

PROCEEDINGS OF THE MERCHANT MARINE COUNCIL UNITED STATES COAST GUARD

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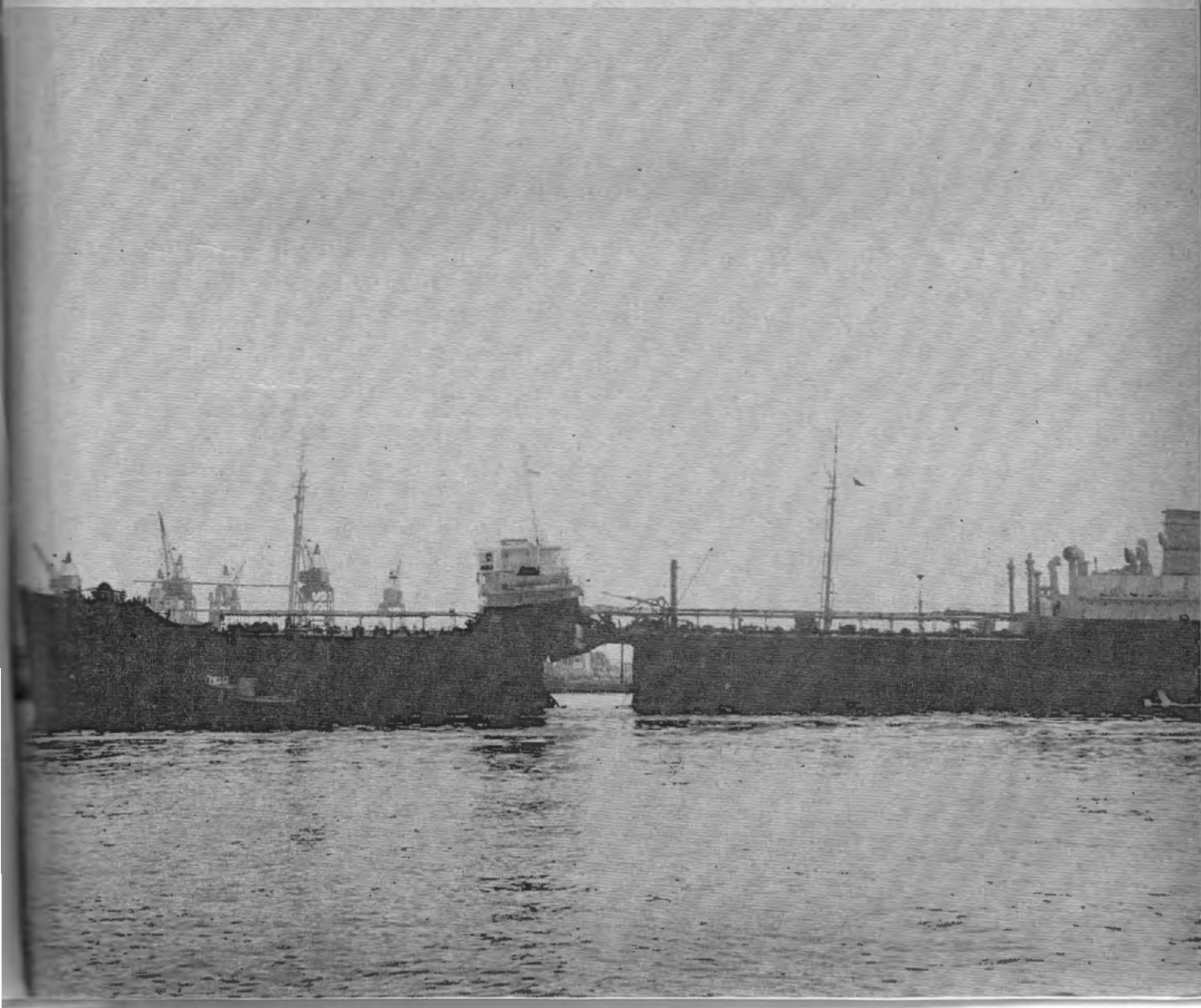
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COUNCIL ACTIVITIES

The Merchant Marine Council will hold a Public Hearing on Tuesday, 21 September 1954, commencing at 9:30 a. m., in Room 4120, Coast Guard Headquarters, 13th and E Streets NW., Washington, D. C., for the purpose of receiving comments, views, and data on the proposed changes in the navigation and vessel inspection rules and regulations as set forth in Items I to XVII, inclusive, of the Merchant Marine Council Public Hearing Agenda, CG-249, dated September 1954. The Agenda contains the specific changes proposed and where possible the present and proposed regulations are set forth in comparison form, together with the reasons for the changes, where necessary.

At this Public Hearing the following subjects will be considered in the order shown:

Item No.	Subject
I.	RULES FOR CERTAIN INLAND WATERS (CG-169); LIGHTS FOR LOG RAFTS
II.	LICENSING AND CERTIFICATING REGULATIONS; REVISION OF REQUIREMENTS
III.	VESSEL INSPECTION REGULATIONS; FOG GONGS
IV.	ELECTRICAL ENGINEERING REGULATIONS; TANK VESSEL REGULATIONS; MISCELLANEOUS AMENDMENTS
V.	TANK VESSEL REGULATIONS; MISCELLANEOUS AMENDMENTS
VI.	TANK VESSEL REGULATIONS; NEW REQUIREMENTS COVERING TRANSPORTATION OF MOLTEN SULFUR, ASPHALT, ETC.
VII.	VESSEL INSPECTION REGULATIONS; REVISION OF REQUIREMENTS, INFLAMMABLE AND COMBUSTIBLE LIQUID CARGO IN BULK
VIII.	MARINE ENGINEERING REGULATIONS; MISCELLANEOUS AMENDMENTS
IX.	PASSENGER VESSEL REGULATIONS; LIFEBOAT RADIOS
X.	CARGO AND MISCELLANEOUS VESSEL REGULATIONS; AMENDMENTS CONCERNING UNMANNED SEAGOING BARGES
XI.	SPECIFICATIONS; PLASTIC RING LIFE BUOYS
XII.	SPECIFICATIONS; BUOYANT CUSHIONS ON UNINSPECTED MOTORBOATS
XIII.	SPECIFICATIONS; BUOYANT VESTS ON UNINSPECTED MOTORBOATS
XIV.	SPECIFICATIONS; NAMEPLATE, WATERTIGHT DOORS
XV.	NAUTICAL SCHOOL REGULATIONS; MISCELLANEOUS AMENDMENTS
XVI.	DANGEROUS CARGO REGULATIONS; MISCELLANEOUS AMENDMENTS; NEW REQUIREMENTS; EDITORIAL CHANGES
XVII.	MILITARY EXPLOSIVES REGULATIONS; SHIPMENT OF HOUSEHOLD EFFECTS AND CHANGE IN DEFINITION SECTION FOR CLARIFICATION

(Continued on page 147)

TANKER ARRIVES MINUS AMIDSHIPS TANKS

Early one morning in the fall of 1953, a T-2 tanker arrived off a West Coast harbor, with a large, gaping hole amidships where Nos. 4 and 5 tanks had been (see Front Cover).

Clearly a violent explosion had occurred on board, but, like a great many tanker explosions, the cause was not as easily discernible as the effect. In addition to eliminating the tanks in which the explosion took place, Nos. 4 and 5, the blast was of such magnitude that the radio and navigation equipment in the amidship area was rendered inoperative. For this reason, there had been no notice of the casualty transmitted from the vessel.

This tanker operated in the coastwise service on the Pacific Coast, and was inspected and approved for the carriage of Grade A liquids. She was fitted with crack arrestors and had been reinforced in accordance with existing requirements.

The voyage in question had commenced at a West Coast port, where a cargo of bulk petroleum products had been loaded and distributed in the main cargo tanks. At that time, all the tanks, except Nos. 1 port and starboard and Nos. 7 port and starboard, contained various grades of gasoline. No. 1 port contained kerosene. No. 1 starboard and Nos. 7 port and starboard contained diesel oil.

The draft on departure was 28' 03" forward, 32' 01" aft.

The cargo was destined for two ports in the Hawaiian Islands, Honolulu and Kahului. The passage from the West Coast to Honolulu was uneventful and routine. The heaviest weather encountered on this trip occurred two days out when the wind rose to force 3.

Upon arrival at Honolulu the greater portion of the cargo was discharged. When departing from this port, cargo remained in Nos. 1 port and 4 center, 7 port and starboard, and 8 center, making the draft 5' 01" forward, 20' 07" aft.

In view of the fact that ballast had been added in No. 5 center and Nos. 6 port and starboard, the draft upon arrival at Kahului, T. H., was 7' 06" forward, 21' 10" aft.

On sailing from Kahului for the mainland, tanks were ballasted as follows: Nos. 2, port and starboard, full; Nos. 5 and 9, center, half full; Nos. 4, 6, and 8, port and starboard, half full. The departure draft was 9' 06" forward, 19' 06" aft. The master testified these ballast tanks were later filled full, with the exception of No. 9, center.

Certain cargo tanks were assigned as permanent ballast tanks on this vessel because of the anti-corrosion control system in use. These ballast tanks, Nos. 3, 5, 7, and 9 center, and Nos. 2, 4, 6, and 8, port and starboard, were fitted with magnesium anodes, which in conjunction with salt water ballast, set up a process designed to reduce corrosion of the cargo tank interiors.

Main cargo tanks, Nos. 2, 4, 6, and 8, center, and Nos. 1, 3, 5, 7, and 9, port and starboard, which were not used as ballast tanks, were fitted with a piping system which enabled them to be sprayed with a chemical solution after the cargo was discharged. These chemicals, a mixture of sodium nitrite and caustic soda, were used to reduce corrosion of the interior of the tanks.

Neither of these anticorrosion processes render the tanks gas free. The spraying of the chemical in the non-ballast tanks has a cleaning action as well as providing a protective film.

Accordingly, after leaving the Hawaiian Islands, the vessel's tanks were prepared in the above manner. Those designated as ballast tanks were ballasted. The nonballasted tanks were sprayed with the chemical solution.

The latter process involved adding water to the chemicals, after which the solution was pumped through the

spraying system in each individual tank to be treated, and then discharged overboard.

Inasmuch as some of the ballasted tanks had not been hosed down before ballasting, this process was carried out by discharging the ballast and refilling some of the tanks at sea.

Nos. 1, port and starboard, and No. 9 center tank were partially gas freed, and accumulated rust and scale were removed from these tanks at sea.

No. 5 center tank was emptied of ballast on the sixth day out, a Saturday, and discharging of ballast in No. 4 wing tanks continued through the next day.

Neither Nos. 4 nor 5 tanks were entered during this voyage.

On the return trip to the mainland, the weather conditions varied from a northeasterly wind of force 4 and moderate to rough northeasterly sea and swell to a northwesterly wind of force 4 and moderate northerly sea and heavy northerly swell. It was reported the vessel was in good trim at all times during this trip, and that no undue stresses resulted from ballasting operations.

In addition to a certain amount of unballasting on the seventh day out other work was taking place on deck.

The bos'n and a maintenance man had painted the main deck area in the shelter deck space amidships and



the use of this area was therefore somewhat restricted.

During the afternoon, the chief engineer entered the shelter deck space amidships to check the domestic water supply. The chief steward removed the soiled linen from the linen locker in this shelter deck area; and, inasmuch as the deck was still tacky, he placed rags under the bags of soiled linen. The chief pumpman also passed through this space while conducting ballasting operations, an unpainted strip having been left for this purpose.

After coffee time, at about 1520, the bos'n and the maintenance man returned to the shelter deck space area for tools and gear to ready the ship for arrival at the loading port. They raised the midship boom in the way of the starboard manifold, provided slings, wrenches, etc., so that everything would be in readiness for connecting the cargo hoses upon arrival.

As the afternoon progressed, the bos'n dismissed the maintenance man to stand his 1600 watch, and proceeded forward to the paint locker after picking up the paint pots and brushes from the shelter deck area. He then commenced squaring up the paint locker and disposing of unusable brushes and buckets over the side.

At 1600, when the ballast in Nos. 4 port and starboard tanks was approximately 12 inches in depth, the valves were closed since the stripping pump was to be used to remove the remainder. The ullage hole covers on No. 5

cargo tanks and No. 4 center tank were closed, but not dogged down; those on No. 4 port and starboard tanks were open. Flame screens were fitted in all ullage holes.

On the bridge the 12 to 4 watch had just been relieved. The weather conditions were: wind, NNW, force 2; small NW. sea and swell; unlimited visibility.

The mate on watch scanned the horizon and noted that no surface or aircraft were visible.

Suddenly, and without warning, at approximately 1608, an explosion occurred amidships in the vicinity of Nos. 4 and 5 main cargo tanks.

The Master was in his cabin asleep. The chief mate was working on cargo loading reports; with him was the third mate. The second mate, the radio officer, and the quartermaster were on watch on the bridge. On deck, the bos'n was forward at the starboard rail; the pumpman, abreast of No. 6 starboard cargo tank. All other personnel were aft.

The bos'n was the only eye witness to the explosion. From his position facing aft and to starboard, he saw black smoke, red flames, and debris extend outboard and to starboard from the shelter deck space. He sought refuge in the chain locker, and when no further explosions occurred, he returned on deck to find himself shut off from the rest of the vessel because of fire amidships.

The Master rushed to the bridge and closed the general alarm circuit.

The bridge was in shambles, and immediately the Master ordered all personnel in the area to proceed aft to the boats inasmuch as all emergency equipment amidships, including both lifeboats and the radio equipment, had been rendered useless.

Fire which broke out in the shelter deck area amidships is reported to have occurred immediately after the explosion. It burned with the greatest intensity on the starboard side, being fed by the contents of the steward's linen locker and also by samples of previous cargoes contained in glass containers stored in the quartermaster's locker, which was adjacent to the steward's locker.

While the boats were being readied aft, the Master, after inspection, determined effective means could be taken to minimize and control the damage. In the meantime, the engineer on watch stopped the main engine, and under the direction of the chief engineer turned the steam smothering system on. All the piping amidships had been ruptured, however, the steam did enter the affected area. There was no pressure in the water pipes on deck because of the broken fire lines, and it was necessary to lead hoses from the poop deck to the burning area.

The three cargo pumps were shut down by the pumpman immediately after the explosion. He had just passed through the shelter deck area going aft a few seconds prior to the explosion and was knocked to the deck by it. Fortunately, his injuries and those of several other crew members were not serious. The timing of this blast was to some degree fortunate, inasmuch as one or more persons had been in and out of the area most of the day.

While the fire hose was being led forward, No. 4 lifeboat was launched and ordered to stand by. The Master and chief mate fought the fire amidships, and when it appeared the fire fighting effort would be successful, the Master left the mate in charge of the fire-fighting party which had come forward. There was no confusion on board, all crew members, and particularly the engineroom personnel, had responded immediately to their stations.

The Master ordered No. 4 lifeboat back aboard at 1740, and preparations were made to get under way, inasmuch as the fire had been brought under control at 1720, or approximately one hour and ten minutes after the explosion occurred.

Since the main steering control in the pilothouse was no longer usable, the after steering station was manned. Orders to the engineroom were relayed by voice via personnel stationed



at intervals on the way to the engine room until a telephone system could be rigged.

At 1742, the main engine was put on slow ahead, and the vessel proceeded on its voyage at a reduced speed of from 30 to 40 RPMs until she arrived off her destined port at 0230 on the following day.

With the vessel secure in a safe harbor, the damage was evaluated and the task of attempting to determine the cause of this \$1,400,000 fire and explosion commenced. Extensive damage to the hull structure from frame 58½ to frame 75 and to the amidship house structure had resulted. All pilothouse equipment, radio equipment, lifesaving equipment, fire lines and steam smothering equipment in the amidships area had been damaged. As a result of this damage, no messages had been sent from the vessel requesting assistance or giving any details of the casualty, and none of the emergency equipment in the area was usable.

The area directly above Nos. 4 and 5 tanks, the amidships shelter deck, was inspected very thoroughly, particularly the electrical equipment. All the light fixtures located therein were of an approved explosion proof type, and were still intact. The light and power cables were also of an approved type for this class of vessel. There were no outlet boxes, nor any circuit interrupting devices, located within the shelter deck space, and extension cords were not used on this vessel in the tanks.

The main deck plating within the midship shelter deck space was not penetrated by valve controls, Butterworth openings, etc. The underwater body of the vessel was examined immediately after drydocking. No marks or other evidence of an external force acting upon the hull structure were found.

Without visible evidence of structural or equipment failures, and with no clear cut explanation from any of the witnesses as to a probable cause, all possibilities were explored.

Some had suggested a floating mine or other foreign object had caused the original explosion. This theory was soon discounted, primarily because of the manner in which the hull plating of the vessel was bent outward rather than inward. Had the vessel struck a mine, a geyser of water would have been created, such was not observed. For these reasons, it was established that the explosion was of internal rather than external origin.

Since the explosion originated on board, the next question was where? After inspecting the area of damage from the blast, it was apparent that the main force of the explosion found

release through the main deck and bulkheads surrounding No. 5 port tank. The main deck over the No. 5 tanks was well opened up; whereas over No. 4 tanks the deck was intact. This indicated that the pressures in No. 4 tanks found release through the deck and hull ruptures caused by an internal explosion in No. 5 tanks.

Witnesses indicated that only one loud blast was heard. However, the probability of more than one explosion remained, inasmuch as the explosions could have followed each other so quickly as to sound like one blast. This possibility was borne out by the ruptured, cracked, and distorted metal of the transverse bulkhead between Nos. 4 and 5 tanks. This bulkhead showed signs of first being blown forward by an initial explosion in the No. 5 tanks, and then when a secondary explosion occurred in No. 4 tanks, that it was partly curled and bent back again towards No. 5 tanks.

The area of greatest pressures apexed in the amidship house above No. 5 port tank, and thereby tended to eliminate No. 5 starboard tank as the source of explosion. Ordinarily, each succeeding explosion tends to expand in the direction of ruptures already made and to further expand damage in the way of the original explosion.

From this information, it was established that the explosion originated in No. 5 port cargo tank, which in turn set off No. 5, center and star-

board, and No. 4, clear across, leaving a gaping hole in the side of the vessel and almost blowing her in half.

Even with the knowledge that the explosion was of internal origin in the No. 5 port tank, the actual cause of the casualty was still undetermined. Any one of a number of sources could have furnished the necessary source of ignition required to set off the vapors in the cargo tanks. As was mentioned previously, tanker explosions often leave no evidence of their cause.

Here was a vessel with a well qualified and conscientious crew. The Master had 22 years' sea experience, of which 10 years was as Master. The chief mate had 15 years at sea on tankers; and the chief engineer, 25 years' experience, 6 of these years as chief engineer on the tanker in question. The unlicensed crew was also well qualified, the bos'n having spent 25 years on tank vessels, and the chief pumpman, 10 years.

The vessel was described as a "happy ship," and the crew very efficient. In fact the Master stated that before he could detect any defects about the vessel in his inspections, the crew would bring them to his attention. He also remarked that this tanker was in the best condition of any he had been on for a long time.

The manner in which the crew responded to their stations during the emergency is worthy of comment. In spite of some doubt as to whether the general alarm actually sounded



because of the damage to electrical circuits, all crew members responded to their stations and went into action. The engine room was completely manned with personnel at their emergency stations within minutes after the explosion, and emergency operations were conducted calmly, efficiently, and effectively.

On this tanker, like all tankers, there were present potential sources of ignition of explosive vapors in the cargo tanks. In spite of the fact that the Master, mate, and pumpman testified that the vessel was structurally sound throughout and that there were no loose objects in the tanks, such as loose heater coil brackets or ladders, such defects may have occurred at any time. Structural failures in the hull are also possible sources of generated heat which will ignite explosive vapors in the cargo tanks.

No. 4 port and starboard tanks had been entered and inspected during the preceding month by the chief mate, with no fractures noted in the bulkheads or internal members at that time. During these inspections, the ladders and heating coil brackets showed little corrosion, and no indication of loose handrails, ladders, or other objects appeared.

There was scale in the tanks up to $\frac{1}{8}$ " in thickness in places. Whether chunks of this scale, falling from a high location to the bottom of the tanks, could have supplied sufficient heat and spark to ignite any explosive vapors present was given some consideration.

This Tanker had on board potential sources of fire and explosion which may or may not be common to other tankers. In the first place it has been mentioned that only tanks Nos. 1 and 9 were even partially gas freed. Petroleum vapors were, therefore, present in cargo tanks Nos. 4 and 5 in various amounts. Ullage screens were in place over these tanks, but the covers were laid over Nos. 5, across, and No. 4, center, and were laid back over the Nos. 4, port and starboard, where ballast was being removed. It cannot be stressed too strongly that ullage screens be maintained in good order, and kept in place. Any defective screens should be replaced immediately.

When inspecting tanks, it is quite possible that a screen may be laid on deck and forgotten. Constant vigilance must be maintained in this matter. On the vessel involved in this casualty the Master and mate stated that all the personnel concerned with this work were conscientious and had never been known to slip up in this matter. It is worthy of note, however, that 32 cases of unsafe practices were reported by Inspectors during the last

6 months of 1953 where ullage holes were found open on tankers without flame screens in place.

The use of the amidships shelter deck area as a catch-all storage space may lead to unsafe conditions. This Tanker did not abuse the space to the extent noted on some other vessels. However, it would appear that the storing of petroleum samples from various cargoes in a locker in this area was inadvisable. If it is necessary to carry samples of cargo in containers, they should be stowed in safety cans in a paint or lamp locker and properly marked. Moreover, it would appear there should be no reason for carrying samples on board for any voyage other than the current one, since their only purpose is to show the nature of the cargo as it came aboard. If the cargo is of the same quality when it reaches the port of discharge, the sample has served its purpose and should be disposed of, or at least left with the vessel's agent rather than carried aboard trip after trip.

This area is accessible to the ullages for both Nos. 4 and 5 tanks and as such should be protected from sources of combustion. Smoking, of course, should be absolutely forbidden in this space. Any soiled rags or other combustible items, if stored in the area, should receive special care. To soil rags by placing them on fresh paint and then to stow linen on top of them was a poor practice in the instant case.

The steward testified that in addition to various steward's department stores, at certain times, safety matches were sometimes retained in the linen locker in this amidships shelter deck area. This was also an unsafe practice as such matches would contribute to any combustion which started in the area. What is stowed in the shelter deck area amidships should be very carefully supervised by the ship's officers.

It is clear that after the initial explosion on this Tanker, the fire would have been minimized had there not been plenty of fuel in both the steward's linen locker and the quartermaster's locker where the petroleum samples, including gasoline, were stored. It is fortunate the explosion and fire were confined to this area and did not spread to other sections of the ship, as well might have been the case, since there was sufficient fire to ignite any stray vapors or other combustible materials about the vessel, and the ullage covers were not dogged down.

Just as it was a matter of conjecture whether there were any loose handrails, ladders, or other objects in the cargo tanks prior to the explosion, the same is true concerning the cracks and fractures found in the hull

and on deck following the explosion. For example, the hull in the way of No. 5 port tank showed a clean crack several feet long, and there were other cracks in the deck which, however, did not join the hull crack. It was practically impossible to determine after the casualty when these fractures took place. It is possible, however, that the heat created by the ship's structure fracturing in any of its parts would be sufficient to ignite low ignition point vapors.

The problem of interior corrosion of tanks on tank vessels is a costly and serious one. Various anticorrosion processes have been employed on tankers in an attempt to reduce this severe damage.

The electrochemical reaction between the magnesium anodes and the salt water in the ballasted tanks liberates hydrogen gas which could be explosive when the mixture of the gas in air reaches 4 percent by volume. To preclude the accumulation of an explosive mixture of hydrogen in the vapor space, the manufacturer of the anodes and the ship's operating instructions state that ballast tanks should be filled and kept that way. Another reason for fully ballasting the tanks is that unless the tanks are filled into the expansion trunks the upper portions of the tanks do not derive any benefit from the anticorrosion devices. It, therefore, appears that these tanks should either be fully ballasted or completely empty in order to prevent the accumulation and possible explosion of hydrogen gas.

The nonballasted tanks were sprayed with a premixed chemical containing sodium nitrite and caustic soda. Sodium nitrite itself is inflammable and is described in the Coast Guard's Dangerous Cargo Regulations (sec. 146.22-100 of title 46 CFR).

These anticorrosion processes are designed to increase the efficiency and life of the vessel, and, in addition, make working conditions on board tankers somewhat safer. For example, it is not necessary for personnel to enter the tanks as frequently to do maintenance work. However, these advantages have to be weighed against any possible hazards resulting from the use of anticorrosive processes.

Granting there were explosive mixtures aboard this tanker, especially in the cargo tanks, this explosion could not have occurred had not a source of ignition been introduced.

Sources of ignition found to have been the basis of other tanker explosions, such as defective electric wiring, fittings, and appliances; use of improper matches; and smoking in forbidden areas have not been estab-

(Continued on page 144)

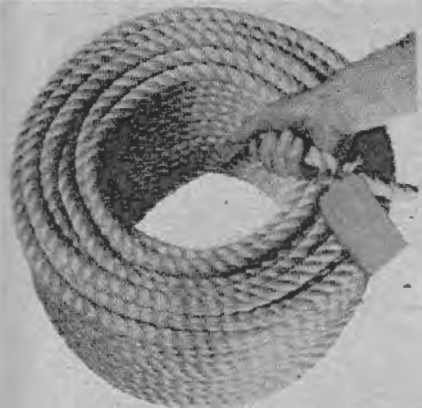
CARE AND HANDLING OF FIBER ROPE

Constant attention must be focused on the proper use, care, and maintenance of fiber ropes used on board ship if they are to be relied upon for any length of time. Modern machinery, scientific cultivation of the fibers of which rope is composed, and perfection of cordage lubrication have all aided in producing the quality fiber rope available to the maritime industry. These advances in rope making will not protect fiber rope from abuses aboard ship however, and the life of lines will be seriously decreased by improper rope handling practices.

Being of plant origin, fiber rope deteriorates rapidly under certain conditions, and for this reason should never be stowed while wet. Nor should rope be stowed at any time in damp, poorly ventilated places, for it will mildew and rot under such conditions.

Right here someone might ask, "Why not use nylon line instead of fiber rope on board ship then, since it dries quickly and, being a synthetic product, is not subject to mildew and rotting?" The answer, of course, is that nylon is used and preferred by some marine operators, particularly in towing operations. The advantages and disadvantages of nylon, as compared with manila or other fiber rope, is another subject. This article is primarily concerned with fiber rope.

Fiber rope can be damaged by excessive hot and cold temperatures. For example, a line which is stowed near a steam pipe will dry out too fast and become brittle, having lost all the oils intended for lubrication purposes. On the other hand, a line which has become frozen will break more easily under such conditions, and should therefore be thawed and dried out before it is placed in service.



Coil of rope, stripped of wrapper and lashings to show clearly how first turn comes off the bottom of the coil. If uncoiled any other way, rope will kink and tangle.

Courtesy American Manufacturing Co.

Just as improper care will injure rope, so also improper methods of using rope will contribute to its rapid deterioration. For example, dragging rope over sharp objects or around corners results in cuts and abrasions to the external surfaces. On the other hand where sharp bends occur in a line, caused by using too small a block or because of a kink in the line, excessive stress will result at the bend. Such stress may cause internal damage to the rope.

Kinks occur more often in a wet line because of rope shrinkage and swelling of fibers with consequent shortening of the lay. They will likely occur also in uncoiling new rope unless the manufacturer's instructions are followed.

Generally new rope is unwound through the eye in the center of the coil in a counter-clockwise manner, with the end to be unwound next to the deck. However, if the rope doesn't unwind easily the coil should be turned over and the rope drawn through the other end. (See fig. 1.) The wisdom of uncoiling a rope in this manner is easily seen if you have ever watched a seaman uncoil a rope from the outside of the coil, with kinks and bends all over the deck.

Excessive loads on a line or quick jerks applied to the load will also shorten the life of the rope. Strains often occur in running gear, also, unless these lines are slacked off during wet weather to allow for the contraction of the wet rope.

Abuse of rope probably causes more rope to be replaced aboard ship than normal wear. All of the causes of rapid deterioration of rope aboard ship cannot be listed here; there are, however, several others which warrant mention. For example a hawser should not be used on one side of a winch or windlass continuously, but rather should be shifted, port and starboard, frequently. In this way, the construction balance of the rope is maintained and the ship's lines have a longer life with greatest efficiency.

Another poor practice when working with winches is permitting a rope to slip on a winch drum. This slipping causes sudden jerks which strain the fibers and shorten the rope's life. A rope should not be permitted to lie idle against a moving drum or capstan either. The friction created chafes the fibers and may generate enough heat to burn the rope.

Fiber rope which has been subjected to any of the abuses described cannot be relied upon for its maximum strain and must be used with caution. It is therefore essential that all rope be carefully examined before it is placed in service.



Courtesy The Bulletin

Danger signals to watch for on the surface of rope are signs of external wear, broken, burned, or cut fibers, displacement of strands, variations in size or roundness of the line, and also any indication of discoloration or rotting in the rope. A rope that has lost its stretch and in which the fibers are dry and brittle should be viewed with suspicion.

Rope should also be examined internally since it may look sound and strong on the outside and yet not be in good condition on the inside because of dry rot or having been weakened by excessive strains. Untwist the rope in several places and watch for broken or powdering fibers which indicate the rope has been subject to severe strain at some time. If the inner yarns are dark and discolored this usually signifies that the rope has been damaged by dry rot.

When a rope exhibits any of the signs enumerated it should not be relied upon for use under maximum strain. This is particularly important where there is any possibility of causing injury to personnel or damage to property about the ship in using such line.

Considerations of safety must also be kept in mind when using knots, hitches, and splices in a line. A spliced line does not lose as much of its weight and strength characteristics as a knotted line. It is important, therefore, to remember in using knots, hitches, and splices in a line to not only make sure they are made properly but also to see that the line is not overloaded. Failure of faulty knots, hitches, and splices under heavy strain may cause serious accidents.

The same precautions must be exercised in using rope slings that are used with rope lines in general. That is they should be cared for properly and inspected at regular intervals.

Only rope of high tensile strength should be used for rope slings, and slings which have been in service for a period of time should not be subjected to maximum loads. Remember also that the angle of the legs of the sling has a direct bearing on the amount of weight which may be lifted safely. Accidents may result by disregarding this factor.

Using proper rope and caring for it properly will do much toward preventing injuries while handling lines. In order to have the greatest possible protection from such injuries those engaged in working with rope must take every precaution to protect themselves and their fellow workers.

Probably one of the most dreaded causes of injury and possible loss of life aboard ship is that of a hawser

snapping. In spite of the fact men are constantly warned to stand clear of hawsers with a strain on them, or any other line for that matter, deaths and numerous casualties are reported wherein fractures and losses of arms and legs were caused by such line breaking.

Many casualties result from carelessness or improper practices in handling lines around winches also. Fingers are constantly being lost or mangled by seamen attempting to free a line or put a turn on a gypsy-head without stopping the machinery.

Then there are always accidents caused by a line suddenly straightening out and catching someone unawares. Or the line runs out suddenly with someone's foot or hand caught in it. These accidents happen so

quickly and without warning that the damage is done before any preventive action can be taken.

Such was the case of a seaman engaged in shifting barges at night. While rendering out a line he stepped into the bight of this line and had his leg cut off when he was suddenly drawn up against a check post. This illustrates the suddenness with which disaster may strike when handling lines, and the need for constant vigilance on the part of both seamen and their supervisors.

As can be seen, there are many items which directly affect the safety of rope. When these factors are overlooked, injuries and damage to property may result. Proper care of rope and precaution when handling lines are the two important factors to keep in mind in connection with rope safety.

TANKER ARRIVES MINUS AMIDSHIPS TANKS

(Continued from page 142)

lished as causes of the present blast. The source of ignition in this case was rather narrowed down to one of three assumed causes: loose objects in the cargo tanks, poor housekeeping in the shelter deck area, or possibly a structural failure in the hull or deck areas. Sources of ignition which involve structural defects or loose objects in the vessel are more difficult to control than the more common sources of ignition listed above, because they must be detected by means of constant and thorough inspections throughout the vessel. There is no place for relaxed vigilance on vessels transporting dangerous cargoes.

EDITOR'S NOTES.—The repair work on this tanker is an interesting story in ship reconstruction. The bow and stern portions were removed in the shipyard from the damaged midships section. A new middlebody, 141 feet in length, was then reconstructed along with a new prefabricated midship deckhouse. When the three sections and the deckhouse were fitted together the vessel proceeded to sea 41 feet longer than her original construction and also had increased her carrying capacity by 20,000 barrels.

It is also understood that a thorough investigation is underway, as a result of this casualty, to establish the possibility of hazards being increased aboard tank vessels by the treatment of tanks with a solution of flake caustic and sodium nitrite. These tests are being conducted by private resources, and the results should be of interest to the entire industry.



Courtesy States Marine Line

INTERNATIONAL CONFERENCE ON OIL POLLUTION

The pollution of the seas and coasts by oil has been a grave problem in many countries for a number of years. As the use of petroleum products increases, the threat to the recreational facilities and wild fowl of the coastal regions of the countries through pollution by oil becomes more serious. The United States in widening its use of petroleum products early in the present century was perhaps the first country to feel the full impact of oil pollution. Legislation prohibiting the release of oil into our territorial waters was enacted in 1924. However, oily wastes discharged by ships at considerable distances at sea may drift ashore and foul beaches and harbors. The power to control the behavior of a ship and its personnel on the high seas lies with the nation whose flag it flies. The problem then cannot be solved satisfactorily without the cooperation of maritime countries.

An International Conference was convened in Washington in 1926 to study the subject and to draft a Convention designed to abate this nuisance. The representatives of the United States believed at that time that the logical solution of the problem would be a Convention signed by the maritime powers of the world providing that ultimately the discharge of oil at sea at any time or place must be prohibited. This position did not receive the support of a majority of the other nations represented at the Washington Conference.

As a result of the failure of the 1926 Conference to provide the solution believed by the United States to be the best approach at that time, an educational program was established on a national basis. This method brought about substantial abatement of oil pollution within the territorial waters of the United States, even though the use of petroleum products in this country increased threefold since 1926. The strict enforcement of the Oil Pollution Act of 1924 within the jurisdictional waters of the United States also encouraged good housekeeping practices.

During the past few years the United Kingdom and other Northern European countries have greatly increased their importation of crude petroleum—up 300 percent in 3 years. This increase has been accompanied by a rise in oil pollution of the coastal regions of those countries. The United Nations took up the matter of

oil pollution, and concurrently the United Kingdom set up a working group under the Chairmanship of Mr. Percy Faulkner, an Under Secretary of the Ministry of Transport and Civil Aviation, to study the problem and to suggest its solution. The report of this working group, published in 1953 and informally called the "Faulkner Report," contained recommendations which were believed, from the British point of view, to be an adequate answer. In common with the studies which preceded the Washington Conference, and with the conclusions reached in the late 1930's by the League of Nations, the recommendations of the "Faulkner Report" pointed to the need for the cooperation of substantially all maritime countries.

The United Kingdom early in 1954 invited the maritime powers to a Conference in London to discuss the oil pollution problem and to endeavor to provide a generally acceptable solution. The United Nations had previously agreed to hold in abeyance its consideration of the matter pending the outcome of the London Conference.

The United Kingdom did not submit a draft Convention to the nations invited to the Conference, the intention being that the "Faulkner Report" would sufficiently inform those invited as to the matters which would be advanced for consideration. Since the invitation to attend the Conference, to be convened on April 26, 1954, was not received by the United States until January 4, 1954, and since it is difficult to arrive at firm decisions concerning the proposals of others without the guidance of a specific draft, it was believed that sufficient time was not available for the United States to establish a position.

However, a Technical Working Group composed of representatives of interested U. S. Government departments and of the shipping industry was established in Washington in February of 1954 to make such examination of the technical aspects of the problem as time permitted in order to develop recommendations to the State Department, which could serve as the basis for instructions to the United States Delegation to the Conference. The Technical Working Group, after studying the "Faulkner Report" and drawing upon the experience of the various participating agencies, concluded that several of the recom-

mendations, such as the mandatory requirement for installation under certain circumstances of mechanical oily-water separators on dry-cargo ships, the absolute prohibition of the discharge of oily wastes and ballast at any place at any time on the high seas, and the establishment of greatly increased number and capacity of port facilities for reception of oily wastes and ballast which presumably would be necessitated by such total prohibition, were not realistic. A detailed review of the oil pollution situation with supporting statistics, prepared for the information of the Technical Working Group, showed that the increase in the use and transportation of petroleum products in the United States had been accompanied by an actual decrease in the degree of oil pollution and pointed out that during this period of approximately thirty years educational standards had been established and good housekeeping practices had been enforced.

Since the United States, the major user of petroleum products, had studied the problem and developed methods for its correction over a period of years, the Technical Working Group felt that the measures employed in this country should be explained to the Conference in London as pointing to a practicable solution without those features contained in the "Faulkner Report" with which the Group could not agree.

The Department of State's instructions to the United States Delegation insofar as they related to antipollution measures followed the recommendations of the Technical Working Group. The United States Delegation, comprised of six members, was able to maintain this position throughout the Conference and during its course gained the support of other Delegations, some of whose countries had not been faced with the problem of oil pollution until recent years.

In the first plenary session of the Conference the Soviet Delegation proposed that the so-called Peoples Republic of China be invited to send representatives. This proposal was set aside by the Conference at a subsequent plenary session on the instance of the U. S. Delegation, which had presented a procedural motion to the effect that the Soviet proposal should not be considered because it did not come within the scope of the Conference.

At the Conference it soon became apparent that, although there was no difference of opinion concerning the principal objective, there existed wide divergence of views concerning some of the recommendations of the "Faulkner Report" and the means by which a satisfactory solution to the problem might be achieved. One of the most controversial items related to the recommendation that the installation of separators on dry-cargo vessels under some circumstances should be a mandatory requirement. It was the United States position that although separators might serve some useful purposes under certain conditions, at the present stage of development none of the known oil separation devices can be unreservedly commended for use on dry-cargo vessels. The Convention written at the Conference requires vessels to be so fitted as to prevent the escape of fuel oil or heavy diesel oil into bilges, the contents of which are discharged into the sea without being passed through an oily-water separator. The Convention provides for the establishment of zones wherein the discharge of oil into the seas would be prohibited. This provision is far more consistent with the system long in force off the Coasts of the United States, wherein a zone is recognized by a "gentlemen's agreement," than the absolute prohibition of discharge anywhere and everywhere as recommended in the "Faulkner Report."

The Final Act of the Conference presented a number of resolutions relating to objectives concerning which there appears to be no serious disagreement. They relate to such matters as encouraging the development of efficient oily water separators, encouraging the provision of adequate reception facilities for oily wastes and ballast at repair ports and terminals where needed, preparation of manuals, creation of national committees and provisions for international exchange of information.

Shortly before the end of the Conference, the Chairman of the U. S. Delegation made a final statement as follows:

"Mr. President, your Excellencies, ladies and gentlemen: the time appears to have arrived when the delegates may look upon the accomplishments of the Conference, and may I summarize the views of the United States Delegation.

"Early this year my Government received an invitation from Her Majesty's Government to attend this Conference. We considered, in view of the early date mentioned, whether we should take more time to conclude studies already under way or contemplated and to try to secure the

views of representative interested groups, or whether to accept the invitation for the date specified and prepare ourselves as best we could in the interim. In my Country distances, as you know, are great, and it is the custom of our industrial groups to meet in conventions for representative actions once a year. These national meetings in the case of our transport, shipping, and petroleum associations usually take place in October or November. In order that we may bring to bear full weight of Government and industry experience in matters of national import, it is most desirable for effective action that our problems be discussed to a conclusion at these annual meetings when all sections of our country are fully represented. Time has not permitted processing this most important problem by our normal procedures so that much more remains for us to do when we return home. After careful consideration of our situation my Government concluded that in view of the urgency expressed in the invitation of Her Majesty's Government we should accept promptly and contribute all that we could to assist the Conference under the circumstances.

"We believe our decision to accept the invitation of Her Majesty's Government promptly was the correct decision, for in this Conference of Delegates representing many nations we have found another confirmation of the great value of personal association in matters of mutual concern. Here we have heard from the Delegates firsthand the extent of pollution in their countries. Here we have heard of research and of experiments and of suggested ways and means for controlling and reducing pollution, and here, by picture and by eloquent appeal, we all have heard the story of the effects of oil pollution on beaches and birds.

"Mr. President, the Delegates to this Conference may differ as to procedure but they are unanimous on a common objective, the pollution of the seas must be cleared up promptly.

"It is true that some of us have felt that we should rely entirely on a convention between the maritime powers to clear up this pollution of the seas, and there are others who have felt that we should start immediately and apply ourselves continuously to the problem through the United Nations which would pool all technical information and keep Governments continually informed of areas in which pollution is critical so that appropriate and immediate steps may be taken for correction.

"It is the view of the United States Delegation that this Conference on

the Pollution of the Seas by Oil has been successful because it has reached conclusions which are representative of both schools of thought which have been so ably presented here by their respective advocates.

"The time approaches when the various Delegations will be taking leave of each other and returning to their respective countries. My Delegation will return to my Country dedicated to two tasks, the serious study and consideration of the Convention which has been produced by this Conference, and the re-doubling of our efforts, especially by research and educational procedures, looking to the successful control of pollution of the seas by oil. Through the United Nations, the United States will make available to all Governments the results of the work we have done on oil pollution control. We express to all Delegations here our deep and sincere thanks for the valuable information and experience which they have so generously made available to us. Now, Mr. President, I am gratified to report to the Conference that the tender of cooperation made by the shipowners of the United States,¹

¹ American Merchant Marine Institute, Inc., 11 Broadway—New York 4, N. Y.

SPECIAL BULLETIN

To: U. S. Steamship Companies

PREVENTION OF OIL POLLUTION

The undersigned organizations call attention to the fact that oil pollution conditions on the shores of Great Britain and the adjacent coasts of Northern Europe are reported to be serious. An inter-governmental Conference among some 40 maritime nations is now being held in London for the purpose of exploring ways and means of controlling such pollution.

Our organizations are entirely sympathetic to the problem that presently exists in this critical area and are extending our fullest cooperation to the authorities concerned. We strongly urge that all companies immediately emphasize to their shipmasters, and all shipboard personnel the acute necessity of observing all precautionary measures set forth in the Oil Pollution Manual, as supplemented by the many specific instructions heretofore issued by individual shipowners. In so doing, specific reference should be made to the conditions now prevailing in U. K. and adjacent areas and the need for special attention to all preventative measures.

Thereafter, we further recommend that all U. S. ships proceeding to the areas in question be reminded of the aforementioned instructions in each voyage order, cable or letter.

We will continue to keep you apprised of world-wide pollution conditions requiring special attention, and your continued cooperation is urgently solicited.

AMERICAN MERCHANT MARINE INSTITUTE, INC.

Association of American Shipowners
Pacific American Tankship Association
Pacific American Steamship Association
American Tramp Shipowners Association

which I read to the General Committee at an earlier date, was placed into effect on 30th April 1954 for all United States ships proceeding to the United Kingdom and Northern Europe. In support of the same objective the United States Navy Hydrographic Office and the United States Coast Guard have issued an official notice.

"Mr. President, we wish to express our thanks to Her Majesty's Government for their vision in calling this conference, their efficiency in conducting it, and the many gracious acts and thoughtful considerations during its sessions."

These statements pointed out the serious study which the U. S. Government and industry have given to the problem of oil pollution and indicate that the study is of a continuing nature.

The Conference constituted an excellent opportunity to hear the views of the maritime nations concerned with this problem, including the means proposed by those nations to develop a satisfactory solution. Not only were the regular sessions and the Subcommittee meetings informative, but useful ideas were also secured from the technical standpoint through discussions on a more informal basis.

Among the U. S. proposals that were adopted by the Conference and later confirmed, were the establishment of international machinery for the collection, analysis, and dissemination of information and technical data about oil pollution and for keeping the problem under review through the appropriate organ of the United Nations. The United Kingdom accepted the obligation to perform the duties of Bureau Power or Central Secretariat until such time as the Intergovernmental Maritime Consultative Organization (IMCO) comes into effect.

No solution which was discussed appears at this time to be more realistic than the educational program and other measures adopted by the United States. However, discouraging oil pollution requires continuing effort, and even though the United States did not sign the convention written by the Conference, that document will receive serious study by government and industry. The fact that an International Conference was held on this subject will give impetus to American ingenuity to develop and suggest an international program to reduce the menace of oil pollution prior to the next international meeting in prospect within the next three years.

In view of the strong position taken by the United States in advocating co-operation, educational programs, study and research, and dissemination

of information, it behooves all affected interests in the United States to support these methods and to take all appropriate measures to insure their success. Failure of the U. S. proposals no doubt would eventually bring about unrealistic international regulations and enforcement measures or unilateral action by countries suffering from oil pollution to impose national requirements on all ships visiting their ports.

COUNCIL ACTIVITIES

(Continued from page 138)

Copies of the Merchant Marine Council Public Hearing Agenda (CG-249) have been mailed to persons and organizations who have expressed a continued interest in the subjects under consideration and have requested that copies be furnished them. Copies of the Agenda will be furnished upon request to the Commandant (CMC), United States Coast Guard, Washington 25, D. C., so long as they are available. After the supply of extra copies is exhausted, copies will be available for reading purposes only in Room 4104, Coast Guard Headquarters, or at the offices of the various Coast Guard District Commanders.

Comments on the proposed regulations are invited. Written comments containing constructive criticisms, suggestions, or views are welcomed; however, acknowledgement of the comments received or reasons why the suggested changes were or were not adopted cannot be furnished since personnel is not available to handle the necessary correspondence involved. Each oral or written comment is considered and evaluated. If it is believed the comment, view, or suggestion clarifies or improves the proposed regulation or amendment, it is changed accordingly and after adoption by the Commandant the revised regulation is published in the Federal Register. Each person who desires to submit written comments, data, or views in connection with the proposed regulations set forth in the Merchant Marine Council Public Hearing Agenda should submit them so that they will be received prior to 17 September 1954 by the Commandant (CMC), United States Coast Guard Headquarters, Washington 25, D. C. Comments, data, or views may be presented orally or in writing at the hearing before the Merchant Marine Council on 21 September 1954. In order to insure consideration of comments and to facilitate checking and recording, it is essential that each comment regarding a section or paragraph of the proposed regulations

shall be submitted on Form CG-3287, showing the section number, the proposed change, the reason or basis (if any), and the name, business firm or organization (if any), and the address of the submitter. Copies of Form CG-3287 may be obtained upon request from the Commandant (CMC) or from any Coast Guard District Commander.

In addition to the above, an Annex I—Military Explosives Regulations has been included in this Agenda. Briefly, a petition has been received concerning the detailed regulations governing the transportation of military explosives on board vessels which became effective 15 May 1954. The petitioner objected to certain definitions used, requirements regarding certain officers' responsibilities during the entire operation of preparation, receiving, and actual handling and stowage of military explosives, and the requirement that the master or person in charge of the vessel make a determination regarding adequacy of all working equipment. The proposals of the petitioner have been placed on the Agenda for comments, views, and data, which are requested for the Merchant Marine Council's further consideration.

JUST THE FACTS

My rate—able-bodied seaman.
My job—secure the hatch.
Time—0758 driving wedge with sledge.
0800 OH! OH!
Results of this case—Misplaced foot was brought to justice and placed in pain for a period of not less than 2 days nor more than 2 weeks.
(Carelessness does not pay!)

—States Marine Lines
Safety Bulletin.



Courtesy Maritime Reporter

Side Lights on the Rules

In this article, we shall continue the comparison of Rule 15, International Rules, with the corresponding provisions in the local rules applicable to Inland Waters, Western Rivers, and Great Lakes.

Subsections (a) and (b) were discussed in the last issue. Accordingly, the present discussion will center on Subsection (c), which commences as follows:

Rule 15 (c) In fog, mist, falling snow, heavy rainstorms, or any other condition similarly restricting visibility, whether by day or night, the signals prescribed in this Rule shall be used as follows:—

Similar provisions are to be found in Article 15, Inland Rules, and Section 80.12, Pilot Rules for Inland Waters; also in Rule 15, Western Rivers Rules, and Rule 14, Great Lakes Rules. It is in the specific provisions that the respective rules are different.

Under Rule 15 (c) (i) and (ii), International Rules, a power-driven vessel under way must sound one or two signals, depending on whether she is making way or drifting aimlessly:

(i) A power-driven vessel making way through the water, shall sound at intervals of not more than 2 minutes a prolonged blast.

(ii) A power-driven vessel under way, but stopped and making no way through the water shall sound at intervals of not more than 2 minutes two prolonged blasts, with an interval of about 1 second between them.

Under Article 15 (a), Inland Rules, and Section 80.12, Pilot Rules for Inland Waters, a steam (i. e., power-driven) vessel under way must sound a prolonged blast at intervals of not more than one minute, irrespective of whether she is making way through the water or drifting aimlessly.

The corresponding provisions in the Western Rivers Rules are even more different. Under Rule 15 (b), Western Rivers Rules, a steam vessel under way without a tow must sound three blasts at intervals of not more than one minute, the first two blasts to be approximately of equal length and the last to be longer. Rule 15 (a), Western Rivers Rules, in turn requires a steam vessel towing one or more vessels to sound three distinct blasts of approximately equal length at intervals of not more than one minute. Finally, Rule 15 (c), Western Rivers Rules, provides that a steam vessel with or without a tow holding her po-

sition near or against a bank by using her engines, or temporarily moored to a bank, must give one tap of the bell when lying to on the right bank, and if lying to on the left bank, two taps of the bell, at intervals of not more than one minute, when a fog signal is heard from an approaching vessel, to indicate her presence. Right and left bank is determined by facing downstream.

The Great Lakes Rules are equally different. Under Rule 14 (a), Great Lakes Rules, a steam vessel under way, except one with a raft in tow, must sound three distinct blasts at intervals of not more than one minute, irrespective of whether the vessel is making way through the water or drifting aimlessly. If the steam vessel has a raft in tow, Rule 14 (c), Great Lakes Rules, requires her to sound a screeching or Modoc whistle for 3 to 5 seconds, at intervals of not more than one minute. Here too it

IT IS SUGGESTED THE READER REFER TO CG-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;" CG-172, "PILOT RULES FOR THE GREAT LAKES AND THEIR CONNECTING AND TRIBUTARY WATERS AND THE ST. MARYS RIVER;" AND CG-184, "PILOT RULES FOR THE WESTERN RIVERS AND THE RED RIVER OF THE NORTH;" WHICH CONTAIN THE LOCAL RULES TO PREVENT COLLISIONS BETWEEN VESSELS ON THE LOCAL WATERS OF THE UNITED STATES. REFERENCES TO RULES AND ARTICLES THROUGHOUT THIS SERIES MAY BE FOUND THEREIN.

is immaterial whether the vessel is making way or is completely stopped.

The next part of Rule 15 (c), International Rules, provides for sailing vessels under way in restricted visibility in the following terms:

(iii) A sailing vessel under way shall sound, at intervals of not more than 1 minute, when on the starboard tack one blast, when on the port tack two blasts in succession, and when with the wind abaft the beam three blasts in succession.

Similar provisions are to be found in Article 15 (c), Inland Rules, and Rule 14 (d), Great Lakes Rules. The Western Rivers Rules, however, do not provide fog signals for sailing vessels under way.

Rule 15 (c), International Rules, then provides for a vessel at anchor:

(iv) A vessel when at anchor shall at intervals of not more than 1 minute ring the bell rapidly for about 5 seconds. In vessels of more than 350 feet in length the bell shall be sounded in the forepart of the vessel, and in addition there shall be sounded in the after part of the vessel, at intervals of not more than 1 minute for about 5 seconds, a gong or other instrument, the tone and sounding of which cannot be confused with that of the bell. Every vessel at anchor may in addition, in accordance with Rule 12, sound three blasts in succession, namely, one short, one prolonged, and one short blast, to give warning of her position and the possibility of collision to an approaching vessel.

In Inland Waters, Article 15 (d), Inland Rules, and Section 80.12, Pilot Rules for Inland Waters, merely require a vessel at anchor to ring the bell rapidly for about five seconds at intervals of not more than one minute. Rule 15 (d), Western Rivers Rules, is similar to the Inland provisions. On the Great Lakes, however, Rule 14 (e), Great Lakes Rules, requires a vessel at anchor to ring the bell rapidly for three to five seconds at intervals of not more than two minutes and, in addition, to sound a signal consisting of one short blast, two long blasts, and one short blast, at intervals of not more than three minutes.

Next, Rules 15 (c), International Rules, provides for vessels engaged in miscellaneous occupations and vessels not under command due to breakdown or inability to maneuver:

(v) A vessel when towing, a vessel engaged in laying or in picking up a submarine cable or navigation mark, and a vessel under way which is unable to get out of the way of an approaching vessel through being not under command or unable to maneuver as required by these Rules shall, instead of the signals prescribed in subsections (i), (ii) and (iii) sound, at intervals of not more than 1 minute, three blasts in succession, namely, one prolonged blast followed by two short blasts.

In Inland Waters, Article 15 (e), Inland Rules, prescribes the same signal for a steam vessel engaged in towing. A vessel being towed may also give this signal at her option, but cannot give any other signal.

Similarly, Rule 15 (a), Western Rivers Rules, provides equivalent provisions only for a vessel engaged in towing. A steam vessel towing one or

more vessels must sound three distinct blasts of approximately equal length at intervals of not more than one minute.

Rule 14 (c), Great Lakes Rules, on the other hand, merely provides corresponding fog signals for a steamer with a raft in tow. Such a vessel must sound a screeching or Modoc whistle for three to five seconds at intervals of not more than one minute.

Rule 15 (c), International Rules, then provides for vessels being towed:

(vi) A vessel towed, or, if more than one vessel is towed, only the last vessel of the tow, if manned, shall, at intervals of not more than 1 minute, sound four blasts in succession, namely, one prolonged blast followed by three short blasts. When practicable, this signal shall be made by the towing vessel.

Article 15 (e), Inland Rules, merely gives vessels being towed the option of sounding a signal consisting of one prolonged blast followed by two short blasts at intervals of not more than one minute. There are no equivalent provisions in the rules applicable to the Western Rivers. Rule 14 (b), Great Lakes Rules, on the other hand, requires every vessel in tow of another vessel to sound four bells (in the manner in which four bells is struck in indicating time) at intervals of one minute.

Next, Rule 15 (c), International Rules, provides for a vessel aground:

(vii) A vessel aground shall give the signal prescribed in sub-section (iv) and shall, in addition, give three separate and distinct strokes on the bell immediately before and after each such signal.

Rules applicable to Inland Waters and the Western Rivers are silent as to vessels aground. Rule 14 (e), Great Lakes Rules, which does provide for vessels aground, requires a vessel aground to ring the bell rapidly for three to five seconds at intervals of not more than two minutes and to sound a signal consisting of one short blast, two long blasts, and one short blast, at intervals of not more than three minutes.

The following provisions of Rule 15 (c), International Rules, provides for miscellaneous small vessels and seaplanes:

(viii) A vessel of less than 20 tons, a rowing boat, or a seaplane on the water, shall not be obliged to give the above-mentioned signals, but if she does not, she shall make some other efficient sound signal at intervals of not more than 1 minute.

Article 15 (f), Inland Rules, which corresponds to these provisions, requires rafts and other water craft not otherwise provided for, navigating by

(Continued on page 154)

Your Fact Forum

Q. Where must the tonnage and official number of every documented vessel be placed?

A. In every vessel documented as a vessel of the U. S., the number denoting her net tonnage should be deeply carved or otherwise permanently marked on her main beam.

Each vessel having an official number should have the official number deeply carved or otherwise permanently marked on her main beam.

Q. What is an officer's duty regarding Notices to Mariners?

A. Officers are required to acquaint themselves with the latest information regarding aids to navigation, and neglect to do so is evidence of neglect of duty. All vessels should, therefore, have a file of Notices to Mariners in the pilothouse.

Q. What entries are required to be made in the vessel's official log book with respect to load lines?

A. The master is required to note in the vessel's official log book at the time of departure from port on an ocean, coastwise, or Great Lakes voyage, the position of the load line mark, port and starboard, as applicable to the voyage, and the actual drafts of the vessel forward and aft.

Q. What devices are required to warn passengers and crews of most vessels in the event of an emergency?

A. Most vessels are required to be provided with a general alarm system constructed in accordance with the Coast Guard Electrical Engineering Regulations for warning passengers and crew in the event of emergency.

Q. What persons should be excluded from the pilothouse and bridge of vessels under way?

A. All persons not connected with the navigation of the vessel should be excluded from the pilothouse and navigator's bridge while under way.

Q. Explain how water may be useful in fighting oil fires.

A. The use of a fine water spray from a fog nozzle directed toward the flaming oil can put the oil fire out by cooling the oil below its flash point or causing the quick formation of steam, thus smothering the fire by driving the oxygen away from the combustion area. A solid stream of water will not put the fire out, but may be useful against oil burning on deck by washing the fire and oil overboard. A wall of water spray is also useful to protect the men fighting the fire and to cool boundaries, thus preventing the spread of the fire.

Q. Explain the combination letter and number system used to classify hand portable and semiportable fire extinguishers required aboard inspected vessels.

A. The letter indicates the type of fire which the unit could be expected to extinguish. The number indicates the relative size of the extinguisher.

Q. State the three methods by which fire spreads and the means you would take to prevent such spreading of the fire.

A. Fire is spread by conduction of heat, by direct radiation, and by convection to adjacent areas.

The spread of fire is prevented by cooling the adjacent surfaces and shutting off its supply of oxygen. The fire is extinguished by cooling or smothering the burning material.

Q. Should it become necessary to make repairs inside an oil tank, what precautions should be taken before entering or ordering men to enter the tank?

A. The oil tank should be freed of dangerous concentrations of inflammable or toxic gases before entering. This should be accomplished by steaming, washing down, and ventilating out the oil tank, after which it should be tested for the presence of gas. If the services of a chemist are not available to make this test, every protection should be afforded those who enter the tanks. Fresh air or oxygen breathing apparatus equipped with lifelines manned by sufficient men on deck should be provided personnel working in the tank.

Q. What precautions should be observed when repairing leaks in the Freon-12 refrigeration system by welding or brazing?

A. The refrigerant should be isolated in another part of the system, and all pressure removed on the part to be repaired. Goggles should be worn to protect the eyes in the event of a liquid leak. Prior to and during the time any welding or brazing work takes place, the area should be thoroughly ventilated by forced ventilation, as Freon-12 decomposes into a poisonous gas when in direct contact with an open flame.

Q. What water pressure should be maintained for best results when using the combination nozzle with a high-velocity or low-velocity fog tip?

A. The water pressure at the nozzle should be maintained as close to 100 p. s. i. as possible for both the low-velocity and the high-velocity tip.

CAUTION IN THE STRAITS OF FLORIDA

Attention of Operators, Masters and Mates of vessels plying the waters of the Straits of Florida between Dry Tortugas and a meridian just to the eastward of Key West, Fla., is called to the two areas designated as danger and caution areas (see fig. 1) in these waters.

The first, a danger area, is a pie shaped wedge defined as follows: From 24°18' N., 82°09'5 W. due west to 24°18' N., 83°05'8 W.; thence in an arc to 23°30'5 N., 82°31'6 W.; thence on a line of bearing 023° T. to initial position. In this area, vessels and aircraft engage in surface to surface and surface to air gunnery exercises during which live ammunition is fired.

In the second, a caution area, which is designated as a submarine operating area, submarines are operating both submerged and on the surface, with or without surface escort. Also, torpedo firing is conducted in this area. The boundaries are as follows: From 24°30' N., 81°10' W. due west to 24°30' N., 81°30' W.; thence south to 24°25' N., 81°30' W.; thence west to 24°25' N., 82°35' W.; thence south to 24°00' N., 82°35' W.; thence east to 24°00' N., 81°10' W.; north to initial position.

Both of these areas are clearly defined on Coast and Geodetic Survey Charts. Figure 5 is a reproduction of a portion of Chart No. 1113 which is the most appropriate for reference.

It should be apparent from the above that great danger exists of collision with a submerged submarine by merchant vessels failing to exercise caution in these areas. Should such a collision occur the possibility of

sinking the submarine with the loss of all hands would be quite likely. There is also the possibility a merchant vessel may be damaged from a live missile or torpedo when due caution is not exercised in navigating these areas.

In addition to the warnings printed on the charts of the area, mariners are kept advised of operations being conducted by means of (1) a permanent warning in the Coast Pilot for the areas and (2) Notices to Mariners issued weekly, delineating the operations to be conducted during the forthcoming week.

At times merchant vessels have been operated in these areas without due regard to their own safety or the safety of other vessels and personnel.

The Commander, U. S. Naval Base, Key West, Fla., therefore requests that all Masters and Mates exercise caution while proceeding through the designated areas in order that the difficult problem which has existed in the past may be eliminated, and the possibility of a serious casualty forestalled.

PUBLIC LAW 500

The following legislation was passed by the recent session of Congress, and was signed by the President.

Public Law 500—83d Congress

Chapter 512

2d Session

H. R. 8538

AN ACT

To provide for the revocation or denial of merchant marine documents to persons involved in certain narcotic violations.

Be it enacted by the Senate and House of Representatives of the

United States of America in Congress assembled,

That when used in this Act—

(a) The term "narcotic drug" shall have the meaning ascribed to that term by paragraph (a) of the first section of the Narcotic Drugs Import and Export Act, as amended (21 U. S. C., sec. 171 (a)), and also shall include marihuana as defined in section 3238 (b) of the Internal Revenue Code.

(b) The term "Secretary" means the head of the department in which the Coast Guard is operating.

(c) The term "seaman's document" means any document authorized by law or regulation to be issued to a merchant mariner by the Secretary.

Sec. 2. The Secretary may—

(a) deny a seaman's document to—

(1) any person who, within ten years prior to the date of the application therefor, has been convicted in a court of record of a violation of the narcotic drug laws of the United States, the District of Columbia, or any State or Territory of the United States, which conviction has become final; or

(2) any person who, unless he furnishes satisfactory evidence that he is cured, has ever been a user of or addicted to the use of a narcotic drug; and;

(b) take action, based on a hearing before a Coast Guard examiner, under hearing procedures prescribed by the Administrative Procedure Act, as amended (U. S. C., title 5, secs. 1001-1011), to revoke the seaman's document of—

(1) any person who, subsequent to the effective date of this Act and within ten years prior to the institution of the action, has been convicted in a court of record of a violation of the narcotic drug laws of the United States, the District of Columbia, or any State or Territory of the United States, the revocation to be subject to the convictions becoming final; or

(2) any person who, unless he furnishes satisfactory evidence that he is cured, has been, subsequent to the effective date of this Act, a user of or addicted to the use of a narcotic drug. Approved July 15, 1954.

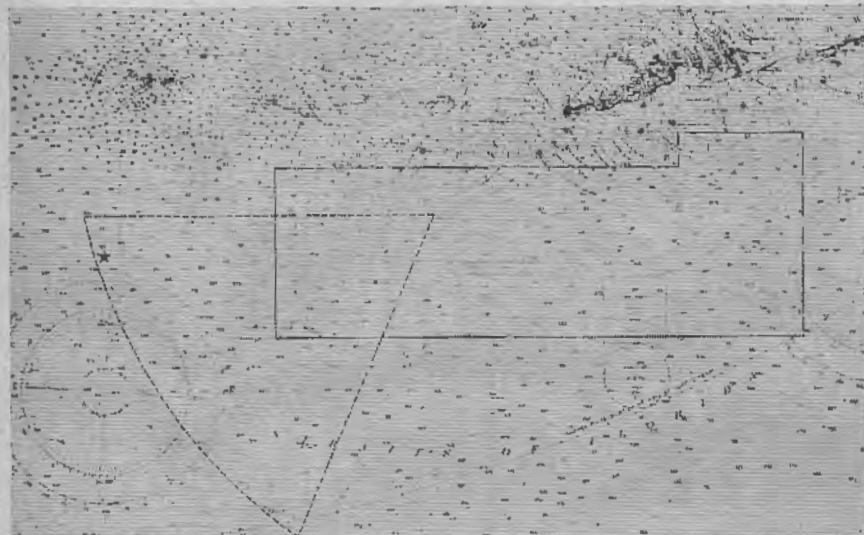


Figure 1.

THE SMARTEST THING IN WORK CLOTHES IS A SAFE WORKER

LESSONS FROM CASUALTIES

CRASH LANDING

The calm uneventful voyage of 150 passengers and 32 vehicles crossing the bay on a ferry came to an abrupt ending—far too abrupt. Making about 8 knots at the time, the steam-propelled vessel piled into the steel-and-timber landing crib with a rending crumpling roar. And all because one man became confused.

As in the case of most double-ended ferryboats which ply regularly between two points, the name of the port or land at each terminus of the run becomes associated with the end of the ferry which always points in that direction. For instance: "The Manhattan end and the Weehawken end," the "San Francisco end and the Oakland end," and the "Brooklyn end and the Staten Island end." Sometimes this identification of an end of the vessel by name of terminus is adopted by the crew to the extent that such designation is clearer to them than the use of the words "forward" or "aft," especially since in a double-ended ferry there is so little difference, one end from the other.

For instance in a routine engine room maneuver, the Engineer may be operating his main power plant "ahead toward E. Podunk" but then have to "back her toward W. Podunk." On the following trip he will be operating "ahead toward W. Podunk" and have to "back her toward E. Podunk." Of course each maneuver is specifically defined by the engine room telegraph and direction indicator from the pilot house. The reading of the telegraph, plus the direction indicator, which points in the direction the ferry is traveling as "ahead," should leave no doubt in the mind of the engineer as to the desired direction for the main engine to turn.

However, there is a necessary time lag in most ferry landing maneuvers which invites trouble for the unwary engineer.

The great majority of ferry landing approaches in this country, due to the nature of ferry crossings and the routes of which they form a link, lie through waters where cross currents are the rule rather than the exception. These currents, sometimes as strong as 6 or 7 knots in velocity, at right angles to the approach to the landing, generally dictate the design of the ferry slip, the nature of the approach to be made, and the design of the ferry itself, to a certain extent. Since the ferry must usually land end-on, a V-shaped slip is necessary to guide the landing end into the

apron against the vagaries of the current.

Because the ferry may be drifting sidewise with the current at an alarming rate as the approach is made, the pilot is required to hold his lead end well upstream from the apron and approach the slip with considerable headway in order to have positive steerageway and sufficient upstream-velocity to overcome the effects of the current. Therefore, since the landing must be made with a high speed of approach, the crib and ferry itself must be of extra-sturdy construction to "stand the gaff" of those occasional landings when the vessel doesn't quite get stopped in time. For the same reason the provision of full power in either direction so that any landing can be made with full backing power, is desirable in ferry design.

Dictated by the necessities of allowing for the current, most ferry approaches follow a pattern. The approach to a point several hundred feet from the slip is made at high speed, usually standard operating speed, so that when the engine is stopped the vessel will have good steerageway for maintaining its heading (at this point, heading on the upstream wing of the slip). There are then a few moments lag while the vessel is steered into the slip with the engine stopped.

It is this time lag which may lead the operating engineer toward trouble. He is standing at the controls during this period waiting for the next bell, knowing that when the "Back" signal comes, the pilot will want full backing power and will want it quickly, for taking off the excessive headway in a hurry. If the engineer shifts his controls to the reversing position there is always a chance he will get one more "Ahead" bell before backing which would mean extra delay and possible confusion in complying. So the normal and human course is to leave the controls in the "Ahead" position until a bell is received.

During the waiting period, if the engineer keeps clearly in mind in what direction the double-ended vessel is moving and which position of his controls will then give a "Back down," the loud gong of the next maneuvering will undoubtedly be answered quickly and correctly and a safe landing will result. If, however, during this waiting period, the engineer's mind wanders for a moment and he forgets whether he is traveling toward E. Podunk or toward W. Podunk (especially on short monotonous back-and-forth runs) the loud gong may catch him short and he will answer a "Back Full" signal with "Full Ahead," despite the telegraph and direction indicator staring him in the face.

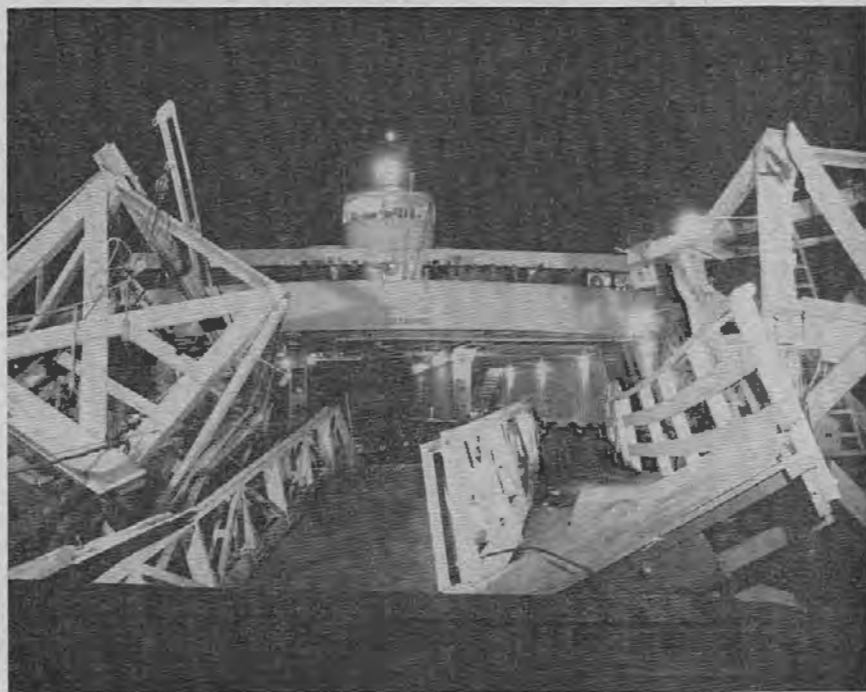


Figure 2.

Casualty reports received have indicated occasions when such a situation occurred, the pilot again rang up "Back Full" or even "Double Back Full" whereupon the engineer again increased speed (in the wrong direction) by opening the bypass, increasing fuel injection or other methods, rather than noticing the error in direction and correcting the situation! Results of this apparently simple error, in damage to the vessel and to the slip are all too obvious. The bill usually runs into thousands of dollars.

Apparently this is exactly what happened aboard the ferryboat which piled up so expensively against the landing (see fig. 2). Happily, of the 150 passengers aboard, none was injured and no damage to the automobiles carried was reported. Due to its rugged construction, the ferry's hull was not damaged, but damage to the slip was considerable.

A safety rule which had been rigidly enforced on this ferry paid off handsomely at the time of this accident. Upon arrival at a fixed point on the approach to the landing, a seaman was always stationed on the main deck at the foot of the stairs from the upper deck. It was this man's job to stretch a chain across the main deck at this point which is 35 feet back from the landing bow, and to keep all passengers back of this chain until the landing had been safely completed.

Most fortunately, this man had performed his duties effectively on this occasion and there was nobody forward of the chain. For the vessel finally came to a stop with the end of the apron or bridge resting well in on the bow, and there would undoubtedly have been injuries if passengers had been standing on this area.

The luckless engineer who had the engine controls for this precipitous landing had been employed in this capacity for only a few days prior to the accident. Nevertheless he had operated the engine through several successful landings.

Although at first steadfastly denying the engine was going ahead instead of backing when the damage occurred, in the face of all facts to the contrary, he finally confessed that he had received the full astern signal sooner than he expected and that he had become confused and given the wrong maneuver.

Topside witnesses estimated the ferry had about 4 knots headway when the first full astern signal was given and about 8 knots headway when she struck the landing!

When all is said and done, the cause for this casualty, like so many other marine casualties, falls right back

upon the human element. With every piece of machinery and equipment in first-class condition and operating in accordance with the highest standards, one human hand pushes a lever the wrong way and a vessel piles up.

The human tendency for all engineers to indulge in a little "porthole navigation" and anticipate engine orders is well understood, but must be guarded against. The most intelligent and successful engineer, when maneuvering, will hold himself alert to answer any bell correctly and quickly as it comes on the telegraph, never in accord with his own ideas or impressions of the moment. The responsibility for ringing up a wrong bell from the bridge remains on the bridge. Only the responsibility for answering the bell wrongly in the engine room will fall upon the engineer.

BEFORE HIS TIME

An article in the June, 1954, PROCEEDINGS entitled "Funereal Fumes" described the deaths of two tankermen on two T-2 tankers due to asphyxiation while working in the after pumprooms without wearing fresh air breathing apparatus. A sad sequel to these unnecessary deaths recently occurred on a foreign tank vessel which was preparing to load in an East Coast port. The 34-year old Chief Mate, a fine professional seaman, just arrived at the prime of life, died as a result of a moment's haste and carelessness.

Preparatory to loading a cargo of toluene and benzol, cargo tanks were being pumped out and washed down by hose pressure. Two seamen were detailed to hose down No. 1 port center cargo tank. One man was handling the nozzle inside the tank and one man assisting from on deck. When the job was nearly completed, the seaman on deck saw the man in the tank suddenly collapse on the bottom plates. The seaman on deck yelled to a deck boy to run and get the Chief Mate, while he himself ran to the pumpman's deck locker to obtain two gas masks.

When the seaman returned with the masks he saw that the Chief Mate had already gone down into the tank and apparently had also collapsed. Putting a gas mask on, this seaman entered the tank and succeeded in getting a life line from deck tied around the seaman originally overcome in the tank. Luck was with this man. He was able to do this and get out of the tank quickly but was on the point of collapse himself when he arrived back on deck.

At this point the third mate put on the other gas mask and started down into the tank in an attempt to get a life line around the chief mate. He was affected by the fumes immediately and just made it back to the deck, collapsing there and requiring resuscitation. Another seaman now donned one of the gas masks and managed to climb down and get a line around the chief mate but by the time he had returned to deck, he also collapsed and required resuscitation.

The group of men on deck labored frantically and managed to haul the chief mate out of the tank, but their efforts appeared hopeless as there was no sign of life. Confirming their worst fears, a doctor who was summoned aboard pronounced the chief mate dead, principle cause of death: fractured skull. Apparently, the chief mate had been overcome by the fumes at a position where, in falling, his head had been struck a severe blow. All of the other four men who had been overcome recovered, although two of them required hospitalization.

It was determined after the series of accidents that motor benzol was being loaded in No. 2 cargo tank at the time of the casualty. Oil inspectors determined that there was a concentration of benzol vapors at the bottom of No. 1 port center tank. Evidence would indicate that these vapors resulted from seepage from the No. 2 tank. However, since this foreign vessel sailed soon after the above misadventures, such defects in the bulkhead could not be established.

Although no description of the exact type of gas masks which had been used could be obtained from the vessel's agent who reported the above accidents, the masks were probably of the so-called all-purpose "canister" type. This is a gas mask equipped with a filter which is useful only in that it chemically and mechanically removes certain gaseous elements and smoke from otherwise breathable atmosphere. It does not supply any oxygen. Unless there is at least 16½ percent of oxygen by volume in the atmosphere, the minimum necessary to sustain human life, there will be no point in using this type of mask for the wearer will be overcome by lack of oxygen and perhaps asphyxiated.

The United States Coast Guard "Manual for the Safe Handling of Inflammable and Combustible Liquids" contains the following statements: "Cargo tanks which are not known to be gas free should not be entered by anyone not provided with, and experienced in the use of, a fresh air (hose) mask. It should always be remembered that the usual 'canister'

mask is of no use in entering oil tanks. Only two types of masks can be used—the hose mask where fresh air is pumped to the user through a hose from the deck, and the oxygen-breathing apparatus where a supply of oxygen for breathing is carried by the user. The wearer of either type of breathing apparatus should be provided with a safety belt and life line. The life line should be tended by two men from the deck above."

It is very likely that the men who were overcome in the tank suffered initially from the toxic effects of benzol fumes which would not be filtered out by a gas mask containing an all-purpose canister. Benzol is a simple aromatic hydrocarbon obtained from the distillation of coal tars. Its vapors when breathed cause headaches and vertigo in the initial stages of exposure. Advanced symptoms from prolonged exposure are: inebriation, staggering gait, twitching, convulsions, and loss of consciousness.

However, while the original toxic effects of benzol vapors may have distressed or partially disabled the men who entered the tank, it is almost certain that the real disabling factor was lack of oxygen. Since the vapors present in the tank were slightly heavier than air, they would tend to accumulate at the bottom of the tank and tend to displace the air, resulting in oxygen deficiency. Tragically, the crew of the tanker in the above case utterly failed to appreciate the real nature of their enemy in the tank, lack of oxygen. The all-purpose type gas masks they used were completely useless insofar as protecting the wearer against anoxia, or asphyxiation due to lack of oxygen.

It is difficult to explain or understand how intelligent merchant officers and seamen, in this type of emergency, can proceed, one after another, to perpetuate each other's mistakes in entering cargo tanks and being overcome.

Unfortunately, the record indicates that this phenomenon occurs from time to time on tank vessels. As mentioned in the previous article on this subject, the belief persists, in spite of all warnings and lessons to the contrary, that rescue of persons overcome in tanks or pumprooms can be accomplished by persons not wearing breathing apparatus if the rescuer is strong enough or quick enough. That this belief is dangerous and will only lead to disaster must be driven home to all tanker men, again and again.

Breathing apparatus which supplies fresh air or oxygen to the wearer independent of whatever atmosphere may exist in a cargo tank is the only safe device which will allow a rescue to be made and must be used.

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by customs ports for the quarter ending 30 June 1954. 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.....	15,480
	(1) Portland, Maine.....	10,566
	(2) St. Albans.....	1,185
	(5) Providence.....	4,628
	Total.....	31,859
2 (St. Louis)	(45) St. Louis.....	9,087
	(12) Pittsburgh.....	1,949
	(34) Pembina.....	69
	(35) Minneapolis.....	2,301
	(40) Indianapolis.....	3,834
	(42) Louisville.....	2,872
	(43) Memphis (part).....	5,464
	(46) Omaha (part).....	285
	(47) Denver.....	15
	Total.....	25,876
3 (New York)	(10) New York.....	46,221
	(6) Bridgeport.....	9,014
	(11) Philadelphia.....	17,798
	Total.....	73,033
5 (Norfolk)	(14) Norfolk.....	15,964
	(13) Baltimore.....	22,820
	(15) Wilmington, N. C.....	7,701
	Total.....	46,385
7 (Miami)	(18) Tampa (part).....	23,721
	(16) Charleston.....	1,604
	(17) Savannah.....	2,941
	(49) San Juan.....	402
	(51) St. Thomas.....	94
	Total.....	28,762
8 (New Orleans)	(20) New Orleans.....	19,755
	(18) Tampa (part).....	871
	(19) Mobile.....	7,388
	(21) Port Arthur.....	4,236
	(22) Galveston.....	7,811
	(23) Laredo.....	1,310
	(24) El Paso.....	11
	(43) Memphis (part).....	65
	Total.....	41,118
9 (Cleveland)	(41) Cleveland.....	7,640
	(7) Ogdensburg.....	2,471
	(8) Rochester.....	5,005
	(9) Buffalo.....	4,472
	(36) Duluth.....	2,573
	(37) Milwaukee.....	3,830
	(38) Detroit.....	18,612
	(39) Chicago.....	8,408
	Total.....	51,011
11 (Long Beach)	(27) Los Angeles.....	9,804
	(25) San Diego.....	1,862
	(26) Nogales.....	92
	Total.....	11,758
12 (San Francisco)	(28) San Francisco.....	12,420
	Total.....	12,420
13 (Seattle)	(30) Seattle.....	17,587
	(29) Portland, Oregon.....	8,608
	(33) Great Falls.....	467
	Total.....	26,662
14 (Honolulu)	(32) Honolulu.....	2,989
	Total.....	2,989
17 (Juneau)	(31) Juneau.....	7,410
	Total.....	7,410
Grand total		359,183

SIDE LIGHTS ON THE RULES

(Continued from page 149)

hand power, horsepower, or by the current of the river, to sound a blast of the fog horn, or an equivalent signal, at intervals of not more than one minute. There are no equivalent provisions in the Western Rivers Rules. Rules 14 (f) and (g), Great Lakes Rules, on the other hand, respectively allow:

(1) Vessels of less than 10 tons that are not propelled by machinery to give an efficient sound signal at intervals of not more than one minute in lieu

of the specific fog signals prescribed for vessels on the Great Lakes.

(2) Produce boats, fishing boats, rafts, or other water craft navigating by hand power or by the current of the river, or anchored or moored in or near the channel or fairway, and not in any port, not otherwise provided for, to sound a fog horn, or equivalent signal, at intervals of not more than one minute.

The last part of Rule 15 (c), International Rules, provides for vessels fishing:

(ix) A vessel when fishing, if of 20 tons or upwards, shall at intervals of not more

than 1 minute, sound a blast, such blast to be followed by ringing the bell; or she may sound, in lieu of these signals, a blast consisting of a series of several alternate notes of higher and lower pitch.

There are no equivalent provisions in the Inland, Western Rivers, or Great Lakes Rules. In these waters, fishing vessels are not required to sound a special fog signal when so engaged.

In the next issue, the comparison of the International Rules with the local rules to prevent collisions will bring out other differences in requirements for vessels in restricted visibility.

APPENDIX

AMENDMENTS TO REGULATIONS

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

TITLE 46—SHIPPING

CHAPTER I—COAST GUARD, DEPARTMENT OF THE TREASURY

[CGFR 54-22]

MISCELLANEOUS EDITORIAL AMENDMENTS TO CHAPTER

The miscellaneous amendments in this document are either editorial to correct names, titles, phrases, and references to laws or regulations or modifications of regulations so that requirements will be the same as before the regulations were revised to implement the 1948 Convention for Safety of Life at Sea.

The amendment to 46 CFR 2.20-1 is to correct references to laws or regulations, which require certain Coast Guard forms to be posted.

The amendments to 46 CFR 25.25-5 (a), 25.30-5 (a), and 25.30-10 (c) are editorial to correct the title of the pamphlet "Equipment Lists, CG 190" and to correct the phrase "hand port-

able" to "hand portable fire extinguishers."

The amendment to 46 CFR 73.35-15 (a) is a relaxation in the regulation requirements for Class 3 watertight doors. When the regulations were re-drafted prior to October 18, 1952, it was considered that the present wording of 46 CFR 73.35-15 (a) correctly interpreted the intent of Regulation 12 (i) (i) of the 1948 Safety At Sea Convention. However, further consideration and a comparison with the wording of the corresponding part of the 1929 Safety At Sea Convention indicates that there was evidently no intent in the 1948 Convention to extend the requirement for power operation to sliding watertight doors located above the waterline. This is substantiated by a review of the corresponding 1952 British Ministry of Transport regulations. The revised wording is considered to comply with the 1948 Safety At Sea Convention and will also bring the regulation concerned in agreement, in this particular, with the regulation which was effective prior to October 18, 1952.

The amendments to 46 CFR 76.10-90 (a) (2) and 95.10-90 (a) (2) relax the regulations to the extent that existing motorboats carrying passengers or freight for hire will not be required to install fire pumps nor will such motorboats be required to replace existing 1½-inch hose with ¾-inch hose.

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

The following is an addition to the list of electrodes which are acceptable to the United States Coast Guard for use in welded fabrication.

Distributor's and/or manufacturer's	Brand	AWS class	Operating positions and electrode sizes (inch)				
			½ and below	¾	1	1½	2
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.	ZIP-24 (contact)	E6012	2	2	2	2	2

§ 2.20-1 Forms—(a) Posting. Statutes and regulations require that certain forms be posted on vessels referred to in the statutes and regulations. This title of the forms indicate the contents of the forms. They may be obtained from any Marine Inspection Office. The Coast Guard Forms and the statutes or regulations which require that they be posted are listed in this section.

(b) CG 802. This form "Persons Allowed in Pilothouse and on Navigation Bridge" is required by Subparts 78.10 and 97.10 of this chapter.

(c) CG 803. This form "Pilot Rules for Certain Inland Waters of the Atlantic and Pacific Coasts and of the Coast of the Gulf of Mexico" is required by 33 U. S. C. 157, and 33 CFR 80.13 (b).

(d) CG 804a. This form "Rules for Lights of Barges, Canal Boats, Scows and Other Vessels of Nondescript Type not Otherwise Provided for When Being Towed" is required by 33 U. S. C. 157.

(e) CG 805. This form "Pilot Rules for the Western Rivers and the Red River of the North" is required by 33 U. S. C. 353, 46 U. S. C. 381, and 33 CFR 95.23.

(f) CG 807. This form "Pilot Rules for the Great Lakes and Their Connecting and Tributary Waters" is required by 33 U. S. C. 243, 46 U. S. C. 381, and 33 CFR 90.15.

(g) CG 809. This form "Station Bills, Drills and Reports of Masters" is required by §§ 35.10-5, 78.17-50 (f), and 97.15-35 (d) of this chapter.

(h) CG 810. This form "Duties of Mates of Inland Steam Vessels" is required by § 157.35-5 of this chapter.

(i) CG 811. This form "Instructions for the Use of the Gun and Rocket Apparatus for Saving Life from Shipwreck as Practiced by the United States Coast Guard" is required by § 35.10-10, Subpart 78.53, or Subpart 97.43 of this chapter.

(j) CG 3018. This form "General Regulations of the Corps of Engineers, Department of the Army, and the United States Coast Guard" is required by 33 U. S. C. 157.

(k) CG 3256. This form "Atomic Attack Instructions for Merchant Vessels in Port" is required by 33 CFR 122.10.

[Federal Register of Thursday July 15, 1954]

AFFIDAVITS

The following affidavits were accepted during the period from 15 June to 15 July 1954:

Emco Manufacturing Co., Los Angeles, Calif., Fittings.

Hackney Iron and Steel Co., Enid, Okla., Fittings.

September 1954

MERCHANT MARINE PERSONNEL STATISTICS

MERCHANT MARINE OFFICER LICENSES ISSUED

Quarter Ending 30 June 1954

DECK		
Grade	Original	Renewal
Master:		
Ocean	74	540
Coastwise	9	88
Great Lakes	3	67
B. S. & L.	20	161
Rivers	7	71
Radio officer licenses issued	19	654
Chief Mate:		
Ocean	60	95
Coastwise	2	6
Mate:		
Great Lakes		
B. S. & L.	7	16
Rivers	13	35
Second Mate:		
Ocean	59	130
Coastwise		2
Third Mate:		
Ocean	64	98
Coastwise		1
Pilots:		
Great Lakes	4	36
B. S. & L.	230	53
Rivers	54	80
Master: Uninspected vessels	11	13
Mate: Uninspected vessels	7	5
Total	643	2,081
Grand total		2,724

ENGINEER

Grade	Original	Renewal
STEAM		
Chief engineer:		
Unlimited	65	609
Limited	24	173
First assistant engineer:		
Unlimited	56	194
Limited	3	14
Second assistant engineer:		
Unlimited	69	278
Limited	1	7
Third assistant engineer:		
Unlimited	92	248
Limited		
MOTOR		
Chief engineer:		
Unlimited	10	60
Limited	42	123
First assistant engineer:		
Unlimited	5	12
Limited	14	14
Second assistant engineer:		
Unlimited	2	12
Limited		2
Third assistant engineer:		
Unlimited	2	16
Limited		1
Chief engineer: Uninspected vessels	8	14
Assistant engineer: Uninspected vessels	10	5
Total	403	1,782
Grand Total		2,185

INVESTIGATING UNITS

Coast Guard merchant marine investigating units and merchant marine details investigated a total of 2,783 cases during the second quarter

ORIGINAL SEAMEN'S DOCUMENTS ISSUED

Quarter Ending 30 June 1954

Type of document	Atlantic coast	Gulf coast	Pacific coast	Great Lakes and rivers	Canal Zone	Total
Staff officer	56	9	34	6		105
Continuous discharge book		3				3
Merchant mariner's documents	1,281	494	825	2,162	3	4,765
AB any waters unlimited	151	39	83	30	1	304
AB any waters, 12 months	57	17	36	125		235
AB Great Lakes, 18 months	4	1	17	48		70
AB tugs and towboats, any waters						0
AB bays and sounds						0
AB seagoing barges						0
Lifeboatman	218	18	204	30	1	471
Q. M. E. D.	156	58	64	148		426
Radio operators	3	2	2	1		8
Certificate of service	1,215	498	805	2,090		4,608
Tankerman	11	13	3	56		83

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

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

WAIVER OF MANNING REQUIREMENTS

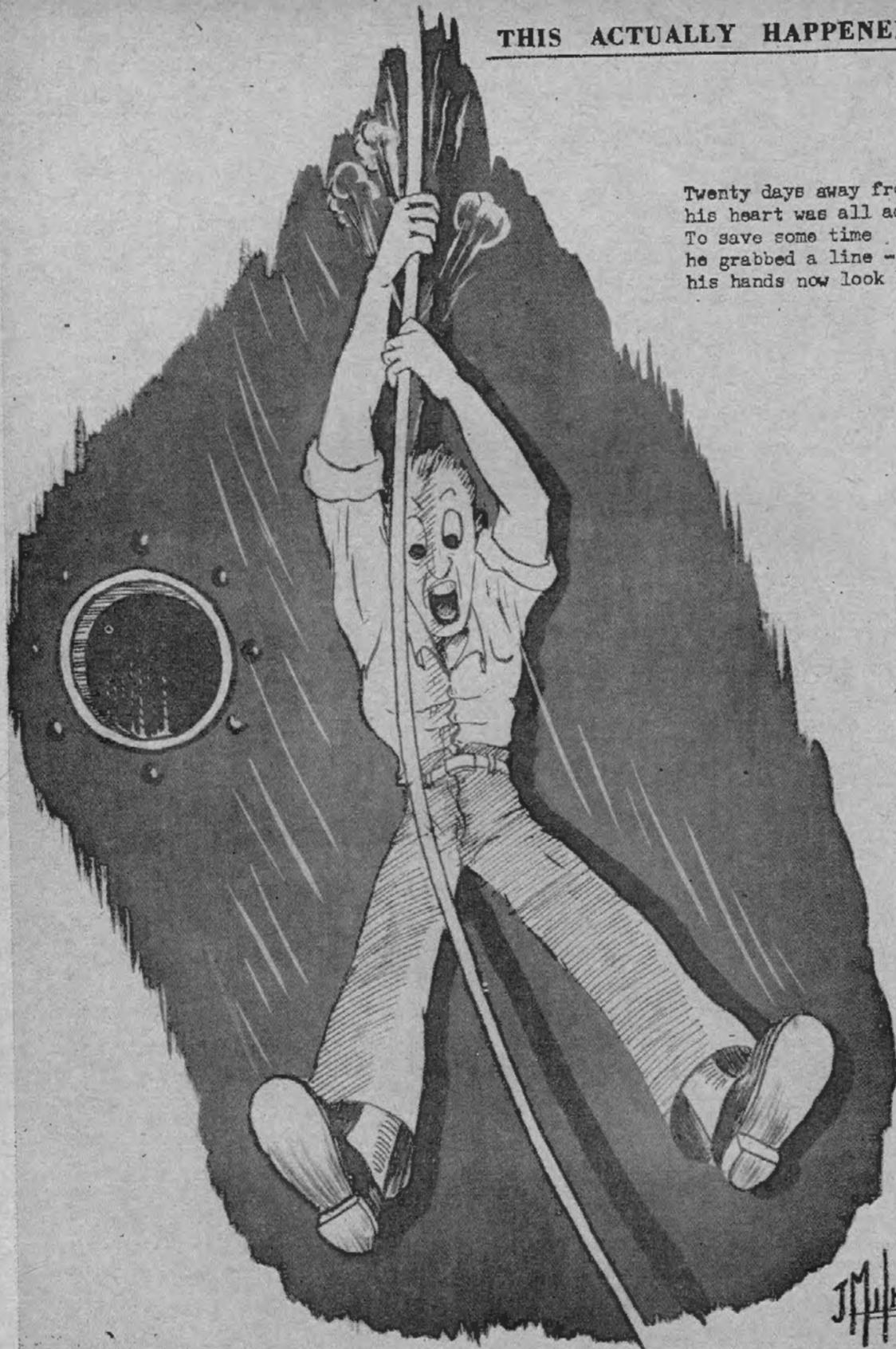
Waivers	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Total
Deck officers substituted for higher ratings				1	1
Engineer officers substituted for higher ratings		1		6	7
O. S. for A. B.	1				1
Wiper or coalpassers for Q. M. E. D.					
Total waivers	1	1		7	9
Number of vessels	1	1		4	6

NOTE.—In addition, individual waivers were granted to permit the employment of 0 able seamen holding certificates for "any waters—12 months" in excess of the 25 percent authorized by statute.

of 1954. From this number, hearings before Examiners resulted involving 40 officers and 210 unlicensed men. In the case of officers, 3 licenses were revoked, 3 were suspended without probation, 10 were suspended with probation granted, 5 licenses were voluntarily surrendered, 8 cases were dismissed after hearing and 1 hearing was closed with admonition. Of the unlicensed personnel, 18 documents were revoked, 22 were suspended without probation, 94 were suspended with probation granted, 68 documents were voluntarily surrendered, 14 hearings were closed with admonitions, and 19 cases were dismissed after hearings.

THIS ACTUALLY HAPPENED

Twenty days away from land,
his heart was all aquiver.
To save some time
he grabbed a line -
his hands now look like liver.



JM | he 53

Courtesy States Marine Line