But the crowning achievement is earning the master's license. The master, in addition to his navigational skills, also keeps the books of the boat, recording barge deliveries and personnel changes, and looks out for the morale and welfare of the crew.

However, his most important job is bringing the millions of dollars of cargo he carries in his barges safely to their destination. One small slip and he may have a sunken or busted barge. The river allows no room for error. Among the most difficult of his jobs is maneuvering the unwieldy tow into a lock.

The barges are normally strung abreast at about the same width as the lock. Easing the tow into some of the locks, particularly some built in the pre-war era, is about as difficult as bringing a wide-slung new model automobile into a narrow 1929 garage.

As the barges are moved into the chamber, the master must fight the violent backlash from the dam, which may be strong enough to whip even the largest towboat out into the river or against the dam and lock.

The river can be the enemy that the merest inattention can turn into a grasping force that pulls men and boats to disaster.

Upon the master's and pilot's skill, the company depends for safe shipment and the crew for safety.

(The last article will deal with the navigational aids provided by the Coast Guard and Corps of Engineers for the safety of the river tows, as well as the precautions taken aboard the boats in an effort to eliminate or minimize accidents and injury.)

Well lighted and airy, this engine room is a model of compact towboat design.

DECK FOAM SYSTEM INSTALLED ON SS FORT FETTERMAN

NEWLY JUMBOIZED, the SS *Fort Fetterman* is plying the ocean routes not only with an enlarged midbody, but with the latest concept in tanker fire protection, a deck foam system.

Utilizing large turret nozzels placed at strategic points on the fore and after houses and with hose stations for portable nozzles, the system provides protection to all tanks and weather decks.

The foam system has the further advantage of requiring less piping on deck than do other established means of cargo tank protection such as steam smothering, carbon dioxide, or tank foam systems in which lines lead to each of the individual tanks. These latter methods might be viewed as "static" protection, requiring a minimum of personnel to release the extinguishing agent but limited in application to those spaces for which the piping is provided.

This foam system is a more "dynamic" protection, but will necessitate participation of the ship's crew to fight the fire wherever it occurs. Training will, therefore, be an essential element in the effectiveness of this new installation.

The foam system in SS *Fort Fetterman* is based on the concept that a fire in a sealed tank has a good chance of extinguishing itself by consuming the available oxygen, and the system is intended to cope with the very real condition of disruption of the tank through collision or explosion. Since this could throw oil out over the ship, the foam system requirements are computed on the basis of the area of the upper deck over the cargo tanks rather than on tank volume, as is the case of other systems. The water rate required to be delivered to the foam making equipment is .016 gpm per square foot of area over all of the cargo tanks. Sufficient foam chemical must be provided to operate the equipment at the above water rate for a period of 15 minutes, without recharging. Details of these requirements are contained in the Coast Guard's Navigation and Vessel Inspection Circular No. 5–57.

The foam main in SS *Fort Fetterman* runs from the machinery space along the upper deck walkway to the midships house. One large pivoted monitor nozzle is located on each wing of the poop deck, directed forward, one on each wing of the bridge deck, amidships, directed aft, and one on each wing of the bridge deck, directed forward; a total of six. In addition, there are ten hose stations distributed on the poop and upper decks with hose and portable foam nozzles to add to the flexibility of the installation, and to assure full coverage. Stop valves at a number of points along the foam main permit insolation of ruptured sections.

DURING RECENT SEA TRIALS OF THE "JUMBOIZED" SS *Fort Fetterman* a group of interested industry and government officials witnessed a test of the newly installed deck foam system seen in this photograph. Photo Courtesy *Keystone Shipping* Co.

The entire required amount of foam chemical is stored in a large tank in the machinery space. Once the system is put into operation, the foam solution is automatically pumped into the foam main at the proper rate by a positive displacement type proportioner which is driven by a water motor inserted in the main. The unused foam chemical remaining in tank is not diluted, and the full storage amount can be drawn without recharging. In these respects, the system differs from the more-familiar pick-up tube or portable proportioner, which required the concerted efforts of a team of men in order to maintain the foam supply.

The vessel has two fire pumps which can be used either separately or in parallel on the foam main. Since the fire main is still required to be available, the fire pumps each have sufficient capacity to meet the required water rate.

It is sincerely hoped that SS *Fort Fetterman* will never have use for the new foam installation. However, should the need arise, in the hands of a trained crew, the foam system should prove a versatile and effective means of cargo tank fire protection.

HINTS ON OFFICIAL LOGBOOKS

"OFFICIAL LOGBOOKS or Unofficial Notebooks" have been the subject of previous articles in this publication.* In each case the importance of properly maintaining the Official Logbook has been stressed to prevent them from becoming notebooks without legality or authority.

Supplied gratuitously, the Official Logbook, CG–706–B, contains information about a ship and its crew that is not found in any other single document. The entries are required by law and pages 1 and 2 of each logbook spell out the statutory requirements. This article is intended to once again call the attention of Masters and others concerned to these specific instructions.

Sometimes the only evidence in disciplinary proceedings, under Revised Statute 4450 as amended (46 U. S. C. 239), against merchant seamen are entries made in the Official Logbook. When these entries are not in strict compliance with the statutory requirements set forth in R. S. 4597 (46 U. S. C. 702) which is quoted on page 2, there has been difficulty in determining whether the log entries alone are sufficient to establish a prima facie case in support of the charge and specifications.

It has been held that "substantial compliance with the true spirit and intent of section 702 of Title 46 U. S. C. A." is sufficient to support the offense of desertion. *The Sharon* (D. C., Va., 1931), 52 F. 2d 481 at 485. (The general purpose of these provisions of law is to prevent the oppression of seamen by trumping up unfounded claims of misconduct.) By analogy, "substantial compliance" is the criterion adopted in these disciplinary proceedings.

Below are the statutory requirements of R. S. 4597 (46 U. S. C. 702), primarily concerning the form of the Official Logbook entries, followed by a note after each requirement summarizing what is considered to be the minimum "substantial compliance" so as to prove, in the absence of rebuttal, the offense charged:

Item 1. Offenses shall be entered on the day the offense is committed.

NOTE: Some leeway is permitted as to the time of making the entry but this is limited to a matter of days rather than weeks or months.

Item 2. The entry shall be signed by the Master and the Mate or some other member of the crew.

NOTE: This is mandatory as to the substance of the offense in all cases. Although not necessary, it is helpful when one or more of the witnesses to the logging was also a witness to the incident on which the log entry is based.

Item 3. If the offender is still on board, he shall be furnished with a copy of the entry before arrival in the next port, or, if the vessel is in port at the time, the copy shall be furnished before departure; and the copy shall be read to the seaman so that he can reply to it.

NOTE: Again, moderate leeway is permitted with respect to the time element of the reading, delivery and reply. These requirements do not apply in cases of desertion and failure to join since the seaman is no longer on board the ship. Compliance with these requirements need only be indicated in the logbook to the extent mentioned below.

Item 4. A statement that a copy of the entry has been so furnished or read to the seaman.

NOTE: This statement need not state both that a copy was read and furnished to the offender as required by Item 3 but both such statements are preferable. In the absence of either such statement, the seaman's signed reply to the charges is barely adequate since it shows that the contents of the entry must have been made known to him in order for him to be able to reply. The statement or reply must be signed separately or together with the entry of the substance of the alleged offense as indicated in Item 2; that is, by the Master and a member of the crew.

Item 5. A statement showing the seaman's reply, if he desires to make any, signed by the Master and a member of the crew.

NOTE: The seaman need not sign his reply if such is undersigned by the Master and a crew member, unless the reply and seaman's signature is used to show that he was acquainted with the contents of the entry in lieu of a statement that it was read to him or he was given a copy of it. See Item 4. The seaman's signature must also appear when the Master and crew member have not signed underneath the reply. Normally, the latter two signatures should appear after the completed entry including the statement of delivery of a copy or reading to the seaman and his reply or the statement that he did not make any reply.

There are monetary penalties against Masters provided for in R. S. 4292 (46 U. S. C. 203) for failing to make required statutory entries in the Official Logbooks in the proper manner. Therefore, Masters of United States merchant vessels are urged to follow these statutory requirements of R. S. 4597 (46 U. S. C. 702) as closely as possible in making entries in the Official Logbooks of their ships. The Logbook may be the sole evidence available to present at a hearing conducted for the purpose of maintaining the high standard of behavior necessary for shipboard safety and the general welfare of personnel on the ship.

*September 1952, January 1954, August 1955.

IMPATIENT COLLISION

The absolute duty of an overtaking vessel to keep clear of the vessel overtaken has been emphasized in a recent U. S. Court of Appeals decision reported in the *American Maritime Cases*. (*B. F. Diamond* vs. *MV Fernside*, 1958, AMC 643).

Arising out of a case which occurred when the *MV Fernside* came up to and rammed a tug and tow in the course of overtaking, the Court agreed that the tug-tow was (1) on the wrong side of the channel, (2) acceded to the *Fernside's* proposal to pass, and (3) failed to post a man where he could hear whistle signals.

In delivering judgment in favor of the overtaken vessel, the Court remarked: "* * * there was nothing to account for the collision except the wholly unwarranted, the inexcusable impatience and negligence of those on the *Fernside*, evidenced, (1) by their importunate and headstrong persistence in pressing for consent to pass on the tug's port side, and (2) by their attempting thereafter to force a passage, all without giving sufficient consideration to the situation as a whole and particularly to the consequences of a failure to negotiate the passing, and on unauthorized assumption that the tow would, or should, move out of the way."

NEW MERCHANT SHIPS

There were 794 new merchant vessels added to the world's oceangoing fleet in 1957, according to a new publication issued by the Maritime Administration, U. S. Department of Commerce. Entitled "New Ship Deliveries during Calendar Year 1957," the publication analyses the steam and motor merchant ships of 1,000 gross tons and over built in the United States and other countries during the year by type, size, speed, and draft. It is a companion publication to "Statistical Analysis of the World's Merchant Fleets as of December 31, 1956," issued in February 1958 by the Maritime Administration.

Such a comparison shows, for example, that while the United States owned 20 percent of the world's oceangoing merchant ships on December 31, 1956, she added only 1 percent of the new ships delivered in 1957. Average speed of world merchant ships at the end of 1956 was 12.1 knots, while the new ships averaged 14.7 knots. Average draft of the old ships was 24.6 feet; of the new ones, 26.9 feet.

The new publication may be purchased from the Government Printing Office, Washington 25, D. C., for 30 cents per copy.

MARITIME SIDELIGHTS

Preparing for a special "lift-on lift-off" cargo container system between California and the Hawaiian Islands, Matson Navigation Company has ordered 350 25-foot van size units and a dock crane to handle them, it was announced in the marine press.

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Less than 11 months after the loss of the sailing ship *Pamir*, German Naval authorities have launched a new 1,760-ton 3-masted training bark, the *Gorch Fock*, to continue giving prospective German merchant marine officers experience with sailing vessels. In contrast to the 86-man crew of the *Pamir* and *Passat*, this new vessel will accommodate 250 trainees.

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Government, labor, and industry representatives gathered in Washington, D. C., for the 1958 symposium on nuclear merchant ships sponsored by the Maritime Administration and the Atomic Energy Commission. The object of the well-attended meeting was to acquaint shipping officials with progress underway on the NS *Savannah*, to discuss the economic outlook for nuclear-powered merchant ships, and to gain the benefit of the views of leaders in the marine industry.

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The California Shipping Company's *Safety Bulletin* included what must be an inevitable article in its current issue:

"A 2nd assistant on an East Coast T–2 dropped a safety shoe on his toe while dressing. Rumor hath it that this man will be supplied with hard-toed safety socks against this hazard."

SAN FRANCISCO AS SEEN by these youngsters was written into the history books on July 30th when the last trans-bay passenger ferry rang up "finished with engines." The once-bustling 43-boat ferry fleet was reduced to four after World War II and with the final run by the *San Leandro* the service has passed from the scene for the first time in more than 100 years. Photo Courtesy Southern Pacific.

Accident statistics released by the Seafarers' Welfare Safety Department for the first three months of 1958 show the greatest number of accidents, percentage wise by departments, were to deck maintenance men, wipers, and chief cooks and utility men. During this period the Seafarers had 348 accidents reported of which 111 were logged as lost-time casualties. Falls accounted for 15% of all accidents reported.

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Edward M. Shaw, second mate of the Great Lakes Steamer *Philip Minch*, has been presented the Milwaukee Police Department's Outstanding Citizen Award for his part in the rescue of a mother and her 3-year old daughter from the Menominee River, it was announced in the Lake Carrier's Association *Bulletin*.

A revolutionary development in shipbuilding technique will enable Britain's latest luxury liner, the 40,000 ton *Oriana* now being built in Barrow-in-Furness, to move sideways under her own steam. The "full speed sideways" order will be transmitted from the bridge to propeller assemblies arranged across and through the vessel at the bow and stern, according to a report in *Fairplay*, the British shipping journal. This is the first time a ship has had built-in "crab crawl" propulsion, the article noted.

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A study on the "Evaluation and Control of Sweat Damage" to canned goods transported by sea has been released by the Stanford Research Institute. The 123-page technical report discusses methods of minimizing this damage and is the result of study and experimentation carried out by the Institute.

Plans to construct three new passenger-cargo vessels for service from the United States East Coast to the West Coast of South America have been submitted by Grace Line Inc. to the Federal Maritime Board. The company has applied for a construction-differential subsidy to assist in building the vessels, for which, its application states, it expects to place contracts by January 1959. The ships are planned to be 20-knot container and reefer type vessels, capable of carrying 69 passengers each; 240 containers of 930 cubic feet each (163 under deck and 77 on deck) and 392,210 cubic feet of refrigerated cargo.

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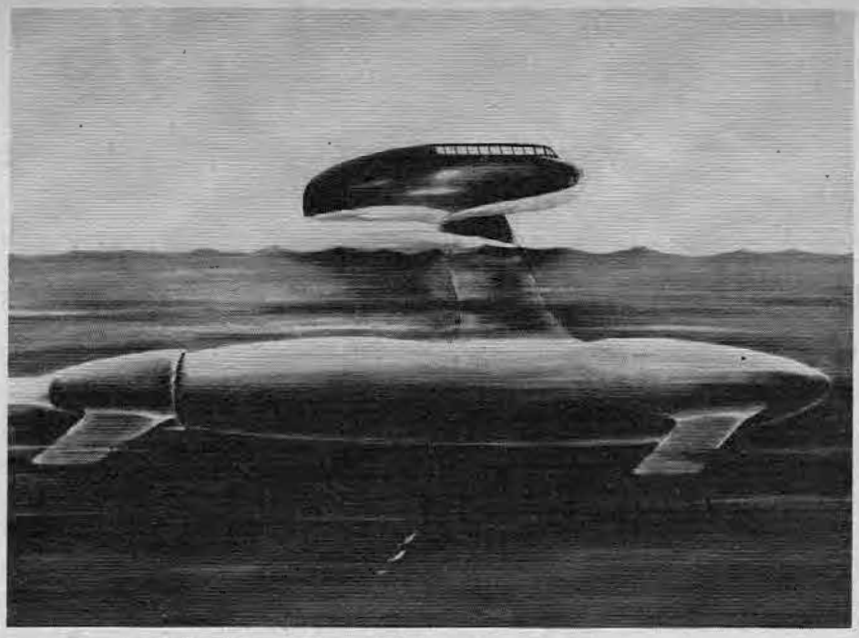
Invitations to bid on scrapping 47 damaged or unstrengthened Liberty ships have been issued by the Maritime Administration. No bids of less than $70,000 per vessel will be considered. The vessels are offered to United States citizens for scrapping and constitute all those remaining from 100 Liberty ships selected from the National Defense Reserve Fleet to be scrapped in accordance with a program announced in November 1957, except for 33 coal-burning Libertys for which sale legislation is pending, and one ship turned over to the Navy. The 19 ships sold since November 1957 have brought a return of $1,579,400.64.



UNDERWATER CARGO VESSEL OF TOMORROW is pictured in this artist's conception of design being worked out by Aerojet-General Corporation's Underwater Engine Division. Although it looks as if it may have been taken from a Jules Verne notebook, this is no mere product of a writer's imaginative daydreaming. Aerojet-General is under contract to the United States Maritime Administration to make a feasibility study of a high-speed, completely submersible hull for a cargo vessel. The submerged torpedo-shape would carry the freight, and the gondola structure would house the crew and navigational equipment. The ultimate power source for driving the propulsion jet pumps is expected to be nuclear. Photo Courtesy *Aerojet-General Corporation.*

LEGAL DECISIONS

In *Bradshaw v. The Trawler Carol Ann, et al,* 1958 A. M. C. 962, an inboard vessel was held liable when a crewman crossing to his vessel moored outboard fell through an unlighted hatch. The crewman was held to be more than a mere licensee as in this instance the mooring arrangement existed for the mutual benefit of all vessels involved; the inboard vessel thereby invited and consented to its being used for safe passage to and from the dock.

Such a situation could arise on almost any vessel when a lighter, fuel barge, or another ship is moored outboard and it is necessary for the crew to cross your ship to reach shore. In the light of the above decision possible liability for any injury incurred in making such a passage may be minimized by marking off a safe, well-lighted passage, and advising all concerned of its location and requiring that they make use of it when crossing.

COMMENTS INVITED ON RULES OF THE ROAD

United States preparations for an International Conference on Safety of Life at Sea scheduled to be held in London early in 1960 are proceeding under the direction of the Commandant of the Coast Guard. Membership in committees to present this country's position paper on pertinent parts of the 1948 Convention for the Safety of Life at Sea and the International Load Line Convention has been made up from industry, government, and labor. The various committees are: Construction, Lifesaving, Radio, Safety of Navigation, Nuclear Power, and Load Line.

As a part of this work the Safety of Navigation Committee met at Coast Guard Headquarters on August 8 in an organizational meeting and established three subcommittees, including a Rules of the Road Subcommittee.

Preliminary discussions of the Rules of the Road Subcommittee emphasized the fact that modern technological advances have raised new problems for the committee. Even though there may not be many changes recommended, the United States' position on the Rules must be fixed prior to the 1960 Conference.

In order to achieve more harmonious expression of the United States' position and to prevent neglecting any possible source of information each representative on the Committee has been asked to solicit his organization for recommendations and suggestions. While this will insure fairly complete coverage, it is the opinion of the Committee that the Rules of the Road have such far-reaching effect that everyone in the maritime field should be offered the opportunity to comment or recommend in that area.

Accordingly, all mariners are invited to submit their comments and recommendations on the International Rules of the Road to the Commandant (MVP), United States Coast Guard, Washington 25, D. C. It cannot be too strongly emphasized that comments to be useful must be constructive with a definite solution proposed where possible. References to specific rules would be most helpful. In addition, the time scheduling is such that all comments must be received prior to 1 December 1958 in order to be considered by the Committee.

MORE ASPHYXIATION CASES

IN THE May 1958 issue of the *Proceedings* an article was printed on asphyxiation in closed spaces. Since that time reports of two more cases have been received. Although occurring two thousand miles and two months apart, the cases are strikingly similar in almost every detail. Both involved shore workers, but since they happened aboard vessels and seamen are not immune to the hazards, they bear review here.

DETAILS FOLLOW

On a tank barge undergoing repairs, two men entered a cargo tank which had previously carried benzol, in order to wash down the scale. Neither wore respiratory protective equipment. Upon reaching the bottom and finding no pressure on the hose, one of the men ascended the ladder. As he did so his partner was observed to collapse in the bottom of the tank. A third man immediately entered the tank without any type of breathing apparatus and attempted to rescue the stricken man. He succeeded in moving him close to the ladder before the effects of the fumes forced him to climb out of the tank, where he collapsed on the deck. The stricken man's partner then reentered the tank to attempt the rescue himself. Upon reaching the bottom of the ladder he collapsed almost immediately. A fourth man in the meantime had obtained a fresh air breathing apparatus and was able to extricate the two men.

The man who originally had been overcome survived, but his partner who had attempted the rescue without adequate protective equipment, did not.

In the second case, two painters were spraying a double bottom tank with benzol thinned paint. Each wore a paper hood over his head, with an air bleeder line from the spray gun to the back of the hood. One of the men had unknowingly torn a hole in his hood while crawling through a lightning hole, and after a few minutes he collapsed. His partner immediately climbed out of the tank and summoned aid. Another worker rushed to respond and without any kind of breathing apparatus climbed into the tank. He too collapsed. The two men were finally removed from the tank, and once again the man who was first overcome survived, and his heroic but incautious rescuer perished.

In addition to re-emphasizing the risk involved in entering a questionable space without adequate protection, these cases suggest that the men involved were not familiar with the properties of benzol.

BENZOL DEFINED

For the information of those who may have occasion to come in contact with it, benzol is another name for benzine, a clear, colorless liquid of aromatic odor, distilled from coal tar. It will freeze solid slightly above the freezing point of water but has a flash point of about 012° F., and will therefore flash below its own freezing point. Benzol gives off vapors at ordinary temperatures. These vapors are 2.77 times heavier than air and within a range of 1.5 percent to 7 percent by volume in air are highly explosive.

According to the Chemical Safety Data Sheet prepared by the Manufacturing Chemists' Association, acute poisoning results from inhalation of high concentrations of this vapor (about 3,000 parts per million by volume of air). Being both heavier than air and toxic, fresh air breathing apparatus or self-contained oxygen-breathing apparatus are the only respiratory protective devices safe for use in spaces where the atmospheric concentration of benzol vapors is not known to be safe. First aid for a man overcome by benzol vapor calls for immediate removal to fresh air and artificial respiration. Of course, the doctor should be summoned at once.

Due to the greater relative weight of benzol vapors, satisfactory ventilation of a tank or other closed space can only be accomplished by removal of the vapors from the lowest portions of the space.

Benzol poisoning may also occur by absorption of the liquid through the skin and should never be used to clean hands or clothing. Clothing soaked or wetted with benzol should be removed promptly and because the vapors are highly inflammable such clothing should never be placed near spark-producing devices or open flames. Heavy winter clothing may also harbor vapors and in cold weather the liquid may freeze on the clothing and upon entering a warm compartment vaporize and cause a serious fire hazard to the wearer.

Benzol may be tricky but ignorance is the real killer. Like any other product benzol can be handled safely when its properties are known and the hazards are understood.

MERCHANT MARINE STATISTICS

There were 941 vessels of 1,000 gross tons and over in the active oceangoing United States merchant fleet on August 1, 1958, according to the Maritime Administration. This was 2 more than the number active on July 1, 1958.

There were 32 Government-owned and 909 privately owned ships in active service. These figures did not include privately owned vessels temporarily inactive, or Government-owned vessels employed in loading grain for storage. They also exclude 31 vessels in the custody of the Departments of Defense, State, and Interior.

There was an increase of 1 active vessel in the privately-owned fleet. One new tanker, the *Atlantic Enterprise* was delivered into service. This increased the total privately owned fleet to 1,001 ships.

Of the 92 privately owned inactive vessels, 19 dry cargo ships and 38 tankers were laid up for lack of employment, 14 less than on July 1. Most of the others were undergoing repair or conversion.

The Maritime Administration's active fleet increased by 1, while its inactive fleet increased by 1. One freighter, the *Champ Clark*, was sold for scrap. Three transports owned by the Navy, the *Gen. Harry Taylor*, *Gen. R. L. Howze*, and *Gen. H. B. Freeman*, were turned over to the Administration. One Navy ship in fleet custody was turned over to the Navy. This increased the Government fleet to a total of 2,121. The total merchant fleet, active and inactive, increased to 3,122 on August 1, 1958.

No new ships were ordered, but conversion contracts for 2 passenger ships, 4 freighters, and 1 bulk carrier were placed. One new tanker, the *Atlantic Enterprise*, was delivered, 1 new tanker, the *World Banner*, was delivered for foreign flag operation, and a converted tanker, the SS *David E. Day*, was delivered. The total of large merchant ships on order or under construction in United States shipyards rose by 4 vessels to 104.

Seafaring jobs on active United States-flag ships of 1,000 gross tons and over, excluding civilian seamen manning Military Sea Transportation Service ships were 51,575. Prospective officers in training in Federal and State nautical schools numbered 1,691.

STANDARD TUGBOAT SIGNALS

The Coast Guard has promulgated internal instructions for hand and whistle tugboat signals to be used by commanding officers of Coast Guard vessels when utilizing Navy tug service when there is no pilot on board the vessel. This instruction also states that they may be used at other appropriate times and occasions in an effort to achieve standardization.

These signals were developed and promulgated by the Navy because a need was indicated for a standardized set of tugboat signals that would be simple, would not be subject to misinterpretation, and would conform in general with signals now used by pilots, and that civilian tug and pilot associations and other governmental agencies would be encouraged to use these signals.

They are published herewith in the *Proceedings* to help give the widest possible dissemination of the signals, and are not to be construed as being regulatory in nature.

Navy Recommended Tug Boat Signals

HAND WHISTLE (Police type)

FROM HALF SPEED ASTERN TO FULL SPEED ASTERN	1 BLAST
FROM STOP TO HALF SPEED AHEAD	1 BLAST
FROM HALF SPEED AHEAD TO STOP	4 SHORT BLASTS
FROM HALF SPEED AHEAD TO FULL SPEED AHEAD	1 BLAST
FROM FULL SPEED AHEAD TO HALF SPEED AHEAD	2 BLASTS
FROM STOP TO HALF SPEED ASTERN	4 SHORT BLASTS
FROM HALF OR FULL SPEED ASTERN TO STOP	1 BLAST
CAST OFF, STAND CLEAR	1 PROLONGED 2 SHORT

HAND SIGNALS

NOTES:

1. A blast is 2 to 3 seconds duration.
   A prolonged blast is 4 to 5 seconds duration.
   A short blast is about one second duration.
2. In using whistle signals to direct more than one tug, care must be exercised to ensure that the signal is directed to and received by the desired tug. Whistles of a different distinct tone have been used successfully to handle more than one tug.
3. These signals may be transmitted to the tug by flashing light. However, flashing light signals should be restricted to use only when hand whistle or hand signals cannot be used.
4. Normally these whistle signals will be augmented by the hand signals given below.

HALF SPEED AHEAD OR ASTERN—Arm pointed in direction desired

FULL SPEED (Either)—Fist describing arc (as in "bouncing" an engine telegraph)

DEAD SLOW (Either)—Undulating movement of open hand (palm down)

STOP (Either) Open palm held aloft facing tug

TUG TO USE RIGHT RUDDER—Hand describing circle as if turning wheel to right (clockwise) facing in the same direction as tug

TUG TO USE LEFT RUDDER—Hand describing circle as if turning wheel to left (counterclockwise) facing in same direction as tug

TUG TO RUDDER AMIDSHIP—Arm at side of body with hand extended, swung back and forth

CAST OFF, STAND CLEAR—Closed fist with thumb extended, swung up and down

NOTE: Tug shall acknowledge all of the above signals with one short toot (one second or less) from its whistle, with the exception of the backing signal which shall be acknowledged with two short toots and the cast-off signal which shall be acknowledged by one prolonged and two short toots.

GANGWAY INJURY

An injury suffered by a ship's cook when he slipped on a shore gangway has resulted in a U. S. District Court awarding him $6,500 damages against the shipowner.

Reported in *American Maritime Cases* 563, 1958, the case is particularly interesting because the Court found both the cook and the vessel negligent, although to a different degree. The cook was found to being contributorily negligent to the extent of 35 percent and the ship at 65 percent.

DETAILS FOLLOW

The shore gangway concerned was suspended from a conveyor located on the dock and consisted of three sections, that is, a set of movable accommodation steps which led from the dock to a platform attached to a banana loading crane, and steps leading to the deck of the vessel. When the cook approached the gangway it was noted the first set of steps was not secured to the platform, in fact it was 4 or 5 feet away.

Reaching the end of this platform, the cook did not request the steps be put in place, but attempted to descend to the dock by using some step-like ledges on the offshore end of the platform. In doing so he stepped on some grease or oil on these steps, causing him to slip and fall causing serious and permanent injuries to his left ankle and left foot.

The Court found the vessel *unseaworthy* in respect to the gangway, which, although a shore gangway it was adopted for use by the ship for purpose of ingress and egress for passengers and crew and was the only means provided.

The shipowner was further cited for:

Failure of the gangway watchman to inform the cook about the gangway being incomplete. * * * Permitting a greasy or oily substance to exist on said gangway in the area which the cook attempted to descend. * * * Failure to section off the step-like ledges, and for allowing the use of the gangway in its incomplete state.

The Court also found the cook negligent in attempting to descend via the offshore end of the platform, a route which he had never attempted before and which he had never seen other crew members use.

Gangways have been the subject of many articles in this publication and mariners are again cautioned to assure themselves the method of entering and leaving the ship is safe for all hands.

nautical queries

Q. Your vessel is on course 320° True at a speed of 8 knots.

At 0100 a vessel is observed on the PPI scope bearing 020° True at a range of 9 miles.

At 0106 the vessel is observed bearing 020° at a range of 7.5 miles.

(a) Assuming that both your vessel and the vessel observed maintain course and speed, determine the distance between your vessel and the vessel observed at their closest point of approach.

(b) Determine the course and speed of the vessel observed.

(c) Determine the course at 0112 which will clear the other vessel by 3 miles in the minimum length of time without change in your speed.

A. (a) The distance between your vessel and the vessel observed at the closest point of approach, assuming that course and speed were held, would be zero. The two vessels are on collision course (0136).

(b) The course of the vessel observed is 232.2° True.

The speed of the vessel observed is 13.0 knots.

(c) The course at 0112, which will clear the other vessel by 3 miles in the minimum length of time is 046.4° True (neglecting advance and transfer).

Q. Your vessel is on course 230° True at a speed of 6 knots.

At 0200 a vessel is observed on the PPI scope bearing 170° True at a range of 6 miles.

At 0210 the vessel is observed bearing 180° True at a range of 4.7 miles.

(a) Assuming that both your vessel and the vessel observed maintain course and speed, determine the distance between your vessel and the vessel observed at their closest point of approach.

(b) Determine the course and speed of the vessel observed.

(c) Determine the course at 0215 which will clear the other vessel by 4 miles in the minimum length of time without change in your speed.

A. (a) The distance between your vessel and the vessel observed at the closest point of approach, assuming that course and speed were held, would be 3.1 miles (at 0232).

(b) The course of the vessel observed is 287.4° True.

The speed of the vessel observed is 11.4 knots.

(c) The course at 0215 which will clear the other vessel by 4 miles in the minimum time is 122.5° True. (Without allowing for advance and transfer.)

Q. (a) In using a loran chart, the lines on the chart are for ground waves. Where are the corrections to be found when using sky waves?

(b) When sky waves are used for computing loran lines of position, are they more accurate close to the station or far away from the station?

A. (a) The corrections for using sky waves on a loran chart appear at the intersections of latitude and longitude on the chart.

(b) The accuracy of sky waves decreases as the stations are approached. They are more accurate far away from the station.

Q. (a) What precautions must be borne in mind in celestial navigation or piloting, when the navigator uses lines of position that cross at small angles?

(b) Where is the most unfavorable position for obtaining a line of position from a pair of loran transmitters?

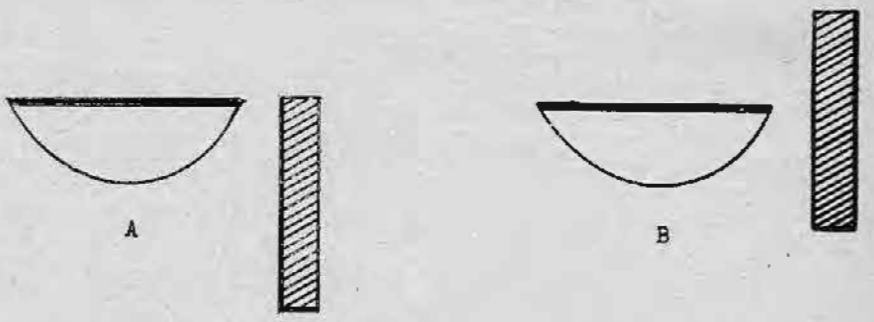
A. (a) When the navigator uses lines of position that cross at small angles, he must bear in mind that an error on either or both of the lines of position may throw the obtained position off many times the amount of the error.

(b) The most unfavorable location for obtaining a loran line of position is adjacent to the base line extensions, where the separation between the loran lines can be several nautical miles per microsecond, even within ground wave range of the station. In these areas of low geometrical precision near the base line extension, accuracy of position determination rapidly diminishes and the navigator should use the system with discretion. Here it may be impossible to determine, from the loran reading observed, which side of the base line extension the observer is on.

MAGNETISM

Q. (a) Given a compass and its Flinders bar corrector arranged in two alternate positions as sketched. In which position will the Flinders bar exert the greatest effect on the compass? Why?

(b) What sources of magnetism other than the vertical induction from the earth's field may influence the action of the Flinders bar?



A. (a) The position of Flinders bar as shown in A is where it will exert the greatest effect, because its pole is then nearest the compass.

(b) The heeling magnet induces magnetism in the Flinders bar, causing semicircular deviation. Hence, the heeling magnet should be set before the adjustment and if it is moved thereafter, the deviation on east and west should be rechecked and corrected with the fore and aft magnets.

The fore and aft magnets induce magnetism in the Flinders bar. This is especially true when they are high up in the bimacle. This causes no serious trouble except when the Flinders bar is increased or decreased. If Flinders bar is added, the fore and aft permanent correction is changed and hence the magnets need to be readjusted.

TABULATION OF UNSAFE PRACTICES

January through June 1958

Emphasizing the need for continued vigilance to detect unsafe practices are the reports involving two recent engine room casualties. In one an engineer suffered a broken leg when he stepped into an opening left when a deck plate was removed to permit work on machinery. The opening was improperly safeguarded. In the other casualty a member of the engineering force died when steam was accidentally introduced into the atmospheric drain tank where he was working. All steam lines connected to the tank were not adequately safeguarded.

Following is a tabulation of unsafe practices for the period January 1 through June 30, 1958:

	Atlantic	Great Lakes and Rivers	Gulf	Pacific	Total
1. Lack of Proper Officer Supervision					
a. Working overside, on stages, etc.	----	2	----	----	2
b. Working w/lines or rigging	----	5	----	----	5
c. Improper stowage cargo, stores, gear	2	4	2	4	12
d. Poor supervision of drills	----	9	----	----	9
e. Use and maintenance of equipment	1	4	----	1	6
f. Other	2	9	11	1	23
2. Unsafe Access to Vessels					
a. Gangway inadequate (L, W, STR.)	3	1	----	1	5
b. Gangway improperly secured	2	6	5	1	14
c. Gangway improperly rigged	3	8	5	4	20
d. Gangway angle too steep	2	31	4	----	37
e. Gangway not clear at either end	----	1	2	----	3
f. Ring lifebuoy w/lanyard not at hand	10	21	7	2	40
g. Insufficient number of gangways	----	----	2	----	2
h. Other	----	8	----	----	8
3. Unsafe Access to Spaces on Board Vessels					
a. Loose or jury rigged ladders	5	2	----	1	8
b. Missing or loose ladder rungs or steps	11	6	9	3	29
c. Ladders deteriorated to a weakened condition	8	4	14	1	27
d. Cluttered doors or passages	4	----	1	2	7
e. Blocked or locked escape doors or ladders	6	2	2	2	12
f. Ladders without hand rails	----	2	----	----	2
g. Other	2	3	----	----	5
4. Hazards at Deck Openings, Ship's Side, Catwalks, Etc.					
a. Inadequate or no lifelines, chains or rails	4	12	9	6	31
b. No provision for removable lifelines	----	2	----	----	2
c. Weakened lifelines, rails or chains	8	2	7	3	20
d. Hatch covers or beams improperly maintained or dangerously piled	1	1	3	1	6
e. Hatch beam locking lugs missing or defective	2	1	----	12	15
f. Catwalks, gratings not provided or deteriorated	----	4	2	----	6
g. Defective F. O. tank vents, screens, check valves	12	8	20	1	41
h. No guards or rails at deck openings	2	2	3	3	10
i. Other	1	10	3	----	14
5. Hazardous Cargo Handling Gear					
a. Safe load not marked on booms	2	----	8	----	10
b. Use of deteriorated cable, lines, hooks, etc.	2	1	----	----	3
c. Improper rigging (guys, etc.)	----	1	----	----	1
d. Other	2	----	1	----	3
6. Hazardous Conditions in Use and Maintenance of Life Saving Equipment					
a. Faulty controls (limit, disconnect switches, etc.)	----	2	9	1	12
b. Safety devices by-passed or missing	----	1	----	2	3
c. Faulty boat releasing gear	1	1	5	3	10
d. Defective pulleys or wheels on davits	3	----	1	3	7
e. Improper stowage—life ring buoys	3	1	5	8	17
f. Lifeboat not properly secured	1	6	----	2	9
g. Poor maintenance of required equipment	10	2	1	4	17
h. Other	20	11	7	----	38
7. Ventilation Hazards					
a. Improper ventilation of confined spaces	1	5	3	----	9
b. Accumulation of grease and dust in vents	1	8	2	4	15

	Atlantic	Great Lakes and Rivers	Gulf	Pacific	Total
7. Ventilation Hazards—Continued					
c. Gas masks, F. S. Lamp, etc., improperly maintained and inaccessible	1	----	4	----	5
d. Use of toxic solvent in confined spaces	2	----	----	----	2
e. Faulty equipment	----	1	----	----	1
f. Other	4	----	8	----	12
8. Lighting Hazards					
a. Exposed wiring or fixture connections	10	9	7	9	35
b. Long or defective extension cords	2	8	3	3	16
c. Insufficient light at gangways, ladders, etc.	----	4	1	2	7
d. Improperly secured or jury rigged wiring	8	12	7	4	31
e. Defective switches, fixtures, wiring	1	10	2	1	14
f. Vapor globes and guards missing from lights in hazardous areas	1	4	----	----	5
g. Other	----	2	3	----	5
9. Electrical Equipment Hazards					
a. Portable equipment not guarded	2	8	12	6	28
b. No guard, rubber mat or drip shield	4	8	5	----	17
c. Overfused circuits	1	2	1	----	4
d. Other	5	11	3	3	22
10. Hazardous "Hot Work"					
a. Disregard of precaution while welding	----	----	1	----	1
b. Lack of valid gas-free certificate	1	----	----	----	1
11. Hazardous Deck Conditions					
a. Oil spills on deck	3	16	8	3	30
b. Loose or oily floor plates, gratings, etc.	2	1	8	1	12
c. Cluttered decks	2	8	15	6	31
d. Hose, wire, etc. led along decks	1	3	----	----	4
e. No deck battens or wood gratings where needed	3	3	3	----	9
f. Floor plates, gratings, supports wasted	3	3	----	----	6
g. Oil and debris in bilges, etc.	1	10	1	----	12
h. Other	2	4	3	3	12
12. Machinery Hazards					
a. Guards on moving machinery inadequate	10	10	12	4	36
b. Boiler water gage glass not shielded	----	3	1	----	4
c. Steam lines improperly lagged or secured	5	5	4	1	15
d. Faulty relief valves	4	1	2	----	7
e. Improper maintenance of equipment	1	11	2	1	15
f. No relief valve or reducing valve	3	----	1	----	4
g. Valve subjected to steam and water pressure	2	2	2	----	6
h. Defective or missing pipe guards or hangers	6	4	6	1	17
i. Other	24	9	8	3	44
13. Tank Vessels					
a. Ullage holes open w/out flame screens	5	22	29	----	56
b. Improper loading of cargo	----	----	2	----	2
c. Cargo tanks open but not gas-free	1	12	6	----	19
d. Faulty P. V. valves and flame screens	5	9	5	----	19
e. Other	3	21	12	----	39
14. Miscellaneous					
a. Firefighting equipment defects	6	9	47	1	63
b. Others not included above	5	3	----	----	8
Grand Total	276	460	387	128	1,251

ACCIDENTS IN BRIEF

Here is a condensation of some accidents reported to Coast Guard Headquarters during the past month. A capsule glimpse into the cause * * * and effect. In each case the victim was incapacitated 72 hours.

CAUSE	EFFECT
	
Slipped on coil of air hose	**Fractured right ankle.**
Slipped on oily deck	Fractured ribs.
Fell from bunk ladder	Contusion lumbo-sacral area.
Lost control of mooring line	Incapacitated 5 days.
Tripped on cross batten	Broken left arm.
	
Chipping rust, hammer slipped	**Severe contusion of right hand.**
Rubber wash-down hose pulled from connection	Second degree burns, left arm, left side of body.
Lowering work boat	Fractured finger.
	
Slipped on wet deck—three passengers fell on top of him	**Contusions—8 days incapacitated.**
Moving machinery	Lost left hand.
Leaking boiler blow-down valve	First, second, third degree burns.
Tools carried in hand. Contacted resistor bank	Electrical burns.
Heaved on line instead of slacking it	Right hand mutilated.
Machine shop grinder	Cut off little finger.

MAIN PROPULSION EQUIPMENT OF T–2 TANKERS

By Commander James M. McLaughlin, USCG
Merchant Vessel Inspection Division Coast Guard Headquarters

DURING THE past 4 years T–2 tankers have sustained serious breakdowns involving the main propulsion equipment as reflected in the following table:

1954— 8
1955—14
1956—12
1957— 4

Considering the number of T–2's operated during these years, this may not be an unsatisfactory record percentagewise. On the other hand perhaps these figures might have been lower—if the ships making up these figures had received more attention regarding maintenance of the electric plant. Certainly these outages were costly—probably much more expensive than routine maintenance.

The report of an investigation into the cause of a recent casualty to the main generator of a T–2 tanker contained the following recommendation:

"It is recommended that this casualty be publicized in order that operators of T–2 tankers be alerted to the possibility of similar weaknesses in main propulsion generators, motors, and their protective devices. It appears that periodic checkups by competent electrical factory service representatives are indicated. These check ups should include:

a Phase relay failure
b Field relay
c Field circuit breaker
d Visual inspection
e D. C. Absorption voltage test"

In the above case the tanker was built in 1944 and consequently came in for her share of overload operation occasioned by wartime demands. Operating in the intervening years, she was laid up in 1955. A year later in response to the needs of the time she was again placed in service. The instant breakdown occurred 8 months later with the vessel at sea.

Early one morning the stator coils on the main generators shorted, causing an electrical fire which was extinguished within a short time. Eighteen stator coils were found to be damaged. Since no generator spare coils were carried it was necessary that the vessel be towed to port.

Considering the age, overload operation during wartime and in-and-out-of-service periods experienced by vessels of this class, it becomes more important to follow recommendations

of the manufacturer in the care and maintenance of the equipment. In addition to routine inspection and cleaning of all contacts, testing of all protective devices, tightening of all connections, etc., the insulation resistance of all components should be measured at regular intervals and a record kept of all readings. Any significant downward trend should be interpreted as a warning that insulation failure is in the offing and corrective measures should be taken before an actual failure causes extensive damage and probable disabling of the vessel when underway.

Since the main generator and controls on T-2's are used for discharging cargo, there are many in-port periods when the equipment is not stopped and therefore, no testing or maintenance performed. The operating schedules should provide for inspection and maintenance and the calling-in of factory representatives is recommended for regular servicing of equipment not within the capabilities of ships' force or company facilities.

APPENDIX

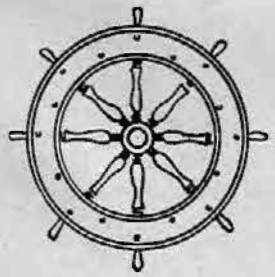
EQUIPMENT APPROVED BY THE COMMANDANT

AFFIDAVITS

The following affidavits were accepted during the period from 15 July 1958 to 15 August 1958:

Marine Brass Foundry, 1221 Clinton St., Hoboken, N. J., CASTINGS (Non-Ferrous).

Tate Engineering, Inc., 516 S. Eutaw St., Baltimore 1, Md., VALVES AND FITTINGS.



MARINE SAFETY PUBLICATIONS AND PAMPHLETS

The following publications and pamphlets are available and may be obtained upon request from the nearest Marine Inspection Office of the United States Coast Guard, except for cost publications which may be obtained upon application to the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Date of each publication is indicated following title.

CG No.	*Title of Publication*
101	Specimen Examinations for Merchant Marine Deck Officers. 1–50
108	Rules and Regulations for Military Explosives. 5–15–54
115	Marine Engineering Regulations and Material Specifications. 3–1–58
123	Rules and Regulations for Tank Vessels. 4–1–58
129	Proceedings of the Merchant Marine Council. Monthly Motorboat Safety. 1957–1958
169	Rules to Prevent Collisions of Vessels and Pilot Rules for Certain Inland Waters of the Atlantic and Pacific Coasts and of the Coast of the Gulf of Mexico. 4–1–58
172	Pilot Rules for the Great Lakes and Their Connecting and Tributary Waters. 4–1–58
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids. 7–2–51
175	Manual for Lifeboatmen and Able Seamen, Qualified Members of Engine Department, and Tankerman. 6–1–55
176	Load Line Regulations. 11–1–53
182	Specimen Examinations for Merchant Marine Engineer Licenses. 5–1–57
184	Pilot Rules for the Western Rivers. 7–1–57
190	Equipment Lists. 3–1–56
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel. 9–15–55
200	Marine Investigation Regulations and Suspension and Revocation Proceedings. 4–13–53
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels. 4–1–57
227	Laws Governing Marine Inspection. 7–3–50
239	Security of Vessels and Waterfront Facilities. 7–1–58
249	Merchant Marine Council Public Hearing Agenda. Annually
256	Rules and Regulations for Passenger Vessels. 3–1–57
257	Rules and Regulations for Cargo and Miscellaneous Vessels. 6–1–55
258	Rules and Regulations for Uninspected Vessels. 7–1–55
259	Electrical Engineering Regulations. 6–1–55
266	Rules and Regulations for Bulk Grain Cargo. 2–13–53
267	Rules and Regulations for Numbering Undocumented Vessels. 1–15–53
268	Rules and Regulations for Manning of Vessels. 9–3–57
269	Rules and Regulations for Nautical Schools. 11–1–53
270	Rules and Regulations for Marine Engineering Installations Contracted for Prior to July 1, 1935. 11–19–52
290	Motorboats. 7–1–58
293	Miscellaneous Electrical Equipment List. 4–15–58
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf. 1–2–57
323	Rules and Regulations for Small Passenger Vessels. (Not More Than 65 Feet in Length) 6–1–58

Official changes in rules and regulations are published in the Federal Register, which is printed daily except Sunday, Monday and days following holidays. The Federal Register is a sales publication and may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. It is furnished by mail to subscribers for $1.50 per month or $15.00 per year, payable in advance. Individual copies desired may be purchased as long as they are available. The charge for individual copies of the Federal Register varies in proportion to the size of the issue and will be 15 cents unless otherwise noted on the table of changes below.

Changes Published During August 1958

The following has been modified by Federal Register:
CG–172 Federal Register, August 9, 1958.
CG–184 Federal Register, August 9, 1958.

WORK CAREFULLY

THIS EAGER MESSMAN USED HIS FOOT FOR A CHOCK— NOW HE HAS NO USE FOR ONE SHOE OR ONE SOCK!

MORAL: PUT THE DOOR ON THE HOOK —

U. S. GOVERNMENT PRINTING OFFICE: 1958