PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

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OF THE

MERCHANT MARINE COUNCIL

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The Merchant Marine Council of the United States Coast Guard

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COUNCIL ACTIVITIES

The Merchant Marine Council will hold a public hearing on Monday, 27 April 1959, commencing at 9:30 a.m., in the Departmental Auditorium, between 12th and 14th Streets on Constitution Avenue NW., Washington, D.C., for the purpose of receiving comments, views, and data on the proposed changes in the vessel inspection rules and regulations as set forth in items I to XI, inclusive, of the Merchant Marine Council Public Hearing Agenda, CG–249, dated April 1959.

Copies of the Merchant Marine Council Public Hearing Agenda (CG–249) are 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), U.S. Coast Guard, Washington 25, D.C., so long as they are available.

Each item in the agenda has been given a general title, intended to encompass the specific proposals presented. It is urged that each item be read completely because the application of proposals to specific employment or types of vessels may be found in more than one item. For example, item V contains proposals applicable only to tank vessels, yet items II and VIII also contain proposals affecting tank vessels.

The items in the agenda are:

Item No.	*Title*
I.	Lifesaving Appliances.
II.	Fire Protection Equipment.
III.	Engineering.
IV.	Electrical.
V.	Tank Vessels.
VI.	Load Lines.
VII.	Work Vests.
VIII.	Power-Operated Industrial Trucks.
IX.	Dangerous Cargoes.
X.	Personnel Licensing.
XI.	Suspension or Revocation Proceedings.

SHIP SAFETY ACHIEVEMENT AWARDS

WINNER OF THE coveted Distinguished Sea Rescue Award jointly made by the Marine Section, National Safety Council, and the American Merchant Marine Institute, is the USNS *Greenville Victory* pictured above. Photo Courtesy *MSTS Magazine, Department of the Navy.*

OUTSTANDING demonstrations of marine safety during 1958 have been recognized by the Marine Section, National Safety Council, and the American Merchant Marine Institute with the awarding of four Ship Safety Achievement Awards.

Separate awards are made annually to the American-flag passenger ship, freighter, tanker, and Military Sea Transportation Service vessel logging the outstanding achievement in its class.

Winners this year are:

SS *Independence*, American Export Lines.

SS *Columbia Trader*, West Coast Steamship Co.

SS *Esso New Orleans*, Esso Standard Oil Co.

USNS *Greenville Victory*, MSTS, Atlantic Area.

The sleek Atlantic liner *Independence* won her award for a daring lifeboat transfer of a stricken Italian seaman in midocean. En route to the Mediterranean, the ship hove to in heavy swells and successfully completed the mercy mission, third such assistance rendered by the vessel since 1951.

The *Columbia Trader* was en route to Alaska early in 1958 when she suffered a major structural failure. The captain and entire crew were cited for their successful team effort in bringing the ship safely to port.

The *Esso New Orleans* won her award for devising and carrying out emergency treatment with available shipboard equipment of skindiver stricken with the "bends" off Molasses Reef.

The award to the USNS *Greenville Victory*, officially designated as a Distinguished Sea Rescue Award, was earned when she ploughed through ice-congested Arctic waters to rescue the survivors of a crashed Canadian airliner. The ship established contact with the downed plane through sound and smoke signals and five passengers were safely brought aboard by the ship's lifeboat.

In addition to these awards, Ship Safety Achievement Citations of Merit were made to:

SS *Steel Age*, Isthmian Lines.

SS *Alcoa Pioneer*, Alcoa Steamship Co.

USNS *Pendleton, MSTS*, Pacific Area.

CATC *Offshore Group*, a drilling unit operated by the Continental Oil Co. in the Gulf of Mexico.

The *Steel Age* responded to a distress call from a burning German ship en route to Karachi and dispatched a fire fighting crew with their gear in a lifeboat which successfully placed the fire under control.

Alerted by a Coast Guard aircraft, the *Alcoa Pioneer* rescued five crewmembers from the sinking schooner *Amberjack II* in the Straits of Florida in boisterous weather conditions.

The *Pendleton*, second MSTS ship to be honored by the group, rescued the entire crew of a Japanese fishing craft which sank in late December.

The CATC *Offshore Group* won recognition for rescuing five men from a sinking fishing vessel in the Gulf of Mexico.

MARINE MACHINERY BREAKDOWNS

By J. H. MILTON

Senior Surveyor in charge of Engineering Investigation, Lloyd's Register of Shipping

Reprinted from the Transactions, North East Coast Institution of Engineers and Shipbuilders, Volume 73, 1957, this Paper has covered some of the problems which can confront Surveyors and Superintendents when serious defects, necessitating the delay of a vessel, have developed at sea or have been brought to light at a survey. The cases covered the following groups: (a) Steam Reciprocating Engines, (b) Boilers, (c) Turbines and Gearing, (d) Diesel Engines, (e) Thrust and intermediate Shafting, (f) Tailshafts.

THRUST AND INTERMEDIATE SHAFTING

THE ADVENT of the Mitchell thrust put an end to most of the troubles experienced in thrust and intermediate shafting. The old multicollar thrust with its water-cooled shoes and renewable white metal facings was a frequent offender. It was not unusual to find corrosion-fatigue fractures at the base of the collars of these shafts, especially if the collars were reduced in thickness through being faced up several times, and were operating in a mixture of oil and water.

One such shaft, removed after much discussion on account of fractures at the base of the collars, was to be broken open for examination of the defects. A weight was dropped on the end of the shaft, and to the surprise of all concerned the shaft broke in a place far remote from the defects which had been under discussion.

MITCHELL THRUST DEFECT

Routine survey of a Mitchell thrust block showed the shaft collar to be bright over about two-thirds of its ahead bearing surface and dull over the remaining one-third with, to the touch, an apparent slight step between the two variations in surface. A steel rule and feelers verified that there was in effect a step of several thousandths of an inch—the dull surface being lower than the bright.

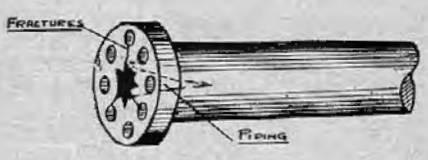


Figure 1.

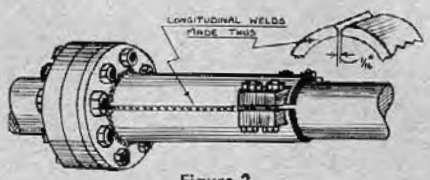


Figure 2.

This thrust block had been operating satisfactorily although the white metal of one pad was slightly wiped. Investigation into its past history revealed that about a year previously the thrust had been seriously overheated and the white metal "run out" due to lack of lubrication. The vessel was at sea and apparently made the nearest port after dressing up the collar face and fitting the spare ahead thrust pads. At the port the thrust shaft was taken ashore and skimmed up in a lathe, to the satisfaction of those concerned. The only feasible explanation for the step in the machined face of the collar was that when the lubrication failure was first observed, this deficiency was made good immediately, probably without avail; and the machinery had to be stopped with the lower part of the hot collar immersed in cool lubricating oil. The effect of the cool oil on the hot collar had locally hardened the surface, and this on subsequent machining in the lathe was sufficient to cause an unnoticed step.

The defect was made good by removing the thrust shaft and grinding the ahead face true.

INTERMEDIATE OR TUNNEL SHAFT DEFECT

It is usual at tailshaft surveys to remove the last section of tunnel shafting to one side to make room for the tailshaft to be withdrawn. On one such occasion it was noticed, after examining the tailshaft, that there was a large cavity visible in one of the exposed ends of the last length of intermediate shafting (see figure 1). This cavity when investigated was found to extend up the middle of the forging for about 8 inches or 9 inches and had fractures radiating

Figure 3.

from it to the bolt holes. The cavity was obviously "piping" in the original forging, and how the shaft (which was of some considerable age) ever passed muster originally is a mystery.

The owners wanted the ship at sea, and forgings take time, therefore a temporary repair had to be decided upon. Once again welding was re-

Figure 4.

Figure 5.

sorted to: a tubular hollow shaft, complete with flange, was shrunk by using the contraction of the two longitudinal welded seams, over the defective shaft (see figure 2) and extended coupling bolts fitted. Additionally, the longitudinal welds were cut short about 8 inches from free end of the sleeve and large lugs welded on, through which heavy clamping bolts were fitted (see figure 3).

TAILSHAFTS

This extremely vital part of a ship's machinery can only be seen when she is in drydock, and is normally only withdrawn from the stern tube for survey once every 3 years.

Obviously, in a single-screw vessel this is one of the most, if not the most important machinery surveys.

Much has been written on tailshafts and their defects, and it is only proposed to mention briefly the causes of most failures in what is considered to be their order of predominance.

(a) Combined bending and torsional fatigue accelerated by corrosion through leakage of sea water into the propeller-cum-tailshaft assembly. A typical example is shown in figure 3, and the depth to which this form of cracking can extend without complete fracture is vividly shown in figure 4.

(b) Fractures in the shaft at the forward end of the keyway, caused by stress concentration at this point through the propeller being a poor fit on the large end of the cone. An example of this type of failure is shown in figure 5.

(c) Fractures in the shaft at the forward end of the liner, especially in shafts which have a journal and plummer block in their length. An example of such a failure, which occurs through combined bending and torsional fatigue accelerated by sea water leaking from the stern gland, is shown in figure 6.

(d) Fracturing of shaft halfway down cone through propeller only fitting on small end and thus cutting down effective diameter of shaft to that at this end (see figure 7).

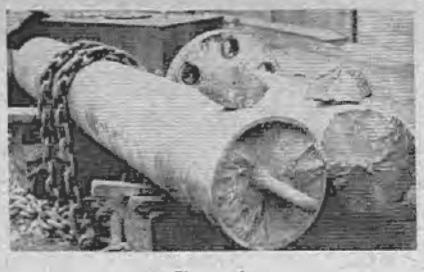


Figure 6.

PROPELLERS

It is not uncommon for a vessel to have to be drydocked on account of propeller damage.

Such damage sometimes occurs through blades striking submerged objects at sea, but more often, especially in twin-screw vessels, when maneuvering in and out of dock. Such damage is, when not too serious, normally rectified by removing the propeller concerned, cutting off the defective portions of the blades, and casting or "burning" on new portions.

In the days when cast-iron propellers were more generally used, it was not uncommon to see propellers with large pieces broken off each blade, and to hear that the performance of the vessel had improved as a result of the damage. Quick changes of damaged propellers for spares are, when it is inconvenient to drydock the vessel, occasionally effected by "tipping the ship"—this is a somewhat precarious operation, especially so when one considers that the propeller has first to be tried for fit with the key in position, and possibly some subsequent fitting to be done.

Much more could be written about propeller damage. However, it is considered fitting to end this series of troubles with a slide showing how, following the loss of a ship's propeller at sea in 1899, a chief engineer of resource made and fitted a new one and enabled the vessel to proceed a further 1,200 miles.

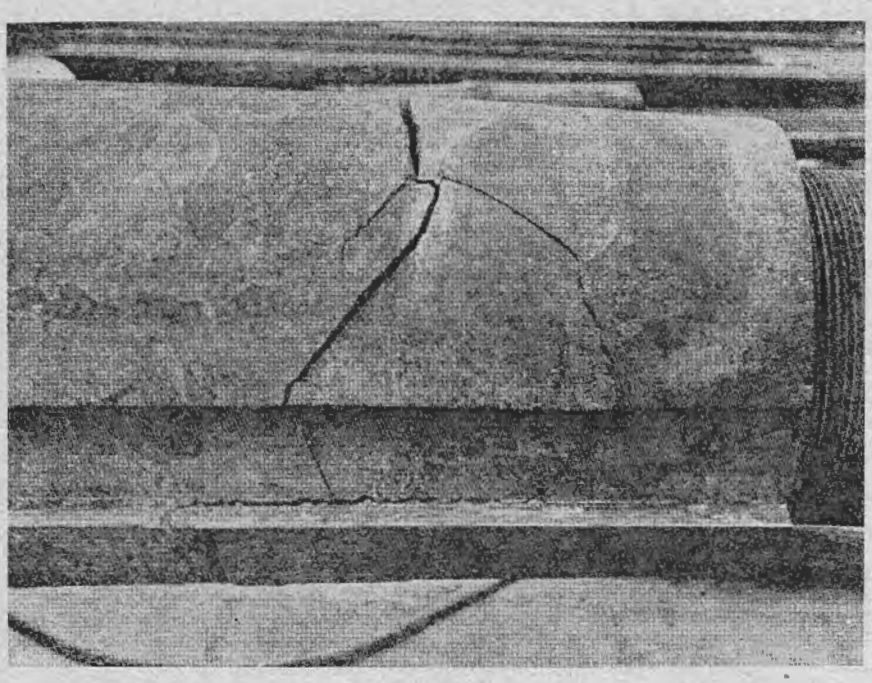


Figure 7.

NONSKID SURFACES

Courtesy of the Accident Prevention Bureau
of the
Pacific Maritime Association

SLIPPING IS undoubtedly the most frequently occurring single type of accident aboard ship. *Slips cause about one-sixth of all injuries to seamen,* based on thousands of shipboard accidents received by the Accident Prevention Bureau.

When kept clean and dry, the materials used for working surfaces aboard ship are, for the most part, not slippery. However, keeping them clean, or at least dry, at all times is impossible. Rain, spray, dew, dust, oil, and other things combine to provide slippery surfaces, often when not expected. Many of these hazards can be reduced or eliminated with the use of special commercial products designed for this purpose.

During the war, naval vessels used nonskid surfacing material very extensively and merchant vessels used it in the gun tubs. Since the war this material has found widespread use both in shoreside industry and among vessels of the merchant marine. It is widely known, but not as widely used as it could be.

This material consists of a fabric to which a layer of granular abrasive is bonded in plastic. It is not difficult to clean, wears well, and can be easily applied. It is available in several degrees of coarseness and can be painted any color. It is available in rolls and cleats of various sizes.

Courtesy Matson Navigation Co.

NONSKID PAINT

Several nonskid paints are on the market. Most of them contain a ground walnut shell additive which provides an excellent nonskid surface in many areas. The walnut shells can also be purchased separately and added to your present supply of deck paint to convert it to a nonskid paint.

In addition, there is a mastic compound which contains an abrasive and is reported to provide a good nonskid surface where it can be used.

Finally, there is available steel plate which has a grinding-wheel-type abrasive rolled into it to a controlled depth, thus providing a nonskid surface with extremely long life and able to resist almost any abuse. For those who may be inclined toward "do-it-yourself" projects, a similar effect in some locations can be achieved with the use of a welding bead. Many vessels have reported good results using welding beads on inclined ladders where the original nonskid surface has worn smooth. (NOTE:—Before starting to use your welding equipment, be sure it is safe to do so and use all necessary precautions while doing it.)

RUBBER MATS

Should you need a temporary nonskid surface, you might consider the use of mats. There are two common types. Flexible rubber mats fabricated from old automobile tires can be obtained in various sizes and shapes to order. While these mats will not withstand oil indefinitely, present a tripping hazard because of their thickness, and must be picked up to clean thoroughly, they not only provide a

nonslip surface but also act as a cushion. For this reason, they would be very useful on the bridge and in front of workbenches and power tools, where a man must stand for a long period of time. They can be secured to ladder treads, and there would be no objection to them in enginerooms.

Rubber runners have been used for some time to provide nonskid surfaces in passageways. They are not without their disadvantages, but can serve a useful purpose. Recently similar runners have been introduced on the market which are made of vinyl and which wear much better than rubber, will not tear, and are available in various colors and thicknesses.

While the use of these materials over all working surfaces aboard ship is impractical, accident reports indicate there are a number of specific locations in which its use would be of great value either because of unusually slippery conditions or because of greater risk of serious injury should slipping occur:

1. On either side of door coamings where a man's footstep lands as he passes through. Particularly important outside reefer compartment, between galley and pantry or messroom, and at doors opening to weather decks.

2. Galley deck as a whole or at least in the way of range, sinks, chopping blocks, and serving tables.

3. On exterior and interior ladders, particularly those leading to storerooms.

4. On gangplank or accommodation ladder. In the latter case, the material should be continued down over edge of tread for protection when ladder is at a small angle.

5. In shower rooms.

6. Around winches and steering engine, where there is likely to be oil and danger of a man falling against moving parts or hot pipes.

7. In front of workbenches and power tools, such as lathes, drill press, and grinder.

8. In those places around mooring bitts and windlasses where men stand while heaving on lines.

9. On deck at garbage chutes or place at rail from which refuse is heaved overboard to give men secure footing while lifting.

While it is not economically practical to install nonslip surfaces everywhere that a man may go, and the use of them cannot be expected to prevent all falls, the experience both afloat and ashore shows that nonslip surfaces in strategic locations are of great value in reducing accidents and in increasing efficiency.

SEARCH-AND-RESCUE PLAN FOR PACIFIC

Rescue potential of the Coast Guard cutter on *Ocean Station November*, midway between Honolulu and the west coast, has long been recognized by mariners and airmen alike and on occasion utilized.

However, only minor use has so far been made of the rescue potential of other vessels at sea in this area. With this fact in mind, the Coast Guard's Commander Western Area in San Francisco has developed a search-and-rescue plan for assistance to aircraft in this well-traveled area.

Known as *Plan Alfa*, the system provides daily ship position information along the Honolulu-mainland track to air carriers, rescue and communication capabilities of surface ships, suggestions on rescue of survivors, homing procedures, and information on midocean drills between surface ships and aircraft.

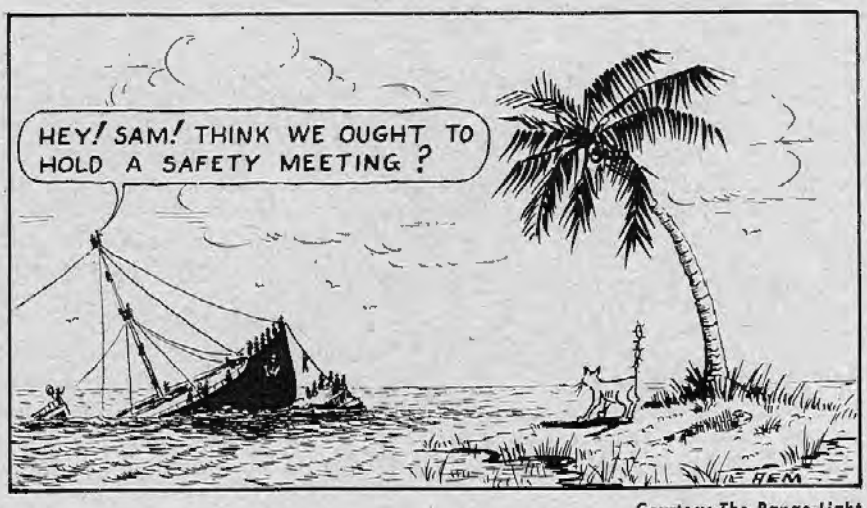
Copies of "Shipboard Air Sea Rescue Plan Alfa" are being given wide distribution to ships operating in the Pacific and additional copies may be obtained from the Rescue Coordination Center, Western Area, U.S. Coast Guard, 630 Sansome Street, San Francisco, Calif.

Midocean drills are an important aspect of the plan, it was emphasized, and any vessels who desire to participate in communication and radio direction finder exercises are invited to submit offers to the Coast Guard, who will make necessary arrangements with commercial and military aircraft.

The first successful search-and-rescue drill in history between a commercial ship and a commercial airliner was made recently between the SS *Matsonia* and two United Air Lines planes at distances up to 600 miles. Communications were maintained on 2182 kcs. between the Matson luxury liner and the UAL airliners and found to be effective 300–600 miles. The homing signals transmitted on the radio direction finding frequency of 410 kcs. by the *Matsonia* were accurate 230–530 miles from ship to aircraft.

Full details are included in *Plan Alfa* and it is suggested that a copy of the plan be obtained prior to requesting participation in the drills. In the case of actual emergency and you do not have a copy of the plan on board your ship, the Coast Guard will include instructions relative to homing procedure.

The SS *Hawaiian Farmer*, Matson Navigation Co., successfully conducted a midocean air-surface drill with four commercial and one MATS aircraft at 2200 G.m.t., February 11, 1959, while in position 30°55′ N, 131°42′ W. During the drill period the *Farmer* effected reliable two-way communications on 2182 kcs. with all participating aircraft, and three aircraft obtained satisfactory homing signals on the vessel's 410 kcs. transmissions.



Courtesy *The Range Light*.

IT'S A SHOCKER!

HOW WOULD you like the shock of your life? And we mean that literally.

While the answer must, of course, be a resounding "not me," the latest tabulation of unsafe practices aboard ship* reported by the Coast Guard is a shocker. In the 6 months' period ending December 31, 1958, there were 861 unsafe practices observed by inspectors with respect to electrical equipment and installations aboard inspected vessels.

There were 15 electrical casualties during the same period which caused the death of one person, the total loss of four vessels, $641,700 loss in property damage, and serious injury to two persons.

In the last 4 years, 30 men were killed by electric shock aboard U.S. Navy ships. Twelve of these in one year. And the most distressing fact is that at least half of the fatalities were caused by 117-volt a.c. or lower voltage circuits.

In other words, from portable tools, electric appliances, portable extension lights, and the like. The Navy remarked that "any man who still refuses to believe that 117 volts can kill is a fool whose folly may turn him into a corpse."

"* * * all too many people are ignorant of the deadly potentialities of 117-volt-and-lower voltage circuits. This fact may, in part, be a carryover from life ashore. When you are in your comfortable living room at home, standing in dry shoes on a dry rug on a dry wooden floor, you are probably sufficiently well insulated that you will not be shocked if you use a portable electric drill that is not grounded by a grounding conductor and that has a defective insulation between the live conductors in the tool and its metal case.

"But don't put on a buffing attachment and try to use the same drill to polish your car while you stand in wet shoes on a garage floor that is running with water. It will probably kill you.

"So, too, will it probably kill you if you use a drill or any other tool like that on a ship."

The important facts revealed in the Unsafe Practice Tabulation indicate that a serious electrical housekeeping is in order aboard inspected vessels. Defective extension cords must be repaired or replaced, jury rigged circuits eliminated, vapor globes and guards installed where missing, installation of suitable grounds on all portable equipment, and an active program of electrical safety.

Electric shock is pretty much an all-or-nothing affair. It either kills you, or it shakes you for a moment and leaves you with no aftereffects as serious or painful as even a slight burn from a cigarette lighter.

If you get "tickled" the next time you pick up an electrical tool or appliance, don't shrug it off for "Joe" to fix. Stop using it *right now* and get word to the Mate or Chief Engineer what's wrong.

Never disregard a shock.

Booklets dealing with electrical safety aboard ship are the U.S. Coast Guard "Electrical Engineering Regulations," CG-259, dated September 2, 1958, which is obtainable at each Marine Inspection office at no cost, and "Electric Shock—Its Causes and Its Prevention," by the Bureau of Ships, Department of the Navy, obtainable from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., for 20 cents a copy.

Further up-to-date analyses on electrical shock are included in the November and December 1958 issues of the Bureau of Ships *Journal*, also on sale by the Superintendent of Documents at 20 cents a copy.

Following are abbreviated case histories of the 30 Navy deaths:

CASE No.	VOLTAGE	EQUIPMENT
1	117 a.c.	Lighting fixture.
2	117 a.c.	Portable light.
3	117 a.c.	Movie projector.
4	117 a.c.	Do.
5	440 a.c.	Switchboard.
6	440 a.c.	Distribution box.
7	117 a.c.	Coffee percolator.
8	440 a.c.	Control panel.
9	440 a.c.	Load center panel.
10	117 a.c.	Fan.
11	2,000–3,000 d.c.	Radio transmitter.
12	117 a.c.	Portable grinder.
13	3,000 d.c.	Radio transmitter.
14	117 a.c.	Portable light.
15	440 a.c.	Switchboard.
16	720 a.c. or 380 d.c.	Hi-fi amplifier.
17	Unknown	Welding equipment.
18	2,000 d.c.	Radio transmitter.
19	800 a.c.	Radar.
20	117 a.c.	Portable light.
21	117 a.c.	Portable grinder.
22	117 a.c.	Portable light.
23	800 d.c.	Radar.
24	440 a.c.	Motor (vent set).
25	117 a.c.	Portable wire brush.
26	440 a.c.	Portable welder.
27	117 a.c.	Fan.
28	117 a.c.	Gooseneck lamp (portable).
29	117 a.c.	Portable light.
30	230 d.c.	Power panel.

ALL SHOOK UP!

Under certain circumstances you can get "all shook up" and fatally so by a mere 110 volts of electricity.

1. If a portable tool has a grounding wire, connect it BEFORE plugging in. If you don't, you may never have a second chance!

2. If a switchbox carries a warning tag, obey the instructions. Closing a tagged switch may endanger the lives of others.

3. A fuse box is not a home for stray tools. They may touch a live wire and fuse you right to the box!

4. Never tamper with electrical fuses around the plant. That's a job for an electrician, who knows how to do it safely.

5. Do not use worn or frayed extension cords. Keep cords away from oil and grease, and never tie them in knots. This avoids fire-causing "shorts" or possible electrocution.

6. If there is an electrical fire, use only the proper type of extinguisher...never water nor the soda-acid types, which will conduct electricity.

*See p. 79.

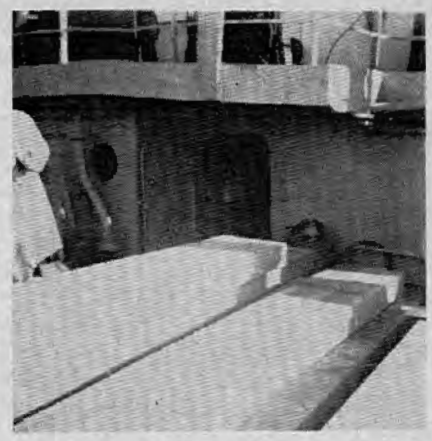
MENTAL LAPSES ARE MURDER

Even the most experienced seaman has a mental lapse once in awhile which is the reason safety must be an active round-the-clock proposition.

There is no use trying to alibi an accident off by saying, "He's got a certificate (or license) and should know better," or "It's not my fault if the man is just plain careless." When the chips are down, it is the officer-supervisor who will be brought to task.

A case in point was included in a recent investigative report sent to Coast Guard Headquarters. A C–2-type ship was discharging a deckload of timber in a foreign port with its own gear. To expedite the operation the timber abeam of No. 5 hatch was being snaked forward and landed overside into a lighter with the gear at No. 4 hatch.

The winch driver assigned to drag the timber into position was using the forward set of winch controls at No. 4



hatch which, on this ship, are mounted on the after end of the cabin deck. This deck overhangs the main deck below and it is impossible to see the watertight doors in the port and starboard passageways leading to the crew quarters there.

The stage was set!

An offwatch oiler stepped through the starboard passageway and stood for a moment in the vacant area between the deck cargo and the midship house. Just at that time a slingload of timber being snaked aft gained momentum and shot forward. A longshoreman shouted a warning and the oiler turned to the safety of the passageway. He was immediately struck in the back and killed instantly.

Although the ship had been discharging deck cargo for 2 days, it is assumed that the oiler suffered a momentarily mental lapse in stepping on the deck in the way of cargo operations.

Our suggestion: When your ship is working cargo, hang signs *across* the doors leading to cargo decks alerting all hands to the possible danger.

APPEAL DECISIONS

Found guilty of six specifications of misconduct, this licensed deck officer had all his seaman's documents and license revoked by a Coast Guard examiner. In affirming the order on appeal, the Commandant remarked: "The order of revocation was justified by the seriousness of the offenses and it will be sustained despite the personal hardship to appellant. The record clearly shows that appellant is not an emotionally stable person and that this condition is accentuated when he drinks intoxicants. The risk of a recurrence of events such as are referred to herein cannot be taken."

★ ★ ★

An examiner of the Coast Guard revoked all seaman's documents issued to this man upon finding him guilty of the charge of "conviction of a narcotic drug law violation." Title 46 U.S.C. 239a–b provides for the revocation of a seaman's document after he has been convicted for a violation of the narcotic drug laws. The statute does not provide for any order other than revocation. Since the purpose of the statute is to deny employment on our merchant vessels to narcotic offenders, it is not material how these convictions were brought to the attention of the Coast Guard or that appellant was not serving on a ship at the time of the offenses. The order was affirmed on appeal to the Commandant.

Found guilty of misconduct, this chief cook had his seaman's documents revoked by a Coast Guard examiner. In affirming the order on appeal, the Commandant said: "The indications that appellant is a confirmed alcoholic are substantiated by his testimony that he is now a member of Alcoholics Anonymous. Hence, appellant would be a constant peril to himself and the safety of other seamen on board ship. Merchant vessels are not considered to be suitable rehabilitation centers for persons in appellant's condition. The order of revocation will stand."

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Failure to join his vessel in a foreign port was determined as misconduct by a Coast Guard examiner who suspended this able-bodied seaman's documents for a period of 2 months outright, plus 4 months on 18 months' probation. The Commandant affirmed the order on appeal.

★ ★ ★

For assaulting and battering a fellow crewmember with a dangerous weapon, to wit, an icepick, while ashore in Japan, a Coast Guard examiner found this ordinary seaman guilty of misconduct and revoked his seaman's documents. It was determined that the seaman was "in the service" of his ship when the assault took place ashore, and the Commandant affirmed the order on appeal.

SAFETY OF PASSENGERS

Question of the liability of shipowners in respect to the safety of their passengers was the subject of a case recently decided before a U.S. Court of Appeals (1958 A.M.C. 1665).

The proceedings arose out of a claim by a passenger for injuries received in jumping from a ladder onto a barge in disembarking from a ship at anchor. The gangway was rigged to permit access to a barge from which they could board a tug. The weather was clear and dry, and a slight swell moved the barge 2 or 3 feet up and down under the gangway. Two seamen were on the barge and one shouted to the passenger not to jump. This warning was disregarded and the passenger jumped from the platform as the barge was rising on the swell and, as a result, suffered torn knee ligaments.

In ruling in favor of the shipowner on the grounds that the man's injuries were proximately caused by his own negligence, the court did point out that a vessel employed as a common carrier of passengers must exercise a high degree of care for their safety and must maintain a reasonable, safe means for a passenger to disembark.

The court also held that "employees must be provided to render such services as are reasonably necessary to get a passenger safely ashore." The ship had carried out these duties and, if the passenger decided not to wait for assistance which was at hand in this case, he must assume the responsibility.

499112—59——2

MARINE CASUALTIES DURING 1958

ANNUAL STATISTICS of the Liverpool Underwriters' Association for 1958 show a slight but steady decrease in worldwide marine casualties over the previous years.

There were 87 vessels of 500 gross tons or over listed as total losses during the year from weather damage, foundering, strandings, collisions, and fires, against 90 losses in 1957. Of this number, five American ships are listed—*Carl D. Bradley, Arlyn, Harry R. Jones, Empress Bay,* and *S. E. Graham.*

In the total-loss column, including constructive total losses, 12 ships were named as lost by collision of which exactly 50 percent were fitted with radar. The report points out that it is not known whether, in fact, these vessels were using radar equipment at the time of collision.

In its Report for 1957–58, the Council of the Institute of Navigation announced that after a joint conference with the French Institute of Navigation and the German Ausschuss für Funkortung, the following conclusion was agreed relative to shipboard radar:

"The cause of many of the collisions at sea * * * seems to have been either contravention or too free an interpretation of the Rules of the Road, particularly where moderate speed is concerned. The conference considered whether it was possible to recommend more precise definition in some of the rules in order to underline the responsibilities of radar-equipped ships and to emphasize the precautions that should be taken in fog. The conference, acknowledging that any redefinition and amendment of the Rules of the Road is a difficult international task which needs systematic examination and much preliminary work, concluded that it would be useful if a small and representative working group were set up to consider this matter further."

Pursuant to this report a working group was set up and is working on a comprehensive working paper for the guidance of their delegates to the Safety of Life at Sea Conference to be held in 1960.

Here in the United States a Safety of Navigation Committee, which includes the Rules of the Road, has been working on a position paper for this conference for over a year which, it is anticipated, will include this country's views on this complex problem.

Vessels disabled due to broken tailshafts and loss of single propellers showed a big improvement over 1957.

In 1958, 16 vessels of over 500 tons were disabled due to broken tailshafts and loss of single propeller, as compared with 26 ships during 1957.

The total comprises:

2 built before the war.
1 built since the war.
13 built during the war, of which—
9 in the United States.
2 in the United Kingdom.
1 in Canada.
1 in Sweden.

Apart from two very small vessels, no losses were sustained by mine damage, and the official view of the Liverpool Association that the danger of the magnetic mine would very much diminish after 1957 appears justified.

Fires and explosions in ships numbered 399, compared with 382 in 1957. The year was notable for tanker casualties where, in some cases, fire and explosion followed collisions with other vessels. Of 13 outbreaks which followed collision, 7 were in tankers, the report said.

Outbreaks due to ignition of oil residue increased from 2 in 1957 to 11 in 1958, indicating perhaps that there are cases where insufficient attention has been paid to cleanliness in ships' enginerooms. In cargoes there was an improvement in the figures for cotton, but fires in fishmeal jumped from 3 in 1957 to 19 last year.

TOTAL LOSSES BY NATIONALITIES

(500 gross tons and upwards)

Nationality	*No.*	1954 *Gr. Tons*	*No.*	1955 *Gr. Tons*	*No.*	1956 *Gr. Tons*	*No.*	1957 *Gr. Tons*	*No.*	1958 *Gr. Tons*
British Commonwealth	20	57,029	19	40,509	22	47,476	13	40,173	8	28,996
Foreign										
America, U.S.	3	7,793	6	22,924	8	35,967	4	3,258	5	24,443
Argentina	1	9,589					2	4,497	1	621
Belgium			1	1,362	1	2,588	2	2,527		
Brazil	8	19,391	3	6,483	3	3,872	2	1,350	1	4,129
Burma			1	1,785						
Chile	1	2,159					3	6,884	1	2,179
China	1	1,351	2	3,224	1	2,059				
Costa Rica	2	7,342	2	3,946	4	14,761	2	2,659	4	9,578
Denmark	3	10,137							1	2,990
Dominica									1	1,084
Ecuador	2	1,862								
Egypt							1	1,428		
Ethiopia					1	1,461			1	1,164
Finland	2	1,326	2	2,223	1	1,918	3	6,716	1	1,282
France	3	4,711	3	5,734			3	22,313		
Germany (East)							1	1,110		
Germany (West)	1	1,986	4	12,076	3	3,708	5	8,016	4	7,537
Greece	5	15,315	7	25,862			1	2,858	7	15,487
Holland	1	500	1	1,567	1	6,410	2	3,317	2	7,896
Honduras	2	2,025	2	3,605	2	2,199	2	1,362		
Iceland			2	1,337			1	655		
Indonesia			2	1,461	2	2,252				
Ireland			1	616						
Israel			1	7,190						
Italy	5	17,292	4	15,234	5	42,899	4	22,030	9	22,722
Japan	6	13,835	5	6,939	6	8,970	2	2,261	8	19,979
Korea					1	781				
Liberia	1	7,404	5	20,280	3	19,180	5	50,285	6	35 044
Mexico			1	5,873						
Norway	5	13,755	2	2,232	8	33,375	4	13,571	4	22,237
Panama	9	42,331	7	34,411	4	14,084	11	46,554	12	46,650
Peru									2	2,645
Philippines	1	560	2	3,654	3	6,147	1	600		
Poland					1	3,133				
Portugal			3	9,951	1	1,435			1	1,026
Russia (U.S.S.R.)			1	1,670	1	1,549				
Spain			3	5,551	3	5,656	2	1,806	3	9,032
Sweden	6	8,259	9	25,056	6	17,458	9	24,580	2	4,640
Turkey	4	3,798	3	2,535	2	6,468	2	9,349	2	8,508
Uruguay							1	767		
Venezuela			1	3,573	1	3,677	1	725		
Vietnam	1	852			1	550	1	1,268		
Yugoslavia									1	607
TOTALS	93	250,602	105	278,863	95	290,033	90	282,919	87	280,477

TABULATION OF UNSAFE PRACTICES

July through December 1958

	Atlantic	Great Lakes and Rivers	Gulf	Pacific	Total
A. Access to Vessel					
Gangways, accommodation ladders, etc.:					
1. Length, width, strength, etc. inadequate	27	9	15	2	53
2. Rigged or secured improperly	20	27	18	19	84
3. Angle too steep	18	9	2	1	30
4. Not clear at either end	5	10	----	3	18
5. Water discharging onto	2	----	----	----	2
6. Hand ropes or rails not provided or inadequate	13	12	6	10	41
7. Insufficient number	----	3	1	----	4
8. Lifeboat or other object suspended over access	1	1	----	3	5
9. Ring life buoy with lanyard not provided or inadequate	45	30	30	24	129
10. Other	5	17	3	8	33
B. Access to Spaces on Board Vessel					
Ladders:					
11. Rigged improperly	10	8	1	2	21
12. Rungs, steps or treads missing or loose	18	18	17	25	75
13. Deteriorated or weakened	26	13	19	16	74
14. Handrails missing or inadequate	11	9	8	15	43
15. Doors or passages cluttered	22	14	12	8	56
16. Escape means blocked or locked	18	12	6	8	44
17. Other	13	33	2	10	58
C. Deck and Hull Openings					
18. Hatch covers, dangerously piled or placed	9	4	4	3	20
19. Hatch covers, missing or defective	8	5	7	6	26
20. Hatch covers, securing means defective	4	17	10	----	31
21. Hatch beam locking lugs missing or defective	1	2	2	8	13
22. Lifelines, chains, rails or guards missing or inadequate	44	24	17	37	122
23. Other	7	9	15	6	37
D. Decks and Platforms					
24. Slippery due to oil, grease, etc	34	40	41	21	136
25. Cluttered	16	13	10	10	49
26. Floor plates or gratings loose or not in place	36	6	17	4	63
27. Rails and guards missing or inadequate	24	4	13	13	54
28. Other	39	13	4	2	58
E. Cargo Handling					
29. Safe load not marked on booms	8	1	7	5	21
30. Guys, falls, booms, etc. improperly rigged	----	----	----	3	3
31. Overloading gear	----	----	----	----	----
32. Jury rig winch controls	----	----	----	2	2
33. Failure to use guards and gates of cargo elevators and escalators	----	----	----	1	1
34. Using defective cargo gear	1	----	----	5	6
35. Smoking prohibition disregarded	3	----	1	8	12
36. Stowage or handling of cargo or gear	5	8	6	----	19
37. Other	1	3	1	3	8
F. Lifesaving Equipment					
38. Not ready for use	22	----	2	4	28
Lifeboats:					
39. Hoisting fully loaded	----	1	1	----	2
40. Personnel riding to fully stowed position	----	----	----	2	2
41. Preventive lashings not used when working in boat	2	----	1	8	11
42. Winch power not shut off when using hand crank or performing maintenance	----	----	1	1	2
43. Starting engine without ventilating	----	----	----	3	3
44. Bypassed safety devices	----	----	----	3	3
45. Tricing and frapping lines improperly used	2	----	----	7	9
46. Davit span lifelines not ready for use	1	1	----	5	7
47. Other	32	25	30	37	124
G. Firefighting Equipment					
48. Not ready for use	62	13	61	35	171
49. Fire screen doors blocked	----	1	----	7	8
50. Other	17	13	15	9	54
H. Ventilation					
51. Neglect to observe safety precautions prior to entering	----	----	----	----	----
52. Use of toxic solvent in confined spaces	----	----	1	1	2
53. Grease, dust, litter in ventilation system	8	20	3	5	36
54. Cowls, mushrooms, etc., frozen	5	1	7	8	21
55. Insufficient ventilation	33	3	2	3	41
56. Other	19	20	22	7	68

	Atlantic	Great Lakes and Rivers	Gulf	Pacific	Total
I. Electrical					
57. Extension cords defective	11	32	19	20	82
58. Portable equipment not grounded	3	24	14	15	56
59. Overfused circuits	8	3	11	3	25
60. Jury rigged circuits	59	37	30	24	150
61. Caps for receptacle outlets not in place	18	27	20	37	102
62. Switch and fuse box panels in passenger spaces left unlocked	1	10	1	3	15
63. General alarm bells muffled or dampened	13	13	10	18	54
64. Vapor globes and guards not in place	52	60	31	53	196
65. Use of defective equipment in hazardous spaces	14	10	2	1	27
66. Other	46	55	17	36	154
J. Machinery					
67. Failure to take safety precautions in lighting-off boiler	----	----	3	8	11
68. Spring loaded valves on sounding pipes secured in open position or not in place	4	1	9	9	23
69. Machinery guards not in place or defective	23	17	16	15	71
70. Failure to block or safeguard steam valves when working on steam lines or inside a boiler, evaporator, etc	2	1	5	----	8
71. Other	53	29	31	22	135
K. Welding, Burning, Heating, or Riveting					
72. No gas-free certificate for "hot work" where required	4	----	7	2	13
73. Inadequate fire watch	3	2	3	5	13
74. Ventilation insufficient	----	----	----	----	----
75. Personnel protective equipment inadequate	3	----	----	----	3
76. Other	1	----	----	2	3
L. Tank Vessels					
77. Ullage holes or expansion trunk openings open without flame screens	9	31	35	4	79
78. Vent header drains left open	----	2	----	----	2
79. Deck battens or wooden gratings not provided where needed	----	4	2	----	6
80. Failure to comply with "Declaration of Inspection Prior to Bulk Cargo Transfer"	----	----	----	----	----
81. Other	25	67	32	9	133
M. Ferry and Excursion Vessels					
82. Vehicles not properly secured during navigation	----	----	----	----	----
83. Vehicle motors not turned off during navigation	----	----	----	----	----
84. Insufficient clearance between vehicles for egress of passengers in emergency	----	----	----	----	----
85. Barricades and gates opened prior to docking	----	----	----	----	----
86. Passenger supervision inadequate	----	----	----	----	----
87. Other	1	1	----	----	2
N. Miscellaneous					
88. Job supervision inadequate	7	----	2	3	12
89. Lack of supervision in maintenance of equipment	2	8	1	4	15
90. Lack of supervision in conducting drills	----	12	2	1	15
91. Lack of sufficient personnel	2	2	9	1	14
92. Oil, fuel and/or debris in bilges	38	3	22	23	86
93. Stoves, ranges, heaters, hot plates, lanterns, etc., not secured against vessel's movement	1	1	----	2	4
94. Inadequate deck, gangway, passageway, lighting	4	6	1	1	12
95. Unsanitary conditions	2	7	2	5	16
96. Chain falls improperly used	----	----	----	----	----
97. Lack of precautions while effecting repairs (including warning notices, etc.)	3	1	1	5	10
98. First-aid equipment not ready for use (medicine chest, litter)	----	----	1	3	4
99. Stowage of ship's stores improper	3	2	6	5	16
100. Access over deckloads	----	----	----	----	----
101. Other	30	20	18	24	92
Grand total	**1,142**	**957**	**804**	**799**	**3,702**

MARITIME SIDELIGHTS

There are 1,574 ships in the Swedish merchant marine, of which 152 are passenger ships, 190 tankers, 1,190 dry cargo vessels, 22 refrigerated ships, and 20 ore-oil carriers. Of this number, 815 are motor vessels.

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Award of a $248,528 contract to Grumman Aircraft Engineering Corp. to design a high-speed hydrofoil seacraft to serve as a test vehicle suitable for demonstrating the operation of such vessels at sea has been made by Maritime Administration. The craft will be designed for a flexible operating speed of approximately 80 knots, and will be between 50 and 100 tons.

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Papers presented before the Nuclear Merchant Ship Symposium in Washington, D.C., last summer have been published and are now available for purchase from the Office of Technical Services, U.S. Department of Commerce, for $2.50 per copy. The publication is titled "Proceedings of the 1958 Nuclear Merchant Ship Symposium" and is designated "TID–7563."

⚓ ⚓ ⚓

The 32-year-old *Ile de France*, one of the Atlantic's most famous vessels, has been sold to the Japanese for scrap at an estimated price of $1,260,000, it was announced in the N.Y. Journal of Commerce. She is due to be replaced in 1961 by the 55,000-ton luxury liner *France* now under construction.

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The 20th International Lifeboat Race will be held in New York on Tuesday, May 19, 1959, to open World Trade Week. Sponsored by the International Council on Seamen's Recreation, the crews will vie for the Joseph W. Powell and Millard G. Gamble trophies awarded to the winners.

Standards of condition and characteristics of vessels to be converted with the aid of Federal ship mortgage insurance have been set by the Maritime Administration. Federal ship mortgage insurance may be granted under title XI of the Merchant Marine Act, 1936, as amended, to provide for 100 percent Government insurance of 75 percent of the actual cost of construction or reconstruction of a vessel. Beginning March 1, 1959, insurance applications for reconstruction work must be filed and approved in principle by the Maritime Administration before work commences.

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Approval of title XI insurance for the construction of a 106,500-deadweight-ton tanker by Manhattan Tankers Co., Inc., was announced by the Maritime Administration. Under the agreement Manhattan Tankers, a U.S. citizen corporation, is to construct the vessel at the Bethlehem Steel Co., Shipbuilding Division, Quincy, Mass.

⚓ ⚓ ⚓

American Mail Line, of Seattle, Wash., has reached agreement with the Federal Maritime Board on a new 20-year operating-differential subsidy contract providing for an estimated $100 million ship replacement program. The company's eight owned vessels are to be replaced by January 1966, with the first three scheduled by June 1, 1959. The first group of ships will be of the 20-knot Mariner type, modified to meet the special requirements of the operator's service. The company owns eight C–3 and C–2 type freighters and one vessel chartered from the Government on United States Essential Foreign Trade Route No. 30 between Pacific Northwest ports and ports in the Far East and Southeast Asia, returning to the Pacific Northwest via California on certain voyages.

⚓ ⚓ ⚓

A 40-page report entitled "Survey and Analysis of Cargo Containers for Cargo Ships" is available from the Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C., at a cost of $1 per copy. Prepared for the Maritime Administration, the report traces and compares the evolution of cargo containers aboard ship in the United States and in Western Europe. It includes a summary of current activity looking toward standardization of sizes, weights, and materials of containers.

⚓ ⚓ ⚓

The National Steel & Shipbuilding Corp., of San Diego, Calif., is the lowest responsive bidder for the construction of four vessels for American Export Lines, it was announced by Clarence G. Morse, board chairman and maritime administrator, U.S. Department of Commerce. The ships will be 493 feet in length, having a 73-foot beam, and a service speed of 18.5 knots. All will have their machinery aft.

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The Gulf & South American Steamship Co. of New Orleans and the Federal Maritime Board have reached agreement on a new 20-year operating-differential subsidy contract. The contract provides for replacement of the company's present fleet of five ships by five 495-foot ships at an estimated cost of $46 million, with the first two being started by July 1, 1961, and the last three July 1, 1963.

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The Department of Agriculture has 52,143,885 bushels of grain stored in 288 laid-up Liberty ships in the reserve fleets, it was announced by Thomas E. Stakem, Federal Maritime Board member. As of the end of January, there were 2,090 ships, approximately 1,400 of which are Liberty type, in the eight national defense reserve fleets located three on the east coast, two on the Gulf, and three on the Pacific, he said.

ACCIDENTS IN BRIEF

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

CAUSE	EFFECT
Airport cover slipped	Smashed fingers.
Missing floor plate	Lacerations from fall.
Apple juice on deck	Slip and fall; contusions.

Caught by rag-box lid	Cracked bone in finger.
Lifting full drum of kerosene	Drum slipped severing finger.
Lighted room to dark deck	Fell into port hawse pipe.
Closing flour bin with knee	Smashed hand.

Cradling booms	Fractured fingers caught between block and boom.
Caught in bight of line	Amputated left leg.
Tripped on steam line	Torn ankle ligaments.
Rigging 2-piece gangway	Smashed fingers.

Tightening bolts	Crushed finger with hammer.
Jumped from tug to barge	Fractured skull.
Unsecured hatch cover	Fall; fractured left arm.

MERCHANT MARINE STATISTICS

There were 954 vessels of 1,000 gross tons and over in the active oceangoing U.S. merchant fleet on February 1, 1959, according to information released by the Maritime Administration. This was six fewer than the number active on January 1, 1959.

There were 27 Government-owned and 927 privately owned ships in active service. These figures did not include privately owned vessels temporarily inactive, or Government-owned vessels employed in loading grain for storage. They also exclude 28 vessels in the custody of the Departments of Defense, State, and Interior.

There was a decrease of eight active vessels and an increase of four inactive vessels in the privately owned fleet. Two freighters, the *Green Bay* and the *Valiant Faith*, were returned from foreign to U.S. flag. One freighter, the *Valiant Effort*, was lost at sea; one tanker, the *Gulfoil*, was removed from the fleet for dismantling; and four freighters were traded in to the Government in connection with the replacement program. This decreased the total privately owned fleet by a net of 4 to 1,003.

Of the 76 privately owned inactive vessels, 38 dry cargo ships and 24 tankers were laid up for lack of employment, 2 more than on January 1. The others were undergoing repair or conversion.

The Maritime Administration's active fleet was two more than that of the previous month, while its inactive fleet decreased by nine. Fourteen Liberty ships were sold for scrap. Three transports and one LST owned by the Navy were turned over to the Administration for layup in the National Defense Reserve Fleet; while the roll-on-roll-off vessel *Carib Queen* was transferred to the Military Sea Transportation Service. This decreased the Government fleet by 7 to a total of 2,113. The total merchant fleet of 3,116 active and inactive ships was 11 less than the fleet on January 1, 1959.

Three new freighters were ordered. Three new tankers were delivered for foreign flag, and one tanker order was suspended. The total of large merchant ships on order or under construction in U.S. shipyards dropped by 1 vessel to 84.

Seafaring jobs on active oceangoing U.S.-flag ships of 1,000 gross tons and over, excluding civilian seamen manning Military Sea Transportation Service ships, were 51,640. Prospective officers in training in Federal and State nautical schools numbered 2,109.

NAVAL RESERVE MERCHANT SHIPS

THE following United States merchant ships have been designated by the Secretary of the Navy as suitable for service as naval auxiliaries in time of war. The Master and not less than 50 per centum of the other licensed officers are members of the Navy or Naval Reserve. (10 USC 7225.) List corrected to December 31, 1958.

ALCOA STEAMSHIP CO., INC.

Alcoa Roamer

AMERICAN EXPORT LINES, INC.

Constitution
Exanthia
Exbrook
Excalibur
Excambion
Excellency
Exceller
Excelsior
Exchange
Exchester
Executor
Exemplar
Exeter
Exford
Exhibitor
Exilona
Exminster
Exochorda
Explorer
Express
Extavia
Independence

AMERICAN PRESIDENT LINES, LTD.

President Adams
President Cleveland
President Coolidge
President Jackson
President Madison
President Polk
President Taft
President Van Buren

A. H. BULL STEAMSHIP CO.

Elizabeth
Kathryn

FARRELL LINES, INC.

African Crescent
African Dawn
African Endeavor
African Enterprise
African Glade
African Glen
African Grove
African Lightning
African Moon
African Patriot
African Pilgrim
African Planet
African Rainbow
African Star
African Sun

OCEANIC STEAMSHIP CO., INC.

Alameda
Mariposa
Monterey
Sierra
Sonoma
Ventura

GRACE LINE, INC.

Santa Adela
Santa Ana
Santa Barbara
Santa Catalina
Santa Clara
Santa Eliana
Santa Elisa
Santa Flavia
Santa Ines
Santa Isabel
Santa Leonor
Santa Luisa
Santa Maria
Santa Monica
Santa Olivia
Santa Paula
Santa Rita
Santa Sofia
Santa Teresa

GULF OIL CORPORATION

Gulfbrand

ISTHMIAN LINES, INC.

Steel Advocate
Steel Apprentice
Steel Designer
Steel Maker
Steel Recorder
Steel Scientist
Steel Seafarer
Steel Surveyor
Steel Vendor

LYKES BROS. STEAMSHIP CO., INC.

Almeria Lykes
Charles Lykes
Doctor Lykes
Frank Lykes
Frederick Lykes
Helen Lykes
Letitia Lykes
Marion Lykes
Sylvia Lykes
Tillie Lykes
William Lykes

MATSON NAVIGATION COMPANY

Hawaiian Builder
Hawaiian Craftsman
Hawaiian Packer
Hawaiian Pilot
Hawaiian Rancher
Hawaiian Refiner
Lurline
Matsonia

MISSISSIPPI SHIPPING COMPANY., INC.

Del Norte

MOORE-McCORMACK LINES, INC.

Argentina
Brasil
Mormacdawn
Mormacdove
Mormacelm
Mormacgulf
Mormacisle
Mormacland
Mormacmail
Mormacmar
Mormacoak
Mormacpenn
Mormacreed
Mormacrio
Mormacsaga
Mormacsea
Mormacstar
Mormacteal
Mormactern
Mormacyork
Robin Gray
Robin Hood
Robin Locksley
Robin Sherwood
Robin Trent

PACIFIC FAR EAST LINE, INC.

Golden Bear

PANAMA CANAL COMPANY

Ancon
Cristobal

STATES MARINE CORPORATION

Beaver State
Empire State
Garden State
Green Mountain State

STATES STEAMSHIP COMPANY

Pacific Transport

UNITED MAIL STEAMSHIP CO., INC.
(United Fruit Co.)

Comayagua
Heredia

UNITED STATES LINES COMPANY

America
American Angler
American Banker
American Builder
American Chief
American Clipper
American Farmer
American Flyer
American Forester
American Forwarder
American Guide
American Gunner
American Harvester
American Hunter
American Importer
American Leader
American Manufacturer
American Merchant
American Miller
American Packer
American Pilot
American Planter
American Press
American Producer
American Reporter
American Shipper
American Trapper
American Traveler
American Veteran
Pioneer Cove
Pioneer Gem
Pioneer Glen
Pioneer Isle
Pioneer Mill
Pioneer Ming
Pioneer Minx
Pioneer Mist
Pioneer Reef
Pioneer Tide
United States

FAULTY GAGE GLASS

A recent $39,000 boiler casualty on a tankship was caused by faulty gage glasses.

At the time of the casualty the vessel was being reactivated and a licensed engineer was supervising the lighting off of the boiler. In addition, sufficient other qualified personnel were in attendance. However, the poor condition of the gage glasses on the boiler led the engineering personnel to erroneously believe that there was water in the boiler. As a result of firing the boiler without sufficient water, 673 tubes sagged to such an extent that they had to be replaced.

The two gage glasses were of the standard high-pressure type consisting of a metal frame and two pieces of Pyrex protected on the inner surface by strips of mica. After the casualty the low gage glass was dismantled and the Pyrex sections were found to be eroded. One of the mica strips was blackened and the other cloudy. The high gage glass was in a similar condition and a simple test showed that light from a flashlight placed behind the gage glass did not show through.

Many boiler casualties in the past have been attributed to faulty readings on gage glasses. Every person lighting off a boiler should first determine whether he is getting a true reading of the water level in the boiler.

CAUTION REGARDING MINED AREAS

Mariners are cautioned that moored and influence mines exist in many areas. These areas are not shown on the navigation charts and information concerning them is not systematically included in the Notice to Mariners.

Information relating to mined areas, safe channels through them, and the aids marking these channels is contained in the following publications:

NEMEDRI.—North European and Mediterranean Waters.
DAPAC (H.O. Pub. No. 10).—Pacific Ocean Areas.
N.M. 1 (20, 21, 22) of 1959.—For areas other than above.
HYDROPAC MESSAGES.
NAVEAMS.

It is absolutely essential that vessels have the necessary publications on board prior to departure. Copies may be obtained direct from the Hydrographic Distribution Offices, or at any Branch Hydrographic Office, free of charge.

Aids to navigation marking the swept channels are not usually shown on the chart.

REPORTS FROM SHIPPING

It has been observed over a considerable period of time that vessels reporting distress, potential distress, groundings, menaces to navigation, medicos, failures of navigational aids, etc., addressed to or requiring action by the U.S. Coast Guard almost invariably fail to include sufficient pertinent information in the initial report.

It is requested, therefore, that vessels furnish the following information in their initial reports of such matters in order to expedite action and obviate the need for messages to obtain amplifying data:

(*a*) Particulars regarding the reporting vessel: Name, position, course, speed, destination, and estimated time of arrival.

(*b*) Particulars concerning the vessel or object reported: Name (if any), color, size, shape, and other descriptive data.

(*c*) Particulars concerning the case: Nature of the case, conditions and action taken, if any.

nautical queries

Q. What are the advantages of the unaflow engine as compared with the multiple expansion engines?

A. 1. Reduction of initial condensation.

2. Greater variation in lead and cutoff.

3. Interchangeability of parts.

4. Better balance of forces as the weights of the reciprocating parts are the same.

Q. What is the dead center of an engine?

A. The points in the revolution of the crankshaft at which the piston rod is in direct alinement with the axes of the arms of the crank.

Q. Under full-power conditions explain how the vacuum is affected when using steam at a pressure higher or lower than the designed pressure on the nozzles of the main air ejector.

A. In both cases the vacuum will be lowered when under full-power operation. If the steam pressure at the nozzles is lowered, the capacity of the air ejector will be lowered. If the steam pressure at the nozzle is greater than the designed pressure, a reduction of the vacuum can be expected due to overheating of the air ejector.

Q. Name at least two means of reducing the speed of a turbine to the proper speed for a propeller, and tell how each is accomplished.

A. By mechanical reduction gears. This is accomplished by the gear ratio between the high-speed pinion and the low speed or bull gear of the shaft. By electrical reduction. This is accomplished by arranging the turbine to run a high-speed generator, and in turn the electricity generated runs a low-speed motor.

Q. Explain the advantages of using retarders in the tubes of oil-burning fire tube boilers.

A. The introduction of tube retarders results in improved distribution of the gases and better contact with the heating surface as they give the gases a rotary passage through the tubes, delaying their passage and bringing them into more intimate contact with the tube surfaces, thus promoting better transfer of heat and boiler efficiency.

Q. If you found hardness appearing in the boiler water, how would you reduce it to zero and maintain the proper chemical conditions of the boiler water?

A. Hardness may be reduced by alternately feeding and blowing, using the bottom blown-down valve. Compound should be added after each sequence in order to maintain the proper alkalinity.

Q. Why are safety valves required on superheaters?

A. Safety valves are provided on superheaters in order to insure a flow of steam through the superheater, thereby preventing a possibility of burning it out, when, for instance, the engines are stopped and there is no demand for steam; also to protect the superheater from excessive pressure, especially when bypassing the heater is possible. The safety valve is set to blow a few pounds lower than the boiler safety valve.

Q. Some supercharged, port-scavenged, double-acting, two-cycle diesel engines are equipped with supercharge valves. Where are these valves located and when do they close?

A. These supercharge valves are located in the passages between the exhaust ports and the exhaust manifolds to prevent the escape of excess scavenging air. These valves close the exhaust port at about the same time that the leading edge of the piston covers the intake port and allows a slight supercharging effect.

Q. How could you find the approximate brake horsepower of a diesel engine by the use of an indicator instrument and no other test equipment?

A. This can be done with reasonable accuracy by taking indicator cards at no load as well as at full load. No-load cards indicate the power that goes into overcoming friction; and when this horsepower is subtracted from the full-load, indicated horsepower, the result is brake horsepower.

Q. (a) What is the compression pressure at the end of the compression stroke of most solid-injection diesel engines?

(b) What is the corresponding temperature for this pressure in degrees Fahrenheit?

A. (a) The pressure at the end of the compression stroke is usually between 450 and 550 p.s.i.

(b) The temperature of the compressed gases will normally be between 1,000° and 1,200° F.

Q. (a) How would you turn the gyrocompass to the approximate heading of the ship when the power is off and the rotor is *stopped?*

(b) How would you turn the gyrocompass to the approximate heading of the ship when the power is on and the rotor and followup system are operating?

A. (a) With power off and rotor stopped, take hold of both sides of phantom and vertical rings and turn them slowly until compass card indicates approximate heading of ship. The compass should never be turned in azimuth, with the power off, by pressure on compensator weights or mercury ballistic.

(b) With power on and rotor and followup system operating, precess the compass to the approximate heading of the ship by pressing down on one or the other of the rotor-case bearing housings. The rotor can then be leveled by pressing against the vertical ring until the bubble is in normal settled position.

Q. All gyrocompasses are constructed with a period of oscillation of approximately 85 minutes in order to minimize ballistic error.

Assume that your gyrocompass has a damping factor of 66⅔ percent. If the gyro is started 90° away from the meridian, how far from the meridian would it be at the end of 85 minutes, one complete period of oscillation ?

A. 10 degrees.

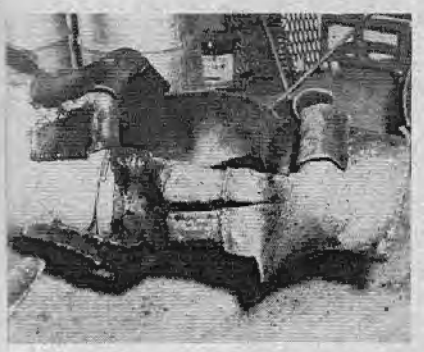
Q. (a) What is meant by "damping" of a gyrocompass and what is the purpose of "damping"?

(b) How is "damping" of a gyrocompass accomplished?

A. (a) "Damping" is the progressive diminishing of amplitude of oscillations of the gyrocompass axis when it has been displaced from the meridian. "Damping" serves to prevent the gyrocompass from swinging back and forth across the meridian indefinitely without settling down.

(b) "Damping" is accomplished by offsetting the connection between the mercury ballistic and sensitive element slightly to the east of the centerline of the latter. Some gyrocompasses, designed with pendulous ballistics, use magnetic damping devices.

CASUALTIES FROM LOW PRESSURE EXPLOSION



Several men were either killed or injured after a section of compressed air piping under a pressure of only 42 p.s.i., exploded in a manufacturing plant. The suspended piping fell and broke oil and gas lines. The resulting flash fire extensively damaged equipment and caused the human casualties.

The specific part of piping that exploded was a "reducer" section which had been fabricated from a section of 16-inch pipe. As shown, triangular sections had been cut from one end of the pipe and the remaining metal bent toward the center and welded together to form a 10-inch diameter section.

According to the recording chart, the air pressure had been steady at 42 p.s.i., until the time of the occurrence when it rose to 52 p.s.i., and then dropped to zero. An abrupt rise in pressure generally accompanies combustion type explosions from the ignition of oil vapors in compressed air systems. The metal at the rupture can be seen from the photograph to be folded back completely.

Because several production machines were damaged, production losses from this accident were very heavy.

One worker was killed instantly. When he was found, his hands were still on the controls of the machine he had been operating.

Article and photograph reprinted from *The Locomotive of The Hartford Steam Boiler Inspection and Insurance Company.*

GERMAN SAILING SHIP

Speculation over the continuation of German naval cadets training under sail since the loss of the *Pamir* was dissolved with commissioning of the 1,760-ton auxiliary barque *Gorch Fock* recently. Built by Blohm & Voss, Hamburg, the ship is 295 feet in length, a beam of 39 feet, a mean depth of 16 feet, and has a sail area of 21,140 square feet.

Between 1933 and 1938, Blohm & Voss built three similar vessels for the German Navy. The first, also named *Gorch Fock*, was in service until the outbreak of World War II. The other two were called *Horst Wessel* and *Albert Leo Schlageter*. After the war the first *Gorch Fock* went to Russia and was renamed the *Tovarisch*, and, as part of war reparations, the other two went to the United States. The *Horst Wessel* was renamed *Eagle* and is used as a training ship by the Coast Guard. The latter ship was sold to Brazil, also as a training ship, under the name *Guanabara*.

The new *Gorch Fock* is expected to have a complement of 250, including about 200 cadets. Previously, West German cadets have had to be content with short trips in the *Nordwind*, a small 100-ton yacht, but it is understood that longer voyages are contemplated during the cadets' 6-month shipboard training.

COLLISION AT ANCHOR

Collision in Ambrose Channel between a tanker, anchored because of fog, and an outbound freighter underway in the same channel, was decided in favor of the anchored vessel in a case recently decided in a U.S. district court (1958 A.M.C. 1644).

The 463-foot tanker, while navigating the channel, ran into dense fog and came to anchor between buoys 9 and 10 near the westerly edge of the channel. Lookouts, lights, and signals were in accordance with regulations. At the time of collision with the tanker the freighter was seeking a safe place to anchor.

Each vessel endeavored to place the blame on the other, the tanker submitting that the freighter was navigating without proper care, and the latter vessel seeking reliance on a provision of the U.S. Code (33 U.S.C. 409), which makes it unlawful "to tie up or anchor vessels or other craft in navigable channels in such a manner as to prevent or obstruct the passage of other vessels or craft."

The court decided that it is well established that this prohibition is not absolute and exceptions are allowed "where literal compliance with its terms would create a danger to navigation which could be avoided or reduced by violation of its terms." As far as the tanker was concerned, the court found that, anchored as it was at the edge of the channel permitted passage through the greater part, and no navigational danger was presented to ships complying with fog regulations. The alternatives were to anchor as she did; to proceed ahead at a speed too slow for maintaining steerageway; to go faster in violation of article 16 or to attempt anchoring outside the channel in too shallow water.

In ruling the freighter at fault, the court found that both vessels were taking the necessary measures in regard to lookouts, lights, and signals; the tanker did not violate the anchorage statute; and the freighter was solely at fault for immoderate speed in fog.

As Judge Learned Hand stated, "everybody knows, the courts have imposed a gloss upon (art. 16) that 'moderate speed is that at which, if the other vessel also does her duty, the vessel will be able to stop her way before they collide.'"

CAUTION TO SHIPMASTERS

Courses should invariably be set to pass lightships with sufficient clearance to avoid the possibility of collision from any cause. Errors of observation, current and wind effects, other vessels in the vicinity, and defects in steering gear may be, and have been, the causes of actual collisions, or imminent danger thereof, needlessly jeopardizing the safety of lightships and their crews, and that of all navigation dependent on these important aids to navigation. Experience shows that lightships cannot be safely used as leading marks to be passed close aboard, but should invariably be left broad off the course, wherever sea room permits.

When approaching a lightship or a station on a submarine site, on radio bearings, the risk of collision will be avoided by insuring that the radio bearing does not remain constant.

LORAN

1. From reports received by the Hydrographic Office, it is evident that the problem of loran sky wave identification continues to plague navigators. Ships and aircraft using loran in areas of dependable ground wave reception occasionally experience apparent loran errors of 10 or 20 or more miles. When sufficient fix data accompanying such reported errors, the Hydrographic Office usually is able to determine that a sky wave match has been made, or that a ground wave has been paired with a sky wave. If the navigator in either case plots his reading as a ground wave match, a sizable position error will result.

The techniques for identifying loran signals are explained in H.O. Pub. No. 9, American Practical Navigator, 1958, H.O. Pub. No. 216, Air Navigation 1955, and in various equipment manuals. A familiarity with these techniques is necessary to avoid trouble and to make the most of the loran system potentialities. In general, it may be helpful for navigators who experience large apparent loran errors to preset the loran indicator to the expected reading when matching pulses. Then, if master or slave pulse fails to appear, adjustment of amplitude balance controls may bring the desired signal into view at the expected setting. Usually, a consideration of distance over land or sea from the loran transmitter, plus time of day, receiver sensitivity, and local and atmospheric interference, will enable the navigator to predict reception of ground waves or sky waves, and to anticipate which he must use.

2. Mariners and aviators are requested to notify the Commandant (OAN), Coast Guard Headquarters, Washington 25, D.C., or the nearest Coast Guard District Commander, of any defect observed in the operation of the Loran System (blinking is not a defect). The notification should include information as to the loran rate involved, whether signals observed were ground waves or sky waves, the nature of the defect, the approximate position of the craft, and the date and time (g.m.t.) of observation of the defective operation.

Suggestions for improvement of loran service are also requested and should be addressed to Commandant (OAN), Coast Guard Headquarters, Washington, D.C.

USE OF RADAR

Failure on the part of a vessel equipped with radar to make use of it while underway in low visibility has been held by a court to be directly contributory to a collision in which the vessel was involved. Article 29 of both International Rules of the Road and Inland Rules of the Road are applicable. This decision places an additional burden on vessels which are equipped and manned to use radar, to do so while underway during periods of reduced visibility without in any way relieving commanding officers of the responsibility of carrying out normal precautionary measures.

ACCEPTABLE HYDRAULIC CAST IRON VALVES [1]

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

Manufacturer	Valve type	Identity	Drawing No.
Vickers, Inc., division of Sperry Rand Corp., Detroit 32, Mich.	Pressure Control	RG-03-**-10	R-133101
Do	do	RG-06-**-10	R-133101
Do	do	RG-10-**-10	R-133101
Do	do	RCG-03-**-10	R-133103
Do	do	RCG-06-**-10	R-133103
Do	do	RCG-10-**-10	R-133103
Do	Deceleration	CG-714-*	I-172902
Do	Pilot-operated check	4CG-03-*-10	I-135468
Do	do	4CG-06-*-10	I-135468
Do	Check	C2G-815	I-82163
Do	do	C2G-825	I-99848
Do	Directional Control	DG1S2-01**-30	I-193214
Do	do	DG1S4-01**-30	I-193214
Do	do	DG2S2-01**-30	I-193214
Do	do	DG2S4-01**-30	I-193214
Do	do	DG3S4-06*-20	R-134291
Do	do	DG3S4-10*-20	R-134193
Do	do	DG4S2-01**-30	I-182412
Do	do	DG4S4-01**-30	I-182412
Do	do	DG4S2-02**-30	I-183822
Do	do	DG4S4-02**-30	I-183822
Do	do	DG5S4-06**-30	I-182413
Do	do	DG5S4-10**-30	I-184865
Do	Flow control	FG-02-***-10	I-136078
Do	do	FCG-02-***-10	I-136079
Do	do	FCG-02-1000-30	I-215705
Do	do	FRG-02-***-10	I-136077
Do	do	FG-03-***-10	I-136080
Do	do	FG-06-***-10	I-136080
Do	do	FG-10-***-10	I-136080
Do	do	FRG-03-***-10	I-136076
Do	do	FRG-06-***-10	I-136076
Do	do	FRG-10-***-10	I-136076
Do	Pressure reducing	XG-03-F-10	R-133656
Do	do	XG-06-F-10	R-133656
Do	do	XG-10-F-10	R-133656
Do	do	XGL-03-F-10	I-174858
Do	Balanced piston type relief valves	CG-03-*-10	I-175630
Do	do	CG-10-**-10	R-134239
Do	do	CG-06-**-10	R-134239

[1] The above listing supersedes all Vickers, Inc., valves currently listed in the Equipment Lists (CG-190) dated Apr. 1, 1958. The basic design of the cast iron valves listed above have passed high impact shock tests and are acceptable under the provisions of 46 CFR 55.07-1(e)(3)

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 1 February to 28 February 1959, inclusive, for use on board vessels in accordance with the provisions of Part 147 (46 CFR 146–147) of the Dangerous Cargo Regulations are as follows:

CERTIFIED

V. J. Todd & Sons, 1233 Washington St., Seattle, Wash., Certificate No. 378, dated 12 February 1959, S–34 DEGREASER.

The Perolin Co., Inc., 350 Fifth Ave., New York 1, N.Y., Certificate No. 379, dated 26 February 1959, FORMET WATER SYSTEM TREATMENT NO. 326.

Esso Standard Oil Co., 15 West 51st St., New York 19, N.Y., Certificate No. 380, dated 26 February 1959, FLIT MARINE AEROSOL.

Plunkett Chemical Co., 3500 South Morgan St., Chicago 9, Ill., Certificate No. 381, dated 27 February 1959, PC–400 LIQUID BOWL CLEANER.

AFFIDAVITS

The following affidavits were accepted during the period from 15 January 1959 to 15 February 1959:

Steel Forgings, Inc., Post Office Box 276, 50 Fannin St., Shreveport, La., FITTINGS.

Ditta Bernardo Genisio, Port Canavese, Roma 40, Torino, Italy, FLANGES.

Warwick Brass Foundry, Inc., 7 Idaho Ave., Warwick, R.I., CASTINGS.

FUSIBLE PLUGS

The regulations prescribed in Subpart 162.014, Subchapter Q, Specifications, require that manufacturers submit samples from each heat of fusible plugs for test prior to plugs manufactured from the heat being used on vessels subject to inspection by the Coast Guard. A list of approved heats which have been tested and found acceptable during the period from 15 January 1959 to 15 February 1959 is as follows:

The Lunkenheimer Co., Cincinnati 14, Ohio. Heat Nos. 592, 593, 594, 595, 596, 597, and 598.

MARINE SAFETY PUBLICATIONS AND PAMPHLETS

The following publications and pamphlets are available and may be obtained upon request from the nearest Marine Inspection Office of the United States Coast Guard. Date of each publication is indicated following title.

CG No.	Title of Publication
101	Specimen Examinations for Merchant Marine Deck Officers. 7–1–58
108	Rules and Regulations for Military Explosives and Hazardous Munitions. 8–1–58
115	Marine Engineering Regulations and Material Specifications. 3–1–58
123	Rules and Regulations for Tank Vessels. 4–1–58
129	Proceedings of the Merchant Marine Council. Monthly
169	Rules to Prevent Collisions of Vessels and Pilot Rules for Certain Inland Waters of the Atlantic and Pacific Coasts and of the Coast of the Gulf of Mexico. 4–1–58
172	Pilot Rules for the Great Lakes and Their Connecting and Tributary Waters. 4–1–58
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids. 7–2–51
175	Manual for Lifeboatmen and Able Seamen, Qualified Members of Engine Department, and Tankerman. 6–1–55
176	Load Line Regulations. 9–2–58
182	Specimen Examinations for Merchant Marine Engineer Licenses. 5–1–57
184	Pilot Rules for the Western Rivers. 7–1–57
190	Equipment Lists. 4–1–58
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel. 9–15–55
200	Marine Investigation Regulations and Suspension and Revocation Proceedings. 7–1–58
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels. 4–1–57
227	Laws Governing Marine Inspection. 7–3–50
239	Security of Vessels and Waterfront Facilities. 7–1–58
249	Merchant Marine Council Public Hearing Agenda. Annually
256	Rules and Regulations for Passenger Vessels. 3–1–57
257	Rules and Regulations for Cargo and Miscellaneous Vessels. 6–1–55
258	Rules and Regulations for Uninspected Vessels. 7–1–55
259	Electrical Engineering Regulations. 9–2–58
266	Rules and Regulations for Bulk Grain Cargo. 2–13–53
267	Rules and Regulations for Numbering Undocumented Vessels. 1–15–53
268	Rules and Regulations for Manning of Vessels. 9–3–57
269	Rules and Regulations for Nautical Schools. 11–1–53
270	Rules and Regulations for Marine Engineering Installations Contracted for Prior to July 1, 1935. 11–19–52
290	Pleasure Craft. (Formerly "Motorboats"). 1–2–59
293	Miscellaneous Electrical Equipment List. 4–15–58
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf. 1–2–57
323	Rules and Regulations for Small Passenger Vessels. (Not More Than 65 Feet in Length) 6–1–58
329	Fire Fighting Manual for Tank Vessels. 4–1–58

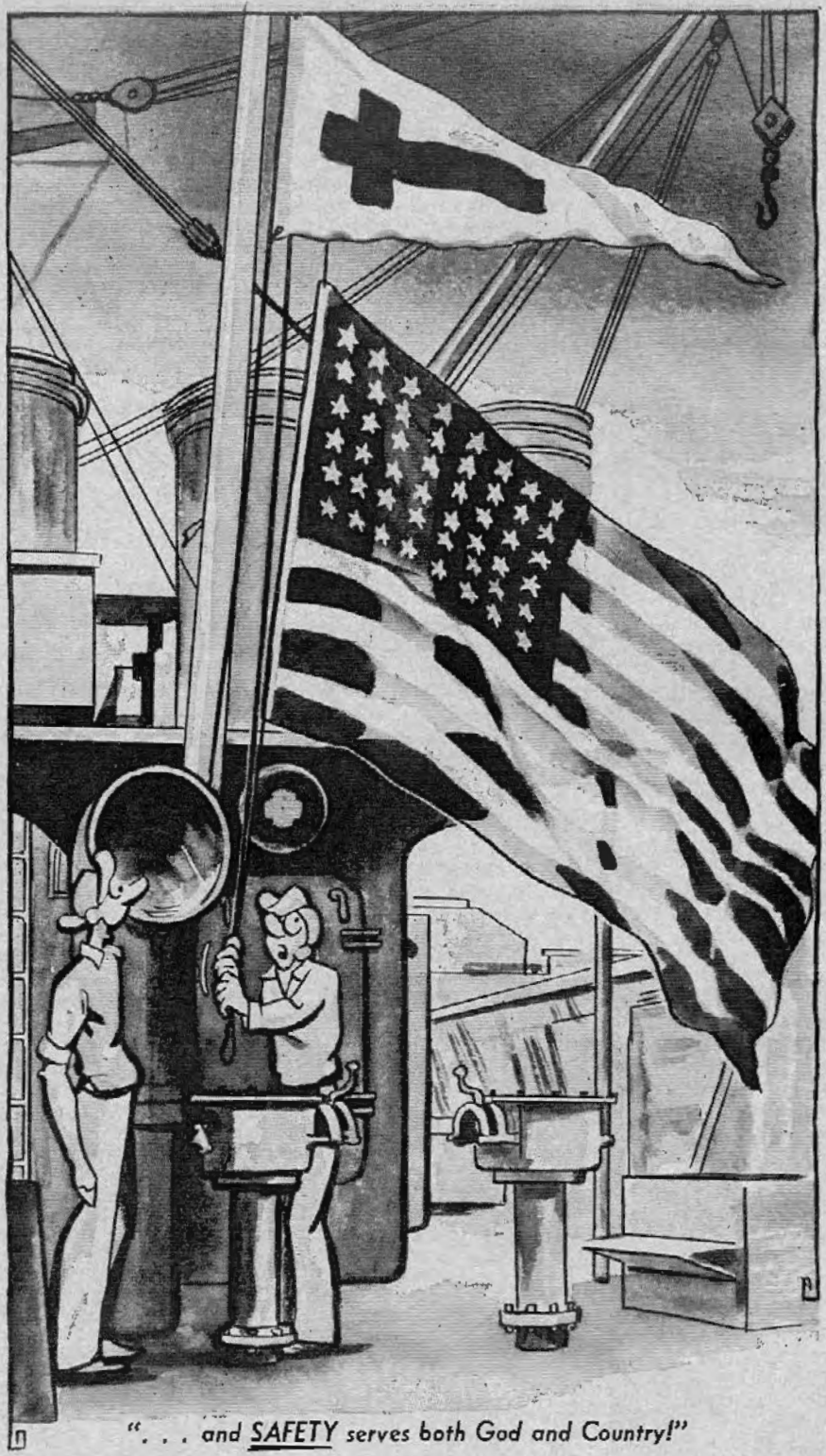
Official changes in rules and regulations are published in the Federal Register, which is printed daily except Sunday, Monday and days following holidays. The Federal Register is a sales publication and may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.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

Changes Published During February 1959

The following have been modified by Federal Register:

None.

U. S. GOVERNMENT PRINTING OFFICE: 1959



". . . and <u>SAFETY</u> serves both God and Country!"