PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL

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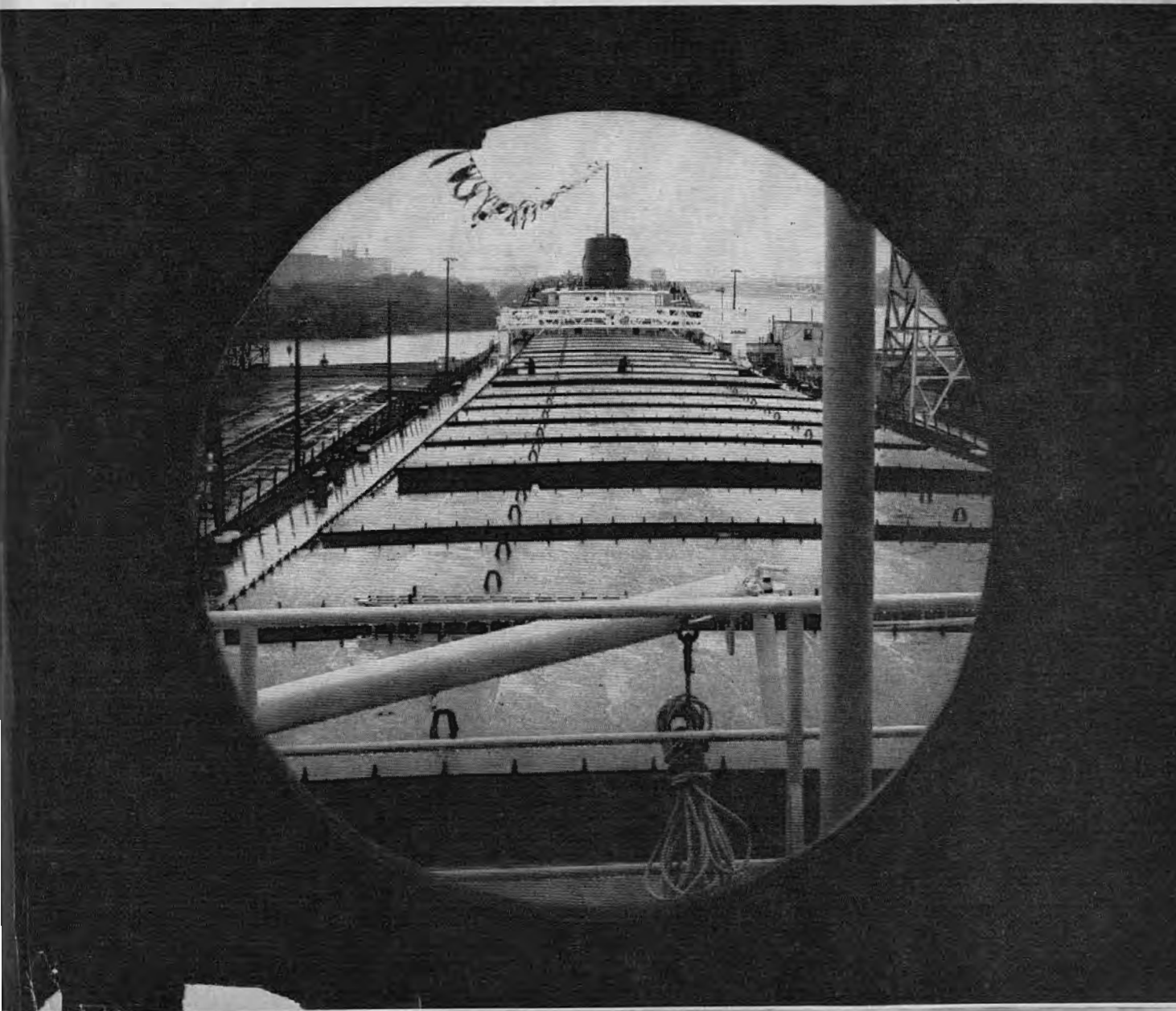

Proceedings of the

MERCHANT MARINE COUNCIL

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The
Merchant Marine Council
of the United States
Coast Guard

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FRONT COVER:

The SS *George M. Humphrey*, looking aft from the mate's cabin. This Great Lakes vessel was built by the American Shipbuilding Co., Lorain, Ohio. It was designed to carry bulk cargoes of iron ore. Particulars are: Length overall, 710 feet; beam, 75 feet; gross tonnage, 14,034 tons; horsepower, 8,500.

BACK COVER:

The poem, *Salt of the Earth*, by John Ackerson, Chief Mate.

"THE SEA LANGUAGE is not soon learned, much less understood, being only proper to him that has served his apprenticeship; besides that a boisterous sea and stormy weather, will make a man not bred to it so sick, that it berates him of legs, stomach, and courage so much as to fight with his meat. And in such weather, when he hears the seamen cry, starboard or larboard or to bide aloof, or flat a sheet, or haul home a clue-line, he thinks he hears a barbarous speech, which he conceives not the meaning of.

"Suppose the best and ablest bred seaman should buckle on armour, and mount a courageous great horse, and so undertake the leading of a troop of horse, he would no doubt be accounted very indiscreet, and men would judge he could perform but very weak service; neither could his soldiers hope of good security, being under an ignorant captain, that knows not how to rein his horse, much less to take advantage for execution or retreat, and yet is apparent to be far more easy to attain experience for land service than on the sea.

"The bred seaman is for the most part hardy and undaunted, ready to adventure any desperate action, be it good or bad; and prodigal of his blood, whenever his commander orders him, if he loves or fears him.

"The seaman's desire is to be commanded by those that understand their labours, laws and customs, thereby expecting reward or punishment according to their deserts.

"The seamen are stubborn or perverse, when they receive their command from the ignorant in the discipline of the sea, who cannot speak to them in their own language."

From "Naval Tracts; treating of all the Actions of the English by Sea, under Queen Elizabeth and King James I." By Sir William Monson (17th century).

CARGO SAFETY SAVES ALL

The formation of the National Cargo Bureau under the sponsorship of the United States Government, has, in effect, served to discharge this country's obligations underchapter VI of the 1948 International Convention for Safety of Life at Sea and is recognized by the maritime industry as a forward step in maritime safety.

Considerable interest has been evidenced by several foreign maritime nations regarding the system employed by the United States where the administration and inspections called for by the aforesaid convention have been arranged through the establishment and operation of this National Cargo Bureau. This interest has been encouraging and the State Department has disseminated informative material explaining this system to these nations.

To further encourage the adoption of similar cargo-inspection agencies by foreign governments, the State Department has been requested to bring the matter to the attention of the Transport and Communications Commission of the United Nations. Through this organization it is hoped that other nations will appreciate the fact that the services of the National Cargo Bureau are widely used in this country and a certificate issued by this agency is accepted by this Government, shipowners, and insurers as prima facie evidence that the ship is safely loaded in accordance with all safety regulations.

Unfortunately, while other countries have assurance that United States vessels, loaded under the supervision of this agency, are safely stowed when they enter their ports, there is as yet no comparable agency that can afford the United States the same assurance when a foreign vessel enters a United States port.

The recent fire and explosion in a large United States port well illustrates this point. That case involved a ship from a foreign port which was loaded with a hazardous cargo, improperly labeled and improperly stowed. The stevedores, not recognizing the cargo as dangerous, damaged one of the containers while discharging the cargo and the fire resulted. Before this fire was brought under control, eight persons had lost their lives, there was thousands of dollars of damage and the port and facilities were gravely endangered.

It is hoped that other nations will recognize the worth of this agency and will sponsor similar inspection agencies, in that way assuring that all marine transportation of hazardous cargoes throughout the world will be in compliance with recognized safety standards.

Cargo Safety is something to which everyone aspires. Depending on the primary interest of the individual or industry, the approach to Cargo Safety varies.

To the packaging industry, cargo safety means adequate packaging, sufficiently strong cartons and thorough protection of the contents of a package against such things as numerous handlings. There is a continuous effort by many groups to improve packaging for transport by ocean carriers.

To the designer of ships and of piers, and to the material handling industry, cargo safety means efficient and safe methods of handling cargo into and out of ships and on the piers. Again, much is being done to modernize and improve cargo-handling.

To some people the key to cargo safety aboard ship may be solving humidity and temperature problems or providing adequate fire-fighting equipment.

To the shipper and consignee, and to the carrier and the marine underwriter, cargo safety too often means necessary protection against pilferage. This commercial disease takes an enormous toll of goods and goodwill. The doctors are still prescribing cures, remedies, and preventives for the pestilence, but its ugly symptoms continue to plague commerce.

Now, there is another approach to cargo safety—and that is stowage. Stowage is a skill that protects cargo, ship, and crew—a skill that contributes to safety.

Safe stowage is to some extent prescribed by law. That is to say, Coast Guard regulations apply in the United States ports to the stowage of hazardous goods and bulk grain. But stowage of *all* cargo is subject to a high degree of responsibility on the shipowner's part. The law imposes on him, as on all of us, the affirmative duty to use due diligence which in his case applies to the stowage of cargo and the seaworthiness of the vessel. A breach of this duty which results in damage or loss to someone exposes the shipowner to lawsuit.

The importance of the task of providing safe stowage to cargo can be measured against the enormity of potential disaster. We are not referring to a truckload of 5 or 20 tons, or a railroad car carrying 20 or 50 tons. We're dealing with 5,000 to 10,000 tons or more and a situation involving several millions of dollars in cargo and ship. A poorly secured deckload of lumber or a grain cargo without correct shifting boards may shift and cause the ship to capsize. Improperly secured vehicles or machinery may break loose and go on a rampage to destroy itself and other cargo and pierce bulkheads and even the plates of the hull. Incorrectly stowed oxidizing materials may result in admixtures resulting in a fire that destroys the whole venture.

We are not talking of the elementary principles of stowage, such as weight distribution, all of which are vital to safe stowage. What we are dealing with are the advanced problems that arise with the constant growth in the number of commodities, particularly industrial chemicals, that are offered for shipment. Three hundred years ago, spices were important cargoes; 200 years ago, sugar; 100 years ago, textiles and many raw materials and foodstuffs. While these cargoes still move, the days of such relative simplicity are gone. It is largely since World War I that the new problems of safe stowage have multiplied so rapidly.

The behavior of a ship (its motion) in a seaway to a great extent determines the damage, if any, to vessel and cargo. That motion consists of pitching and rolling. The up and down, and outward and inward components of rolling produce marked thrusts on the cargo. Cargo on the outboard regions of the tank top or deck, for instance, may be required to support 2 or 3 times the static weight of cargo stowed above it and would be required to absorb sidewise thrusts from cargo stowed alongside it, all through the rapid acceleration of the hull when rolling in heavy weather. With this situation in mind, prudent stowage may call for loading the ship so as to achieve a lengthy or slow period of rolling, which will require that the weight be distributed heightwise (and yet not so distributed that negative stability obtains).

One can also anticipate more than minimum damage to poorly stowed cargo as the result of the vessel pitching in heavy weather. The more violent the motion of the vessel in a longitudinal direction and particularly pounding, the more damage to cargo will ensue. The shipowner thinks of pitching damages in terms of setting up of shell and structure at the forefoot of the ship, and fracturing of longitudinal members and decks. But from the standpoint of the cargo and its stowage, one thinks

of these conditions of pitching as well as rolling, in terms of the stresses and strains to which the cargo is subjected.

So much for the need of skilled attention to cargo safety because of the enormous forces to which ship and cargo are exposed while at sea. Turn now to the safety problems resulting from the multitude of commodities offered for shipment. The shipowner is concerned with those commodities classed as hazardous and becoming subject to national and international regulation. Regulations for safety of life and property at sea are beginning to multiply, and shipowners, marine underwriters, and governments are keenly interested.

The relationship of commodity to commodity in planning stowage or the restrictions of stowage because of the character of a commodity are elementary. Anyone knows that onions and coffee cannot be stowed side by side without having the coffee absorb the flavor of onion. Apples and flour cannot be stowed together because the flour absorbs the flavor of the apples. However, only those thoroughly familiar with cotton, for example, are aware of the many conditions in the hold of a ship that may lead to spontaneous heating. Cotton is a hazardous commodity! The Coast Guard's Dangerous Cargo Regulations contain many precautions concerning the loading and stowage of this commodity aboard ship. Cotton, when contaminated with drying or oxidizing oils, will heat spontaneously. Under confined conditions where there is insufficient circulation of air to dissipate the heat as generated, ignition may occur. The source of such a fire is often difficult to locate and, because of the penetration-resistant characteristics of baled cotton, it is extremely difficult to extinguish. In 1954, on a foreign-flag vessel in a southern port, it was the evening of the third day of a fire discovered in 1,900 bales of cotton and cotton linters before the fire was extinguished.

Cotton is only 1 of some 1,800 commodities that are covered in over 605 pages of fine print in the Dangerous Cargo Regulations.

The safety and protection of cargo is a special concern of ship operators. The industry deserves credit for all that has and is being done in this connection. The stimulus comes in part from competition—the operator needs to satisfy shippers by ensuring that his company delivers shipments to destination in sound condition. And while the stimulus comes in part from the legal and cost aspects, there is also the urge for satisfaction from a job well done.

Research may be an academic word, but the practical work being done daily, company by company, to improve cargo protection is definitely sound research. As one company puts it, "Every claim that is filed represents a failure on some part of our service." Several companies utilize business machines and punched card systems to detect and evaluate their claims record. Once a trouble spot is noticed, it is vigorously attacked. One company that is a leader in the field has achieved remarkable reductions in claims paid. Claims paid for loss and damage by water, rail, and truck carriers are approximately 1.15 percent of gross revenue. That was the figure of this particular ship operator in 1935. By continuous pressure on the sore spots in its experience, the operator reduced this to 0.99 percent in 1953. This compares with 1.18 percent reported that year by the Association of American Railroads and 1.17 percent reported by the American Trucking Association. But percentages fail to tell the dollar and cents story. Look instead at some of the operator's record by commodities (based on claims cost per ton):

	1949	1950	1951	1952	1953
Losses on canned shrimp	$1.56	$1.18	$1.08	$0.33	$0.28
Loss and damage on olives in jars	12.63	7.90	1.54	1.19	.70
Floor covering (including linoleum and tile)	.....	.29	.21	.21	.13
Radios and TV sets	.....	5.09	4.97	1.55	.84

The handling of rubber has presented an interesting problem. Since World War II rubber has come to the United States packed as "barebacks" rather than in cases or burlap. This has resulted in a new problem of handling, called massing or blocking of up to 20 bales of the barebacks. Steamship companies began to use talc so that the barebacks would not adhere to one another. However, longshoremen demanded penalty pay on the grounds that the talc was obnoxious. The next move was to use interlineators between tiers of rubber in the ship, using polyethylene, pliofilm, or patented coated paper. But this was not satisfactory; the paper adhered to the bales and the importers protested that they had heavy expense in removing the foreign matter from the rubber. This was particularly true of the crepe types of rubber.

Cargo surveyors have conferred for months with ship operators, marine underwriters, and others to solve this problem. An experiment is now under way with two carriers. Instead of stowing the bales of crepe rubber on the flat sides of the oblong shape, they will be stowed on end. The ends normally carry marking patches so that vertically the bales will be stowed patch against patch instead of rubber against rubber. The experiment may determine whether interlineators can be dispensed with.

With barebacks of another type of rubber the problem of obliteration of markings has plagued carriers and underwriters. The various grades of rubber become mixed and inseparable. Nondelivery claims can run as high as $30,000 on one voyage. As much as 20 tons of rubber may remain unclaimed at the dock. The ingenuity of one surveyor has led to a partial solution. By offering an expert service of grading the unclaimed rubber, the carriers and consignees can match their shortages against the remaining rubber and the worst that the carrier or underwriter has may be a differential claim of $400 (because of differences in grade) instead of a total claim of $30,000 less salvage.

One ship operator has successfully tackled the cargo damage problem arising from packaging and pilferage conditions in a general cargo trade. Claims paid have been reduced $700,000 a year in 10 years by consistently attacking weaknesses in the handling and stowage of cargo. An important contribution to the campaign was the development of plywood containers of 135 cubic feet each into which packages are stowed before the containers are loaded aboard ship. Pilferage has been sharply reduced, loss of small packages has diminished, packaging requirements have been simplified, and delivered costs to consignees have been lowered.

The shipowner who does not concentrate attention on cargo protection is blindly passing by a pot of gold in the form of savings, lower costs, and more satisfied customers.

Marine underwriters are also actively interested in cargo protection. They have participated in studies by the Maritime Association of the Port of New York, the American Institute of Marine Underwriters and the International Union of Marine Insurance pertaining to cargo loss prevention and packaging problems. Both the International Union and the American Institute have Cargo Loss Prevention Committees.

An interesting example of applied cooperation to achieve cargo safety is the study of sodium hydrosulphite. During 1948 and 1949 there were several serious fires because of this commodity. Exploration by marine underwriters, ship operators, manufacturers, the Coast Guard, and others

revealed that while the commodity was relatively stable when transported aboard railroad cars or resting in a warehouse, for some strange reason fire would occur in the commodity itself when stowed aboard ship. Sodium hydrosulphite oxidizes in air and when there is sufficient moisture it will heat to the point of spontaneous ignition. The result of the study was the development of a more substantial container for transport of the commodity by ship. No serious fire, if any fire at all, has occurred since.

Probably most people have forgotten the sensational series of fires during discharge of jute and burlap cargoes in the 1920's. In 1927 marine underwriters and ship operators collaborated to adopt a series of rules applicable to these cargoes, adherence to which since that time has practically eliminated the destructive fires.

We can also take note of the enormous amount of bulk grain shipped from the United States since World War II. Marine underwriters wrote recommendations for the safe stowage of these cargoes to prevent shifting of the grain. These recommendations have since evolved through the International Convention for Safety of Life at Sea to Coast Guard regulations and are found in almost identical form or in principle in the regulations of Canada, the United Kingdom and other signatory nations.

Now, from the history of individual effort to protect cargo and from the history of changing character in ship size and speed and in commodities, there has evolved a collective effort to apply a special kind of skill to safe stowage of cargo. This is the work of the *National Cargo Bureau,* a nonprofit organization in which ship operators, marine underwriters, manufacturers, shippers, and Government collaborate. The purpose is twofold: to offer skilled cargo-loading inspection and advice to ship operators, and to advise Government as well as to act on behalf of Government in connection with regulating stowage of hazardous goods.

In the fall of 1952, at the Los Angeles Propeller Club Convention, Carl E. McDowell, Executive Vice President of the *National Cargo Bureau,* outlined the purposes of this Bureau. Marine underwriters had initiated a similar service to ship operators more than 100 years ago. Because of its public-service character, and at the request of the United States Coast Guard, the service was adjusted and broadened to all United States ports through collaboration of the underwriters, ship operators, Coast Guard and Maritime Administration. NCB commenced its operations on November 19, 1952, the effective date of the current International Convention for Safety of Life at Sea. The 2 years of activity since then have been highly successful. Approximately 27,000 inspections a year are being made by NCB surveyors. The NCB has advised and consulted with the Coast Guard, Maritime Administration and ship operators regarding individual stowage problems and regulations. Information on cargo safety has been exchanged overseas with governments, ship operators, and marine underwriters. Assistance has and is being given to the United States representative on the United Nations Committee of Experts on Transport of Dangerous Goods. All and all, a great deal is being done for and on behalf of the maritime industry to advance both cargo safety and self-regulations.

The element of skill in safe stowage is what should be emphasized now. The special skill of a cargo-loading surveyor is a combination of personal character and of study and accumulated experience. As to character—there is that unique situation that sets shipping aside from all other forms of human endeavor, the nature and character of which is epitomized by the master mariner. The voyage of a ship is a joint venture of many interests, all of whom (shipowner, shipper, underwriter, and so on) entrust their share in the venture to the skill and authority of the master for the duration of the voyage. His authority at sea is almost supreme and unlimited; his responsibilities are correspondingly great.

The experience of this situation—both authority and responsibility, but more especially the weight of unusual responsibility—penetrates deep and lastingly into the character of the merchant skipper. He absorbs respect for the awesome power of the sea and gains an instinct regarding the need to achieve safety through the stowage of cargo aboard ship.

National Cargo Bureau looks for that type of man to represent it on the waterfront—the experienced master mariner whose instinct and experience gives him both a high degree of self-discipline and a practical understanding of the needs of the industry.

Now, this is not a eulogy of a group of men. It *is* an appraisal of the quality of threescore men who are devoting their lives and skills to encouraging cargo safety in the stowage of cargo. Their service is an advantage to shipping in American ports that is not available anywhere else in the world.

In addition to bringing their abilities to the Bureau, these surveyors are guided by carefully developed policies and practices applied uniformly at all ports. NCB has a board of directors composed of 18 ship operators and marine underwriters, all acting in an individual capacity together with the Commandant of the Coast Guard and the Maritime Administrator. The president for the past 2 years has been Mr. Louis B. Pate of the Robin Line. The first vice president is Mr. Owen E. Barker of Appleton & Cox, recently elected president of the American Institute of Marine Underwriters. Headquarters of NCB are in New York; regional headquarters are loacted in the Gulf and on the Pacific coast.

A very brief summary of the knowledge and experience that is fundamental to a competent cargo-loading surveyor encompasses the following:

1. Knowledge of the general construction of cargo compartments and of the piping in these compartments, their uses and where they lead to.

2. Appreciation of the need for and attention to clean holds, clean bilges, and clear bilge suctions, as well as clear scuppers in decks.

3. An understanding of fire-extinguishing apparatus aboard ship and of cargo gear, and an ability to inspect its condition.

4. Knowledge of the principles of stability and their application.

5. Knowledge of the principles of cargo ventilation and of the types of cargo that do or do not require ventilation.

6. A working knowledge of the characteristics of different types of cargo, of how they may become damaged and of the effect of one type on another with regard to problems of stowage in proximity one to the other.

7. A thorough knowledge of Coast Guard regulations covering dangerous and hazardous cargoes and bulk grain and an ability to apply them.

To repeat: Cargo Safety is something to which everyone aspires. Achieving safety through good cargo stowage is becoming increasingly complicated and important to the modern merchant marine. For this reason, the skill of a competent, experienced, well-trained cargo-loading surveyor is a valuable supplement to the ship operator's shoreside and shipboard personnel.

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MERINT

Since the timely receipt of intelligence sightings is vital to the defense of the United States so that United States Military Forces can take prompt defensive action, it is urgent that all United States merchant ships and fishing vessels properly relay such information.

To promulgate the correct procedure for making such reports, the United States Navy has printed the pamphlet MERINT which is now available for use on merchant vessels and fishing vessels. It will be distributed to vessels by the United States Naval Sea Frontier Commanders. Any inquiries concerning the issue of this publication should be directed to the United States Naval District Commandant, Operations Officer.

Abstracts of certain pertinent portions of this pamphlet are as follows:

HOW TO REPORT

1. Merchant ships will employ normal international commercial communication procedure.

2. MERINT reports should be transmitted in plain language to the nearest United States military or commercial radio station, as appropriate. When passed to commercial stations a report should contain instructions to pass to the nearest Military Command and to either Commander Western Sea Frontier or Commander Eastern Sea Frontier for sightings in the Pacific or Atlantic areas respectively.

WHEN TO REPORT

1. Immediately (except when within territorial waters of other nations as prescribed by International Law).

2. When the situation changes sufficiently to warrant an amplifying report.

DELAYED REPORTS

In the event a MERINT report cannot be made by radio the master is requested to report the details of the MERINT sighting to the appropriate United States military or consular authorities. This report should be submitted immediately upon arrival in port by any available means.

WHAT TO REPORT

Report immediately by radio all airborne and waterborne objects which appear to be hostile, suspicious, or unidentified. As a result of these reports United States Forces are enabled to take prompt defensive or investigative action.

WHAT TO REPORT IMMEDIATELY

1. Guided missiles.
2. Unidentified flying objects.
3. Submarines.
4. Group or groups of military vessels.
5. Formations of aircraft which appear to be directed against the United States, its Territories, or possessions.

WHAT NOT TO REPORT

1. Surface craft or aircraft in normal passage.
2. Known United States military vessels including submarines.
3. Known United States Government vessels.
4. Known United States or allied military aircraft.

CONTENTS OF REPORTS

MERINT reports shall contain the following as applicable in the order listed.

1. "MERINT" will always be the first word of the text.
2. Ship's position at time of sighting.
3. Nature of object(s) sighted.
4. Direction of sighted object's(s') travel.
5. Observations of aerial sightings the altitude expressed as low, medium, or high.
6. Date-time group, expressed in Greenwich mean time (G. M. T.).
7. Signature.

Every effort shall be made to obtain a reply from receiving station to insure that message has been received.

TYPES OF REPORTS

1. MERINT reports—Initial sighting report.

2. Amplifying report — Additional information that becomes available to any MERINT observer and is of importance.

3. Cancellation report—When a MERINT report is nullified by a subsequent observation a cancellation report should be made.

TRADITIONS OF THE SEA

The roll of American Seafarers who have performed their duties in an outstanding and meritorious manner in accordance with the highest traditions of the sea is long but never completed. A group of seafarers recently added to this honored list were members of the crew of the American ship SS *Marven*. They are as follows: Edward C. Erne, third mate; Harvard Lem, first assistant engineer; Alex Stankiewicz, deck maintenance; William Lamb, A. B.; John S. Harwell, A. B.; Phillip T. Lukens, A. B.; Joseph Kozlowski, O. S.; and John W. Singer, messman.

On September 17, 1953, while en route to Korea, a wiper on the *Marven* was so seriously injured that major surgery was necessary to save his life. The *Marven* was able to rendezvous with the USS *General A. E. Anderson* early the following day. Unfortunately, the ships were in the midst of a gale and the *General A. E. Anderson* advised the *Marven* that it was considered too dangerous to launch a motor launch. The master of the *Marven* then asked for volunteers to man a lifeboat, and the aforementioned men stepped forward.

On January 5, 1954, the Commandant of the United States Coast Guard commended these men. Each commendation reads as follows:

> The United States Coast Guard is pleased to commend you for your outstanding conduct in assisting your fellow shipmate George R. Black, in transferring him safely to the USS *General A. E. Anderson*.
>
> As a member of the crew of the SS *Marven* on September 18, 1953, you volunteered to serve in a boat crew and undertake the transfer of the injured man to the USS *General A. E. Anderson*, although there was a high sea running and conditions were highly hazardous for handling a lifeboat. Despite the difficulties of wind and sea, safe delivery of the patient was effected and the boat's crew returned safely aboard the SS *Marven*, although the boat had to be abandoned. Your courage and devotion to duty in volunteering for this difficult task to aid in saving your shipmate's life were in keeping with the highest traditions of the United States Merchant Marine.

Side Lights on the Rules

In this, the 17th, article in the *Side Lights on the Rules* series, we shall continue the comparison of the International Rules with the corresponding provisions in the local rules applicable to Inland Waters, Western Rivers, and the Great Lakes by turning to Rule 24, International Rules, dealing with overtaking vessels.

Rule 24, International Rules, states:

Rule 24 (a) Notwithstanding anything contained in these rules, every vessel overtaking any other shall keep out of the way of the overtaken vessel.

(b) Every vessel coming up with another vessel from any direction more than 2 points (22½ degrees) abaft her beam, i. e. in such a position, with reference to the vessel which she is overtaking, that at night she would be unable to see either of that vessel's sidelights, shall be deemed to be an overtaking vessel; and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of these rules, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

(c) If the overtaking vessel cannot determine with certainty whether she is forward of or abaft this direction from the other vessel, she shall assume that she is an overtaking vessel and keep out of the way.

The meaning of the rule is more complete when considered in relation to rules 21, 22, 23, 28 (a), and 28 (b), International Rules, which provide that:

Rule 21. Where by any of these rules one of two vessels is to keep out of the way, the other shall keep her course and speed. When, from any cause the latter vessel finds herself so close that collision cannot be avoided by the action of the giving-way vessel alone, she also shall take such action as will best aid to avert collision (see rules 27 and 29).

Rule 22. Every vessel which is directed by these rules to keep out of the way of another vessel shall, if the circumstances of the case admit, avoid crossing ahead of the other.

Rule 23. Every power-driven vessel which is directed by these rules to keep ont of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

Rule 28. (a) When vessels are in sight of one another, a power-driven vessel under way, in taking any course authorised or required by these rules, shall indicate that course by the following signals on her whistle, namely:

One short blast to mean "I am altering my course to starboard."

Two short blasts to mean "I am altering my course to port."

Three short blasts to mean "My engines are going astern."

(b) Whenever a power-driven vessel which, under these rules, is to keep her course and speed, is in sight of another vessel and is in doubt whether sufficient action is being taken by the other vessel to avert collision, she may indicate such doubt by giving at least five short and rapid blasts on the whistle. The giving of such a signal shall not relieve a vessel of her obligations under rules 27 and 29 or any other rule, or of her duty to indicate any action taken under these rules by giving the appropriate sonnd signals laid down in this rule.

Under the quoted wording of Rules 24, 21, 22, 23, and 28, International Rules, a vessel overtaking (i. e., approaching) another at any angle in the arc left blank by the sidelights is required to take whatever avoiding action is necessary to prevent risk of collision. She may stop, slow down, or change course to pass astern; or, she may assume a course parallel to, but well clear of, the overtaken vessel's. The mode of propulsion is immaterial. What governs the required action is the angle of approach resulting from the respective courses and speeds.

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.

The overtaken vessel, on the other hand, is required to maintain course and speed, until an improper act by the overtaking vessel makes collision imminent.

If the overtaking vessel is power-driven, she must indicate a change in course or a reversal of the engines by sounding the appropriate whistle signal. When she turns to starboard, she must sound 1 short blast; when she turns to port, 2 short blasts; when she reverses her engines, 3 short blasts.

The overtaken vessel, if power-driven, must likewise sound 1, 2, or 3 short blasts when acting to avoid collision. She may also sound the danger signal — 5 or more consecutive short blasts — while maintaining course and speed, to warn the overtaking vessel to keep clear. The giving of this signal is notice of possible danger due to the failure of the overtaking vessel to take ample or timely avoiding action—no more, no less. It does not justify a change in course or speed.

The limits of the overtaking situation are defined in a similar manner under the rules applicable to Inland Waters, Western Rivers, and the Great Lakes. Also, the overtaken vessel is required to hold course and speed, and the overtaking vessel to keep clear. However, what each vessel is required to do to avoid collision, when power-driven, varies in several respects under the latter rules.

Article 24, Inland Rules, is equivalent to Rule 24, International Rules, and is stated in similar terms:

Art. 24. Notwithstanding anything contained in these rules every vessel, overtaking any other, shall keep out of the way of the overtaken vessel.

Every vessel coming up with another vessel from any direction more than two points abaft her beam, that is, in such a position, with reference to the vessel which she is overtaking that at night she would be unable to see either of that vessel's side lights, shall be deemed to be an overtaking vessel; and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of these rules, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

As by day the overtaking vessel can not always know with certainty whether she is forward of or abaft this direction from the other vessel she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

It is supported in a similar manner by articles 21, 22, and 23, Inland Rules, which provide that:

Art. 21. Where, by any of these rules, one of the two vessels is to keep out of the way, the other shall keep her course and speed.

[See *arts.* 27 and 29.]

Art. 22. Every vessel which is directed by these rules to keep out of the way of another vessel shall, if the circumstances of the case admit, avoid crossing ahead of the other.

Art. 23. Every steam vessel which is directed by these rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

However, the similarity in provisions ends with articles 18 (rule VIII and IX) and 28, Inland Rules:

Art. 18. Rule VIII. When steam vessels are running in the same direction, and the vessel which is astern shall desire to pass on the right or starboard hand of the vessel ahead, she shall give one short blast of the steam whistle, as a signal of such desire, and if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two short blasts of the steam whistle as a signal of such desire, and if the vessel ahead answers with two blasts, shall direct her course to port; or if the vessel ahead does not think it safe for the vessel astern to attempt to pass at that point, she shall immediately signify the same by giving several short and rapid blasts of the steam whistle, not less than four, and nnder no circumstances shall the vessel astern, attempt to pass the vessel ahead until such time as they have reached a point where it can be safely done, when said vessel ahead shall signify her willingness by blowing the proper signals. The vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the passing vessel.

Art. 18. Rule IX. The whistle signals provided in the rules under this article, for steam vessels meeting, passing, or overtaking, are never to he used except when steamers are in sight of each other, and the course and position of each can be determined in the day time by a sight of the vessel itself, or by night by seeing its signal lights. In fog, mist, falling snow or heavy rain storms, when vessels can not see each other, fog signals only must be given.

Art. 28. When vessels are in sight of one another a steam vessel under way whose engines are going at full speed astern shall indicate that fact by three short blasts on the whistle.

These statutory provisions are supported by several regulatory Pilot Rules, specifically sections 80.6, 80.3, 80.2, and 80.1, Pilot Rules for Inland Waters, reading as follows:

80.6 Vessels running in same direction; overtaking vessel. When steam vessels are running in the same direction, and the vessel which is astern shall desire to pass on the right or starboard hand of the vessel ahead, she shall give one short blast of the steam whistle, as a signal of such desire, and if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two short blasts of the steam whistle as a signal of such desire, and if the vessel ahead answers with two blasts, shall direct her course to port; or if the vessel ahead does not think it safe for the vessel astern to attempt to pass at that point, she shall immediately signify the same by giving several short and rapid blasts of the steam whistle, not less than four, and under no circumstances shall the vessel astern attempt to pass the vessel ahead until such time as they have reached a point where it can be safely done, when said vessel ahead shall signify her willingness by blowing the proper signals. The vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the passing vessel.

Every vessel coming up with another vessel from any direction more than two points abaft her beam, that is, in such a position with reference to the vessel which she is overtaking that at night she would be unable to see either of that vessel's side lights, shall be deemed to be an overtaking vessel; and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of the rules in this part, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

As by day the overtaking vessel cannot always know with certainty whether she is forward of or abaft this direction from the other vessel she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

80.3 Vessels passing each other. The signals for passing, by the blowing of the whistle, shall be given and answered by pilots, in compliance with the rules in this part, not only when meeting "head and head," or nearly so, but at all times when the steam vessels are in sight of each other, when passing or meeting at a distance within half a mile of each other, and whether passing to the starboard or port.

The whistle signals provided in the rules in this part for steam vessels meeting, passing, or overtaking are never to be used except when steam vessels are in sight of each other, and the course and position of each can be determined in the daytime by a sight of the vessel itself, or by night by seeing its signal lights. In fog, mist, falling snow, or heavy rainstorms, when vessels cannot so see each other, fog signals only must be given.

80.2 Cross signals. Steam vessels are forbidden to use what has become technically known among pilots as "cross signals," that is, answering one whistle with two, and answering two whistles with one.

80.1 Danger signal. If, when steam vessels are approaching each other, either vessel fails to understand the course or intention of the other, from any cause, the vessel so in doubt shall immediately signify the same by giving several short and rapid blasts, not less than four, of the steam whistle, the danger signal.

Thus, in Inland Waters, a vessel overtaking another is required to keep clear, and the vessel being overtaken to maintain course and speed—as under International Rules. However, if the vessels are power-driven, and running in the same direction, they must agree to the manner in which passing is to be accomplished. The overtaking vessel must indicate by a 1-or-2 short blast signal on which side she wishes to pass the overtaken vessel. The overtaken vessel must answer with a like signal if she assents, or sound the 4 short blast danger signal in refusal. If she sounds the danger signal, the overtaking vessel must stay astern until another signal from the overtaken vessel allows her to pass. This whistle procedure does not provide for a power-driven vessel overtaking at an angle. It will be noted, however, that Article 22, Inland Rules, prohibits the overtaking vessel from attempting to cross the overtaken vessel's bow. Consequently, when overtaking at an angle, the overtaking vessel is required, by implication, to pass astern of the overtaken vessel.

Under the rules applicable to the Western Rivers, overtaking vessels are prescribed for in terms which are on the whole similar to those governing the overtaking situation in Inland Waters. However, there are important differences to be noted.

Rules Numbered 22 (a) and 23, Western Rivers Rules, describe the overtaking situation and set forth the basic procedure to be followed by each vessel:

Rule Numbered 22. (a) Notwithstanding anything contained in these rules, every vessel, overtaking any other, shall keep out of the way of the overtaken vessel.

Every vessel coming up with another vessel from any direction more than 2 points abaft her beam shall be deemed to be an overtaking vessel; and no subsequent alteration of the bearing between the 2 vessels shall make the overtaking vessel a crossing vessel within the meaning of these rules, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

As the overtaking vessel cannot always know with certainty whether she is forward of or abaft this direction from the other vessel, she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

Rule Numbered 23. Where by rules 17, 19, 20, and 22 one of two vessels shall keep out of the way, the other shall keep her course, subject to qualifications of rule 25.

These provisions are then supported by specific provisions applicable to power-driven vessels, namely, Rules Numbered 22 (b) and 21, Western Rivers Rules:

Rule Numbered 22. (b) When one steam vessel is overtaking another steam vessel, so as to involve risk of collision, and the overtaking vessel shall desire to pass on the right or starboard side of the other vessel, she shall give, as a signal of such desire, one distinct blast of her whistle, and if the overtaken vessel answers with one blast, shall direct her course to starboard; or if the overtaking vessel shall desire to pass on the left or port side of the other vessel, she shall give, as a signal of such desire, 2 distinct blasts of her whistle and if the overtaken vessel answers with 2 blasts, shall direct her course to port. However, if the overtaken vessel does not think it is safe for the overtaking vessel to attempt to pass at that time, she shall immediately so signify by giving several short and rapid blasts of her whistle, not less than 4, and

under no circumstances shall the overtaking vessel attempt to pass until such time as they have reached a point where it can be safely doue, and the overtaken vessel shall have signified her willingness by blowing the proper signal, 2 blasts for the overtaking vessel to pass on the port side, one blast to pass on the starboard side, which signal shall be answered with a similar signal by the overtaking vessel before passing. After an agreement has been reached the overtaken vessel shall in no case attempt to cross the bow or crowd npon the course of the overtaking vessel.

Rule Numbered 21. Every steam vessel, when approaching another vessel so as to involve risk of collision, shall slacken her speed, or, if necessary, stop and reverse.

Other supplementary provisions are contained in sections 95.17, 95.19, 95.21, and 95.09, Pilot Rules for the Western Rivers, reading as follows:

95.17 Overtaking situation. When two steam vessels are in the overtaking situation, it is the duty of the steam vessel being overtaken to answer immediately a passing signal of the overtaking steam vessel, either by assenting with the same nnmber of blasts or by dissenting with the danger signal.

95.19 Passing signals. The passing signals, by the blowing of the whistle, shall be given and answered by pilots, in all weathers, when approaching each other; and, wherever possible, the signals shall be given and answered before the steam vessels, or if towboats pushing tows, the heads of such tows, have arrived at a distance of half a mile of each other.

95.21 Visual signal. All whistle signals shall be fnrther indicated by a visual signal consisting of an amber colored light so located as to be visible all around the horizon for a distance of not less than 1 mile. This light shall be so devised that it will operate simultaneously and in conjunction with the whistle sounding mechanism, and remain ignited or visible during the same period as the sound signal: *Provided,* That the installation, use, or employment of the amber visual signal required by this section shall be optional in the case of (a) vessels operating upon the Gulf Intracoastal Waterway; (b) vessels operating on the Mississippi River below mile 237 AHP (Belmont Landing) as set forth in map No. 40, "Maps of the Mississippi River, Cairo, Ill., to the Gulf of Mexico, Louisiana (1944 ed.)," published by the Mississippi River Commission; (c) newly constructed vessels while en route from point of construction to a point in waters where the aforementioned amber visual signal is not required; (d) motorboats of class A and class 1; and (e) motorboats of class 2 and class 3 not engaged in trade or commerce.

95.09 Danger and cross signals. (a) The alarm or danger signal shall consist of four or more short and rapid blasts. Steam vessels are forbidden to use what has become technically known among pilots as "cross signals," that is, answering one whistle with two, and answering two whistles with one. In all cases and under all circumstances, a pilot receiving either of the whistle signals provided in the rules in this part with which for any reason, he deems it injudicions to comply, instead of answering it with a cross signal, shall at once observe the provisions of this section.

(b) The pilot of any steam vessel shall sound the alarm or danger signal whenever required by the law, or any of the regulations hereinafter contained; that is to say, as follows:

(1) Whenever it is dangerous to take the side indicated by the passing signal of another vessel; or,

(2) Whenever any steam vessel does not understand or is in doubt regarding the signal of another steam vessel; or,

(3) Whenever, from any cause, one steam vessel is imperiled by another.

Turning to the rules applicable to the Great Lakes, it can be seen that the statutory and regulatory structure of the requirements is similar to that in Inland Waters and the Western Rivers. It also can be seen that while the required signals are signals of intention and assent, there are a number of differences in detail and application. Furthermore, these rules, like the rules applicable to Inland Waters and Western Rivers, contain important differences in direct conflict with the International Rules.

Rules 22 and 20, Great Lakes Rules, set forth the basic procedure to be followed by each vessel:

Rule 22. Notwithstanding anything contained in these rules every vessel overtaking any other shall keep out of the way of the overtaken vessel.

Rule 20. Where, by any of the rules herein prescribed, 1 of 2 vessels shall keep out of the way, the other shall keep her course and speed.

These provisions are supported by specific provisions applicable to power-driven vessels, specifically, Rules 21, 23, and 26, Great Lakes Rules:

Rule 21. Every steam vessel which is directed by these rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

Rule 23. In all weathers every steam vessel under way in taking any course authorized or required by these rules shall indicate that course by the following signals on her whistle, to be accompanied whenever required by corresponding alteration of her helm; and every steam vessel receiving a signal from another shall promptly respond with the same signal or, as provided in rule 26:

One blast to mean, "I am directing my course to starboard."

Two blasts to mean, "I am directing my course to port." But the giving or answering signals by a vessel required to keep her course shall not vary the duties and obligations of the respective vessels.

Rule 26. If the pilot of a steam vessel to which a passing signal is sounded deems it unsafe to accept and assent to said signal, he shall not sound a cross signal; but in that case, and in every case where the pilot of one steamer fails to understand the course or intention of an approaching steamer, whether from signals being given or answered erroneously, or from other causes, the pilot of such steamer so receiving the first passing signal, or the pilot so in doubt, shall sound several short and rapid blasts of the whistle; and if the vessels shall have approached within half a mile of each other both shall reduce their speed to bare steerageway, and, if necessary, stop and reverse.

In turn, the Pilot Rules for the Great Lakes supplement these provisions, as can be seen from sections 90.8, 90.4, 90.3, and 90.2:

90.8 Vessels running in same direction; signals for overtaking. (a) When one steam vessel is overtaking another and the steam vessel astern shall desire to pass on the right or starboard side of the steam vessel ahead, she shall give one distinct blast of the whistle as a signal of snch desire and, if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two distinct blasts of the whistle as a signal of such desire and, if the vessel ahead answers with two blasts, she shall direct her conrse to port; or if the vessel ahead does not think it safe for the vessel astern to pass at that time, she shall immediately signify the same by giving the danger signal of several short and rapid blasts of the whistle, not less than five. It shall then be the duty of the steam vessel astern to hold back and, after an appropriate interval, if she still desires to pass, to make the proper signal so indicating; but under no circumstances shall the steam vessel astern attempt to pass the steam vessel ahead until such time as they have reached a point where it can be safely done, and the steam vessel ahead shall signify her willingness by blowing the proper answering signal. The steam vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the other steam vessel.

(b) Every vessel coming up with another vessel from any direction more than two points abaft her beam; that is, in such a position, with reference to the vessel which she is overtaking, that at night she would be unable to see either of that vessel's side lights, shall be deemed to be an overtaking vessel, and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of the rules in this part, or relieve her of the duty of keeping clear of the overtaken vessel until the overtaken vessel is finally passed and cleared.

(c) As the overtaking vessel cannot always know with certainty whether she is forward or abaft this direction from the other vessel, she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

90.4 Vessels passing each other. The whistle signals indicating course shall be given and answered in accordance with the rules, not only when an alteration of course is required, but at all times before vessels approach within half a mile of each other, from whatever direction, if their courses will bring them within that distance from each other.

90.3 Cross signals. Steam vessels are forbidden to use what has become technically known among pilots as "cross signals"—that is, answering one whistle with two, and answering two whistles with one. In all cases, and under all circumstances, a pilot receiving either of the whistle signals provided in the rules in this part, which for any reason he deems injudicious to comply with, instead of answering it with a cross signal, shall at once sound the danger signal and observe the rule applying thereto.

90.2 Danger signal. If, when steamers are approaching each other, the pilot of either vessel fails to understand the course or intention of the other, whether from signals being given or answered erroneously or from other causes, the pilot so in doubt shall immediately signify the same by giving the danger signal of several short and rapid blasts of the whistle not less than five; and if both vessels shall have approached within half a mile of each other, both shall be immediately slowed to a speed barely sufficient for steerageway, and, if necessary, stopped and reversed, until the proper signals are given, answered, and understood, or until the vessels shall have passed each other.

In the next article in this series, it will be seen that similar differences in signals and required procedures face a power-driven vessel approaching a sailing vessel, or vice versa, under the respective rules.

HIGHLIGHTS ON THE RULES

If you change course 1° you will have to run 60 miles to move over 1 mile.

An overtaken vessel is not as fast, but she got there first.

An overtaken steamer which consents to be passed still has right-of-way.

In fog, if you hit an anchored vessel you are self-convicted of excessive speed.

Good seamanship means:
Taking your vessel where it is safe, when it is safe, at the speed of a prudent seaman.

Good seamanship, like some other things, takes a lot of practice to get good at it.

The best place to know the rules and the worst place to study them is in a collision approach.

nautical queries

DECK

Q. For how long a period may the canister of a gas mask be kept in service?

A. A canister should be good for two hours continuous or interrupted service. No canister which has had the seals removed should be kept in service for more than one year, regardless of the amount of time it has been used. No canister with seals unbroken should be used if it is more than five years old.

Q. Why is it that even though a vessel may be equipped with a gyro-compass, an accurate check is kept on the deviation of the magnetic compass?

A. The gyro-compass is a mechanical apparatus, subject to mechanical and electrical breakdowns, which is dependent upon a constant source of electrical power. Therefore, there always exists the possibility of needing the magnetic compass.

Q. What gear should be ready in preparation for picking up a pilot?

A. The pilot ladder, a boat rope, and a heaving line. If the pilot is boarding at night, a cluster light should also be rigged over the side.

Q. What does a *blinking* of Loran signals indicate?

A. That the timing of the signals has become inaccurate. No reading should be taken while the signals are blinking.

Q. What effect does traveling across land have on Loran signals?

A. When signals travel across land the distance at which they can be received is reduced; their accuracy, however, is not affected.

Q. Describe the factors which influence the accuracy of a fix obtained by using Loran lines of position.

A. The accuracy of fixes derived from Loran lines of position is dependent on the following factors:

(a) The crossing angle of the lines of position (as in other methods of navigation).

(b) The location of the vessel with respect to the transmitters, i. e., the value of the microseconds in distance.

(c) The type of wave used, whether ground or sky wave.

(d) The number of lines of position used. Three lines will increase the accuracy over two, etc.

ENGINE

Q. What are the advantages of the automatic unloaders used on the cylinders of some constant speed motor driven compressors?

A. The automatic unloaders used with constant speed motor driven compressors permit greater flexibility in operation and capacity control. They also enable the compressor to start in the unloaded condition, thus reducing the starting torque on the motor.

Q. Why is it poor practice to use a belt drive when operating a series wound motor as a prime mover?

A. Series motors should never be belted to the driven machines as breaking of the belt would remove the load entirely and cause them to race at a dangerously high speed.

Q. Will the voltage of a generator build up if the armature rotates in the wrong direction? Why or why not?

A. No. If the armature rotation is in such a direction as to cause the induced voltage to set up currents in the shunt field in such a direction as to cause a magnetic field to be developed in opposition to the residual magnetic field, then the net magnetic field is less and the induced voltage cannot build up.

Q. What determines the location of the superheater in a water-tube boiler, and how is it protected against excessive heat?

A. The exact location of the superheater depends upon the degree of superheat desired. The higher the degree of superheat for which it is designed, the closer to the furnace will be its location. The superheater is usually protected against excessive heat by screening rows of generating tubes placed between it and the furnace.

Q. Explain why the evaporation rate is greater in small diameter tubes than in large diameter tubes, all other factors being the same.

A. With all other factors the same, the evaporation rate is a function of the ratio of generating surface area to the volume of contained water, and the smaller the tube, the greater will be the ratio of generating surface area to the volume of contained water.

SEAWORTHINESS

Webster's Dictionary defines the term "seaworthiness" as follows: "Ability to stand stormy weather in safety; as a 'seaworthy ship'." That this definition appears to be outdated in this 20th century is illustrated by a recent Supreme Court decision. A dissertation on what elements constitute "seaworthiness" should be of interest to all those who follow the sea. The opinion rendered on February 28, 1955, by the Supreme Court of the United States in the case of *Elie J. Boudoin* v. *Lykes Steamship Co., Inc.*, sets forth the latest interpretation of this term.

The New York Times on March 1, 1955, reported the details of the case, as follows:

"The case in the Supreme Court concerned Manuel Gonzales, a deckhand on the freighter SS *Mason Lykes*.

"It awarded to Elie J. Boudoin, an oiler in the engine department, $2,100 damages against Lykes Brothers Steamship Co., Inc.

"The case grew out of a drinking party while the *Mason Lykes* was in port at Walvis Bay, Africa, in November 1949. Gonzales, it was asserted, drank nearly a fifth of liquor. In the course of the drinking bout he went to Mr. Boudoin's room and took a bottle of brandy from under the bed.

"Mr. Boudoin awakened and Gonzales attacked him with the bottle, afflicting severe injuries. Testimony showed that Gonzales returned later with a knife which he also intended to use on Mr. Boudoin.

"Mr. Boudoin, in suing for damages, contended that the ship was 'unseaworthy' because of the presence of Gonzales in the crew. He contended that the watch officer of the ship was negligent in that he did not stop the drinking party, although it was a noisy one that the officer could have heard.

"A Federal District Court at New Orleans agreed and awarded damages to Mr. Boudoin. The Court of Appeals for the Sixth Circuit reversed this decision and Mr. Boudoin appealed to the Supreme Court."

The Supreme Court's opinion is as follows:

OPINION

"This is a suit by an American seaman against the owner and operator of an ocean freighter, the SS *Mason Lykes*, on which he was formerly employed. He based his claim for recovery both on negligence and on breach of the warranty of seaworthiness. The case was tried by the court upon waiver of jury. The District Court found for the plaintiff, holding that the shipowner breached its warranty of seaworthiness and that its officers were negligent. 112 F. Supp. 177. The Court of Appeals reversed, 211 F. 2d 618. We granted certiorari to resolve a seeming conflict between that opinion and *Keen* v. *Overseas Tankship Corp.*, 194 F. 2d 515, decided by the Court of Appeals for the Second Circuit. 348 U. S. 814.

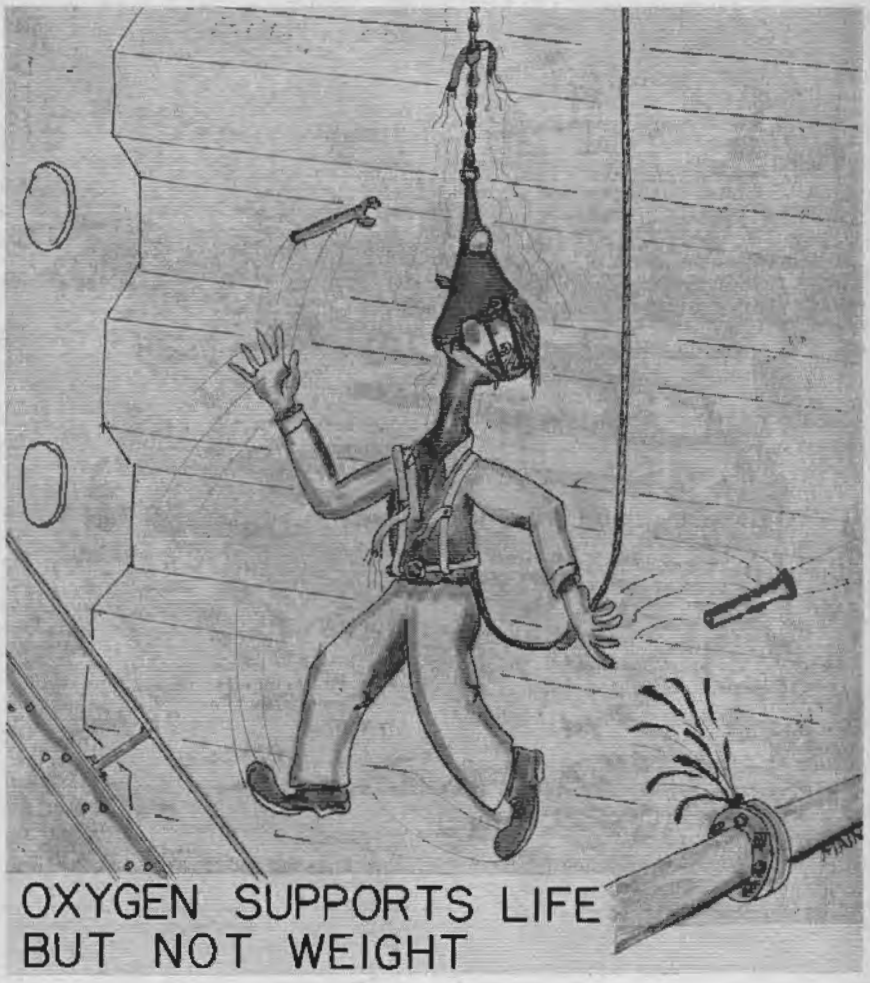
"Plaintiff was employed in the engine department as an oiler. The ship had a deck maintenance man, named Manuel Gonzales. Plaintiff's injury was inflicted by Gonzales who, during the course of a night's drinking party, went to plaintiff's room and took a bottle of brandy from under plaintiff's bed. Plaintiff awoke, startled; and Gonzales attacked him with the bottle, causing severe injuries.

"The District Court placed liability for breach of the warranty of seaworthiness on the holding of the *Keen* case, where Judge Learned Hand wrote:

> 'The warranty of seaworthiness as to hull and gear has never meant that the ship shall withstand every violence of wind and weather; all it means is that she shall be reasonably fit for the voyage in question. Applied to a seaman, such a warranty is, not that the seaman is competent to meet all contingencies; but that he is equal in disposition and seamanship to the ordinary men in the calling.' 194 F. 2d 518.

"The District Court found that Gonzales was not 'equal in disposition and seamanship to the ordinary men in the calling.'

"The assault by Gonzales on plaintiff occurred in the early morning of November 25, 1949. This happened during the course of a drinking party on board in which much liquor was consumed, Gonzales drinking nearly a



fifth. Gonzales was, indeed, drunk when he assaulted plaintiff. The evidence is disputed; but the District Court found that shortly after Gonzales struck plaintiff with the bottle, he returned with a large knife which he also intended to use on him. When plaintiff was taken to the ship's hospital, Gonzales created a disturbance outside—threatening the mate, trying to enter the sickbay, and offering to give blood to plaintiff for a transfusion. Those events followed on the heels of the assault.

"About 6 hours after the assault, Gonzales was ordered to the master's cabin, where he refused to make any statement about the assault. Later he was ordered to clean the ship's hospital. Instead of doing that, he left the ship against orders. Early in the afternoon Gonzales returned to the ship with bottles of liquor at which time the captain apprehended him, took the bottles away, and placed him in irons—a step which the captain testified he seldom used.

"The next day, November 26, Gonzales left the vessel without leave and did not return until the morning of November 28, when he was logged for disobedience of orders and fined for being absent without leave. On return of the *Mason Lykes* to the United States, Gonzales was discharged by the captain, though, since that time, he has served on respondent's vessels.

"On the basis of these facts, the District Court found that Gonzales was 'a person of dangerous propensities, and proclivities' at the time of his assault on plaintiff; that Gonzales was 'a person of violent character, belligerent disposition, excessive drinking habits, disposed to fighting and making threats and assaults.'

"We think the record does not warrant rejection of the District Court's findings and that the findings warrant recovery for breach of the warranty of seaworthiness.

"The warranty of seaworthiness is a species of liability without fault. The *Osceola*, 189 U. S. 158; *Seas Shipping Co.* v. *Sieracki*, 328 U. S. 85, 90–94. Yet it does not mean that the shipowner is liable for injuries 'resulting from every sailor's brawl,' as Judge Learned Hand put it in *Jones* v. *Lykes Bros. Steamship Co.*, 204 F. 2d 815, 816. It does not mean that the owner is liable every time a seaman gets drunk and does damage to a member of the crew. It does not mean that the owner is liable for injuries from all the fisticuffs on shipboard.

"All men are to some degree irascible; every workman is apt to be angry when a fellow complains of his work to their common superior; and some will harbor their resentment and provoke a quarrel over it even after the lapse of several hours. Sailors lead a rough life and are more apt to use their fists than office employees; what will seem to sedentary and protected persons an insufficient provocation for a personal encounter, is not the measure of the 'disposition' of 'the ordinary men in the calling.' *Jones* v. *Lykes Bros. Steamship Co., supra*, 817.

"The warranty of seaworthiness does not mean that the ship can weather all storms. It merely means that 'the vessel is reasonably fit to carry the cargo.' The Silvia, 171 U. S. 462, 464; *The Southwark*, 191 U. S. 1, 9. If it is not, the owner is liable, irrespective of any fault on his part. *The Osceola, supra; Seas Shipping Co.* v. *Sieracki, supra.*

"We see no reason to draw a line between the ship and the gear on the one hand and the ship's personnel on the other.[1] *A seaman with a proclivity for assaulting people may, indeed, be a more deadly risk than a rope with a weak strand or a hull with a latent defect.*[2] The problem, as with many aspects of the law, is one of degree. Was the assault within the usual and customary standards of the calling? Or is it a case of a seaman with a wicked disposition, a propensity to evil conduct, a savage and vicious nature? If it is the former, it is one of the risks of the sea that every crew takes. *If the seaman has a savage and vicious nature, then the ship becomes a perilous place. A vessel bursting at the seams might well be a safer place than one with a homicidal maniac as a crew member.*

"We do not intimate that Gonzales is a maniac nor that the extreme need be reached before liability for unseaworthiness arises. We do think that there was sufficient evidence to justify the District Court in holding that Gonzales had crossed the line, that he had such savage disposition as to endanger the others who worked on the ship. We think the District Court was justified in concluding that Gonzales was not equal in disposition to the ordinary men of that calling and that the crew with Gonzales as a member was not competent to meet the contingencies of the voyage. We conclude that there was evidence to support the cause of action for breach of the warranty of seaworthiness. Therefore we do not reach the question of negligence.

Reversed.

"Mr. Justice Reed concurs in the result on the ground of the negligence of the ship's officers."

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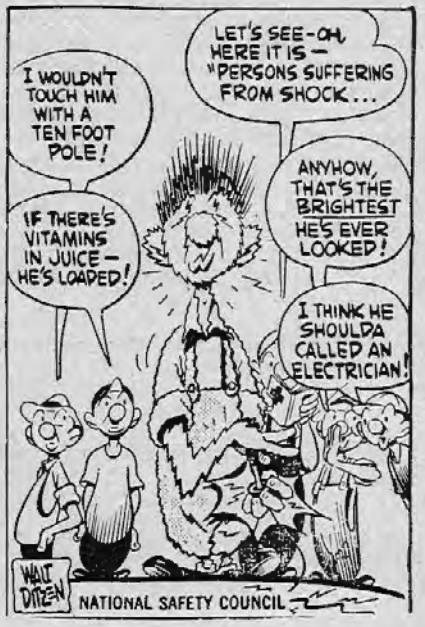
[1] "Situations involving breach of warranty of seaworthiness by reason of the disposition of a crew member have been presented in several recent decisions. Recovery was allowed in *Thompson* v. *Coastal Oil Co.*, 119 F. Supp. 838 (D. C. N. J.), rev'd on other grounds. The court followed the *Keen* case in holding that a crewman who tried to murder one of his fellows with a meat cleaver was not equal in disposition to those of his calling

"In *Stankiewicz* v. *United Fruit Corp.*, 123 F. Supp. 714 (S. D. N. Y.) the court directed a verdict for defendant on a cause of action for breach of warranty of seaworthiness, on the ground that there was no evidence that the assailant was not equal in disposition to men of his calling. As noted, the same result followed in the *Jones* case, *supra*, where the court held the test of unseaworthiness had not been met where a crewman assaulted one of his fellows following an earlier argument. And see *Kelcey* v. *Tankers Co.*, 217 F. 2d 541."

[2] Italics by editor.

"Their want of practice will make them unskillful, and their want of skill, timid. Maritime skill, like skills of other kinds, is not to be cultivated by the way or at chance times."

—*Thucydides, 500 B. C.*



SAFETY AND MAINTENANCE OF ELECTRICAL EQUIPMENT

The importance of electrical equipment on board merchant vessels is easily seen by the dependence placed upon it for the actual operation of the vessel. A serious breakdown in one of the important auxiliaries on board might result in a complete shutdown of the plant. For this reason electrical equipment utilized to pump fuel, ballast, and water, to lift cargo, provide lights, refrigeration, and fire protection, etc., must be maintained in such a manner as to avoid the possibility of a breakdown.

Because of the nature of vessels, the high voltages of electrical equipment aboard, and readily accessible means of grounding electrical circuits to the hull through the body of an individual, every precaution must be taken to make shipboard electrical facilities safe.

Both of these problems are recognized by the Coast Guard Electrical Engineering Regulations which require that the electrical installations on vessels be such that the services essential for safety will be maintained under various emergency conditions, and also that the safety of passengers, crew, and vessel from electrical hazards will be assured.

Manufacturers attempt to produce equipment which will stand the rigors of shipboard duty for long periods of safe operation without breakdowns. A great deal, however, depends upon how the equipment is maintained after it comes aboard, as to whether safe operation will obtain for any extended period of time. Carelessness and negligence in caring for and working with electrical equipment not only lead to injuries of personnel, but are probably the most frequent causes of the failure of electrical equipment.

There is no room for carelessness around electrical equipment, regardless of the voltage in the circuit. Everyone recognizes the potential danger of a circuit carrying 440 volts. Too many persons on board ship, however, are willing to take chances with 110 volts. This is foolish thinking, especially, as has already been mentioned, the chances of forming a good ground by contact of the body with any part of the steel structure of the vessel, resulting in a severe shock, or death, is always present.

All electrical circuits should be treated as potentially dangerous, no matter what the voltage. A line, therefore, should never be worked on until it is known to be deenergized. But the way to test a line to see whether it is dead is NOT by taking a shock intentionally. If such practice is followed, the person doing the testing may wind up in that state. There are various types of instruments manufactured for such tests—they should be utilized.

Frequently persons using portable electric equipment receive severe shocks when such equipment is not properly grounded. Such casualties are easily avoided by grounding the tool before using it. Where grounded type receptacles, designed for cords containing a ground wire, are not available for use with portable tools, the ground lead in the tool cord should be connected to the bare metal surface of the ship with a metal spring clip, or by connecting the wire to a nut or bolt in the hull, or by some other equally acceptable means.

Any extension cords used with such portable equipment should be carefully inspected before use and should be of sufficient length. Spliced cords should never be used on board ship, not only because they are prohibited by regulations, but also because they are dangerous.

Care must also be taken to protect oneself from electric shock while changing fuses. They should not be removed until the circuit has been completely deenergized, and then always replaced with another of the same rated voltage and ampere capacity. And of course fuses should never be shorted out. To do so is inviting disaster, since such a practice may damage equipment or cause a fire.

Firefighting equipment should be accessible to electrical equipment and, what is more important, those who work with this electrical equipment should be aware of the location of the fire-fighting apparatus and how it works. Before attempting to put out an electrical fire, the circuit should first be deenergized. Even after this is done only fire-fighting equipment which employs a nonconducting extinguishing agent should be used to combat such fires.

Frequent inspection of electrical equipment coupled with proper maintenance of such facilities will do much to prevent such casualties. This practice will also help to prevent breakdowns and subsequent costly repairs of electrical motors, generators, etc.

It is not possible to lay out a maintenance program that will be applicable to every vessel and all the various types of electrical equipment aboard. That such a program should be carried out on every ship is clearly evident by the fact that a large percentage of the failures of electrical equipment result from improper care in lubricating motors and generators, and also in failing to keep them clean. For one of the most common results of improper lubrication of electrical machinery is the rapid wearing out of bearings.

It is also important that a routine inspection and maintenance program be set up for the proper care of electrical machinery because of frequent changes in the crew who care for and operate this equipment. An electrician or engineer may be aboard for one trip or several trips and then another man takes over. Unless some record has been kept on lubrications, repairs, and particular features of a piece of equipment he will have no guide to work by. Whereas if a maintenance schedule has been worked out for weekly, monthly, semiannual, and annual inspections and servicing of equipment none of the essential maintenance work will be neglected. This also prevents over lubrication of electrical machinery, which may be just as damaging as under lubrication. For excessive oil which finds its way onto the windings will collect dirt, or excessive greasing of bearings may cause them to overheat.

A "Trouble-Shooter's" Guide and the manufacturer's book of instructions should be kept handy for ready reference when unusual characteristics develop in a piece of electrical equipment. The instructions of the manufacturer should be followed in caring for equipment, particularly with regard to lubrication, since it is extremely important that the proper type of lubrication be used in electrical machinery at the right time.

Maintenance of electrical equipment on deck requires that particular attention be paid to keeping it dry. This equipment is required to be manufactured so as to be watertight. Carelessness in leaving inspection plates open or terminal enclosure plates loose, or failing to replace faulty or loose gaskets, often permit moisture to enter areas otherwise watertight. Extreme care in protecting the watertight integrity of a deck motor should also be taken if it becomes necessary to dismantle and reassemble such a piece of equipment.

It is essential that electric motors be kept dry in order that the insulation materials will remain nonconductors. Moisture from any source should be kept away from electrical equipment, particularly the windings of motors. For when such windings are wet, the insulation resistance is decreased considerably. In spite of all precautions, however, such conditions do occur at times. Under such circumstances the motor should not be used until the windings have been dried out.

Insulation materials on electrical machines are generally given extra protective coatings by the manufacturer to protect them. This insulation may need revarnishing from time to time if the surface cracks.

Cleaning of electrical machines is not limited to preparation for varnishing however, since constant care is necessary to keep electrical equipment clean. If this cannot be done by wiping excess dirt from the machine, the next best method is to use a suction or vacuum process to remove it. Blowing compressed air onto equipment to remove loose dirt frequently results only in imbedding it deeper into the machinery. If abrasive or conductive materials are blown into the windings the insulation resistance may be lowered or short circuits may result.

If the dirt or other accumulations of foreign materials cannot be removed by the above processes, a cleaning solvent will probably have to be used. Never use a piece of metal to scrape away excess foreign material on electrical equipment. If necessary a small wooden stick may be used for this purpose.

There are various solvents used for cleaning insulation and windings of electrical machinery of oily and greasy deposits. Carbon tetrachloride and stoddard solvent, or a combination of the two, are frequently used for this purpose. Gasoline or benzine should never be used for cleaning purposes on shipboard, because of the great fire hazard involved. While stoddard solvent is a petroleum product it is utilized because of its high flash point.

Care must be exercised when using carbon tetrachloride because of its toxic effects. Persons working with this material must avoid breathing the fumes. For this reason the area where the cleaning is taking place should be well ventilated.

There are, of course, a great many things to watch for in inspecting electrical equipment and maintaining it in good working condition. For example, excessive vibration of electrical machinery must be corrected as soon as detected, and when the machinery runs too fast or too slow the reason for such performance must be ascertained. Generators in particular should never be permitted to overspeed, and therefore every precaution should be taken to prevent such action.

Insulation resistance of electrical equipment should be checked periodically and compared with previous readings, particularly where there is some question about a piece of equipment. In order to evaluate these insulation resistance measurements properly a log should be kept of insulation resistance measurements taken at regularly scheduled intervals. Humidity, ambient temperature, and condition of the machine should also be noted, since they are also important in evaluating the condition of a piece of machinery.

If any large or abrupt decrease in insulation resistance is indicated when compared with those recorded in the log it should be investigated, and the equipment restored to normal or renewed as indicated by the conditions found.

The air gap of the bearings, particularly on alternating-current motors, must also be inspected frequently and the proper spacing maintained.

On direct-current motors the brushes must receive constant attention and be renewed when worn. The manufacturer's instructions regarding the type of brushes to use and the pressure to be exerted upon them in

operation are extremely important and should be followed carefully. One point on this subject is particularly important, however, and that is that chatter and sparking of brushes from a rough commutator will not be corrected by additional pressure on the brushes. Such a practice will only result in chipping the brushes. The only solution is to smooth out the commutator.

These and many other problems come under the heading of maintenance of electrical equipment. It is clear therefore that in order to keep all the essential electrical machinery functioning properly and safely aboard ship, constant attention must be focused upon its care. This equipment has come to be relied upon so much for the essential operations of a vessel that it is almost taken for granted that it will always function when called upon. Such is not the case unless it is properly maintained. Keeping electrical equipment dry, clean and properly lubricated are among the most important factors to be utilized in accomplishing this end.

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RADIOMETRIC SEXTANT

The Office of Naval Research, Washington, D. C., recently announced the development of a "radiometric sextant" which, within certain limitations, can automatically track the sun and moon under any weather conditions.

This is the first practical application of the new science of radio astronomy. It consists of a highly directional antenna and very sensitive receiving equipment to pick up the continuous radiowave emission of the two celestial bodies. It receives and handles automatically the so-called "noise energy" which remains constant at certain wave lengths regardless of other conditions on the solar surface which may cause enormous increases in radiowave emission.

The sextant is described as one of simple yet sturdy construction. It is easily and quickly operated and because of its highly directional antenna and operation on a very high frequency it is not likely to be disturbed by local or man-made static. Its accuracy is comparable to that of an optical sextant.

Successful Tests

"The Navy, has been conducting tests on use of the sextant for navigation of surface ships. It has operated successfully under all weather conditions."

"The present sextant," it is pointed out, "cannot be used to track stars. The ultimate aim is to track on either sun or stars. The difficulty in designing such all-purpose equipment is in the antenna. It would have to be large to be powerful enough to pick up galactic radio signals (transmissions from the general star field), which are several orders of magnitude weaker than solar noise. Such equipment could replace all current navigational equipment. It is not subject to jamming as are navigational systems dependent on man-made radiations."

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WATER HAMMER

When water and steam are present in a steam pipe, there is also present a serious accident potential. Precautions must therefore be taken to prevent this combination, which results in water hammer action, and has been the cause of many serious casualties on board merchant vessels.

Water hammer action is usually signaled by a cracking noise in the steam pipes, growing more violent as the water accumulation increases. Unfortunately, however, it does occur at times without any forewarning, particularly when steam is admitted to a pipe which contains considerable water. Many such cases have resulted in explosions as soon as the steam valve was opened.

When steam is admitted to a cool steam pipe, in which no water is present, the pipe acts as a condenser and water hammer action may be delayed, depending on the time necessary to accumulate sufficient condensate to produce the required amount of water. On the other hand, as indicated above, the action of water hammer may take place immediately when steam is admitted to a pipe containing water.

The action of water hammer in a steam pipe is produced when a slug of water is forced along the pipe with increasing momentum by the steam pressure, and is suddenly arrested by another slug of water or other obstruction. When this impact occurs, a rupture may result at the point of impact, or the pressure produced by this action may cause a rupture if it reaches a weaker part of the piping system containing valves or fittings of low shock resistance, such as cast iron.

In order to avoid water hammer great care should be exercised in admitting steam into a pipe. The greatest preventive of water hammer action is to take every precaution to see that no water is present in steam pipes before the steam is turned on. All sections of steam piping where water might accumulate, particularly low points, should be cleared of condensate by seeing that the drains to the trap line are open. The trap by-passes should be opened to facilitate this draining process. When certain that the piping is free of water, these by-passes should be closed to prevent live steam being blown through.

Steam piping should be warmed up slowly by opening the by-pass valves first. The pipes should be warmed and the pressures equalized before the large valves are opened. If no by-pass is connected with the valve, warming and equalizing should be effected by slightly cracking the connecting valve, allowing only a small amount of steam into the pipe. It is advisable, under any conditions, to open steam stop valves carefully and slowly.

If after steam is admitted to the piping a cracking noise is heard, the steam should be shut down immediately and any water in the pipes allowed to drain off. In some instances it may be necessary to repeat this process several times before the pipes are thoroughly heated and free from water.

The draining and warming processes with no pressure on the pipe, outlined above, may appear slow, but it is a safe procedure. Time and effort used to prevent water hammer action may help to avert serious future casualties.

COUNTRIES WHICH HAVE ACCEPTED THE INTERNATIONAL REGULATIONS FOR PREVENTING COLLISION AT SEA, 1948

Australia	Italy
Belgium	Japan
Brazil	Liberia
Bulgaria	Mexico
Burma	Netherlands
Canada	New Zealand
Chile	Nicaragua
Colombia	Norway
Denmark	Pakistan
Dominican Republic	Panama
Ecuador	Peru
Egypt	Philippines
Finland	Poland
France	Portugal
Fed. Rep. of Germany	Roumania
Greece	South Africa
Haiti	Spain
Hungary	Sweden
Iceland	Turkey
India	U. S. S. R.
Iraq	United Kingdom
Irish Republic	United States
Israel	Venezuela
	Yugoslavia

SAFETY COMMITTEES

Safety Committees, both afloat and on shore, have contributed much in recent years towards reducing accidents in the maritime industry. Steamship companies which have formulated well-organized safety programs have consistently made the ship's safety committee the important factor in their plans for cutting down the number of casualties which result in damage to property and cargo and also cause injuries and at times loss of life.

The men who sail the ships must be interested in safety if such a program is to succeed. These men, who are actually doing the job, are most familiar with the hazards and pitfalls aboard ship. Yet it is often true that because of their closeness to such hazards for long periods of time they become careless and take chances in their work. This is where the safety committee steps in to remind them of the potential accident causes which are constantly present, for it is a known fact that most accidents are the result of human instead of mechanical failures.

Certain steamship companies have had successful safety programs in effect for many years which utilized safety committees in solving the accident prevention problem. In 1952 many companies took up the practice when the National Shipping Authority instructed all of its general agents to place in effect such a program on all ships operated for the Government. Some of these companies found the program so successful they incorporated it on their own vessels.

Companies which do not now have an accident prevention program in effect in their fleet would do well to consider formulating such a plan by establishing a Management Safety Committee ashore and a Ship Safety Committee on each of their vessels.

Steamship companies with organized safety programs have found the plan is no more difficult than that. The Management Safety Committee generally consists of shoreside personnel, such as the Marine Superintendent, Port Captain, Port Engineer, and a person designated as the Safety Director, whose principal duty is to furnish each vessel with a carefully planned safety program, calling for, among other things, the formulating of a Ship's Safety Committee, composed of the Master, the head of each department, and additional members, if desired, composed of other officers or the crew's delegates.

This group is then furnished with instructions for holding meetings at least once a month to investigate and discuss accident problems peculiar to the vessel, or other safety subjects. A report of such meetings is then forwarded to the Management Safety Committee for review, and the safety program has taken hold.

The Management Safety Committee's primary purpose is that of keeping the interest in safety aboard ship at a high level. There are many ways in which this is accomplished; one of the most important being the supplying of the Ship Safety Committee with an abundance of material for their meetings.

Many companies issue safety manuals to their fleet for this purpose. Others incorporate this material in operating manuals, and forward supplementary material and recommendations to the vessel at frequent intervals. This data is often seasonal in nature, since weather and climatic conditions may induce certain types of accidents.

For example, during the seasons when heavy weather is likely to occur matters such as keeping decks safe by using lifelines and nonslip materials for the protection of the men are suggested as topics for safety meetings. Navigation of the vessel to avoid undue stress during storms is also a timely topic at such times.

At other times methods of preventing falls, or the proper methods of handling materials are put forth for discussion. More injuries result from these two causes than from any other on board ships, and these subjects should, therefore, be constantly revived for discussion.

Fire prevention is always a must for consideration by the Ship Safety Committee. The Management Safety Committee should constantly strive to see that a high degree of interest is maintained in this subject.

Nothing produces fear and panic aboard ship quicker than fire. Everything has been done to provide the safest vessels and equipment for preventing and controlling such fires. The human element falters at times, however, and for this reason every successful safety program devotes considerable time to this subject. Generally the Management Safety Committee attempts to provide the Ship Safety Committee with all the material necessary to instruct the crew in the functions and uses of all types of fire-fighting equipment.

At one time some of the steamship companies employed a "Safety Mate" whose sole duty was to go from ship to ship instructing the personnel in the use of fire-fighting equipment and other safety subjects. Such duties could very easily be incorporated into the work of the Management Safety Committee. Such training would by no means replace regular shipboard training and drills but would rather be supplementary in nature.

A crew supplied with expert knowledge on fire prevention and control can be relied on in an emergency and may be instrumental in saving lives and property, or even the vesssel itself, in the event of an actual fire aboard.

One of the most successful means of getting material to the Ship Safety Committee for consideration at their meetings and for assisting them in making the crew safety conscious is by the publication of a monthly fleet safety pamphlet or bulletin. There are many such excellent publications in the steamship industry which are read by the personnel on board ships of the fleet with keen interest since they are like "letters from home."

Safety Committee reports from the various vessels are sometimes printed in these publications along with editorial comments regarding recommendations from the ship on various safety subjects.

The fleet publication generally contains statistics on the number, type and causes of accidents on each vessel. It might seem that such information when published would appear dry and uninteresting. Such is not the case, however. These statistics offer a comparison between the vessels of the fleet, and it is a certainty that, human nature being what it is, the personnel of each vessel are doing their utmost to keep their vessel at the top of the safety list.

Cooperation is the keynote for the success of any safety program. Just as there must be cooperation between the licensed and unlicensed personnel to make a safe ship, so the Management Safety Committee must cooperate with the Ship Safety Committee to make safety work on board vessels of the fleet.

What the Management Safety Committee does with the Ship Safety Committee reports is important. Where recognition is given to sound recommendations by placing them in effect, the safety program has taken a long step towards success.

Meetings and joint inspections aboard the vessel by the Management and Ship Safety Committees cement relations and help to solve mutual problems. This is also an opportunity to see that a uniform safety program is being carried on throughout the fleet.

The success or failure of a safety program depends largely on the interest shown by the officers of the

ship. For the attitude of the crew will be reflected by that of the officers. For example, the engineer officer on watch may take a few minutes longer when assigning a task to a member of his department to explain how to go about the particular job and what tools to use and how to use them safely. But, on the other hand, if the officers are cold, indifferent, and skeptical towards the safety program, the crew will be careless and the effort will fail.

This type of personal instruction is important where crew changes are frequent and new men are coming aboard continually. Such instruction may get a little boring to the "old timers," but they are the ones who, after being associated with a hazard for a long period, may get careless or take chances. The accident rate is just as high for careless workers as it is for inexperienced ones.

The same type of personal instruction is given to the deck gang by the Mates. Recent accidents and particular safety problems peculiar to the ship are always of interest and should be discussed. When men are assigned particularly hazardous duties they are closely supervised. All men, and particularly those who are new or have been away from the sea for a while, are given instructions on how to go about their tasks safely. Even men who have been to sea for years benefit from such instructions, since they may not have been trained properly at certain tasks.

On such ships all the officers are on the alert for unsafe working habits by the crew and constantly seek to impress on the men the need for adopting safer practices for their own safety.

All this boils down to the fact that when a man is injured, some of the blame may be his supervisor's. The excuse that a man was careless may mean he was not trained in the job, or was improperly trained. Or he may not have been provided with adequate supervision. Any one of these reasons reflects to some degree upon the supervisor. When this is brought home to the officers of the ship, more on-the-job supervision should result.

The crew itself must be interested in the safety program if such a program is to succeed. Some companies have found that one of the best ways to encourage cooperation from the crew in a safety program is to include the crew's delegates on the Ship Safety Committee.

Under such an arrangement a direct line is established between the crew and the Safety Committee. The crew gram and soon ideas and suggestions are flowing from the crew to the Safety Committee and vice versa.

A safety program which is constantly being supplied with new ideas and suggestions from interested participants cannot possibly stagnate. And the more people who participate in a safety program, the more numerous and varied will be the crop of ideas.

Each Ship Safety Committee generally delegates the investigation of injuries and other casualties to certain members of the Committee. These accidents are not investigated so much for the purpose of fixing the blame, but rather to determine the full and true cause of the accident and the circumstances surrounding it. A full report is made of the accident, and after the report has been studied by the Ship Safety Committee recommendations are incorporated into the report.

These recommendations are corrective in nature and indicate means of preventing a recurrence of this type of accident in the future, since the accident causes, brought to light in such reports, are eliminated or corrected immediately.

When these reports are published in the fleet safety bulletin they serve the additional purpose of alerting other vessels to potential accident causes, since no one vessel has a monopoly on a particular type of accident.

One other function of the Ship Safety Committee is the making of regular inspections of the entire vessel. When the Master makes his regular weekly inspection some or all members of the Ship Safety Committee accompany him to look particularly for unsafe conditions and practices. Notes are taken at the time and brought up for review at the next Safety Committee meeting. These inspections are not conducted necessarily for the purpose of seeing how many things are wrong, but whether everything is satisfactory safetywise aboard ship. The fact that Coast Guard Inspectors in the short period of time they are aboard each vessel during the year report many unsafe practices indicates this is a fruitful field.

It is a known fact that a great many accidents are due to thoughtlessness, recklessness, and ignorance on the part of the injured worker or fellow workers, and for this reason the Committee watches for persons standing under loads or in other dangerous places, wearing improper clothes or failing to wear safety devices such as goggles, or working under unnecessarily hazardous conditions, such as feel more a part of the safety promaking electrical repairs when the current is still in the line, or other equally dangerous practices.

The idea in back of such inspections is not "Did an accident happen here?", but rather "Can an accident occur here?" The accident reports mentioned previously will tell what caused an accident, here it is desired to correct the cause *before* the accident happens.

Therefore, the open spaces on deck, all types of machinery, conditions of decks, ladders and passages, and electrical equipment receive special attention. Fire hazards are constantly watched for and determinations made as to whether fire equipment would be adequate in a particular area should fire break out. Places where "Nobody ever goes" are also examined for hazards, since actually there is no such place on board.

A check off list is a valuable asset in making such inspections, and many companies have standard forms for this purpose. Items such as lighting, ventilation, housekeeping, etc., are not as easily overlooked when such forms are used.

A Management Safety Committee ashore which shows keen interest in the Ship Safety Committees and encourages the work of the latter Committee will do much towards maintaining a successful safety program. Actually the cost of such a program is negligible—the personnel are already on the payroll—since as has been said the officers on the ships are the key factors in any safety program. Active participation in the safety program, therefore, by these officers particularly, and by the crew in general, coupled with cooperation and encouragement from management ashore, will reduce the number of injuries and loss of life aboard ships in addition to reducing damage to property, for safe ships are efficient ships.

CRACKED SHIP AND IRON MEN

By CDR. William C. Foster, USCG

On the evening of November 16, 1954 the *SS P & T Trader*, a C–3 type cargo vessel, was eastbound towards Coos Bay, Oreg., from the port of Yokohama, Japan, approximately 600 miles from her destination. The vessel was light, drawing 8 feet forward and 17 feet 6 inches aft, and had been averaging about 14 knots with following winds and seas during the voyage. At about 6 p. m. the wind shifted from the southwest to east southeast and the sea began to build up from an easterly direction. Moderate pitching was experienced from this easterly sea and at 10:30 p. m. the vessel commenced to pitch heavily. At about 10:50 p. m. the vessel, while making approximately 70 r. p. m., pounded heavily into a large head sea and a loud report was heard throughout the vessel.

The speed was immediately reduced to 45 r. p. m. and the vessel was brought around away from the wind and sea. The Master and Chief Engineer made an immediate inspection in the driving rain and rising wind and discovered that the main deck was cracked from the vicinity of the after port corner of No. 3 hatch over to the sheer strake. The crack ran slightly aft as it went outboard. With the aid of a flashlight the Master was able to determine that the crack extended down the vessel's side through three shell plates. The strengthening strap on the sheer strake was buckled outboard and was cracked approximately one-third of the way through. Several rows of rivets on either side of the crack had been sheared and others had been started.

The crack worked with every roll and pitch of the ship and it was apparent that the situation could worsen with little or no warning. An emergency message was sent to the Commander, 13th Coast Guard District, in Seattle, advising of the vessel's predicament, but it was up to the crew to remedy the situation. All hands were called out and under the direction of the Chief Engineer preparation was made to commence emergency repairs.

After the first hurried inspection, a complete inspection of the forward end of the vessel was made. It was discovered that in addition to the main deck and shell plate fractures, there was a small crack at the forward starboard corner of No. 3 hatch on the main deck and a small secondary crack leading off at a 45° angle, tending aft, one-third of the way to the sheer strake from the after port corner of No. 3 hatch. In the lower 'tween deck it was found that the shell plating crack had ruptured frame No. 92. It was also found that in the upper 'tween deck there was a crack at the after port corner of No. 3 hold.

As the most serious crack appeared to be the one on the port side of the main deck leading away from No. 3 hatch, emergency repairs were started there. On either side of the crack, near the port bulwark, was located a heavy bitt and chock. Two 300-foot winch falls, 8 by 19 steel wire, were lashed tightly around this bitt and chock. On the starboard side, in a similar manner, the 1½-inch insurance cable was lashed around the bitt and chock located there. This lashing was set up as tightly as possible and was held fast by means of an after deck winch. In addition, various lengths of cargo deck lashing chain were made fast on either side of the crack and set up by means of turnbuckles. Around No. 3 hatch coaming was wrapped a length of five-eighth inch steel wire. This was done to prevent the diagonal hatch corners on the port side aft and the starboard side forward from opening further than they had.

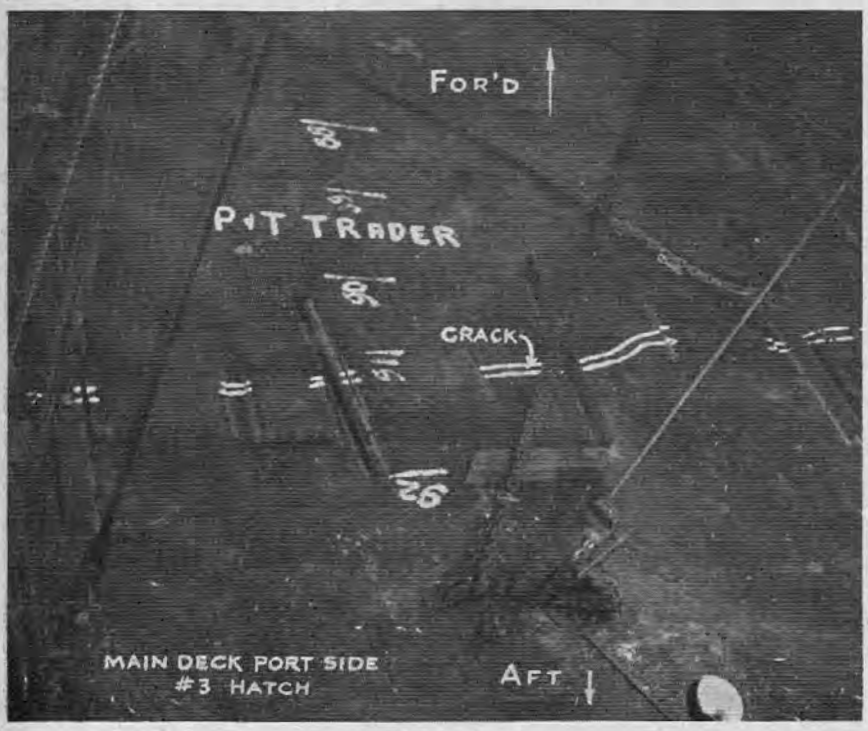


Figure 1.

The emergency equipment drill was used to drill the ends of the main deck crack both in the hatch coaming and in the shell plating. Holes were also drilled at the ends of the smaller cracks in the 'tween deck, on the main deck, and at the forward starboard corner of the hatch. *With one exception, none of the cracks extended beyond the drilled holes.* The exception was the crack in the upper 'tween deck plating at the port after corner of No. 3 hatch. The first hole was drilled approximately 4 inches from the corner and after the crack continued to run, a second one was drilled approximately 7 inches from the corner. The crack did not extend beyond the second hole.

The Chief Engineer, Mr. Charles T. Schonbeck, who had been aboard the vessel since it was received from the United States Navy in 1947, had burning and welding outfits complete with 200 cubic feet of acetylene gas and 244 cubic feet of oxygen. He also had an ample supply of welding rods which were used in normal operation to weld deck cargo lashing pads on deck since the vessel frequently carried large deck cargoes of lumber. It was decided to weld several plates over

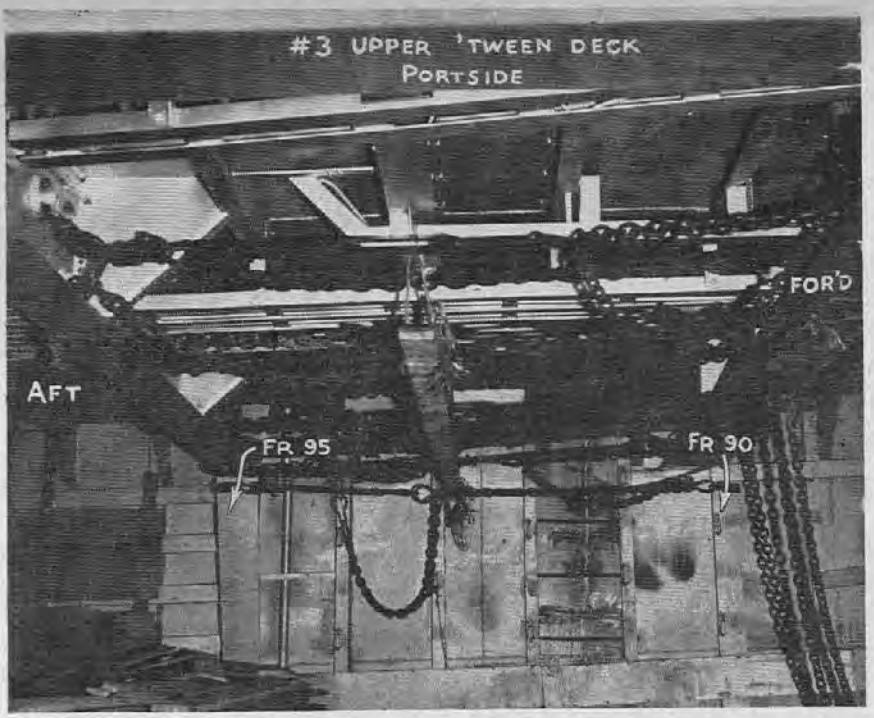


Figure 2.

the main deck crack and to install strengthening angle bars over the shell plating crack. Five steel blank flange plates from the No. 2 deep tank bilge wells were removed for this purpose. These plates were 25 inches by 18 inches by ⅝ inch. These plates were fairly evenly spaced over the crack and were welded in place. (*See fig. 1.*) Difficulty was experienced at first in making the weld hold since the crack was working approximately three-eighths of an inch, but, upon tightening the winch falls, the amount of movement was materially reduced.

In the upper 'tween deck level, four tie bars, which were fabricated from 1¼-inch diameter steel rod and threaded on both ends, were inserted and bolted to frames 91 and 92. Holes were cut in the frames for this purpose. Seven cargo deck lashing chains of seven-eighths inch pear-shaped links were brought up tight with turnbuckles between deep web beams 90 and 95. The jumbo boom turnbuckle was also installed between these web beams. Holes were burned in the beam flanges and the turnbuckle shackles were bolted to the beams. (*See fig. 2.*)

In the lower 'tween deck, five angle bars which were obtained by cutting up a deep tank ladder, were welded across the crack. Three tie bars were also installed between frames 91 and 92 for additional reenforcement. In addition, short sections of angle bar were welded around the end of the crack to prevent spreading.

The foregoing repair job was completed 42 hours after the casualty occurred. The Chief Engineer stated that he had nothing but praise for the manner in which the crew, regardless of department, turned to and carried out his instructions. A constant watch was kept on the cracks after the repairs were completed and careful attention was given to the vessel's course and speed. On November 22, 1954, the vessel arrived safely in inland waters off British Columbia and continued on to Seattle.

In conclusion, it is believed that this emergency repair job, which was done with limited equipment and under difficult conditions was most commendable and reflects a high standard of leadership and ability on the part of the officers and crew of the *SS P & T Trader*. These emergency repairs may well have prevented the ship from breaking in two with possible large loss of life. Congratulations to Capt. Douglas E. Wilson, Chief Engineer Charles T. Schonbeck, and the crew of the *SS P & T Trader* for an outstanding exhibition of good seamanship.

UNSOLICITED TOW

A highly embarrassing incident occurred to a small motor tugboat towing three scows last summer when it arrived at its destination at daybreak and discovered that it had added an additional tow during the night. To add to the consternation, the new tow was a fishing vessel devoid of any occupants although all signs pointed to recent occupancy. Whether the situation could be construed as hitchhiking, larceny of a motorboat, embezzlement of a free tow, or something else, was not immediately clear. Later investigation and deduction indicated only an unfortunate accident.

It seems that a man with considerable fishing experience left home one morning to go mackerel fishing in his 25-foot motorboat. Ample fuel, fishing gear, bait, and food were taken along to enable him to stay out overnight. When last seen he was headed out of the harbor, alone, bound for the mackerel fishing grounds.

The tug with three wooden rock scows in tow astern in tandem cleared the same harbor entrance shortly after midnight that night. After clearing the sea buoy, the towing cable was payed out so that there was approximately 850 feet from the tug to the first scow and about 400 feet between each scow. The tug and tows were properly lighted. About 1 a. m., a deckhand took the conn of the tug, steering from an enclosed pilothouse with one window open. Between 2 a. m., and 2:30 a. m., the tug and tow passed a number of small fishing vessels at anchor on the mackerel grounds. The deckhand swore that he cleared all of these fishermen by a wide margin. About 4:30 a. m., the master took over the steering until arrival off the harbor entrance at the destination, about daybreak. The crew of the tug then began to heave in the long tow line and prepared to separate the scows, to take each one into the harbor individually. At this time the 25-foot motorboat was noticed just astern of the last scow. It was found that the bight of the motorboat's manila anchor line was snagged on a splintered section of planking on the after port quarter of the last wooden scow. The motorboat was hailed with no reply and crew members from the tug boarded it. There was no one on the motorboat.

It was found that the motorboat's anchor line was streamed out its entire length, about 46 fathoms. There were about 30 pounds of fresh caught mackerel, a barrel of chum, a brailing net and one rubber boot. All of the fishing gear was in position for use. The fishing line and reflector were missing. The anchor light was burning, although its standard was broken. Sidelights were turned off, but in working condition. Miscellaneous gear was lying about in the boat as though it had been recently used.

The ignition switch was on but the engine was stopped. One fuel tank was full and only about 4 gallons had been consumed from the other tank.

The boat was dry but several of the cabin's plexiglass windows were cracked and there was other damage to the hull which indicated a minor collision. The manila anchor line was chafed. At latest reports the operator of the motorboat had not been seen nor had his body been recovered.

As a result of extensive investigation and analysis, it was concluded that the operator of the motorboat had been fishing at night alone, at anchor, and that his boat had been struck on the starboard side by one of the three rock scows, hooked on, and towed away. The conclusion was also reached that the operator fell over the side in an undetermined manner and lost his life by drowning. Most likely, he fell as a result of the collision with the scow whose very close proximity he had probably not noticed in time.

Since the presence of the motorboat at the end of the tow was not detected until daybreak, it is a good bet that the collision and snagging were also unnoticed at the time by any persons on the tug, as they took place up to as much as 1,600 feet astern of the tug. That a deckhand fully occupied with piloting and steering the tug at night with only one pilothouse window, was not keeping a proper lookout seems to be beyond argument. In addition, the amount of attention this man could devote to the behavior and position of his tows while acting as his own lookout in addition to piloting and steering, is obviously minute. The tendency of a long tow to tail off to one side or the other of the course line of the tug is well known. It takes little imagination to visualize the deckhand in the tug clearing the unfortunate motorboat by what he considered a good margin but the last scow on the tow clearing the motorboat by no margin at all, especially at night. Inasmuch as no personnel serving on this small motor tug were required by law to have licenses or be certificated by the Coast Guard, no disciplinary action against their licenses or documents could be taken on the charge of negligence for not keeping a proper lookout. Also, Federal criminal action for negligence resulting in loss of life could not be taken because the actual cause or manner of death could not be definitely proved. Nevertheless the dramatic consequences of such slipshod navigation have been impressed on the minds of the persons involved and they, as well as all other thoughtful navigators, will keep in mind that the next time may be under circumstances by which they could be prosecuted to the full extent of the law.

SKY HOOK

Very few thoughtful mariners have to be reminded of the importance of checking the strength and security of rigging which suspends heavy weights over their heads. On a derrick barge last year (*see fig. 3*) one small detail was overlooked and several hundred pounds of steel came crashing to the deck, knocking one man overboard and injuring him so critically that he died 8 days later. It seems that a cotter pin in a main supporting block had worked loose.

The derrick barge was engaged in driving piles, using a 50-foot spud "H" beam which, together with the steam hammer and attachments was suspended from the main boom over the pile by means of a 4-foot steel block (*see fig. 4*). After driving the pile down about 10 feet, it was necessary to stop, lower, and readjust the spud. Each time the spud was lowered the pile was adjusted, or straightened if necessary, by a pull exerted by moving the boom. It was in the process of lowering the spud and realining the pile after the first 10-foot drive on this pile that the tragedy occurred. The foreman on the deck of the barge who made frequent checks on the alinement of the piling took a measurement and asked the boom operator to pull the pile to the left. With the hammer resting on the pile, the operator topped the boom, or boomed up, to prepare to swing the pile. As the main purchase came taut, the spud and hammer came away from the supporting block and fell over onto the deck of the barge. The foreman ducked and tried to roll away from the falling weights, but was struck and forced overboard, the spud and hammer going over the side with him. Men on the barge were able to pull him aboard and get him to a hospital, but his internal injuries were too severe to permit his recovery.

Examination of the block disclosed that the heavy steel pin, from which the spud and hammer were secured by a shackle, was gone. It was found on the deck, intact and undistorted, but with the cotter pin missing. Apparently the cotter pin had broken due to crystallization and a heavy blow, or had gradually worked to a closed position and slipped out of the block pin. A sustained heavy load might have kept the block pin in position, but the relieving of this load when the hammer was rested on the pile allowed this pin to work out of one of the cheeks of the block. When the boom was shifted to aline the pile, the pin slipped out and the heavy spud and hammer were dislodged and fell. The cotter pin was about 4 inches long and weighed but a few ounces.

Figure 3.

So small an item in all this heavy equipment and yet so disastrous a result.

It might be said that the rigging in this case was subject to unusual and severe strain due to the hammering of the piledriver, and that such conditions would not pertain to shipboard cargo or other rigging. In this connection, it should be emphasized that, in the above case, there was not a material failure of any structural strength member of the barge's rigging but only the malfunction of a small nonstrength member—the disappearance of the cotter pin.

It is just this kind of "small" failure in shipboard rigging which is the most dangerous, because it is least likely to be detected in time to prevent an accident. The loosening of a shackle pin, the stranding or kinking of a wire cable, the wearing of a block-pin bushing, the slacking off of a wire clamp nut, the gradual wear in a winch-clutch tooth, the slightest straightening of a cargo runner hook—it is the thousand and one "little" things which must be constantly looked for, anticipated, and corrected by shipboard personnel if freedom from painful or fatal injuries is to be their lot. Just remember that those tons of weight hanging over your head are kept from crashing down with murderous effect only by a few man-made appurtenances. Unlike the mythical "Sky Hook," these man-made appurtenances are subject to frailties and failures, and so often the failures occur at the worst possible moment—when one of the human frailties is standing directly under the weight! Don't be an optimist about heavy weights and rigging—"Hope for the best but prepare for the worst," and you may be able to prevent the worst from happening.

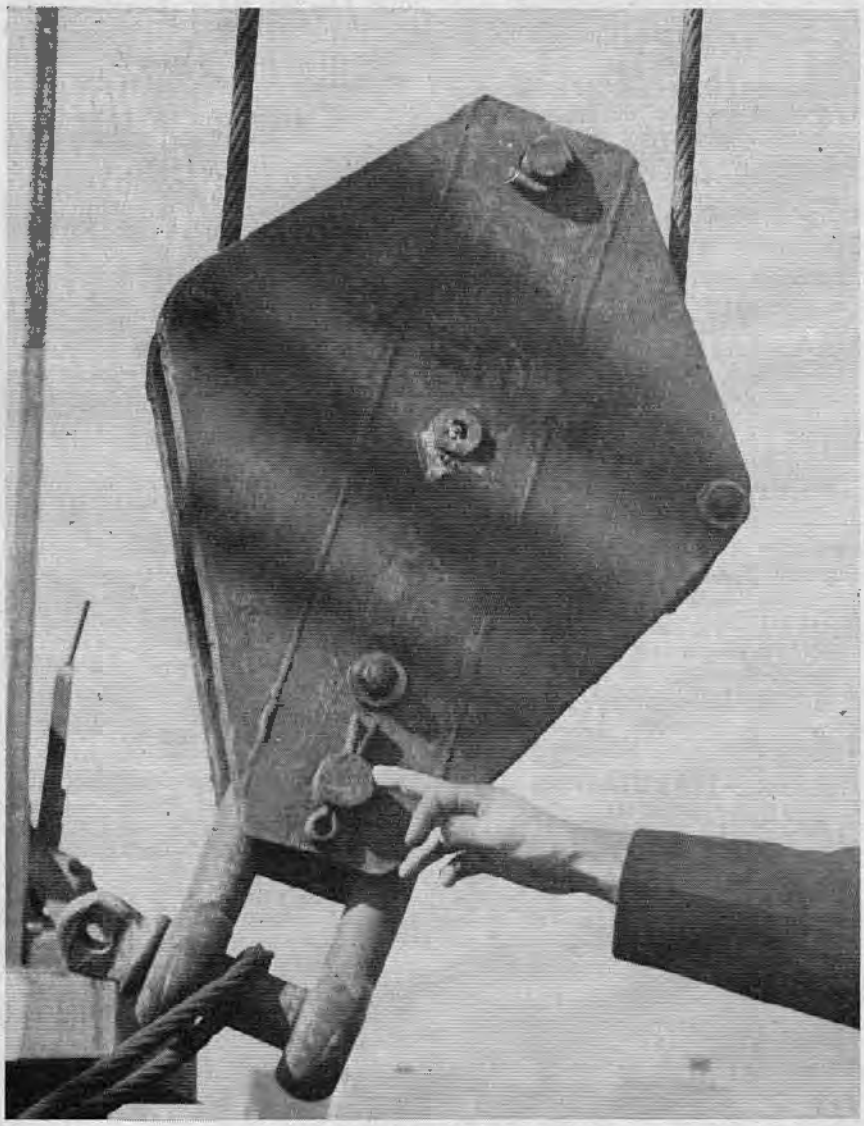


Figure 4.

DELIBERATES

Casualties that are brought on by people deliberately violating good safety practices really are not accidents.

An accident is generally defined as "an unplanned event that takes place in an otherwise orderly sequence which usually results in injury or death and in every case results in delay." This is to say that an accident is an *unexpected* occurrence; one which you would have no way of knowing would happen. You cannot predict real accidents because they are usually the result of a strange combination of circumstances which are almost impossible to guard against.

Accidents do happen. It is unfortunate and true. But just so this fact won't discourage you, here is a secret—accidents are extremely rare and the chances of you being injured in an accident are very, very small.

You don't believe it? You think that accidents happen quite frequently? You say you can remember quite a few you have seen and you have had a couple happen to you? You are probably t h i n k i n g of "deliberates."

A "deliberate" is not a true accident. It is the result of someone working in an unsafe manner, usually in violation of the standard safety rules. When you use a chipping hammer without wearing your safety goggles or a face shield, you are asking for an eye injury. Sooner or later you will get what you ask for. Your eye injury will have been "deliberately" caused by your unsafe act.

Because many people are too lazy to wear protective equipment, because many people ignore safety rules, because many people act carelessly without thinking; the records show many unnecessary injuries and other casualties. They call them accidents but most of them are "deliberates."

Courtesy—States Marine Lines

APPENDIX

WHICH ONE?

S. E. Whitcomb

I watch men work in the plants I go through,
And I see three types in each mill;
There's the man who can't and the man who won't,
And the man who says, "I will."

The man who can't should be pitied,
To him we should always be kind;
For he works each day in the same old way,
His life is simply a grind.

So let us take care and watch out for this man
To see that he doesn't get hurt,
For safety is something he can't understand,
Nor apply in his daily work.

The man who won't is a failure,
He never will get ahead,
For he pays no heed to what anyone says,
But goes his own way instead.

When accidents come and a question is asked,
The answer is always the same—
This man who stubbornly says, "I won't,"
Is the man who is always to blame.

And now I come to the last of the three,
The man who says that he will.
We find he is better than all the rest
And the man of the greatest skill.

There is the man who practices care
In every move that he makes,
Safety is part of each job that he does—
This duty he never forsakes.

There is one of the men embodied in you—
"I can't," "I won't," or "I will"
And I leave it to you which one you must be
In order the big job to fill.

—*Safety Poems,*
National Safety Council.

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 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

[CGFR 54-58]

PART 1—GENERAL PROVISIONS

SUBPART 1.25—FEES AND CHARGES FOR COPYING, CERTIFYING, OR SEARCHING RECORDS AND FOR DUPLICATE DOCUMENTS AND CERTIFICATES

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

Subchapter B—Merchant Marine Officers and Seamen

[CGFR 54-60]

PART 10—LICENSING OF OFFICERS AND MOTORBOAT OPERATORS AND REGISTRATION OF STAFF OFFICERS

SUBPART 10.25—REGISTRATION OF STAFF OFFICERS

PART 12—CERTIFICATION OF SEAMEN

SUBPART 12.02—GENERAL REQUIREMENTS FOR CERTIFICATION

Subchapter O—Regulations Applicable to Certain Vesels During Emergency

PART 154—WAIVERS OF NAVIGATION AND VESSEL INSPECTION LAWS AND REGULATIONS

(Federal Register of Tuesday, February 22, 1955)

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

Subchapter D—Navigation Requirements for Certain Inland Waters

[CGFR 54-55]

PART 80—PILOT RULES FOR INLAND WATERS

LIGHTS FOR RAFTS AND OTHER CRAFT

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

1. Part 80 is amended by adding a note to follow after § 80.16, reading as follows:

§ 80.16 *Lights for barges, canal boats, scows and other nondescript vessels on certain inland waters on the Atlantic and Pacific Coasts.* * * *

NOTE: The regulations in §§ 80.16 to 80.17, inclusive, are not applicable to rafts. The requirements regarding lights for rafts are in § 80.32.

2. Section 80.32 is amended to read as follows:

§ 80.32 *Lights for rafts and other craft.* (a) Any vessel propelled by hand power, horse power, or by the current of the river, except rafts and rowboats, shall carry one white light forward not less than 8 feet above the surface of the water.

(b) Any raft while being propelled by hand power, by horse power, or by the current of the river, while being towed, or while anchored or moored in or near a channel or fairway, shall carry white lights as follows:

(1) A raft of one crib in width shall carry one white light at each end of the raft.

(2) A raft of more than one crib in width shall carry 4 white lights, one on each outside corner.

(3) An unstable log raft of one bag or boom in width shall carry at least 2 but not more than 4 white lights in a fore and aft line, one of which shall be at each end. The lights may be closely grouped clusters of not more than 3 white lights rather than single lights.

(4) An unstable log raft of more than one bag or boom in width shall carry 4 white lights, one on each outside corner. The lights may be closely grouped clusters of not more than 3 white lights rather than single lights.

(c) The white lights required by this section shall be carried from sunset to sunrise, in a lantern so fixed and constructed as to show a clear, uniform, and unbroken light, visible all around the horizon, and of such intensity as to be visible on a dark night with a clear atmosphere at a distance of at least one mile. The lights for rafts shall be suspended from poles of such height that the

lights shall not be less than 8 feet above the surface of the water, except that the lights prescribed for unstable log rafts shall not be less than 4 feet above the water.

(Federal Register of Wednesday, January 26, 1955)

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

Subchapter H—Passenger Vessels

[CGFR 55-2]

PART 71—INSPECTION AND CERTIFICATION

SUBPART 71.25—ANNUAL INSPECTION

LIFEBOATS ON FERRYBOATS AND CERTAIN OTHER RIVER VESSELS

Section 71.25–15 (a) (2) is amended to read as follows:

§ 71.25–15 *Lifesaving equipment.* (a) * * *

(2) Each lifeboat shall be lowered to near the water and then be loaded with its allowed capacity, evenly distributed throughout the length and then be lowered into the water until it is afloat and be released from the falls: *Provided,* That lifeboats on river ferryboats and on river vessels shall be lowered to the water and afloat before loading. In making this test persons or dead weight may be used. The total weight used shall be at least equal to the allowed capacity of the lifeboat, considering persons to weigh 165 pounds each.

Subchapter O—Regulations Applicable to Certain Vessels During Emergency

[CGFR 55-4]

PART 154—WAIVERS OF NAVIGATION AND VESSEL INSPECTION LAWS AND REGULATIONS [1]

EMPLOYMENT OF SEAMEN

The following waiver orders are canceled effective thirty days after the date of publication of this document in the Federal Register, except that any vessel where the crew is engaged on or before the effective date of this cancellation, under the terms of the following waiver orders, such vessel may continue with such deficiencies in its crew for the remainder of the period for which the entire crew is signed on and no penalties of law shall be imposed because of failure to comply with the provisions of law which were relaxed by these waiver orders:

1. Section 154.08 *Able seamen employed on Great Lakes merchant cargo and tank vessels,* as well as 33 CFR 19.08, is revoked.

2. Section 154.09 *Qualified members of engine department on Great Lakes merchant cargo and tank vessels,* as well as 33 CFR 19.09, is revoked.

3. Section 154.10 *Able seamen employed on merchant vessels other than Great Lakes vessels,* as well as 33 CFR 19.10, is revoked.

[1] This is also codified in 33 CFR Part 19. (Federal Register of Thursday, January 27, 1955.)

EQUIPMENT APPROVED BY THE COMMANDANT

[EDITOR'S NOTE.—Due to space limitations, it is not possible to publish the specification numbers, approval numbers and other descriptive data regarding approvals and termination of approvals as published in the Federal Register. Copies of the Federal Registers may be obtained from the Superintendent of Documents, Washington 25, D. C.]

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 29 December 1954 to 27 January 1955, inclusive, for use on board vessels in accordance with the provisions of part 147 of the regulations governing "Explosives or Other Dangerous Articles on Board Vessels" are as follows:

Curran Corp., South Canal Street, Lawrence, Mass., Certificate No. 196, dated January 10, 1955, V. S. S. (VOLATILE SAFETY SOLVENT).

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 1955 to 15 February 1955 is as follows:

The Lunkenheimer Co., Cincinnati 14, Ohio. Heats No. 499, 500, 501, 502, and 503.

H. B. Sherman Manufacturing Co., Battle Creek, Mich. Heats No. 796 and 797.

AFFIDAVITS

The following affidavit was accepted during the period from 15 January 1955 to 15 February 1955:

Jenkins Bros., 100 Park Avenue, New York 17, N. Y., VALVES.

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

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

Distributor's and/or manufacturer's	Brand	AWS class	Operating positions and electrode sizes (inch)				
			5/32 and below	3/16	7/32	1/4	5/16
Reid Avery Co., Dundalk, Baltimore 22, Md	Raco 13	E6013	1	1	2	2	------
The Babcock & Wilcox Co., 161 East 42d St., New York 17, N. Y	B & W 915	E9015	1	2	------	------	------
Alloy Rods Co., York, Pa	Atom-arc 7016 (Contact Type)	E6016	1	2	2	2	3

Salt of the Earth

(For James A. Farrell, Jr.)

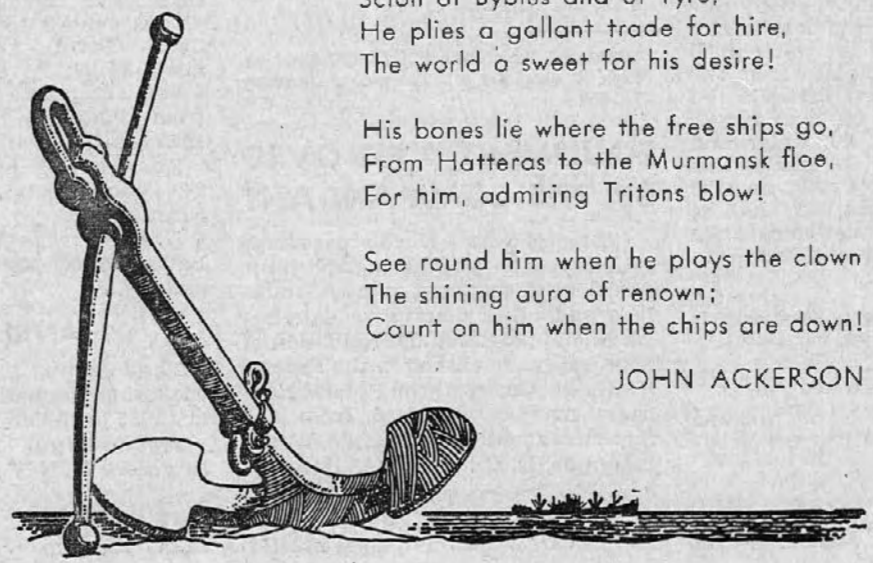
White-capped, tattooed, sunburnt,
deadpan,
Efficient Yankee sailorman!
Find his equal if you can!

Scion of Byblus and of Tyre,
He plies a gallant trade for hire,
The world a sweet for his desire!

His bones lie where the free ships go,
From Hatteras to the Murmansk floe,
For him, admiring Tritons blow!

See round him when he plays the clown
The shining aura of renown;
Count on him when the chips are down!

JOHN ACKERSON



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