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MERCHANT MARINE COUNCIL
UNITED STATES COAST GUARD

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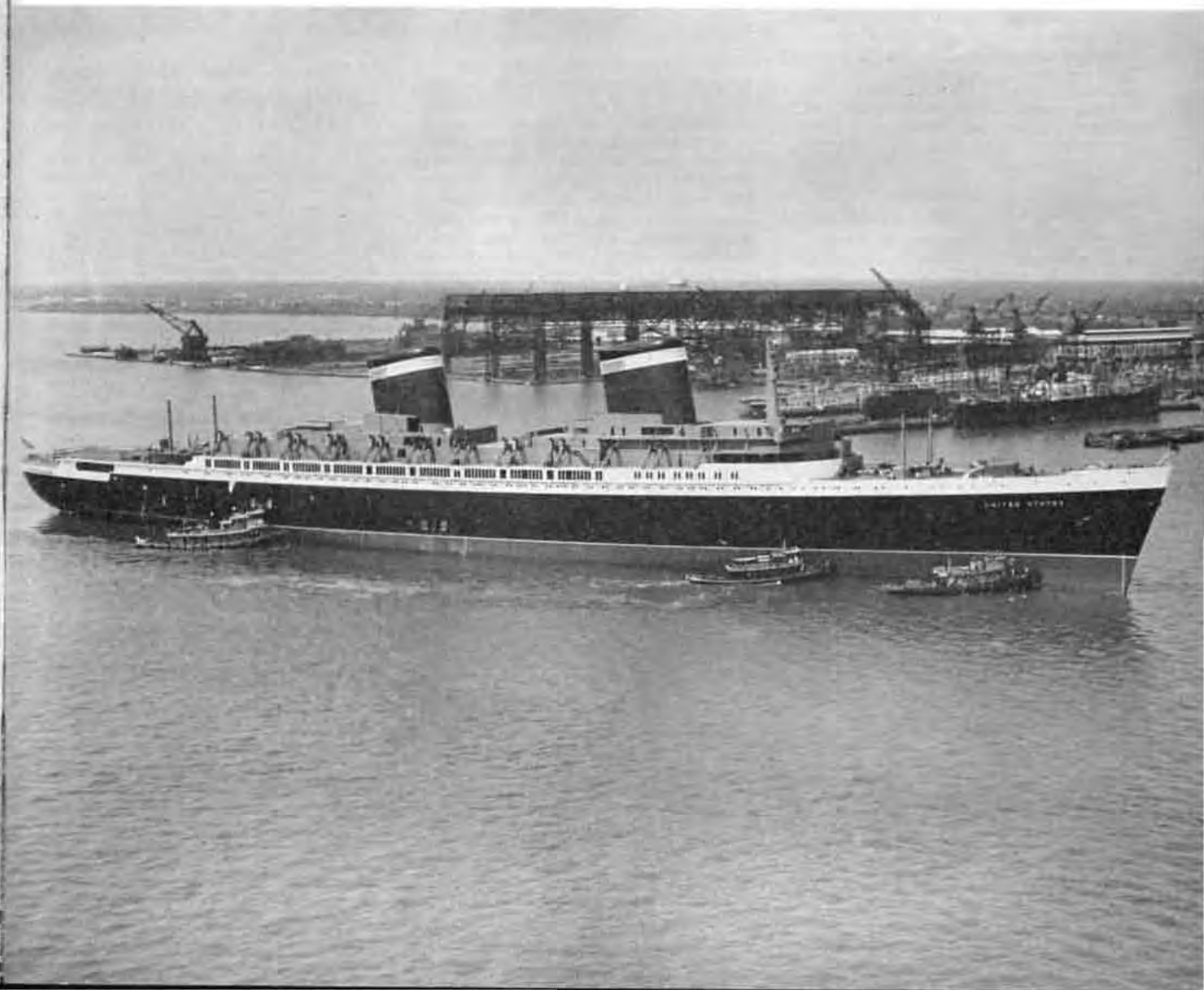

Proceedings of the

MERCHANT MARINE COUNCIL

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The
Merchant Marine Council
of the United States
Coast Guard

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COUNCIL ACTIVITIES

The Merchant Marine Council will hold a public hearing on 18 September 1951, commencing at 9:30 a. m., in room 4120, Coast Guard Headquarters, Thirteenth and E Streets NW., Washington, D. C., for the purpose of receiving comments on the following proposed changes in the navigation and vessel inspection regulations. The agenda contains the specific changes proposed, and where possible the present regulations and proposed regulations are set up in comparison form. Comments on these proposed regulations are requested.

ITEM I—GENERAL PROVISIONS—MARINE ENGINEERING REGULATIONS (12/51)

It is proposed to revise the Marine Engineering Regulations and Material Specifications (CG 115) to permit the use of liberalized design stresses based upon a factor of safety of 4 under certain restricted requirements which must be met in order to use the higher stresses allowed. These proposed regulations are given in detail in items I to VIII, inclusive, in the agenda. It is necessary that 46 CFR 50.05 (c), regarding application of marine engineering regulations, be revised in order that the application of the regulations to existing installations will be understood. Under certain conditions the applications of the proposed regulations may be retroactive in effect.

ITEM II—MATERIALS—MARINE ENGINEERING REGULATIONS (12/51)

The material requirements in the Marine Engineering Regulations and Material Specifications are being revised in their entirety in order to utilize insofar as possible the practices and procedures used by industry. It is proposed to amend 46 CFR 51.01–1 (b) in order that the maximum temperature permitted for flange and firebox quality steel plate may be increased from 500° to 650° F. to be consistent with the limitations imposed on this material when used as flange material in piping systems. Since 1935 it has been the administrative practice to publish detailed material specifications in the Marine Engineering Regulations and Material Specifications as 46 CFR Part 51. These detailed material specifications stated by direct reference the applicable American Society of Testing Materials (ASTM) standards or other specifications which covered the material specifications in question. However, the regulations did not indicate the variations from the ASTM specifications or other specifications referred to in appropriate notes printed with the detailed specifications. Since the standard specifications issued by the American Society for Testing Materials, Philadelphia, Pa., are normally accepted in commercial trade as the

method for identifying materials desired in the manufacture of boilers, unfired pressure vessels, piping, etc., it is proposed to adopt by reference the ASTM specifications for materials which may be used in marine service subject to necessary limitations because of special conditions applicable. To accomplish this it is proposed to amend 46 CFR Part 51 by completely revising the material specifications presently published as subparts 51.04 to 51.76, inclusive, and by making editorial changes in subpart 51.01, regarding general material regulations. It is felt that by stating by reference to ASTM specifications what materials are acceptable for marine service and specifically stating in the regulations the limitations applicable to these specifications that it will be easier for the public to determine the requirements applicable.

ITEM III—CONSTRUCTION—MARINE ENGINEERING REGULATIONS (12/51)

The construction requirements in the Marine Engineering Regulations and Material Specifications are being revised to bring them up to date with modern usages and practices used in industry. It is proposed to revise 46 CFR Part 52 by changing certain definitions and general requirements by incorporating the American Society of Mechanical Engineers stresses in the design formulas covering shells and heads of boilers and unfired pressure vessels; provide stress tables for ferrous materials in this part as well as for nonferrous materials covered by 46 CFR Part 54; prescribe definite limitations for the design of boilers and unfired pressure vessels employing stresses based upon a factor of safety of 4, such as corrosion allowance, removal of welding reinforcement, and consideration of additional stresses imposed by effects other than internal pressure; establish new tables for allowable welded joint efficiencies, which permits increase in the basic efficiencies for classes I, II, and III welding by the removal of weld reinforcement and by the use of spot radiography and stress relief; revise present regulations for the purpose of bringing certain Coast Guard requirements covering design formulas for cylindrical shells and dished heads of boilers and unfired pressure vessels, welding requirements covering furnaces, fireboxes, and waterlegs on fire tube boilers and formulas for determining the allowable pressure and minimum thickness of boiler tubes, into closer agreement with the ASME boiler code (as petitioned by manufacturers); and new requirements covering automatically controlled packaged boilers, access and inspection openings in boilers or pressure parts thereof; and method for determination of ligament efficiency in tube sheets with unsymmetrically spaced holes.

ITEM IV—LOW PRESSURE HEATING BOILERS—MARINE ENGINEERING REGULATIONS (12/51)

It is proposed to revise the requirements for low pressure heating boilers in the Marine Engineering Regulations and Material Specifications as 46 CFR Part 53 so that the requirements for such boilers will be similar to the current requirements of the American Society of Mechanical Engineers' heating boiler code considered applicable to marine service. The factor of safety of 5 has been retained for the design of heating boilers. The requirements prescribing the capacity and testing of safety and relief valves on heating boilers have been revised and where possible to agree with the ASME code. New requirements are proposed for preliminary tests for safety and relief valves having nonmetallic disks as well as for automatically controlled packaged type heating boilers.

ITEM V—UNFIRED PRESSURE VESSELS—MARINE ENGINEERING REGULATIONS (12/51)

It is proposed to revise the present requirements regarding unfired pressure vessels in the Marine Engineering Regulations and Material Specifications as 46 CFR Part 54 by rewriting the regulations in this part in their entirety. This is done in order to establish a more uniform set of regulations for the design and construction of unfired pressure vessels. The requirements covering the stress relieving of unfired pressure vessels constructed of A204 and A212 steel plate have been revised to agree with the ASME unfired pressure vessel code. There have been added a table for stresses for nonferrous materials and cast iron; design formulas for tube sheets and tubes of heat exchangers and cast iron heads; requirements regarding access and inspection openings to provide for suitable inspection and cleaning of unfired pressure vessels, as well as revised requirements for nozzle openings and reinforcements; and requirements covering pressure relief devices on unfired pressure vessels, including the requirements for the flow testing of safety relief valves for liquefied compressed gases. New formulas have been incorporated in the proposed requirements to permit calculation of the theoretical flow of the gas used in the flow tests where coefficients of discharge are to be determined for safety relief valves. The physical properties of the more common gases have been tabulated at standard conditions of 60° F. atmospheric pressure. Similar requirements are presently published in the "Tank Vessel Regulations" and the "Dangerous Cargo Regulations" which will be transferred to this part if the proposed requirements are adopted.

ITEM VI—PIPING SYSTEMS—MARINE ENGINEERING REGULATIONS (12/51)

It is proposed to revise the requirements regarding piping systems in the Marine Engineering Regulations and Material Specifications as 46 CFR Part 55, by revising certain requirements and incorporating additional requirements for new materials permitted. The piping material stress table has been revised by incorporating additional piping materials for use in high temperature service and a number of new nonferrous grades have been added. The design pressures for piping have been clarified in order to establish minimum design requirements for saturated and superheated steam piping. The requirements covering the design of pipe pierced with tube holes have been revised to agree with the ASME code. The allowable variations in pressures and temperatures above the design limit for piping have been clarified. Certain requirements covering design of valves, plug cocks, and flange joints have been revised to clarify their intent. The design of boiler feed and blow-off piping has been revised to require a design pressure of not less than 125 percent of the maximum allowable pressure of the boiler. The number and location of independent bilge suctions required have been revised to agree with the 1948 Convention for Safety of Life at Sea. Changes have also been made to the fuel oil service requirements to permit a vessel having an auxiliary packaged boiler not exceeding 3,000 pounds per hour generating capacity to be equipped with a single fuel oil pump and heater. Vessels burning fuel oils of low viscosity will no longer be required to be equipped with fuel oil heaters under the proposed changes. Certain requirements covering lubricating oil

systems have been revised to agree with the American Bureau of Shipping Rules. The regulations for sounding pipes have been revised to clarify their intent.

ITEM VII—ARC WELDING, GAS WELDING, AND BRAZING—MARINE ENGINEERING REGULATIONS (12/51)

It is proposed to revise the present requirements regarding arc welding, gas welding, and brazing in the Marine Engineering Regulations and Material Specifications, as 46 CFR Part 56, by clarifying the scope of the regulations; redefining welding terms employed in welding processes to agree with the American Welding Society standard, and to revise certain requirements regarding acceptable types of welded joints to agree with the American Society of Mechanical Engineers' codes and American Bureau of Shipping rules. The proposed revisions in subpart 56.01, regarding arc welding and gas welding, deal with the scope of the regulations; definition of welding terms used; approval of plans showing essential fabrication details; requirements for submerged arc welding procedure qualifications; acceptable arc welding electrodes; joint efficiency requirements for classes II and III welded pressure vessels; revised figures illustrating joint details; requirements for various types of welded joints, seal welding and intermittent welding; stress relieving requirements for class II welded pressure vessels; classes I and II welded piping connections; and slip-on flanges of class I welded piping. The proposed revisions in subpart 56.05, regarding tests and inspection, deal with new requirements for spot radiography of welded joints for class II welded pressure vessels designed with a factor of safety of 4. The changes proposed in part 56 are necessary to bring the regulations in closer agreement with American Welding Society standards, American Society of Mechanical Engineers' codes, Navy Department requirements, or American Bureau of Shipping rules.

ITEM VIII—INSTALLATIONS, TESTS, INSPECTIONS, REPAIRS, ETC.—MARINE ENGINEERING REGULATIONS (12/51)

It is proposed to revise the requirements regarding installations, tests, inspections, repairs, etc., in the Marine Engineering Regulations and Material Specifications as 46 CFR Part 57, by removing from the regulations certain sections containing instructions to marine inspectors and to revise other requirements to agree with procedures presently followed in repairing, installing, testing and inspecting certain types of marine installations. The proposals will bring up to date the method for determining the proportional limit of pressure parts to agree with the current American Society of Mechanical Engineers' codes. The formula for calculating the maximum allowable pressure of the weakest part of the structure under stress has been revised by the substitution of the maximum allowable stress for the average tensile stress which is necessary when the pressure part is subject to temperatures exceeding 650° F. for ferrous materials. The specification for fusible plugs for boilers has been revised and designated as subpart 162.014 and will be transferred to part 162 in subchapter Q—Specifications. In addition new requirements for fusible plugs in small fire tube boilers have been added. The specification for fusible plugs will not be published in the Marine Engineering Regulations since these requirements apply primarily to the manufacturing of this equipment.

ITEM IX—STEERING APPARATUS—MARINE ENGINEERING REGULATIONS (55/51)

At present requirements for steering apparatus are contained in over 14 different regulations. In order to eliminate conflicting requirements, as well as to clarify Coast Guard regulations, it is proposed to eliminate these requirements presently in effect and to place the revised regulations for steering apparatus in the Marine Engineering Regulations and Material Specifications as a new subpart 55.19 in 46 CFR Part 55, which already contains other requirements covering piping systems. Where necessary appropriate cross references will be published in the various groups of regulations. This proposal consolidates the present regulations covering steering apparatus now published in 46 CFR 32.25–30, 32.35–25, and 32.35–35, in subchapter D, Tank Vessel Regulations; section 46.40 in subchapter E—Load Line Regulations; sections 59.61, 59.62, 60 55, and 60.55a, in subchapter G—General Rules and Regulations for Vessel Inspection, Ocean and Coastwise; sections 76.55 and 76.56 in subchapter H—General Rules and Regulations for Vessel Inspection, Great Lakes; sections 94.54 and 94.55 in subchapter I—General Rules and Regulations for Vessel Inspection, Bays, Sounds, and Lakes Other Than the Great Lakes; and sections 113.46a and 113.47 in subchapter J—General Rules and Regulations for Vessel Inspection, Rivers. The proposed regulations for steering gear apparatus in the Marine Engineering Regulations revise the present requirements to agree with the American Bureau of Shipping rules. The petition from several manufacturers requesting changes in the regulations was also considered and incorporated into the proposed regulations. The present requirements for steering apparatus on tank barges in 46 CFR 32.35–35 will contain the proviso that the regulations in the Marine Engineering Regulations shall be met insofar as it is practical to do so. The proposed regulations for steering apparatus on tank vessels will be retroactive in effect to July 1, 1951, but it is felt that this action will not seriously affect new installations made since that date and is recommended primarily in order to maintain a continuity of general requirements applicable to tank vessels.

ITEM X—COMPRESSED GASES—DANGEROUS CARGO REGULATIONS (57/51)

It is proposed to completely revise the detailed regulations governing compressed gases in 46 CFR 146.24–1 to 146.24–100 of the Dangerous Cargo Regulations (CG 187). The proposed revision includes a number of new hazardous articles which have become commercially important and are now being shipped by water in increasing quantities. It is also proposed to allow a number of new containers for hazardous materials. These changes are being made so that the Coast Guard requirements will agree with the Interstate Commerce Commission's Regulations for similar materials insofar as practicable. The specific changes proposed are set forth in the agenda.

ITEM XI—POISONOUS ARTICLES—DANGEROUS CARGO REGULATIONS (56/51)

It is proposed to completely revise the detailed regulations pertaining to poisonous articles, in 46 CFR 146.25–1 to 146.25–100, inclusive, of the Dangerous Cargo Regulations (CG 187). The proposed revision includes new hazardous articles which have become commercially important and are now being shipped by water in increasing quantities and a number of new containers for hazardous materials will be authorized. These changes will re-

vise the Coast Guard requirements so that they will be in agreement with the Interstate Commerce Commission's Regulations insofar as practicable. To accomplish this it is proposed to amend various sections in the general regulations, shipper's requirements re packing, marking, labeling, and shipping papers and the detailed requirements set forth in table 146.25–100. The specific changes proposed are set forth in the agenda.

ITEM XII—EXPLOSIVES—DANGEROUS CARGO REGULATIONS (60/51)

It is proposed to completely revise the detailed regulations governing explosives in 46 CFR 146.20–1 to 146.20–100, inclusive, in the Dangerous Cargo Regulations (CG 187). This revision will include a number of new explosives which have become commercially important and are now being shipped by water in increasing quantities. A number of new containers for these articles will also be authorized. New general regulations are proposed which will define an explosive, state type of prohibited or not permitted explosives in water transportation, acceptable explosives for water transportation, and types of class A explosives, as well as revised general requirements regarding classes B and C explosives. These revisions are in agreement with the Interstate Commerce Commission's Regulations for such articles insofar as practicable. The specific changes and new requirements proposed are set forth in detail in the agenda.

ITEM XIII—MECHANICAL DISENGAGING APPARATUS, LIFEBOAT—SPECIFICATIONS (61/51)

It is proposed to revise the specification for lifeboat mechanical disengaging apparatus in 46 CFR Subpart 160.033 of the specifications for lifesaving equipment by amending 46 CFR 160.033–2 (c) to agree with the present requirements set forth in 46 CFR 59.68 and 60.61 which do not permit the replacement of releasing gear with other than the Rottmer type on ocean and coastwise vessels over 3,000 gross tons. In order to insure that subsequent releasing gears will maintain a factor of safety at least equivalent to that provided in the first gear tested, it is also proposed to require affidavits from the manufacturer relative to the physical and chemical properties of the materials used as a new paragraph 46 CFR 160.033–3 (f). In order that the operating test load for initial approval of the mechanical disengaging apparatus will not be less than the load used in the shipboard installation test as set forth in 46 CFR 59.3a, 60.21a, 76.15a, and 94.14a, in the General Rules and Regulations for Vessel Inspection, it is proposed to revise the requirement in 46 CFR 160.033–4 (c) (1) by increasing the test load to an amount equivalent to the weight of a fully loaded lifeboat plus 10 percent. The detailed changes are set forth in the agenda.

ITEM XIV—LIFE PRESERVERS OR OTHER LIFESAVING DEVICES (63/51)

As a result of the public hearing held 20 September 1950, regarding children's life preservers on motorboats and motor vessels, the regulations were revised by amending 46 CFR 25.4–1 (a), 26.2–1 and 27.2–1 in the Motorboat Regulations and 46 CFR 113.44a in the General Rules and Regulations for Vessel Inspection, Rivers, was added so that motorboats and motor vessels carrying passengers for hire have to be provided with an approved life preserver for each person on board and with an additional number of approved life preservers suitable for children equal to at least 10 percent of the total number of persons carried, and these requirements became effective 17 February 1951. Recently it has come to the attention of the Coast Guard that certain motor propelled ferryboats were not equipped with children's life preservers because 46 CFR 117.4 in the General Rules and Regulations for Vessel Inspection, Rivers (CG 185) does not mention children's life preservers. Accordingly, it is proposed to amend 46 CFR 117.4 (a) to require children's life preservers on motor propelled river ferry vessels so that no possible error in the intent of the regulations may be made. The proposed change is set forth in detail in the agenda.

INSTRUCTIONS FOR SUBMISSION OF COMMENTS

Comments on the proposed regulations contained in the agenda are invited. All persons desiring to comment shall submit comments in writing on or before 14 September 1951 and shall include data and views as to why the regulations should not be promulgated, or if changes are desired therein, the suggested rewording with reasons therefor. In order to insure thorough consideration of comments and to facilitate checking and recording, it is essential that each comment regarding a proposed regulation shall be submitted on the blank forms inclosed with the agenda, or if additional forms are needed, the style and arrangement shall be the same as shown on the form. It is necessary that each suggested rewording of a proposed section of a regulation be submitted on a separate sheet showing the specific item and page number, section number, the proposed change, the reason or basis (if any), and the name, business firm or organization (if any), and the address of the submitter.

A LIBRARY IS RECOMMENDED

The following list of publications is recommended reading and should be in the library of every owner and operator of waterfront facilities and vessels. They may be purchased from the addresses given.

	Title of pamphlet	Source	Cost
1	Principles of Plant Protection	Department of Defense	Free.
2	Rules for Handling Dangerous Cargo at Waterfront Facilities.	American Association of Port Authorities.	20 cents.
3	Operation of Marine Terminals	NFPA [1] (No. 307)	25 cents.
4	Employee Organization for Fire Safety	NFPA	25 cents.
5	Security of Port Facilities and Ships in Harbor	NFPA	25 cents.
6	Fire Protection of Vessels Under Construction and Repair.	NFPA	15 cents.
7	Retail Lumber and Lumber Storage Yards	NFPA	15 cents.
8	Petroleum Wharves	NFPA	10 cents.
9	Common Hazardous Chemicals	NFPA	50 cents.
10	Flammable Liquids Fire Codes, vol. 1	NFPA	$3.50.
11	Causes and Prevention of Cotton Fires	NFPA	Free.
12	Recent Port and Ship Fires and Explosions	NFPA	$1.50
13	Texas City Disaster	NFPA	$1.50.
14	Recent Significant Marine and Port Fires.	NFPA	$1.50.
15	Protection of Piers and Wharves	No. 87, Board of Fire Underwriters [2]	Free.
16	Storage and Handling of Combustible Fibers	Board of Fire Underwriters [2]	$1.00.
17	Dangerous Cargo Regulations CG 187	Government Printing Office	$1.50.
18	Tank Vessel Regulations USCG	U. S. Coast Guard	Free.
19	Minimum Plant and Property Protection Plan	LACD & D. Corps, room 102, City Hall, Los Angeles.	Free.
20	Pacific Coast Marine Safety Code	Pacific Maritime Association	Free.
21	Regulations Governing Los Angeles Harbor, Tariff No. 3.	Los Angeles Harbor Department	Free.

[1] National Fire Protection Association, 60 Batterymarch St., Boston, Mass.
[2] Board of Fire Underwriters, 85 John St., New York City.

DEVELOPMENT OF XRA BUOYS

Basic concepts:

In the early part of 1948 Headquarters, in response to a request received by the Ninth District from the Navigation Committee of the Lake Carriers' Association, approved a plan to replace a number of smaller can and nun buoys on the Great Lakes with first-class Standard buoys of the same types to improve radar response of buoys. Results were disappointing, due to the fact that the response from these larger targets proved to be even less than from the smaller ones because of the contours of the particular class of buoys used.

Increasing acceptance of radar by shipping interests made a general improvement in radar response from buoys desirable. Two basic concepts to accomplish this improvement were considered. Concept (1) is based on the plan of adding reflectors to present Standard buoys without altering the design of the structure. Concept (2) proposes changing the design of lighted and unlighted buoys so that the structural elements of the buoy are arranged to give radar response as well as to fulfill their structural function. As a result of the "additive" concept (1), the type "B" corner reflector was developed, and as a result of the "design" concept (2), the "XRA" type buoy is being developed.

FIGURE 1.—Lighted whistle buoy with nest of eight Type "B" radar reflectors.

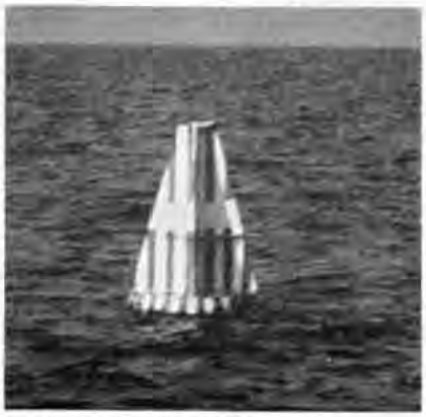

FIGURE 2.—"XRA" Type nun buoy.

TYPE "B" BUOY RADAR REFLECTOR

A detailed description of the type "B" buoy radar reflector is not reprinted here because of space limitations. The required supporting framework and number of reflectors necessary to cover 360° of the horizon, which varies from four to eight according to the size of the buoy, can be added without seriously affecting the flotation or stability of the buoy. (See fig. 1.) The additional cost of a single component of the type "B" reflector is approximately $50, with the installed cost of an eight-reflector unit about $600. This type of reflector is available to improve radar response of any existing buoy and, as later shown, of the XRA buoy. However, it is an item of appreciable additional cost which fact in itself tends to limit its widespread utilization.

Tests which were carried out by the Coast Guard Electronics Engineering Station at Wildwood, N. J., and the Field Testing and Development Unit indicated that the type "B" reflector-equipped buoys presented consistently better targets than the buoys not so equipped, this improvement approximating 12 decibels in the 3-cm. frequencies. Since the maximum range at which one can expect to detect a radar target is inversely proportional to the fourth power of the reflected energy, it is reasonable to expect that the maximum range of a buoy without the reflectors can be multiplied by a factor of two after the reflectors have been added.

XRA BUOYS

It was believed that the same distinctive rectangular and triangular silhouettes of the Standard can and nun buoys could be retained and yet alter the design so that the visible portions of the buoys would be formed by two vertical planes intersecting each other at right angles, thereby giving better radar reflecting characteristics than the regular buoys. In February 1949 the Civil Engineering Division at Headquarters drew up designs of a can and nun buoy based on these concepts (now designated the "XRA" type, figs. 2 and 3) and one of each was fabricated at the yard. Shortly after completion they were planted off the New Jersey coast in the vicinity of Five Fathom Bank along with standard buoys of the same size and type for the purpose of collecting comparative data.

Many tests were run and evaluated on the radar reflecting qualities of these buoys, but perhaps the most interesting were those made by personnel from the Electronics Engineering Station, Wildwood, N. J., and the Field Testing and Development Unit on board the test vessel *Cuyahoga* during the month of September 1949.

The radar used was an RCA model CR–101, which operates on a frequency of 3 cm. To record the reflecting qualities from the different buoys, a 4 x 5 speed Graphic camera with an f5.6 lens was used to photograph the radar scope. Exposures were timed so as to include one complete antenna sweep, successive exposures being made on every fifth sweep. About 600 observations were taken during the several approaches to the buoys, with different range scales, gain and suppressor settings and under varying wind, sea, and atmospheric conditions. The photographs showed that the XRA buoys gave consistently much better indications on the scope than equivalent type conventional buoys. Subsequent data collected by the Electronics Engineering Station, after the buoys were moved in nearer to the coast, bore this out.

As a result of the encouraging results from these tests 10 each XRA nun and can buoys were fabricated at the YARD and shipped to the Ninth Coast Guard District where they are to be placed in service for the 1951 navigation season. One of the facets of this particular phase of the project

FIGURE 3.—"XRA Type can buoy.

is to obtain the reaction of shipping interests with respect to the visual aspects of these buoys.

Additional information gathered from the aforementioned tests and experience obtained while working on and with the XRA buoys follows:

(a) Preliminary estimates of the cost on XRA buoys indicate that an unlighted XRA buoy will cost 10 to 15 percent less than the present equivalent Standard type. Design of lighted XRA types has not progressed far enough for cost estimates, but basic concept is to produce improved radar reflection without increase of cost.

(b) At distances of one-half mile and up it is often impossible to distinguish visually between the present Standard buoy and the XRA buoy of equivalent type.

(c) Due to the requirement for orange and white vertical stripes for test buoys it was difficult to make exact comparisons of the relative visibility of XRA and conventional buoys. Under daylight conditions the average visual detection range of XRA first-class Standard buoys was of the order of 2 miles. The average range of first-class Standard buoys was about 10 percent greater. This difference is due to the fact that while the silhouette of a Standard buoy remains the same size regardless of the rotation of the buoy, the silhouette of an XRA buoy decreases to a minimum of 71 percent of the Standard buoy silhouette when the vertical planes are at an angle of 45° with line of sight. This slight decrease in visual range does not appear to be operationally important. If necessary, it can be compensated for by slightly increasing the diameter of the XRA buoy so that its average silhouette is the same as that of equivalent Standard buoys.

(d) At night using a searchlight to locate the buoys, the average visibility of XRA design should be somewhat better than Standard designs. Night tests conducted with Scotchlite applied in equal height horizontal band to both XRA and equivalent Standard buoys indicated that XRA gave about 10 percent better visual detection range than Standard design.

(e) Horizontal planes used in XRA design serve both as stiffeners and as an integral part of the reflector. This horizontal plane may reduce the maintenance required as a result of bird deposits since they serve to reduce bird deposits on the vertical surfaces, which are the primary surfaces used by the mariner in seeing the buoy.

(f) To date no problem in handling these buoys has been encountered. It is expected, however, that refinements in design to facilitate handling will arise as a result of service experience.

(g) Comparative radar response of XRA buoys. Results given here were obtained with a 3-cm. radar. With 10-cm. radar, the improvement is of a lower order of magnitude, but in no case has the XRA principle failed to result in some degree of improvement of radar response. When first-class Standard XRA buoys were compared with first-class Standard buoys at a range of 2 miles, the XRA buoys produced visible pips on 94 percent of the scans while the Standard buoys were visible only 11 percent of the times the radar beam crossed the target. A first-class Standard XRA nun at a range of 2.7 miles produced visible pips 62 percent of the antenna revolutions. A Standard 9X38 lighted whistle buoy at the same 9X38 lighted whistle buoy produced visible pips at the same range on only 25 percent of the sweeps. A type "B" reflector fitted to 9X38 buoy under the same conditions produced useful pips 99 percent of the sweeps.

Dual Purpose XRA Buoys:

Another type of XRA buoy which is undergoing service tests in Chesapeake Bay as this edition of the Engineer's Digest goes to press is the so-called dual purpose XRA buoy. Briefly, this design incorporates a nun and can at opposite ends of a single buoy using the XRA principle with a ballast weight which can be shifted and secured in the end opposite whichever type of buoy it is desired to use. As this buoy is to be fabricated of light material—since a lightweight, more or less expendable buoy is visualized—the pertinent question to be determined is whether, because of rough handling, the angular relationship of the XRA planes will be distorted sufficiently so that radar reflection is reduced to a point where it is of the same order as the regular buoy.

XRA Lighted Buoys.

Two XRA type buoy structures are also being fabricated at the yard at the present time which, when placed on appropriate buoy bodies, will form two 9X38 WE buoys (fig. 4). Outstanding advantages are simplicity of design of its superstructure, with the vertical intersecting surfaces supporting the light, and increased radar ranges.

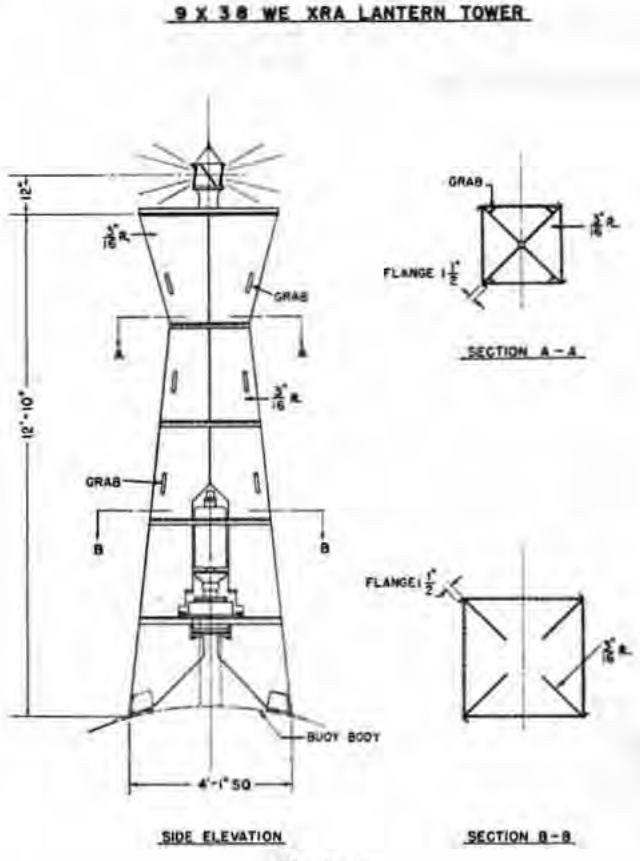

FIGURE 4.

Summary:

Type "B" radar reflectors are operational today and serve the basic function of improving the radar response of existing buoys. Since they are relatively costly their use is limited to situations where greatest practical improvement in radar response is economically justified.

XRA buoys are a design employing the concept of designing the structural components of the above-water portion of a buoy to serve effectively as both day mark and radar target. While existing buoys can be converted to XRA design it will usually cost no more to employ a type "B" reflector. The XRA concept is aimed at improving the radar response of all newly constructed buoys without increasing the cost, thereby permitting a gradual improvement in radar response of the whole United States buoyage system.

If and when XRA buoys are adopted, the type "B" reflector will still be a useful device to increase the response of any buoy including XRA design in cases where the cost of maximum radar response is justified.

Foresight will provide that "ounce of prevention"

HAP HAZARD

Accidents never take a vacation

THE BUSINESS END OF A LITTLE MATCH MAY BE THE END OF A BIG BUSINESS.

Observations of the Old Mariner

PREVENT THE LITTLE ACCIDENTS AND THE BIG ONES WILL TAKE CARE OF THEMSELVES

A man noticed that a light bulb was out. He reached up and batted the vapor globe with his hand. The globe broke and cut a finger almost off.

It is true that sometimes a broken filament can be joined by vibration. If the broken ends brush against each other while the current is on the resulting arc may weld them together. It will work with a gentle tapping on the bulb itself, if it will work at all. A slap at the vapor globe does no good because the fixture is usually too firmly secured to be jarred very much.

Brute force and cussedness won't help and will probably produce only damage and injury. Better just relax and put in a new bulb.

TAKING CHANCES MAY TAKE YOUR LIFE

Even rattlesnakes give warning—Accidents don't

DOCUMENTATION, TRANSFER OR CHARTER OF VESSELS

The Federal Maritime Board of the Maritime Administration, Department of Commerce recently issued the second revision to General Order No. 58, relating to the transfer of control of vessels to aliens contrary to the interest of the national defense of the United States.

The revised regulation, published in the Federal Register on June 16, 1951, reads as follows:

SEC. 221.5 *Approval of certain sales, mortgages, leases, charters, deliveries, or transfers of vessels of less than 40 feet over-all length and less than 50 horsepower to aliens or agreements therefor; of transfer to foreign registry and flag; of contracts for construction of such vessels for aliens; of the transfer of control of corporations owing such vessels; and of the departure of such vessels from United States ports before United States documentation.* Subject to the exceptions stated in section 221.6 hereof, the Department of Commerce, Maritime Administration, hereby grants the approval required by section 37 of the Shipping Act, 1916, as amended (40 Stat. 901; 46 U. S. C. 835), to the following transactions:

(*a*) The sale, mortgage, lease, charter, delivery, or transfer, and agreement for the sale, mortgage, lease, charter, delivery or transfer to any person not a citizen of the United States of any vessel or interest therein, owned in whole or in part by any person a citizen of the United States or by a corporation organized under the laws of the United States or of any State, Territory, District, or possession thereof, which vessel is under forty (40) feet over-all length and less than 50 horsepower and is not documented under the laws of the United States or the last documentation of which was not under the laws of the United States;

(*b*) The transfer to, or placing under, any foreign registry or flag of any such vessel;

(*c*) The entrance into any contract, agreement, or understanding to construct a vessel of less than 40 feet over-all length and less than 50 horsepower within the United States for, or to be delivered to, a person not a citizen of the United States;

(*d*) The making of agreements or the effecting of understandings whereby there is vested in or for the benefit of any person not a citizen of the United States the controlling interest or the majority of the voting power in a corporation which is organized under the laws of the United States or any State, Territory, Dis-

trict, or possession thereof and which owns no vessel of 40 feet or more over-all length or of more than 50 horsepower and which transaction is not otherwise subject to the provisions of section 37 of the Shipping Act of 1916, as amended; and

(e) The departure from any port of the United States of any vessel of less than 40 feet over-all length and less than 50 horsepower which was constructed in whole or in part within the United States, has not been documented under the laws of the United States, and has never cleared for any foreign port.

As used in this section, the term "over-all length" shall mean the length of the vessel as measured from end to end over the deck excluding sheer; the term "horsepower" shall mean manufacturer's rated horsepower; and the term "documented" shall mean registered, enrolled, or licensed.

SEC. 221.6 *Exceptions to approvals granted by section 221.5.*—Approval granted by section 221.5 shall not apply to:

(a) Demise or bare-boat charters;

(b) Any transaction involving the transfer of the ownership, possession, or control of any vessel, or of any interest therein (including charters), to any person (not a citizen of the United States) residing in the Soviet Union, Latvia, Lithuania, Estonia, Poland, Czechoslovakia, Hungary, Rumania, Bulgaria, Albania, North Korea, the Soviet Zone of Germany, Manchuria, or Communist China;

(c) Any transaction involving the transfer of the ownership, possession, or control of any vessel, or of any interest therein (including charters), to nationals of, or citizens of the Soviet Union, Latvia, Lithuania, Estonia, Poland, Czechoslovakia, Hungary, Rumania, Bulgaria, Albania, North Korea, the Soviet Zone of Germany, Manchuria, or Communist China;

(d) The transfer of any vessel to the registry of or the placing of any vessel under the flag of the Soviet Union, Latvia, Lithuania, Estonia, Poland, Czechoslovakia, Hungary, Rumania, Bulgaria, Albania, North Korea, the Soviet Zone of Germany, Manchuria, or Communist China.

Effective Date: The effective date of this order shall be the date of publication in the Federal Register, which is June 16, 1951.

COVER PICTURE

Built for the U. S. Lines at the Newport News Shipbuilding & Drydock Co., the S. S. *United States* passenger vessel is 990 feet long.

Emphasizing the dual purpose in the Nation's merchant marine this mighty ship was conceived, planned, and constructed basically and primarily as a naval transport, for immediate use as a troopship if war must come.

The ship's capacity is 2,000 passengers and a crew of 1,000 but she could carry 14,000 troops in the event of war.

It will be 10 months before the "queen" begins her maiden voyage.

Accidents involve people and they can involve YOU! Be wise—Be CAREFUL.

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by Customs ports for the quarter ending 30 June, 1951. Generally speaking, undocumented vessels are those machinery-propelled vessels of less than five net tons engaged in trade which by reason of tonnage are exempt from documentation. They are also those motorboats and motor vessels of five net tons and over used exclusively for pleasure purposes which are not documented as yachts or those of less than five net tons which by reason of tonnage, are not entitled to be so documented.

Coast Guard district	Customs port	
1 (Boston)	(4) Boston	16,502
	(1) Portland, Maine	11,500
	(2) St. Albans	2,910
	(5) Providence	4,570
	Total	35,482
2 (St. Louis)	(45) St. Louis	17,227
	(12) Pittsburgh	2,472
	(34) Pembina	89
	(35) Minneapolis	6,515
	(40) Indianapolis	4,345
	(42) Louisville	3,963
	(43) Memphis (part)	8,067
	(46) Omaha (part)	503
	(47) Denver	6
	Total	43,187
3 (New York)	(10) New York	49,083
	(6) Bridgeport	9,127
	(11) Philadelphia	21,054
	Total	79,264
5 (Norfolk)	(14) Norfolk	16,475
	(13) Baltimore	23,581
	(15) Wilmington, N. C	8,688
	Total	48,744
7 (Miami)	(18) Tampa (part)	23,240
	(16) Charleston	1,949
	(17) Savannah	3,386
	(49) San Juan	469
	(51) St. Thomas	93
	Total	29,137
8 (New Orleans)	(20) New Orleans	20,222
	(18) Tampa (part)	801
	(19) Mobile	8,329
	(21) Port Arthur	4,039
	(22) Galveston	10,788
	(23) Laredo	2,124
	(24) El Paso	6
	(43) Memphis (part)	76
	Total	46,385
9 (Cleveland)	(41) Cleveland	14,435
	(7) Ogdensburg	6,517
	(8) Rochester	8,848
	(9) Buffalo	8,335
	(36) Duluth	4,228
	(37) Milwaukee	12,601
	(38) Detroit	29,410
	(39) Chicago	8,594
	Total	92,968
11 (Long Beach)	(27) Los Angeles	9,059
	(25) San Diego	1,744
	(26) Nogales	110
	Total	10,913
12 (San Francisco)	(28) San Francisco	20,759
	Total	20,759
13 (Seattle)	(30) Seattle	33,168
	(29) Portland, Oregon	9,886
	(33) Great Falls	1,055
	Total	44,109
14 (Honolulu)	(32) Honolulu	3,521
	Total	3,521
17 (Juneau)	(31) Juneau	7,066
	Total	7,066
	Grand total	461,535

"They Said It..."

The American Legion is not primarily interested in whether the American maritime industry makes 5, 10, or no percentage of profit. However, its members who have been forced to travel across submarine-infested waters cramped in the holds of dirty, hastily converted rust buckets, who have had to eat and sleep in relays for lack of proper accommodations, cannot be blamed for looking upon the transportation which gets him to the wars and—God willing—gets him home again with coldly realistic eyes.

PAINTING BOTTOMS OF WOODEN BOATS WITH ANTIFOULING VINYL

The Department of Defense has recently issued military specifications for Vinyl-Red, Antifouling Paint for bottom painting of wooden boats. The following description of this paint (Navy Formula No. 121) is excerpted below for those who may have an interest, particularly in the pleasure boat field.

Paint, antifouling vinyl should consist of ingredients conforming to the applicable specifications in the proportions shown in the table below. The formula is given slightly in excess of 100 gallons to allow for normal manufacturing loss.

NAVY FORMULA NO. 121

Ingredients	Pounds per 100 gallons
Cuprous oxide (type I of Spec. MIL-C-15180)	800
Resin (grade WW of Spec. LLL-R-626)	80
Vinyl resin [1]	80
Tricresyl phosphate (Spec. TT-T-656)	30
Methyl isobutyl ketone [2]	275
Xylene (Spec. TT-X-916)	185

[1] The resin shall be a vinyl chloride-vinyl acetate copolymer. It shall contain 85 to 88 percent vinyl chloride and 12 to 15 percent vinyl acetate. The resin shall have a specific gravity of 1.35 to 1.37. Material shall be furnished as a powdered white solid, not less than 98 percent of which shall pass through a No. 20 sieve, conforming to Specification RR-S-366.

[2] Methyl isobutyl ketone shall have a specific gravity of 0.799 to 0.804 at 20/20° C., shall entirely distill within a 4.0° C. range which shall include 116° C. and shall be at least 95 percent pure.

The Component raw materials of the paint, should be mixed and ground as required to produce a product which is uniform, stable, free from grit, and entirely suitable for the purpose intended. The product should be capable of being broken up with a paddle to a smooth, uniform consistency and should not liver, thicken, curdle, gel, nor show any other objectionable properties; its odor, normal for the volatiles permitted; and its color characteristic of the pigment used. There should be no evidence of incompatibility of any of the ingredients of the paint and should show a good adhesion. After a dry period of 24 hours, the panel should be smooth and uniform and should show no evidence of cracking, alligatoring, or other defects.

Painting the bottoms of wooden boats will result in higher costs for the first hauling due to increased labor and higher paint costs. However, substanial savings will accumulate from reduced frequency of hauling, shorter time out of water, and reduced labor required to clean bottom for subsequent repaintings. It is estimated that the cost per boat will be slightly lower for first year, and give 25 percent reduction in costs in subsequent years.

Two kinds of fouling are encountered; that due to marine animal life such as barnacles and marine borers, and that due to vegetation such as grass and some slime and scum. Antifouling paints which produce copper ions are effective against animal life, but are relatively ineffective on grasses. Grasses can be controlled by incorporating mercury compounds in the paint, but mercury compounds have been shown to react with the grass and bronze fastenings of the boat. Since the vinyl paint film is much tougher than most antifouling paints, the vegetative growth can in most cases be removed by a bristle brush similar to a deck scrubber without damage to the paint film.

Conversion From Other Materials to Vinyl Bottom Paint

(a) Preparation of bottom.—Remove all existing bottom paint to bare wood. Examine underwater body carefully for evidence of marine borer attack. If found, localities or spots of entrance shall be treated by burning with torch or replacing destroyed material as necessary. Boat should be allowed to dry at least 24 hours prior to application of bottom paint.

Preparation of paint for use.—Due to high percentage of heavy cuprous oxide, this paint will require thorough and vigorous stirring and "boxing" before application. For first coat on initial application, add 1 pint of thinner (toluene and methyl isobutyl ketone) per gallon of paint.

Paint application.—On initial application, paint is to be brush applied. Because of rapid drying and tendency of each coat to soften previous coat, some difficulties may be encountered if an attempt is made to brush paint out as much as conventional paints. Three coats are to be applied. Paint may be applied at any air temperature above 5 degrees F. At 70° F. each coat should dry hard in 45 minutes. Lower temperatures will require longer drying time between coats. At low temperatures, paint should be warmed by storing in a room at a temperature of about 70° for 24 hours.

Precautions.—The thinner and solvents used in this paint are inflammable as well as highly volatile. Particular care should be exercised to exclude sparks, open flames and smoking from area where paint is stored, mixed and in the immediate area around the boat during application. Since all antifouling paints contain toxic materials, special attention should be given to personal cleanliness.

Repainting Bottoms Previously Coated With Vinyl Antifouling Paint

Principal growth which will normally be present is grass and algae. These should be removed by vigorous scrubbing with stiff fiber bristle brush such as a deck scrubber. Remove all oil and grease. Since vinyls are very resistant to alkalies and oils, strong nonabrasive detergents may be used to easily remove grease and oil spots. Kerosene or thinner, mineral spirits may be used to scrub bottom with soap and water. After rinsing and allowing to dry thoroughly, wire brush any areas where paint appears to be peeling, blistering, or loosely adhering. Sand all such rough spots smooth. Apply one coat of paint thinned slightly as for initial coat to all spots where paint is removed. Examine bottom for marine borers. Touch up areas treated for borers. Apply three brush coats or four spray coats of vinyl antifouling paint.

Touch up.—The vinyl paint furnished has an effective antifouling life of over 1 year, and insofar as paint is concerned, an annual bottom painting would suffice if paint film remained unbroken. Touch up procedure consists of sanding the bare spots smooth and applying two brush coats of vinyl paint over such areas. These areas should be as dry as practicable prior to paint application. The basic objective is to get two coats of vinyl on bare areas without delaying or interfering with other work. Since paint abrasion usually is most pronounced in vicinity of bow and along waterline, it may be practicable to accomplish touch up in these areas by beaching and painting at low tide.

Painting schedule.—All wooden vessels and wooden boats regularly kept afloat on fresh water should have their underwater bodies repainted with three brush coats, or four spray coats of paint, antifouling vinyl, once every 2 years; while those wooden vessels and boats regularly kept afloat on salt water should have their underwater bodies repainted with three brush coats or four spray coats of paint, antifouling vinyl, once

each year. Whenever a boat is hauled for any reason, bare and abraded areas shall be touched up with two coats of vinyl antifouling paint. Vessels or boats with wood hulls completely protected by metal sheathing other than copper should be given same paint treatment as steel vessels. The use of zincs reduces the effectiveness of antifouling paints and causes accelerated fouling of bronze and copper materials.

LESSONS FROM CASUALTIES

VALUE OF RADAR IN AVOIDING SHIP COLLISIONS

The annual report of the number of ship collisions and the conditions under which they occurred presents an interesting study of the value of radar aboard ships as compared to those without such equipment.

The report covers the fiscal year ending June 30, 1951. Of the 182 collisions that occurred on *all waters*, 90 were involved where one or both vessels were equipped with radar. It is noteworthy to observe that only 9 collisions occurred where visibility was poor and both ships were equipped with radar.

Of 140 collision accidents emphasis is placed on the fact that at the time of the collisions the visibility was fair to excellent and radar *was not* a factor. On the other hand in 42 collision accidents where visibility was poor to bad, radar *was* a factor.

During the fiscal year two tragic collisions are recalled at this time. On August 25, 1950, off San Francisco Bay investigation revealed that in a dense fog the S. S. *Mary Luckenbach* collided with the U. S. S. *Benevolence* (a Navy hospital ship), the latter overturned and sank with a tragic loss of 23 lives. Both vessels were radar equipped, but only the U. S. S. *Benevolence* had hers in operation. The second collision and the worst to occur was more than 20 miles offshore in the Gulf of Mexico between the tankers S. S. *Esso Suez* and the S. S. *Greensboro*, in which there were 39 lives lost. Both vessels had their radars in operation during a dense fog in which their speed was excessive as revealed in the investigation.

The investigation further revealed that the majority of the accidents were directly due to human failures. Poor evaluation of information given by the radar is probably due to inexperience in operation and the failure to plot the position of the vessels from this information. There is no doubt that radar properly used, and the vessel adhering to the Pilot Rules, contribute greatly toward improving safety at sea.

A close study of the following tables involving all collisions reported and investigated during the last fiscal year is recommended.

MOPE and DOPE

"Shall we paint that SAFETY FIRST sign now, Sir?"

RADAR—COLLISIONS

VESSELS OVER 100 GROSS TONS

1951 FISCAL YEAR

LOCATION AS TO CLASSIFIED WATERS:

	Name of vessel	Gross tons	Class	Date	Title	Location	Weather—sea
1	S. S. *Celestial* M. V. *Brazil Mar* (Brazil)	6,111 185	Freighter Freighter	17 Aug. 1950	2106 (night)	23°07′ S., 43°37′ W.	Wind easterly, force 3, sea smooth.
2	M. V. *Masen* (Sweden?) M. V. *Weymouth*	Unknown 170	Unknown Fishing	28 Aug. 1950	0900 (day)	42°06′ N., 66°50′ W.	Wind southerly, force 2, sea calm, foggy.
3	S. S. *E. J. Henry* M. V. *Fernland* (Norway)	11,615 5,564	Tanker Freighter	2 Oct. 1950	2150 (night)	13 miles northeast Winter Quarter, L. V.	Wind easterly, force 3, slight sea.
4	S. S. *Steel Inventor* S. S. *Astra* (Denmark)	5,689 2,709	Freighter Freighter	30 Mar. 1951	0617 (day)	20 miles southeast of Atlantic City, N. J.	Wind southeast, force 4, moderate sea.
5	S. S. *Esso Suez* S. S. *Esso Greensboro*	17,061 10,195	Tanker Tanker	20 Apr. 1951	0422 (night)	26°17.5′ N., 91°25.5′ W., in the Gulf of Mexico	Wind northerly, force 3, small sea, foggy.

LOCATION AS TO CLASSIFIED WATERS: COASTWISE

6	S. S. *Santa Juana* S. S. *Peach Tree State*	6,507 7,176	Freighter Freighter	3 July 1950	0822 (day)	20 miles southwest of Newport, Oreg.	Wind Northerly, force 3, small sea.
7	M. V. *American Girl* M. V. *Anna M*	261 259	Fishing Fishing	8 July 1950	0802 (day)	Fishing Banks, Nicaragua	Wind ENE, force 3, moderate easterly swell.
8	M. V. *Boy* and Tow M. V. *J. R. Guyton*	Unknown 146	Tug Tug	11 July 1950	0050 (night)	East Point, Harbor Island, Tex.	Wind SE., force 2, sea smooth, flood tide.
9	S. S. *Anniston City* M. V. *Gail*	5,686 11	Freighter Fishing	23 July 1950	1953 (day)	12 miles West of Gray's Harbor, Wash.	Wind NW., force 2, moderate swell.
10	S. S. *Mary Luckenbach* M. S. T. S. *Benevolence*	8,162 15,450	Freighter Hospital	25 Aug. 1950	1655 (day)	Entrance, San Francisco Bay	Wind NE., force 2, sea smooth, foggy.
11	S. S. *Eugene Lykes* M. B. *No. 296* (Yugoslavia)	8,190 Yugoslavia	Freighter Government	29 Aug. 1950	0146 (night)	3 miles off Rovigno, Istrian Coast, Yugoslavia.	Wind southerly, force 1, slight sea.
12	S. S. *James W. Cannon* M. V. *Peter G*	7,200 (LST)	Freighter Freighter	17–23 Sept. 1950.	Various	Cape Lisborne, Alaska	Various, heavy seas prevailing.
13	S. S. *Florence Luckenbach* M. V. *Lily* (Panama)	8,166 Unknown	Freighter Fishing	21 Sept. 1950	0134 (night)	7°36′ N, 79°54.5′ W.	Wind SW., force 2, smooth sea.
14	S. S. *Pelican State* M. V. *Erria* (Denmark)	7,613 8,766	Freighter Passenger	22 Oct. 1950	0715 (day)	3 miles south of Ambrose, L. V.	Wind and sea calm, dense fog.
15	S. S. *St. Augustine Victory* LST Q073 (Japan)	7,604 (LST)	Freighter Freighter	31 Oct. 1950	0645 (day)	Iwon Beach, East Coast Korea.	Heavy ground swell, clear.
16	S. S. *Helen Lykes* LST *Q089*	6,108 (LST)	Freighter Freighter	4 Nov. 1950	Throughout day.	Iwon Beach, East Coast Korea.	Wind SW., force 2, heavy swell.
17	M. V. *G-Man* S. S. *Overo* (Argentina)	22 7,607	Fishing Freighter	25 Nov. 1950	2015 (night)	13½ miles east of Aransas Pass, Tex.	Wind easterly, force 1, sea smooth.
18	S. S. *De Pauw Victory* *Ku Toku Maru* (Korea)	7,607 Unknown	Freighter Fishing	4 Jan. 1951	0320 (night)	Korea, East Coast	Wind N., force 3, small northerly swell.
19	M. V. *Peter Maersk* (Denmark) U. S. C. G. C. *Marion* and Tow	6,566 Public vessel	Freighter	1 Feb. 1951	0930 (day)	5 miles east of Cape Henry, Va.	Wind SE., force 2, sea smooth, foggy.
20	S. S. *Mormacmoon* S. S. *Chong Lee* (China)	7,939 Unknown	Freighter Freighter	15 Feb. 1951	0317 (night)	4.6 miles from Yokohama Breakwater Entrance.	Wind N., force 10, seas rough.
21	S. S. *Amtank* S. S. *Esso Richmond* (Panama)	14,151 11,344	Tanker Tanker	18 Feb. 1951	0109 (night)	4 miles, 144° from Overfalls, L. V.	Wind W., force 2, sea smooth, foggy.
22	S. S. *Bull Run* S. S. *Monrosa* (Italy)	10,195 7,178	Tanker Freighter	5 Mar. 1951	0241 (night)	Off Southwest Pass, Gulf of Mexico.	Wind Southerly, force 2, sea smooth.
23	S. S. *Nathaniel B. Palmer* U. S. N. *NB-1* (pilot boat)	7,210 Public vessel	Freighter	15 Mar. 1951	1658 (day)	Pearl Harbor, T. H., entrance	Wind SW., force 3, slight sea.
24	S. S. *George S. Long* M. V. *Cotis Du Nord*	7,210 4,003	Freighter Freighter	22 Apr. 1951	2110 (night)	Entrance, Delaware Bay	Wind easterly, force 3, sea choppy.

RADAR—COLLISIONS

VESSELS OVER 100 GROSS TONS

1951 FISCAL YEAR

OCEANS (MORE THAN 20 MILES OFF SHORE)

	Visibility	Speed (knots)	Radar equipped	Radar in operation	Pilot rules observed	Cause	Results
1	Good	15 9	No No		No No	No change of course signals, little effort to avoid collision.	No damage. Sank, total loss, 2 lives lost.
2	Bad	9 2	No No		No Yes	*Masen:* Immoderate speed in fog. No fog signals.	Hull starboard side holed. No damage.
3	Bad	13 15	Yes Yes	Yes Yes	No No	Both vessels: excessive speed in fog	Bow plates and frames, holed. Port quarter plates, frames damaged
4	Bad	5 3	No No		No No	Both vessels: excessive speed in fog	Bow damaged above waterline. Sank, total loss.
5	Bad	16 15	Yes Yes	Yes Yes	No No	Both vessels: excessive speed in fog	2 dead, collision and fire damage. 37 dead, estimated $2,000,000 damage.

(LESS THAN 20 MILES OFF SHORE)

6	Poor	11 No way on	No No		No Yes	*Santa Juana:* Immoderate speed in fog.	Starboard bow plates fractured. Sheer strake and deck indented.
7	Good	7 7	No No		No No	Privileged: Changed course Burdened: Held course—speed	Hull, port side, damaged. Bow damaged.
8	Good	5 Moored	No No		Yes Yes	Strong flood tide deflected *Boy's* tow	No damage. Hull plate indented, bent rudder.
9	Bad	4 4	No No		Yes No	No lookout on *Gail* other than helmsman.	No damage. Holed, frames broken, awash.
10	Bad	12 15	Yes Yes	No Yes	No No	Both vessels: Excessive speed in fog	Considerable bow damage. Sank, 23 persons lost.
11	Good	14 4	No Unknown	Unknown	Yes No	Motorboat without lights	No damage. Sank, 9 persons lost.
12	Fair	Anchored Moored	Yes No	No	Yes Yes	*Peter G*, loading alongside *Cannon* in heavy seas.	Rail and deckhouse damaged. Extent of damage unknown.
13	Good	12 8	Yes No	Yes	Yes No	*Lily:* Used no whistle signals on course change.	2 hull plates indented. Stem damaged.
14	Bad	5 2	Yes Yes	Yes Yes	Yes No	*Erria:* Sounding 2-blast fog signal with way upon her.	Bow damaged. Starboard side holed, engine room flooded.
15	Good	Anchored Moored	No Unknown	Unknown	Yes Yes	LST, loading alongside *Victory*, surging in heavy sea.	Indents in hull. Extent of damage unknown.
16	Good	Anchored Moored	No Unknown	Unknown	Yes Yes	LST, loading alongside *Lykes*, surging in heavy sea.	Indented plates. Extent of damage unknown.
17	Good	0 14	No Unknown	Unknown		*G-Man* rammed from behind, no determination as to fault or cause of collision.	Sank, total loss. Extent of damage unknown.
18	Good	10 No way on	No No		Yes No	No light showing on Korean fishing vessel.	No damage. Sank, 3 lives reported lost.
19	Poor	8 0	Unknown Yes	Unknown Yes	No Yes	*Peter Maersk* failed to keep clear of overtaken vessel.	No damage. Tow: Damaged hull and topsides.
20	Bad	Anchored Anchored	No Unknown	Unknown	Yes Yes	*Chong Lee* dragged anchor in heavy wind and sea.	Bow plates holed. Extent of damage unknown.
21	Bad	2 4	No Yes	Yes	Yes No	*Richmond* failed to stop engines on hearing fog signals.	Anchor carried away. Hull indented.
22	Bad	3 4	Yes No	Yes	No No	Failure of both vessels to proceed with caution in fog.	Bow plates indented. Hull and superstructure damaged.
23	Good	2 2	No No		Yes Yes	Error in judgement on part of Navy coxswain.	NB-1 fell under rake of *Palmer* and swamped.
24	Good	10 12	Yes Unknown	No Unknown	Yes No	*Colin Du Nord* crowded overtaken vessel.	Hull damage—indents. Do.

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LOCATION AS TO CLASSIFIED WATERS:

	Name of vessel	Gross tons	Class	Date	Title	Location	Weather—sea
25	M. V. *George Whitlock II* M. V. *Tydol*	988 1,257	Tanker Tanker	5 July 1950	0630 (day)	Long Island Sound, near Long Sand Shoal.	Wind easterly, force 2, sea smooth.
26	M. V. *Robert Eugene* M. V. *Trondanger* (Norway)	130 7,500	Freighter Freighter	7 July 1950	0027 (night)	1 mile northeast Pilot Point, Puget Sound.	Wind NE., force 2, no sea.
27	M. V. *Esso Delivery No. 13* M. B. *13R729*	1,224 Motorboat	Tanker Motorboat	8 July 1950	0135 (night)	Chesapeake Bay, 0.3 mile off Tolchester, Md.	Wind and sea calm.
28	M. B. *Eunice* M. V. *A. W. Higgins*	10 149	Motorboat Tug	17 Dec. 1950	0530 (night)	Tampa (Fla.) Bay	Wind northerly, force 2, small sea, hazy.
29	M. V. *Lucidor* *Navy Tug YTB 501*	3,810 Public vessel	Freighter	20 Jan. 1951	1950 (night)	Womens Bay, Kodiak, Alaska.	Wind NW, force 9, sea smooth.
30	S. S. *P. W. Sprague* S. S. *Wyoming*	6,028 10,198	Freighter Tanker	1 Feb. 1951	1512 (day)	3.5 miles, 336° from Overfalls, L. V.	Wind S, force 5, sea calm, flood tide.
31	M. V. *Ruth* and Tow U. S. S. *Chukawan No. 100*	275 Public vessel	Tug Public vessel	6 Feb. 1951	2205 (night)	Hampton Roads (Va.) Channel.	Wind SSE., force 3, clear, calm.
32	S. S. *Exanthia* S. S. *Elizabeth*	6,533 8,258	Freighter Freighter	16 Feb. 1951	0205 (night)	Miah Maull light, Delaware Bay.	Wind NE., force 3, clear, flood tide.
33	M. V. *Gov. Herbert R. O'Conor* M. V. *Del-Mar-Va*	937 106	Passenger Freighter	2 Mar. 1951		Off Sandy Point Light, Upper Chesapeake Bay, Md.	
34	S. S. *Santa Paula* S. S. *Wolverine State*	10,292 7,196	Tanker Freighter	5 Apr. 1951	0249 (night)	San Francisco Bay	Wind northerly, force 2, sea calm.

LOCATION AS TO CLASSIFIED

35	S. S. *Harry Coulby* M. V. *Vernon*	9,467 14	Freighter Fishing	5 Aug. 1950	0830 (day)	32 miles, 024°, light, Lake Superior from Point Au Sable.	Wind SW., force 2, no sea.
36	S. S. *Elton Hoyt II* S. S. *Enders M. Voorhees*	6,939 10,294	Freighter Freighter	24 Nov. 1950	1417 (day)	Straits of Mackinac	Wind SSW., force 5, moderate sea, snow.

LOCATION AS TO CLASSIFIED

37	S. S. *Melrose* S. S. *Sandcraft*	6,043 2,054	Freighter Dredge	2 July 1950	0151 (night)	Narrows, New York Harbor	Wind and sea calm, clear.
38	S. S. *John Hanson* S. S. *Durmitor* (Yugoslavia)	7,210 5,833	Freighter Freighter	9 July 1950	0430 (night)	Rijeka, Yugoslavia	Fine and clear, calm.
39	S. S. *Hawaiian Lumberman* U. S. N. *Tug YTB-189*	7,427 Public vessel	Freighter Public vessel	11 July 1950	1507 (day)	U. S. N. Supply Depot, Oakland, Calif.	Slight sea, wind NW., force 2.
40	U. S. S. *Medregal* (submarine) M. V. *Baltimore* *Barge No. 9*	Public vessel 10 Unknown	Tug Barge	19 July 1950	0115 (night)	Cooper River, Charleston, S. C.	Moderate wind and sea, calm, strong current.
41	S. S. *Arizona* M. V. *Lion* and Tow	7,606 218	Freighter Tug	20 July 1950	0640 (day)	Beacon 88, Hudson River, N. Y.	River calm, flood tide, wind NW., force 2.
42	S. S. *Louise Lykes* S. S. *Richard Walsh*	8,180 252	Freighter Tug	22 July 1950	0939 (day)	Mobile River, Mobile, Ala.	Wind and sea calm, clear.
43	M. V. *Coyne Sisters* and Tow M. V. *Cheyenne II* and Tow	105 84	Tug Tug	24 July 1950	0500 (night)	3.5 miles west of Baldwinsville, N. Y., State Barge Canal.	Wind and sea calm.
44	M. V. *Liberty Belle* S. S. *New York Central No. 2* and Tow.	892 215	Passenger Tug	26 July 1950	1435 (day)	North River, New York Harbor.	Wind NW., force 2, calm.
45	M. V. *Goliah* M. V. *Pomare*	177 601	Tug Freighter	28 July 1950	0505 (night)	Pier 66, Seattle, Wash.	Wind and sea calm.
46	M. V. *Hardy L. Roberts* and Tow M. V. *Bull Calf* and Tow	283 131	Tug Tug	do	0615 (day)	Mile 939.5, lower Mississippi River.	Wind and river calm, foggy.
47	M. V. *Bull Calf* and Tow M. V. *Fred W. Olcott* and Tow	131 Unknown	Tug Tug	do	0550 (day)	Mile 939.0 lower Mississippi River.	Wind and sea calm, foggy.
48	M. V. *Fred B. Dalzell* M. V. *Ventura*	194 22	Tug Passenger	31 July 1950	1640 (day)	East River, New York Harbor, N. Y.	Wind WSW., force 2, sea calm.
49	M. V. *Bayou Orleans* and Tow M. V. *Astral* and Tow	207 77	Tug Tug	do	0455 (night)	Mile 270.5, west of Harvey Locks, Harvey, La.	Wind SE., force 2, moderate current.
50	S. S. *Tillie Lykes* M. V. *Benson* (Liberia)	7,854 825	Freighter Freighter	1 Aug. 1950	1533 (day)	Brownsville (Tex.) Harbor	Wind SE., force 2, sea calm.

LAKES, BAYS, AND SOUNDS

	Visibility	Speed (knots)	Radar equipped	Radar in operation	Pilot rules observed	Cause	Results
25	Bad	4 Anchored	Yes No	No	Yes Yes	Effect of strong tidal current	No damage. Plates, frames, deck, indented.
26	Good	5 6	No No		No Yes	Confusion on *Eugene*, mate on watch unlicensed.	Damage to bulwarks and caulking. No damage.
27	Good	9 Anchored	Yes No	No	Yes No	Motorboat had out insufficient anchor line, improper lights.	No damage. Damaged beyond repair.
28	Poor	8 6	No No		No No	Confused by passing signals. Obscured running lights.	Bow planking and frames broken. No damage.
29	Good	Moored 5	Yes Yes	No No	Yes Yes	Wind parted mooring lines of *Lucidor*, YTB 401 assisting.	Side plates indented. No damage reported.
30	Bad	3 Anchored	Yes Yes	Yes Yes	Yes Yes	Crowded anchorage, strong flood tide.	Hull indented. Hull indented, deck buckled.
31	Good	4 Anchored	No Yes	No	No Yes	*Puth* failed to shorten hawser of tow	Tow damaged. No damage reported.
32	Good	13 16	No Yes	No	No No	Both vessels, failure to comply with art. 18, rule I.	Bow plates and frames damaged. Starboard No. 1 hold plates holed.
33	Bad		No No				Moderate damage. Sank without loss of life.
34	Good	15 11	No No		Yes No	*Wolverine State*, burdened, failed to give way.	Port quarter damaged. Bow plates, frames, damaged.

WATERS: GREAT LAKES

35	Good	10 0	Yes	No	Yes No	*Vernon:* Inexperienced hand at wheel	No damage. Total loss.
36	Bad	6 14	Yes Yes	Yes Yes	No No	No passing or danger signal. Did not reduce speed.	Stem: 29 shell plates, internals. Port side: 4 shell plates, internals.

WATERS: RIVERS

37	Good	7 9	No No		No No	Cross signals, action to avoid collision not in time.	Bow plates holed. Sank.
38	Good	4 Moored	No Unknown	Unknown	Yes Yes	*Hanson:* Engineer gave contrary engine direction.	No damage. Stern damaged by anchor.
39	Good	Moored 5	Yes Yes	No No	Yes Yes	Error in judgement on Navy Tug	Hull plate, frames damaged. No damage reported.
40	Good	6 Moored Moored	Yes No No	No	No Yes Yes	*Medregal*, in passing, cut pipeline-anchor cable.	No damage. Sank. Capsized.
41	Good	2 8	Yes No	No	Yes No	Tug and tow navigating wrong side of channel.	No damage. Tows damaged.
42	Good	No way on 6	No No		Yes Yes	Error in judgment on part of tug	Plating and frames indented. No damage indicated.
43	Good	Astern 5	No No		Yes Yes	Restricted manuevering room; failure to hear bend signals.	Tug and tow damaged. Tow damaged.
44	Good	No way on 6	No No		No Yes	*Liberty Belle* got underway, did not see tug.	No damage. Tow damaged.
45	Good	5 Moored	No Yes	No	Yes Yes	*Goliah:* Confused signals between pilot house and engine room.	Stern damaged. Bow damaged.
46	Bad	Drifting 4	No Yes	Yes	Yes No	*Bull Calf* failed to reduce speed	Tow damaged. No damage indicated.
47	Bad	2 6	Yes No	Yes	Yes No	*Olcott:* Immoderate speed in heavy fog	No damage. Tow damaged.
48	Good	8 10	No No		Yes No	*Ventura* did not allow enough room for overtaking.	No damage. Damage to bow and hull.
49	Good	6 8	Yes No	No	No No	Both vessels failed to give proper signals.	Damage to tug and tow. Tow damaged.
50	Good	Maneuvering Moored.	No Unknown	Unknown	Yes Yes	*Benson* maneuvering in close quarters	Plates indented port side. No damage reported.

LOCATION AS TO CLASSIFIED

	Name of vessel	Gross tons	Class	Date	Title	Location	Weather—sea
51	S. S. *Calcite* S. S. *New Mexico*	3,966 98	Freighter Tug	do	0420 (night)	Cleveland (Ohio) Harbor	Wind SW., force 3, no sea.
52	M. V. *Midwest Cities* and Tow *Barge CB-82*	165 663	Tug Barge	8 Aug. 1950	2355 (night)	Mile 302, Chicago Ship Canal	Wind and river calm.
53	M. V. *Lia* (Sweden) M. V. *Seaboard* and Tow	3,539 41	Freighter Tug	9 Aug. 1950	2030 (night)	Castle Island, Boston (Mass.) Harbor.	Wind SW., force 2, sea smooth.
54	M. V. *Norana* (Norway) M. B. *10P687*	3,806 Motorboat	Freighter	12 Aug. 1950	2110 (night)	Sunken Meadows, Little Hell Gate, New York Harbor.	Wind and sea calm, ebb tide.
55	S. S. *Loeland* (Norway) S. S. *P & T Seafarer*	1,959 8,010	Freighter Freighter	15 Aug. 1950	0636 (day)	Grove St., pier, Oakland, Calif.	Wind and sea calm.
56	M. V. *Jeanette E.* and Tow M. V. *Pennsylvania* and Tow	121 620	Tug Tug	16 Aug. 1950	0530 (day)	Mile 524, Ohio River	Wind and river calm, foggy.
57	S. S. *Bethlehem* S. S. *Green Bay*	8,271 71	Freighter Tug	18 Aug. 1950	0235 (night)	Sheboygan (Wis.) Harbor	Wind NE., force 5, moderate sea.
58	M. V. *Sarah Pinser* M. V. *Lake Charles*	674 1,064	Tanker Tanker	20 Aug. 1950	0515 (day)	Off lower end of Welfare Island, New York Harbor.	Wind SW, force 2, sea calm.
59	M. V. *Frank A. Lowery* and Tow M. V. *Carmelite II* and Tow	240 119	Tug Tug	do	0625 (day)	Buoy No. 331, New York State Barge Canal.	Wind and sea calm.
60	S. S. *Mongah* and Tow S. S. *W. J. Creighton* and Tow	487 1,132	Tug Tug	21 Aug. 1950	0450 (night)	Montgomery Lock, mile 31.7, Ohio River.	Wind and river calm, foggy.
61	S. S. *Arizona* S. S. *Karen Olson*	7,606 2,119	Freighter Freighter	30 Aug. 1950	1615 (day)	Locks at Coos Bay, Oreg.	Wind westerly, force 4, sea calm.
62	S. S. *D. O. Mills* S. S. *J. F. Schoellkopf*	6,598 7,301	Freighter Freighter	31 Aug. 1950	1035 (day)	Calumet River, Chicago, Ill.	Wind northerly, force 2, no sea
63	M. V. *Pemaquid* U. S. C. G. C. *Mariposa*	420 Public vessel	Passenger	do	1152 (day)	New London Ledge Light, mouth of Thames River, Conn.	Wind E., force 2, sea calm, foggy.
64	M. V. *Fort Sumter* S. S. *Esso Paterson*	149 10,169	Tug Tanker	do	0510 (night)	Standard Oil Dock, Cooper River, Charleston, S. C.	Wind S., force 3, sea choppy.
65	S. S. *Asher J. Hudson* M. V. *Southland* and Tow	136 145	Tug Tug	13 Sept. 1950	2330 (night)	Sabine-Neches Canal, Tex.	Wind SE., force 2, flood tide, 1 knot.
66	S. S. *J. J. Sullivan* *Barge B. L. I. 101*	7,077 700	Freighter Barge	18 Sept. 1950	2205 (night)	Calumet River, South Chicago, Ill.	Wind SSW., force 4, strong current.
67	M. V. *Jack Don* and Tow M. V. *Percheron* and Tow	500 146	Tug Tug	21 Sept. 1950	1945 (day)	Mile 834, lower Mississippi River.	Wind southerly, force 4, river calm.
68	M. V. *F. B. Payne* and Tow M. V. *Montgomery* and Tow	200 287	Tug Tug	24 Sept. 1950	0055 (night)	Mile 299.5, Illinois Waterway	Wind light, water calm.
69	M. V. *Gramercy* and Tow M. V. *Cayuga* and Tow	64 134	Tug Tug	27 Sept. 1950	1815 (day)	Herkimer Guard Gate, Erie Canal.	Wind and canal calm.
70	S. S. *Esso Tug No. 8* and Tow M. V. *Dalzellido* and Tow	219 143	Tug Tug	3 Oct. 1950	1920 (night)	Williamsburg Bridge, vicinity Corlears Hook, New York.	Wind westerly, force 2, ebb tide, calm.
71	S. S. *Clovis Victory* M. V. *Parrakoola* (Sweden)	7,612 5,752	Freighter Freighter	6 Oct. 1950	0648 (day)	Pier 39, San Francisco, Calif.	Wind NE., force 2, sea calm.
72	M. V. *Harry Truman* and Tow S. S. *Tenaru River* and Tow	635 1,132	Tug Tug	10 Oct. 1950	0001 (night)	Mile 438.2, Mississippi River.	Wind and river calm, dense fog.
73	S. S. *Azalea City* M. V. *Otto Banck* (Sweden)	6,065 2,384	Freighter Freighter	13 Oct. 1950	1828 (night)	Cape Cod Canal, Mass.	Wind NW., force 6, clear.
74	S. S. *Koalkraft* S. S. *Gilbert*	376 1,108	Tanker Dredge	14 Oct. 1950	0840 (day)	Calumet River, Chicago, Ill.	Wind NE., force 4, strong current.
75	S. S. *Carl W. Meyers* *Barge Maia*	4,109 3,350	Freighter Barge	do	1030 (day)	Duluth (Minn.) Harbor	Wind NE., force 4, calm sea.
76	M. V. *Alden S. Swan* M. V. *G. H. McNeal*	144 248	Fishing Fishing	16 Oct. 1950	1230 (day)	Entrance to Harbor of Cape Charles City, Va.	Wind NE., force 4, small sea.
77	M. V. *Robert Henjes* and Tow M. V. *Virginia* and Tow	76 117	Tug Tug	22 Oct. 1950	1615 (day)	Cape Fear River, N. C.	Wind Westerly, force 3, sea smooth.
78	M. V. *Elwha* S. S. *Herman Frasch*	37 7,101	Tug Freighter	23 Oct. 1950	1100 (day)	Port Angeles (Wash.) Harbor	Wind northerly, force 2, calm
79	S. S. *Sharon Victory* S. S. *East Point Victory*	7,612 7,607	Freighter Freighter	26 Oct. 1950	1159 (Day)	Anchorage 12, San Francisco Bay.	Wind SE., force 8, choppy sea
80	S. S. *Pere Marquette 12* S. S. *Meteor* S. S. *George W. Mead*	2,767 3,383 3,968	Freighter Tanker Freighter	28 Oct. 1950	0737 (day)	Detroit River	Wind and river calm, foggy.

WATERS: RIVERS—Continued

	Visibility	Speed (knots)	Radar equipped	Radar in operation	Pilot rules observed	Cause	Results
51	Good	4 6	Yes No	No	Yes Yes	Error in judgment on tug—passing ahead of steamer.	No damage. Foundered and sank.
52	Good	4 Moored	No No		Yes Yes	Master of tug blinded by searchlight up-river.	Tow damaged. In sinking condition.
53	Good	8 4	Unknown No	Unknown	No Yes	*Lia* misinterpreted signals, no action to avoid collision.	No damage. Tow sank.
54	Good	9 6	Unknown No	Unknown	Yes No	Motorboat showed no all-around white light.	No damage. Sank, total loss.
55	Good	Moored Backing	No Yes	No	Yes Yes	*Seafarer:* Lack of judgement, restricted channel.	*Seafarer:* Hull indented, deck buckled. *Lorland:* Stern holed.
56	Bad	4 6	No Yes	Yes	No No	*Both Tugs:* Immoderate speed in fog.	Tow damaged. Tow damaged.
57	Good	Moored Maneuvering	No No		Yes Yes	Tow line parted, tug swung into *Bethlehem.*	Shell plate holed. No damage reported.
58	Good	8 6	No No		Yes Yes	Misunderstanding of signals, strong tide.	Indentations. Holed vicinity of fore peak.
59	Good	4 4	No No		Yes No	*Carmelite II* sounded cross signals	Tow sank No damage reported.
60	Bad	4 Moored	No Yes	No	Yes No	*Creighton* failed to sound regulation fog signals.	Three barges in tow damaged. No damage.
61	Good	Maneuvering Moored	Yes Yes	No No	Yes Yes	Sudden gust of wind carried *Arizona* over into *Olson.*	No damage. Lifeboat and starboard bulwarks damaged.
62	Good	4 5	No Yes	No	Yes Yes	Both vessels took suction from each other in bridge.	Stern damaged. Stern damaged.
63	Bad	10 Anchored	No Yes	No	No Yes	*Pemaquid:* Excessive speed in fog	Plates and stem buckled. Hull plates holed, frames bent.
64	Good	4 Moored	No Yes	No	Yes Yes	Tug, in maneuvering, failed to check speed.	No damage. Hull plates indented.
65	Good	Backing 5	No No		No Yes	*Hudson:* Gave no whistle signal in backing from slip	Rail and deckhouse damaged. No damage.
66	Good	5 Moored	Yes No	No	Yes No	Barge showing no lights	Sheer strake plates indented. Stern rake damaged.
67	Fair	4 1	Yes No	No	Yes Yes	Close proximity of 2 ascending vessels	Tow damaged. No damage.
68	Good	3 3	No No		Yes No	*Montgomery:* Side lights did not show extreme width of barge.	Tow damaged. Tow damaged.
69	Good	4 6	No No		Yes No	*Cayuga,* in overtaking, failed to keep clear.	Tow damaged, beached. No damage.
70	Good	4 7	Yes No	No	No No	Both tugs failed to sound whistle signals.	No damage. Barges extensively damaged.
71	Good	Moored 3	No No		Yes Yes	*Parrakoola,* in docking, struck *Clovis Victory.*	Slight damage to stern. Port quarter plates indented.
72	Bad	4 Moored	Yes No	Yes	No Yes	*Truman* discontinued fog signals on nearing shore.	No damage. Tow damaged.
73	Good	6 5	No Yes	No	Yes Yes	*Otto Banck,* in light trim, affected by cross wind.	Damaged bulwarks, deck structure. Damaged bulwarks, deck structure.
74	Good	5 Moored	No No		Yes Yes	*Gilbert* set down by wind and current	No damage. Plates and frames bent.
75	Good	3 Moored	No No		Yes Yes	*Meyers* set down by wind and current	Broken hawse pipe, dented plates. Bulwarks damaged.
76	Good	8 8	No No		No No	No passing signals, failure of *Swan* to give way.	Starboard side holed. Stem extensively damaged.
77	Good	0 4	No No		Yes Yes	Mistake in judgment, large tows, narrow channel.	Hull, propeller, rudder, damaged. Tow damaged.
78	Good	5 Moored	No Yes	No	Yes Yes	*Elwha:* Error in judgment with tow in restricted area.	No damage. Rudder and bearing damaged.
79	Good	Anchored Anchored	No Yes	No	Yes Yes	*Sharon:* Dragging anchor into other anchored vessel.	Bulwarks, sheer strake, lifeboats. Stem damaged.
80	Bad	4 5 4	No Yes Yes	Yes Yes	Yes Yes Yes	3 vessels in narrow channel, confused fog and passing signals.	Hull damaged above waterline. Bow, port and starboard, damaged. Port bow damaged.

LOCATION AS TO CLASSIFIED

	Name of vessel	Gross tons	Class	Date	Title	Location	Weather—sea
81	S. S. *Latin American* *Barge Texaco 575*	159 1,048	Tug Barge	30 Oct. 1950	2030 (night)	Stapleton Anchorage, New York Harbor.	Wind southerly, force 2, calm sea.
82	S. S. *Ellis Island* S. S. *Mary Murray*	804 2,126	Passenger Passenger	1 Nov. 1950	1048 (day)	Between the Battery and Governors Island, New York Harbor.	Wind westerly, force 2, haze, flood tide.
83	M. V. *Magnolia* and Tow M. V. *Trojan* and Tow	225 131	Tug Tug	3 Nov. 1950	1715 (day)	Neches River, below Atreco, Tex.	Wind NW., force 4, 3- to 4-knot current.
84	S. S. *Medford* S. S. *Joseph J. O'Brien* and Tow	6,700 306	Freighter Tug	do	0013 (night)	Elizabeth River, Norfolk, Va.	Wind SW., force 3, sea smooth.
85	S. S. *Ball Brothers* *Barge Alfred Krupp* (Canada)	5,733 3,012	Freighter Barge	4 Nov. 1950	2110 (night)	Upper St. Clair River, Mich.-Canada.	Wind NNW., force 5, snowing.
86	M. V. *Jane Rhea* and Tow S. S. *Champion Coal*	91 449	Tug Tug	do	0230 (night)	Mile 36.3, Monongahela River	Wind E., force 3, river calm, rain.
87	S. S. *Irg* M. V. *Z-Seven* and Tow	10,172 76	Tanker Tug	5 Nov. 1950	0049 (night)	Sabine-Neches Canal, Tex.	Wind northerly, force 2, sea smooth, current.
88	S. S. *Peter White* S. S. *George F. Rand*	6,184 7,510	Freighter Freighter	6 Nov. 1950	0545 (night)	Cuyahoga River, Cleveland, Ohio.	Wind SW., force 4, calm.
89	S. S. *Barbara Lykes* U. S. *Army Tug No. 1566*	6,108 Public vessel	Freighter	7 Nov. 1950	0001 (night)	Pusan, Korea, Harbor	Wind N., force 3, sea smooth.
90	M. V. *Eastern Cities* and Tow M. V. *Prospect* and Tow	146 65	Tug Tug	8 Nov. 1950	1220 (day)	West of Buoy No. 138, Erie Barge Canal.	Wind SW., force 5, calm.
91	S. S. *St. Augustine Victory* S. S. *Bedford Prince* (Britain)	7,604 7,127	Freighter Freighter	14 Nov. 1950	1015 (day)	Moji, Japan, Harbor	Wind and sea moderate, heavy current, swell.
92	M. V. *Consultor II* and Tow M. V. *Seaboard*	182 518	Tug Tanker	15 Nov. 1950	0245 (night)	Vicinity 50th St., New York	Wind and sea calm.
93	M. V. *Bull Calf* and Tow M. V. *Edward B. Warner* and Tow.	131 341	Tug Tug	do	1425 (day)	Mile 787.7, upper Mississippi River.	Wind SW., force 2, calm.
94	M. V. *James F. Dwyer* and Tow M. V. *Justine McAllister* and Tow.	87 114	Tug Tug	16 Nov. 1950	0510 (night)	New York State Barge Canal	Wind and sea calm.
95	S. S. *Cygnet III* M. V. *Chanda* (Britain)	7,176 6,981	Freighter Freighter	18 Nov. 1950	0450 (night)	Thames River off Tillbury Jetty, Great Britain.	Wind variable, sea calm.
96	M. V. *Samuel Clemens* and Tow M. V. *Fred W. Olcott* and Tow	285 308	Tug Tug	do	0015 (night)	Mile 877, lower Mississippi River.	Wind southerly, force 2, fair.
97	S. S. *Esso Baltimore* S. S. *Marine Leader*	7,949 10,172	Tanker Tanker	26 Nov. 1950	0751 (day)	Havana, Cuba, Harbor	Wind NNW., force 7, sea rough.
98	S. S. *American Counselor* S. S. *Pessac* (France) S. S. *Hellenic Chrysoula* (Panama). S. S. *Salta* (Argentina)	7,601 775 1,513 8,556	Freighter Freighter Freighter Passenger	do	1507 (day)	Schelde River, Netherlands	Wind easterly, force 2, smooth, foggy.
99	M. V. *Glenn Tracy and Tow* M. V. *Marilyn and Tow*	330 129	Tug Tug	28 Nov. 1950	0027 (night)	Mile 182.5, Illinois River	Wind NW., force 3, river normal.
100	M. V. *Esso Tug No. 9 and Tow* M. V. *Dorothy McAllister and Tow.*	197 Unknown	Tug Tug	30 Nov. 1950	1100 (day)	Arthur Kill at Trembly Point, N. Y.	Wind NW., force 3, flood tide.
101	S. S. *Mount Greylock* M. V. *Molly Lou*	10,655 30	Freighter Fishing	5 Dec. 1950	0509 (night)	San Francisco Bay, Calif.	Wind NNE., force 3, slight sea.
102	M. V. *Eastern Cities and Tow* S. S. *Transfer No. 11 and Tow*	146 109	Tug Tug	6 Dec. 1950	1410 (day)	East River, N. Y.	Wind NE., force 2, flood tide.
103	S. S. *Antinous* *Barge B-10*	6,065 Unknown	Freighter Barge	do	0840 (day)	Pier 8, Port Covington, Baltimore (Md.) Harbor.	Wind NE., force 4, sea smooth.
104	S. S. *Del Aires* M. V. *Deerpool* (Britain)	6,509 5,169	Freighter Freighter	7 Dec. 1950	1245 (day)	Port of Brownsville, Tex.	Wind SSE., force 6, sea calm.
105	S. S. *Akron and Tow* *Brooklyn Edt Float No. 25*	171 Unknown	Tug Barge	8 Dec. 1950	1745 (day)	South 3d St., pier, Brooklyn, N. Y.	Wind mild, sea calm.
106	S. S. *Erchester* S. S. *Paolo II* (Italy) M. V. V. *Luigi Noli* (Italy)	7,129 5,183 342	Freighter Freighter Freighter	do	0903 (day)	Inner Harbor, Leghorn, Italy	Wind SSE., force, 9, disturbed sea.
107	M. V. *Callahan No. 1 and Tow* S. S. *Beacon*	145 727	Tug Passenger	10 Dec. 1950	0835 (day)	Hudson River off Newburgh, N. Y.	Wind and river calm, foggy.
108	M. V. *Bull Frog and Tow* *Barges Nos. 187 and 488*	111 400	Tug Barge	12 Dec. 1950	0615 (day)	Mile 132, Cumberland River	Light wind, normal current, snow.

WATERS: RIVERS—Continued

	Visibility	Speed (knots)	Radar equipped	Radar in operation	Pilot rules observed	Cause	Results
81	Good	6 Moored	No No		Yes Yes	Bell signals on tug not understood by engineer.	No damage. Extensively damaged.
82	Fair	8 6	No No		Yes Yes	Traffic and tidal conditions	Deck house pushed in. No damage.
83	Good	5 4	No No		Yes Yes	Adverse conditions of wind and tide	Hull above water and superstructure. Hull above water and superstructure.
84	Good	No way on 4	No No		No No	Passing signals not given soon enough to avoid collision.	Hull dented starboard bow. Tow holed, stove in, sank.
85	Poor	5 Drifting	No No		Yes No	Barge drifting out of command in snowstorm.	Several plates indented, holed. No damage reported.
86	Poor	5 8	No No		No Yes	*Rhea:* Operating at night without proper lights.	Stern wheel driven forward, sank. No damage reported.
87	Good	10 7	No No		Yes Yes	Barges veered into channal, took suction from *Ivy.*	Plates indented, small hole. No damage.
88	Good	5 Moored	Yes Yes	No No	Yes Yes	Suction of *White* pulled *Rand* away from dock.	No damage. Hull plates indented.
89	Good	Maneuvering Helping	No Unknown	Unknown	Yes Yes	Tug drifted aft in way of *Lykes* propeller.	Damaged propeller. No damage reported.
90	Good	6 5	No No		Yes Yes	Restricted maneuvering room and strong wind.	No damage. Tow damaged.
91	Good	Moored Mooring	Unknown	Unknown	Yes Yes	*Prince:* Parted manila hawser while mooring, drifted back.	Indents along starboard side. No damage reported.
92	Good	Backing 7	No No		Yes No	*Seaboard:* Failure to sound passing signals.	Stern of tow damaged. Bow damaged.
93	Good	5 3	Yes No	No	No Yes	*Bull Calf:* Vision obscured, approached bend too fast.	Large hole in tow above waterline. Tow damaged slightly.
94	Good	4 4	No No		Yes Yes	Narrow channel and bend obstructing view.	Tow damaged. Tow damaged.
95	Good	Maneuvering 6	Yes Yes	No No	Yes No	*Chanda* attempted to pass through narrow opening.	Sheer strake, stern, indented. No damage reported.
96	Good	4 Backing	Yes No	No	Yes Yes	Misunderstanding of passing signals	Tow damaged. 2 tows damaged extensively.
97	Good	6 4	Yes No	No	Yes No	*Marine Leader* negligently lost steerageway in channel.	Port bow plates indented. Bow damaged.
98	Bad	Anchored Anchored Anchored 8	Yes Unknown Unknown Unknown	Yes Unknown Unknown Unknown	Yes Yes Yes No	*Salta:* Too great a speed in channel with engine trouble in fog. Collided with all ships and with each other.	All vessels suffered minor indentations in hull plating. Crew member *Chrysoula* lost.
99	Good	6 9	Yes Yes	No No	Yes No	Effect of wind on *Marilyn* tow setting into *Traer.*	Tow sank. Tow damaged.
100	Good	6 7	Yes No	No	Yes Yes	Restricted maneuvering room, bend in channel.	Tug received hull damage. No damage reported.
101	Good	10 7	No No		Yes No	*Molly Lou:* No whistle signals and error in judgment.	No damage. Damage to hull, mast, superstructure.
102	Good	7 8	No No		No Yes	*Eastern Cities* on wrong side of channel.	Deck plate of tow cracked. Tow, extensively damaged.
103	Good	4 Moored	No No		Yes Yes	Error in judgment. Also effect of wind on ship.	No damage. Holed and sunk.
104	Good	Maneuvering Moored	No Unknown	Unknown	Yes Yes	*Del Aires* caught by wind while docking.	Minor hull damage. No damage reported.
105	Good	6 Moored	No No		Yes Yes	Momentary steering failure on *Akron*	No damage. Holed.
106	Good	Maneuvering Moored Moored	Unknown Unknown	Unknown Unknown	Yes Yes Yes	Inability of tugs to hold *Erchester* into the wind while docking.	Considerable damage minor nature. No damage reported. No damage reported.
107	Bad	2 10	No No		Yes No	Ferry proceeding at immoderate speed in fog.	Tow damaged. No damage.
108	Poor	7 Moored	No No		No Yes	*Bull Frog* navigating out of marked channel.	Tow damaged. Both barges damaged.

LOCATION AS TO CLASSIFIED

	Name of vessel	Gross tons	Class	Date	Title	Location	Weather—sea
109	S. S. *Fontana* *Barge Alfred Krupp* (Canada)	3,887 3,012	Freighter Barge	do	2215 (night)	Sarnia, Ontario, Harbor	Wind WSW., force 3, calm sea.
110	U. S. C. G. C. *White Pine* M. V. *Fort Dearborn and Tow*	Public vessel 569	Tug	do	0305 (night)	Mile 732, lower Mississippi River.	Wind NW., force 1, sea calm.
111	M. S. T. S. *Kingsport Victory* M. V. *Neckar* (Germany)	7,606 395	Freighter Freighter	19 Dec. 1950	1932 (night)	Columbus Quay, Bremerhaven, Germany.	Weather conditions not reported.
112	M. V. *Commercial Clipper* and Tow. M. V. *Ellen* and Tow	411 245	Tug Tug	do	1410 (day)	Mile 675.8, Ohio River	Light breeze, strong current, snow.
113	M. V. *A. C. Dodge* M. V. *Atlantic Sun*	1,147 11,401	Tanker Tanker	21 Dec. 1950	0017 (night)	Delaware River	Wind NNW, force 2, no sea.
114	S. S. *Esso Baltimore* *Tank Barge BA-2013*	7,949 1,076	Tanker Tugboat	24 Dec. 1950	1835 (night)	Mile 101.5, Mississippi River	Wind and river calm, 3-knot current.
115	S. S. *M. E. Lombardi* S. S. *Drente* (Netherlands)	5,325 8,192	Tanker Freighter	26 Dec. 1950	1835 (night)	San Francisco (Calif.) Harbor	Wind northerly, force 2, 6-knot ebb tide.
116	S. S. *Trimbles Ford* U. S. S. *Vermilion (AKA-107)*	11,670 Public vessel	Tanker	27 Dec. 1950	0836 (day)	Hampton Roads, Va	Wind N., force 7, snow flurries.
117	S. S. *Thomas F. Baker* S. S. *Roxane* (France) S. S. *Penchateau* (France)	7,210 7,813 995	Freighter Freighter Freighter	22 Dec. 1950 28 Dec. 1950	2005 (night) 0800 (day)	La Palice, France, Harbor	Wind at both times squally with gusts of force 6–8.
118	S. S. *Pioneer Cove* *Barge Charleston* (derrick)	8,266 681	Freighter Barge	30 Dec. 1950	1543 (day)	The Narrows, New York Harbor.	Light airs, smooth sea, foggy.
119	U. S. C. G. C. *Cherokee* M. V. *Regis* and Tow	Public vessel 91	Tug	31 Dec. 1950	1804 (night)	Elizabeth River, Norfolk, Va.	Wind N., force 3, tide ebbing, calm.
120	M. V. *Atlas* and Tow M. V. *Lucy Haden* and Tow	85 146	Tug Tug	5 Jan. 1951	0826 (day)	Houston (Tex.) Ship Channel	Wind SE, force 2, calm.
121	M. V. *Fort Dearborn* and Tow M. V. *Montgomery* and Tow	570 287	Tug Tug	4 Jan. 1951	2200 (night)	Mile 138.9, Illinois River	Wind and river calm.
122	S. S. *J. H. McEachern* M. V. *City of San Diego*	6,197 311	Tanker Fishing	10 Jan. 1951	0229 (night)	Corinto, Nicaragua, Harbor	Wind and sea calm.
123	M. V. *Minnesota Husky* and Tow. M. V. *Percheron* and Tow.	350 146	Tug Tug	do	2045 (night)	Mile 179, Illinois River	Wind and river calm.
124	S. S. *Baton Rouge* and Tow M. V. *L. L. Wright* and Tow	757 124	Tug Tug	13 Jan. 1951	2010 (night)	Mile 180.5, Illinois River	do.
125	M. V. *Huck Finn* and Tow M. V. *Sally Ann* and Tow	607 82	Tug Tug	14 Jan. 1951	1218 (day)	Mile 226, Illinois River	do.
126	M. V. *Bob Greene III* *Barge Orsco No. 64*	23 400	Tug Barge	do	2200 (night)	Mile 603.5, Ohio River	Wind NW., force 4, current 5 m. p. h.
127	M. V. *W. A. Wansley* S. S. *Legion Victory*	181 7,607	Tug Freighter	15 Jan. 1951	1546 (day)	Port Arthur (Tex.) Ship Canal.	Wind W., force 2, calm.
128	S. S. *Europa* (Panama) M. V. *Bright Moon*	15,044 57	Passenger Fishing	19 Jan. 1951	1832 (night)	Ambrose Channel, New York Harbor.	Wind and sea calm.
129	M. V. *Carol Moran* and Tow M. V. *Spring Creek* and Tow	238 196	Tug Tug	23 Jan. 1951	0150 (night)	Kill Van Kull, N. Y.	Wind light, sea calm.
130	S. S. *Del Mar* S. S. *Mormacstar*	10,070 7,773	Passenger Freighter	do	2355 (night)	Santos, Brazil, Harbor approach.	do.
131	M. V. *Whyne H.* and Tow M. V. *Anna S. Cooper* and Tow	259 85	Tug Tug	25 Jan. 1951	1500 (day)	Mile 492, Tennessee River	Wind Northerly, force 2, current normal.
132	M. V. *Theresa S.* M. V. *Chippewa*	31 887	Fishing Passenger	28 Jan. 1951	0742 (day)	Entrance to Eagle Harbor, Wash.	Wind NE, force 2, smooth sea.
133	M. V. *Vulcan* and Tow M. V. *Bull Calf* and Tow	141 131	Tug Tug	do	0010 (night)	Mississippi River, Harvey Locks.	Wind S., force 3, strong current.
134	M. V. *Edward B. Warner* and Tow. M. V. *Havana Zephyr* and Tow	341 384	Tug Tug	29 Jan. 1951	1030 (day)	Mile 730, lower Mississippi River.	Wind N., force 4, river calm.
135	M. V. *Keystone* and Tow *Barge H-442*	320 900	Tug Barge	do	0215 (night)	Mile 270.5, Ohio River	Wind SW., force 2, raining.
136	S. S. *D. W. Wishered* and Tow *Barge CT-420*	335 440	Tug Barge	do	0240 (night)	Mile 317, Ohio River	Wind NE., force 2, raining.
137	S. S. *Grove City Victory* S. S. *Robert Craig*	7,607 Public vessel	Freight	30 Jan. 1951	0638 (night)	Yokohama, Japan, Anchorage.	Wind NE., force 2, sea smooth.

WATERS: RIVERS—Continued

	Visibility	Speed (knots)	Radar equipped	Radar in operation	Pilot rules observed	Cause	Results
109	Good	4 Moored	No No		Yes Yes	*Fontana:* Maneuvered by tug, bow out of control.	Bow plates indented. No damage reported.
110	Good	Moored 4	No Yes	 No	Yes No	Tug pilot allowed tow to approach too close to shore.	Stern indented. No damage.
111	Fair	3 8	Yes No	Yes	Yes No	Inattention on part of *Neckar*	Port side plates indented, holed. No damage reported.
112	Poor	8 7	Yes Yes	Yes Yes	Yes No	*Ellen:* No lookout, improper speed, no passing signals.	Tow damaged. Tow damaged.
113	Good	9 12	Yes Yes	No Yes	Yes Yes	*Dodge* took suction from overtaking vessel; bow deflected into *Atlantic.*	Port bow extensively damaged. Bow extensively damaged.
114	Good	9 7 (towed)	Yes No	Yes	No Yes	*Baltimore:* Immoderate speed, lack of judgment.	Holed, fire damage. Holed, cargo loss.
115	Good	Moored Drifting	Yes Yes	No No	Yes Yes	Strong ebb tide parted lines of *Dreute,* drafted.	Several bent plates and frames. Superficial damage.
116	Fair	4 anchored	No Yes	 No	No Yes	*Ford* maneuvering too close to *AKA-107.*	Flare of bow damaged. Several hull plates (starboard) set in.
117	Good	2-4 Moored Moored	No Unknown Unknown	 Unknown Unknown	Yes Yes Yes	In each case *Baker* was caught by strong gusts of wind.	Several indents. Scraped and indented. Scraped and indented.
118	Bad	4 Anchored	Yes No	Yes	Yes Yes	*Core* unable to hear fog bell of derrick	No damage. Lost anchors, scraped.
119	Good	No way on 6	Yes No	No	Yes No	Tug and tow on wrong side of channel	No damage. Tow holed above waterline.
120	Good	4 7	No No		Yes Yes	*Atlas* took suction from left bank, sheared.	Tow indented. Bow plated indented, 1 person injured.
121	Good	3 3	Yes No	No	Yes No	Failure of *Montgomery* to alter course sufficiently.	Tow damaged. Tow damaged.
122	Good	Maneuvering Anchored	Yes No	No	Yes Yes	Stern discharge of tanker fouled shrouds of fishing vessel.	No damage. Fort shrouds damaged.
123	Good	No way on 4	No No		Yes Yes	Bow of *Percheron* deflected when it struck heavy ice.	Damaged Murry-Tregurtha Unit. No damage.
124	Good	4 3	No Yes	 No	Yes Yes	*Baton Rouge* partially out of control due to heavy ice.	No damage indicated. Tow damaged.
125	Poor	No way on 4	Yes No	Yes	Yes Yes	Tow of *Sally Ann* fell off to starboard in maneuvering.	Towed barge damaged. No damage indicated.
126	Poor	4 Moored	No No		Yes Yes	Combination of wind and current. Low horsepower.	Towed barge sank. No damage.
127	Good	4 4	No No		Yes Yes	Monetary steering failure on tug	No damage. Side plates indented.
128	Good	11 5	Unknown No	Unknown	No No	*Europa* overtaking, no exchange of signals.	No damage. Hull damage at stern.
129	Good	Aground 6	No No		Yes Yes	Error in judgment of *Spring Creek*	No damage. Tow damage.
130	Good	5 Anchored	Yes No	No	Yes Yes	*Del Mar* slow in answering following near collision.	Considerable damage to both ships: plates, frames, bulkheads.
131	Good	4 6	Yes No	No	No No	Pilots of both tugs delayed in taking preventive action.	No damage. Tow holed.
132	Good	7 3	No No		No No	Signals not properly exchanged in overtaking.	Considerable damage to hull and rigging. No damage to *Chippewa.*
133	Good	6 4	No Yes	 No	Yes Yes	Strong current, congested area	Damage to deck house and rail. No damage.
134	Good	5 Backing	Yes Yes	No No	Yes No	*Havana Zephyr* backed into other tug	Tow damaged. Stern slightly damaged.
135	Poor	3 Moored	Yes No	No	No Yes	Immoderate speed at time of low visibility.	Tow damaged. Sunk.
136	Fair	5 Moored	No No		No Yes	Failure of *Wisherd* to use searchlights.	Tow damaged. Sunk, cargo lost.
137	Good	Anchored 8	No Yes	 No	Yes No	*Robert Craig* handled in unseamanlike manner.	Indents near bow. Damage unknown.

LOCATION AS TO CLASSIFIED

	Name of vessel	Gross tons	Class	Date	Title	Location	Weather—sea
138	M. V. *J. Raymond Russell* M. V. *F. J. Perry*	137 614	Tug Tanker	31 Jan. 1951	0455 (night)	Bayway, N. J.	Wind N., force 3, strong ebb tide.
139	S. S. *Stony Point* *Unknown Car Float*	1,391	Passenger Barge	do	2030 (night)	Marine Repair Shops, West New York, N. J.	Wind NE., force 4, sea calm raining.
140	M. V. *Linda Chotin* and Tow M. V. *Polly S.* and Tow	228 30	Tug Tug	1 Feb. 1951	0230 (night)	Mile 360, Mississippi River	Wind W., force 5, rain, snow, sleet.
141	S. S. *Karen Olson* *Several Small Fishing Boats*	2,119 Var.	Freight Fishing	do	0900 (night)	Berth 135, San Pedro, Calif., Harbor.	Not indicated.
142	S. S. *Polarus Gem* S. S. *Tydol Bayonne*	6,917 10,296	Tanker Tanker	do	1117 (day)	The Narrows, New York Harbor.	Wind SE., force 3, dense fog, calm.
143	S. S. *Jamaica* *Used Essayons*	6,989 11,961	Passenger Dredge	do	1204 (day)	550 yards, 90° from Claremont Channel buoy, New York Harbor.	Wind and sea calm, dense fog
144	M. V. *Fred B. Dalzell* and Tow M. V. *Immen* (Sweden)	194 20,050	Tug Freighter	3 Feb. 1951	0145 (night)	St. John's River, Fla	Wind NW., force 3, calm
145	S. S. *Ashley* and Tow M. V. *Poling Bros. No. 16*	240 396	Tug Tanker	8 Feb. 1951	0500 (night)	Between Battery and Governor's Island, New York Harbor.	Wind NW., force 6, sea choppy.
146	M. V. *Dixie* and Tow M. V. *Kentucky* and Tow	175 81	Tug Tug	9 Feb. 1951	0330 (night)	Mile 757.3, Ohio River	Wind calm, strong current
147	M. V. *Duncan Bruce* and Tow M. V. *Navajo* and Tow	246 64	Tug Tug	10 Feb. 1951	2245 (night)	Mile 471, Ohio River	do
148	*Dredge H. W. McCurdy* S. S. *James Cook*	 7,208	Dredge Tanker	do	0320 (night)	West Waterway, Seattle, Wash.	Wind SSW., force 5, clear, 3-knot current.
149	S. S. *Albert E. Watts* S. S. *USNS Mission Soledad*	10,907 10,461	Tanker Tanker	14 Feb. 1951	0034 (night)	Houston (Tex.) Ship Channel	Wind NW., force 5, calm sea
150	M. V. *Cape Zephyr* and Tow M. V. *Bayou Orleans* and Tow	308 207	Tug Tug	15 Feb. 1951	2210 (night)	Mile 539.2, Mississippi River	Moderate wind, swift current
151	S. S. *Marshfield Victory* S. S. *Montesa* (Panama)	7,608 7,777	Freighter Freighter	do	0121 (night)	Yokohama Quarantine Anchorage.	Wind NW., force 10, snow
152	S. S. *Flying Enterprise* S. S. *Esso Paterson*	6,711 10,169	Freighter Tanker	16 Feb. 1951	2335 (night)	"M" Buoy, Nordenham, Germany.	Wind SE., force 3, calm sea
153	S. S. *Alcoa Polaris* M. V. *Westside*	6,711 600	Freighter Passenger	22 Feb. 1951	1103 (day)	200 yards off ferry landing, on Mississippi River, New Orleans.	Wind calm, river smooth
154	S. S. *George S. Long* U. S. S. *Munda*	7,210 Public vessel	Freighter	do	0030 (night)	Hylebos Waterway, Tacoma, Wash.	Wind NE., force 4, sea smooth
155	M. V. *Dauntless No. 16* and Tow *Navy Gig* (attached to *DD-722*)	146	Tug	23 Feb. 1951	0800 (day)	200 yards west of Town Point Light, Norfolk, Va.	Wind NW., force 3, sea smooth.
156	S. S. *Catskill* S. S. *Syracuse*	1,400 1,344	Passenger Passenger	do	1528 (day)	Pier 83, Hudson River, N. Y.	Wind N., force 3, clear
157	S. S. *Guadalcanal* and Tow M. V. *Esso Louisiana* and Tow	1,132 641	Tug Tug	26 Feb. 1951	0523 (night)	Mile 233.6, Mississippi River	Wind moderate, swift current.
158	S. S. *Mojave* S. S. *Krusaa Kobenhorn* (Denmark).	7,178 2,999	Freighter Freighter	do	0523 (night)	Houston (Tex.) Ship Channel	Wind SE., force 1, sea smooth
159	S. S. *Edward L. Shea* S. S. *Polarus Sailor*	7,646 7,176	Tanker Freighter	30 Dec. 1950	1723 (night)	Houston (Tex.) Ship Channel	Wind northerly, force 3, sea smooth.
160	S. S. *City of Richmond* M. V. *Esso Delivery No. 10*	1,923 1,155	Passenger Tanker	2 Mar. 1951		Craighill Channel, Baltimore (Md.) Harbor.	
161	S. S. *George W. Stevens* M. V. *Gannet* and Tow	262 146	Tug Tug	4 Mar. 1951	2115 (night)	Newport News, Va.	Wind SSW., force 3, sea calm
162	S. S. *Bertha Hrovig* (Norway) S. S. *Uranienborg* (Denmark)	2,415 3,365	Freighter Freighter	6 Mar. 1951	0750 (day)	1 mile south of Miah Maull Light Station, Delaware Bay.	
163	M. V. *John Murray* and Tow M. V. *Harry P. Conners* and Tow	123 105	Tug Tug	do	2020 (night)	Channel between Execution Rocks and Harts Island, NY.	Wind southerly, force 3, flood tide.
164	M. V. *Spring Creek* and Tow S. S. *Esso Tug No. 3* and Tow	146 175	Tug Tug	8 Mar. 1951	0545 (day)	Arthur Kill, North of Trembly Point.	Wind northerly, force 2, calm sea.
165	S. S. *P & T Pathfinder* S. S. *Ingeniero Huergo* (Argentina)	7,950 3,327	Freighter Tanker	do	2320 (night)	Between buoys KM 75 and KM 73, La Plata River, Argentina.	Wind SE., force 2, small sea
166	M. V. *Monitor* and Tow S. S. *Transfer No. 21* and Tow	99 267	Tug Tug	do	0545 (day)	Junction Bayonne and Greenville Channel.	Wind NW., force 3, sea smooth

WATERS: RIVERS—Continued

	Visibility	Speed (knots)	Radar equipped	Radar in operation	Pilot rules observed	Cause	Results
138	Good	8 Backing	No No		Yes No	Lights of *Pussell* not picked up by *Perry*.	Hull damaged. No damage.
139	Poor	Maneuvering Moored	No No		Yes Yes	Restricted maneuvering room, adverse wind and tide.	Hull damaged. No damage indicated.
140	Bad	3 Moored	Yes No	Yes	Yes Yes	Adverse weather conditions, severe storm.	No damage. Wood hull extensively damaged.
141		Maneuvering Moored	Yes No	No	Yes Yes	Throttle error on *Karen Olson*	No damage. Several small boats damaged.
142	Bad	6 6	No Yes	Yes	No No	Both vessels proceeding at immoderate speed in fog.	Damage to hull plates, frames. Stem damaged.
143	Bad	3 Anchored	Yes Yes	Yes No	No Yes	Excessive speed in fog after target seen on radar.	Superstructure damaged. Superstructure damaged.
144	Good	5 8	No Unknown	Unknown	No No	Several violations Inland Rules, both vessels.	Holed and beached. Minor damage to stem.
145	Good	4 6	No No		Yes No	*Poling Bros. No. 16* passing ahead of *Ashley*.	No damage. Superstructure damaged.
146	Good	7 5	Yes No	No	No No	*Dixie* overtaking; whistle signals improper, both vessels.	Tow damaged. Tow damaged.
147	Good	8 Backing	No No		Yes Yes	Strong current deflected head of *Navajo* tow.	Minor damage to bow and to tow. Tow damaged.
148	Good	Moored 5	No Yes	No	Yes Yes	Light tanker maneuvered in strong wind, narrow channel.	Grounded, scow damaged. Minor damage.
149	Good	Docking Moored	No Yes	No	Yes Yes	In docking, wind set *Watts* on to *Soledad*.	Minor hull damage. Minor hull damage.
150	Good	Aground 6	No Yes	No	Yes Yes	*Bayou Orleans* lost control of tow	Bottom damage. No damage.
151	Bad	Anchored Anchored	No Unknown	Unknown	Yes Yes	*Montesa*, a dead ship, dragged her anchor.	Damaged hull, superstructure, No. 2 lifeboat. No damage reported.
152	Good	7 Maneuvering	No Yes	No	No No	*Paterson* maneuvering contrary to local regulations, *Enterprise*: excessive speed.	Extensive hull and superstructure damage. Extent of damage to *Paterson* not received.
153	Good	Backing 8	No No		Yes No	*Westside* failed to allow sea room	Bow holed. Considerable damage to roof.
154	Good	6 Moored	Yes Yes	No No	Yes Yes	Light ship caught by wind in narrow channel.	Damage to superstructure and lifeboat. Minor damage.
155	Good	8 7	Yes No	No	No No	No lookout on tow. No effort made to avoid collision.	No damage. Sank, loss of one life.
156	Good	Moored Backing	No No		Yes Yes	Momentary steering failure on *Syracuse*.	Bow damaged. Bow damaged.
157	Good	4 4	Yes Yes	No No	Yes Yes	Narrow channel and a swift current	Tow damaged. No damage.
158	Good	5 Moored	No Unknown	Unknown	Yes Yes	Steering gear failure on *Mojave*	Hull damaged. No damage reported.
159	Good	8 6			Yes Yes	*Shea* sheered towards center of channel in passing.	Hull, port side—scraped, indented. Hull, port side—scraped, indented.
160			Yes Yes	Yes Yes			
161	Good	Backing No way on	No No		No Yes	*Stevens*, backing, did not see *Gannet* and Tow	Bow plates and ribs of *Gannet* bent.
162	Bad		Yes Yes	Yes Yes			Engine room, No. 2 hold, flooded. No damage reported.
163	Good	5 5	No No		Yes Yes	Flood tide caused tow of *Murray* to set over.	Tow capsized, loss of cargo. Tow sank.
164	Good	5 5	No Yes	No	Yes Yes	Tide set stern of *Spring Creek* over, tows collided.	No damage. Tow damaged.
165	Good	10 7	Yes Unknown	No Unknown	Yes No	Argentine vessel sheered across *Pathfinder's* bow.	Bow damaged. Extent of damage unknown.
166	Good	6 3	No No		No Yes	Whistle signals not answered by *Monitor*.	Tow damaged. No damage.

Radar—Collisions; Vessels Over 100 Gross Tons; 1951 Fiscal Year—Continued

LOCATION AS TO CLASSIFIED

	Name of vessel	Gross tons	Class	Date	Title	Location	Weather—sea
167	M. V. *Albert E. Herkin* and Tow M. V. *F. Latcher Brown* and Tow	313 84	Tug Tug	9 Mar. 1951	0645 (day)	Mile 170, Intracoastal Waterway, west of Harvey, La.	Wind and canal calm.
168	M. V. *S. T. Kiddoo* M. V. *Gatco Maryland* and Tow	613 97	Tanker Tug	17 Mar. 1951	2300 (night)	Chaffins Bluff, James River, Va.	Wind calm, tide ebbing.
169	S. S. *F. M. Whitaker* S. S. *Bianca Corrado* (Italy)	267 7,162	Tug Freighter	do	1415 (day)	C. & O. R. R. pier, Norfolk, Va.	Wind SE., force 2, sea calm.
170	S. S. *Denali* S. S. *Baranof*	4,302 4,999	Passenger Passenger	19 Mar. 1951	0108 (night)	Wrangell Narrows, Alaska.	Wind E., force 2, calm sea.
171	S. S. *Lipscomb Lykes* S. S. *Louise Lykes*	7,855 8,180	Freighter Freighter	21 Mar. 1951	0740 (day)	Army Base Pier, New Orleans, La.	Wind westerly, force 2; calm sea.
172	S. S. *Canton Victory* S. S. *Dickinson Victory*	7,607 7,607	Freighter Freighter	25 Mar. 1951	0916 (day)	Below Algiers Point, New Orleans, La.	Wind NE., force 3, sea calm.
173	M. V. *Coriuto* (Cuba) M. V. *Danny D*	539 75	Freighter Tug	14 Mar. 1951	2325 (night)	Mile 225, Intracoastal Canal.	Wind N., force 2, calm.
174	M. V. *Supreme* M. V. *Charles E. Trout* *Dredge Pittsburgh*	390 146 Unknown	Tanker Tug Dredge	23 Mar. 1951	0224 (night)	Newark Bay Channel.	Wind WNW., force 4, ebb tide.
175	S. S. *Nevada* S. S. *Edam* (Netherlands)	10,296 8,871	Tanker Freighter	30 Mar. 1951	1808 (day)	Ship John Shoal, Delaware River.	Wind Southerly, force 7, no swells, foggy.
176	S. S. *Dow Chemical* S. S. *Edward G. Seubert*	6,612 432	Freighter Tanker	5 Apr. 1951	1700 (day)	Standard Oil Corp. Dock, East Chicago, Ind.	Wind SE., force 2, no sea.
177	S. S. *Diamond S. No. 87* *Bucyrus*	449 323	Freighter Freighter	do	1515 (day)	100 feet off 33d St. pier, Brooklyn, N. Y.	Wind NW., force 2, sea calm.
178	M. V. *St. Mary* M. V. *Coyle* and Tow	10 120	Fishing Tug	11 Apr. 1951	1245 (day)	Harvey Canal, Intracoastal Waterway.	Wind NNW., force 4, sea calm.
179	S. S. *Frank Haskell* S. S. *Tydol Bayonne*	10,296 10,296	Tanker Tanker	21 Apr. 1951	0813 (day)	Tidewater Associated Oil Co., Kill Van Kull, Bayonne, N. J.	Wind N., force 1, calm.
180	M. V. *Robert W. Lea* and Tow M. V. *Robin* and Tow	440 346	Tug Tug	do	1205 (day)	Mile 136.7, Illinois Waterway.	Wind SE., force 3, current 4 m. p. h.
181	M. V. *MacLeod* M. V. *Cressi*	165 36	Freighter Fishing	22 Apr. 1951	2207 (night)	Wrangell Narrows, North Entrance Lighted Bell Buoy No. 45.	Wind and sea calm, clear.
182	M. V. *Tell City* M. V. *Vatroline* and Tow	Doc. 445	Passenger Tug	24 Apr. 1951	1610 (day)	Mile 727, Ohio River.	Light wind, sunny, calm river.

COLLISIONS, VESSELS OVER 100 GROSS TONS

July 1, 1950, to June 30, 1951

		Percent
Total number of collisions—all waters (visibility zero to excellent)	182	
Number of collisions where both vessels were radar equipped	24	13. 2
Number of collisions where 1 vessel was radar equipped	66	36. 3
Number of collisions where 1 or both vessels were radar equipped	90	49. 5
Number of collisions where neither vessel was radar equipped	92	50. 5
Total number of collisions where visibility was fair to excellent and radar WAS NOT a factor	140	76. 9
Total number of collisions where visibility was poor to bad and radar WAS a factor	42	
Number of collisions where visibility was poor to bad and both vessels were radar equipped	9	21. 4
Number of collisions where visibility was poor to bad and 1 vessel was radar equipped	19	45. 3
Number of collisions where visibility was poor to bad and 1 or both vessels were radar equipped	28	66. 7
Number of collisions where visibility was poor to bad and neither vessel was radar equipped	14	33. 3

Compiled 11 July 1951.

Keep a step ahead of accidents with safety

WATCH YOUR STEP

Safety aboard ship should start from the moment one comes aboard, continuously while aboard and until one takes the last step ashore.

The 1948 International Convention for Safety of Life at Sea endeavors to set up minimum safety requirements for all vessels. In the new regulation 17 the convention established the following requirements on ships of all nations:

All ships engaged on voyages in which pilots are likely to be embarked should comply with the following requirements respecting pilot ladders:

(*a*) The ladder should be kept in good order and used as far as possible only for embarking and disembarking pilots and other officials while a ship is arriving at or leaving a port.

(*b*) The ladder should be of adequate length and strength.

(*c*) The treads should be of adequate width.

Radar—Collisions; Vessels Over 100 Gross Tons; 1951 Fiscal Year—Continued

WATERS: RIVERS—Continued

	Visibility	Speed (knots)	Radar equipped	Radar in operation	Pilot rules observed	Cause	Results
167	Bad	2 No way on	Yes No	Yes	Yes Yes	Failure of intercommunication system between *Heekin In* and Tow.	No damage. Damage to stern and mast.
168	Good	2 5	No No		Yes No	Unskillful navigating on *Maryland*, no whistle at bend.	No damage. Tow holed, compartment flooded.
169	Good	5 Moored	No Unknown	Unknown	Yes Yes	*Whitaker* misjudged speed and distance.	Bow damaged. Slight indent in side.
170	Fair	6 8	Yes Yes	Yes Yes	Yes Yes	*Denali* misjudged tidal effect, slow speed, narrow channel.	Cargo booms of both vessels hung up when passing.
171	Good	Moored Docking	No No		Yes Yes	Forward spring parted while *Louise Lykes* docked.	Indent starboard quarter. Stem damaged.
172	Good	Anchored Drifting	No No		Yes Yes	Engine failure on *Dickinson Victory*	Stern damaged. Deck, hull, lifeboat damaged.
173	Good	8 6	Unknown No	Unknown	Yes Yes	*Corinto* took suction, sheered into *Danny D.*	Bow damaged. Tow holed.
174	Good	6 2 Anchored	No No No		No No Yes	Congested area where dredge was working. Misunderstood whistle signals.	Port side scraped, starboard bow indent. No damage. Starboard quarter and stern damaged.
175	Bad	3 Anchored	Yes No	Yes	Yes Yes	Thick fog and traffic	Forecastle head, port, damaged. Slight damage.
176	Good	Maneuvering Moored			Yes Yes	Maneuvering in restricted area against wind.	Hull indents, starboard side. No damage.
177	Good	4 5	No No		No No	Both vessels left obstructed pier at too great a speed.	Damaged deck, frames, sheer strake. No damage.
178	Good	Moored 4	No No		No No	Wind deflected tow of *Coyle* on to *St. Mary*.	Damaged hull. No damage.
179	Good	Maneuvering Moored	Yes Yes	No No	Yes Yes	Error of judgment of pilot of *Haskell*	No damage. Minor damage.
180	Good	No way on 4	Yes Yes	No No	No No	Failure of both tugs to establish manner of passing.	Tow damaged. Tow damaged.
181	Good	8 5	No No		No Yes	*MacLeod*: Failed to sound proper signals, failed to maintain proper lookout.	No damage. Holed; damage to rudder, tail shaft.
182	Good	6 2	No Yes	No	No Yes	*Tell City* made no effort to keep clear of tow.	*Tell City* sank with loss of 2 lives.

(*d*) Two man ropes, properly secured, should, where circumstances so require, be used in conjunction with the ladders.

(*e*) Arrangements should be such that the pilot can safely pass from the head of the ladder to the ship's deck.

(*f*) Spreaders at suitable intervals should be provided, if necessary, to prevent the ladder twisting.

(*g*) At night a light shining overside should be available and used.

Every person who boards a vessel must first pass over the gangway or ladder of some kind and on leaving the vessel his last step is taken from the gangway or ladder to the shore. It is just as important to have an adequate ladder on a small pleasure boat as it is on an ocean-going passenger liner or cargo vessel. How long would you put up with broken down steps leading to your front or rear porch in your home? Good housekeeping aboard ship is just as important as it is in your home.

If a pilot has difficulty climbing the Jacob's ladder because it may be weak, easily twisted, poorly lighted if at night or no light at all, unattended, rungs missing, greasy or dirty, don't blame him if he comes aboard in a rotten mood—the captain or master had better arouse the safety-mindedness of the chief mate and boatswain. Why hazard the life and limb of individuals boarding a vessel?

It is generally true that a vessel moors in out-of-the-way places where it is necessary for the crew to use a ladder or a makeshift gangway. It is amazing to see the gangway conditions that exist in a casual walk along the waterfront of any port. Where a vessel is anchored and boarding of the vessel takes place from a lighter or small boat, via the ladder, even more hazardous conditions are encountered and a properly installed steady ladder is even more important than when the vessel is moored to a shore berth. The more adverse the conditions the more important it is to have a proper watch at the head of the gangway or ladder.

Along this same line it is most important to see that men working over the side of a vessel work under safe conditions. In port along a river or channel front the vessel is exposed to swift currents. A man painting or working over the side is exposed to dangerous conditions. Shipboard policy should be positive in establishing a safety policy in this respect as well as strict enforcement of it. Too many injuries and fatal casualties have occurred and happen every day as a result of lax or no safeguards at all for hazardous work by the ship's crew.

After a casual examination of some of the official reports of gangway and ladder casualties the following are brought to your attention:

At 9:30 p. m. in September at Baytown, Tex., the chief engineer was departing from his vessel over the

gangway to contact dock men. He reached a point on the gangplank just as he was about to step on the dock—losing his balance he fell into the water between the vessel and the dock. Although immediate aid was at hand he died from drowning. The gangplank in use was of the usual variety equipped with hand rails and should have been safe enough. However it was pointed out that the officer had returned from shore leave a short time before the fatal accident and witnesses indicated that he showed signs of having been drinking upon his return. Safety requires that one must have the full use of all faculties.

Slippery Ladder

At sea in the Mediterranean in March, aboard a vessel at 8 a. m. a member of the crew fell or slipped on the ladder between the crew messroom and crew quarters below. Broken right Tibea. One man lost for the remainder of the voyage. It's a case of a slippery ladder, but remember the use of both hands is necessary for safety when climbing or descending a ladder.

Fatal Fall

On a vessel moored at a dock in Buffalo, N. Y., at about 8 p. m. in September, a crew member was climbing the ladder to come aboard the vessel. Upon reaching the third or fourth rung he fell, striking the dock on his head and then rolled into the water and was drowned. Inspectors revealed that the 28-foot aluminum ladder was free from any defects and the area was well-lighted. Two witnesses observed the accident.

Use Both Hands

A ship at anchor in Yokohama in January at 11:30 a. m., a seaman carrying a broom, mop, and bucket slipped and fell down the inside ladder from the bridge to the boat deck. Result, a fractured back. Hands can be a steadying influence.

Steep Gangway

A vessel was berthed at a dock in the Panama Canal Zone in September. The vessel was supplied with a gangway by the dock authorities. The top of the gangway rested upon the bulwark railing with the top extending about 2 feet over the deck and the bottom end resting on the dock. The top of the gangway was so located that a person coming aboard must step from the top of the gangway to a bit on deck and then to the deck itself. The gangway was rigged with life lines supported by stanchions in the approved fashion. No lines were rigged from the top of the gangway inboard to the vessel.

At about 5 a. m. a member of the crew attempted to come aboard the ship using the gangway and carrying a package of considerable size. The gangway was at an angle of about 45° and when the crewman reached a point about 4 or 5 feet from the top he requested the seaman at the gangway watch to assist him in getting the package aboard. As he handed the watchman the package his foot slipped on a cleat and he fell off the gangway under the lifeline to the log camel at the waterline. He was seriously injured and the ship lost the man for the remainder of the voyage.

Off Balance Is Fatal

Scene: Cargo ship berthed at a pier in Long Beach, Calif., in August at 4:45 p. m.

The second electrician while returning from shore leave lost his balance halfway up the accommodation ladder and fell between the pier and the ship, striking a wooden camel, fell into the water, sank and drowned. The ladder was considered to be safe and sound. At the time the second, third, and junior third mates and a dozen seamen on deck were in the immediate vicinity. It was only a matter of seconds before aid was on the spot. For some unknown reason the man was apparently not able to grasp the man ropes to keep from falling.

Another Bridge Ladder Tragedy

Vessel on a coastwise run off Providence, R. I., at about 7:15 p. m. in February, a member of the crew fell down the ladder from midships house deck to the main deck, a distance of about 10 feet. There were no witnesses to this accident. It resulted in the death of the crew member.

Accommodation Ladder Tragedy

At Detroit at about 2 a. m. in April, a member of the ship crew returning from liberty fell off gangway to concrete pier. Concussion of skull, death resulting about 15 hours later. Rain made the gangway slippery and drinking made the crew member unsteady. The combination was fatal.

Fashion note—The smartest thing in work clothes is a safe worker

APPENDIX

Amendments to Regulations

CG–239

Subchapter K—Security of Vessels

[CGFR 51-32]

Section 121.16 is amended by adding a new paragraph (b), reading as follows:

§ 121.16 *Requirements for documents bearing security clearance indorsement.* * * *

(b) On and after September 1, 1951, all persons employed on merchant vessels of the United States of 100 gross tons and upwards engaged in (1) the foreign trade, or (2) the intercoastal trade, or (3) the coastwise trade to Alaska or the Hawaiian Islands, shall be required as a condition of employment to be in possession of a document bearing a special validation indorsement for emergency service prior to acceptance of employment as members of crews of such vessels. The issuance of documents bearing security clearance shall be in the form and manner prescribed by § 121.15.

(40 Stat. 220, as amended; 50 U. S. C. 191. E. O. 10173, Oct. 18, 1950, 15 F. R. 7005; 3 CFR, 1950 Supp.)

Effective September 1, 1951.

Dated: July 12, 1951.

[SEAL] MERLIN O'NEILL,
Vice Admiral, U. S. Coast Guard, Commandant.

[F. R. Doc. 51-8194; Filed, July 17, 1951; 8:49 a. m., 16 F. R. 6868—7/18/51]

Eight Easy Ways to Fall:

- *Loose objects on deck.
- *Not watching your step on ladders.
- *Tripping over objects.
- *Slipping on oil.
- *Failing to use a grab rail.
- *Unguarded openings.
- *Cluttered ladders.
- *Between loose planks.

CG–172

Subchapter E—Navigation Requirements for the Great Lakes and St. Marys River, Michigan

[CGFR 51–34]

Part 92—Anchorage and Navigation Regulations; St. Marys River, Michigan

EMERGENCY SPEED LIMITS

The regulations in 33 CFR Part 92 contain the requirements governing the movements and anchorage of vessels and rafts in the St. Marys River from Point Iroquois on Lake Superior to Point Detour on Lake Huron. The purpose of the following new regulation, designated as 33 CFR 92.14a, is to establish a maximum speed limit for all vessels of 50 gross tons or over while navigating between Little Rapid Cut Lighted Buoy No. 87 and 6-Mile Point Range Rear Light, as well as to modify 33 CFR 92.14, which specifies a maximum speed limit for vessels of 500 gross tons or over while navigating between Everens Point and Big Point on the St. Marys River. This regulation specifying reduced speed limits for vessels navigating between Little Rapid Cut Lighted Buoy No. 87 and 6-Mile Point Range Rear Light is necessary for the protection of the navigable channel because of the present high stage of water and will be in effect until the St. Marys River is closed to navigation for 1951. The effect of the new regulation is to reduce the speed over the ground of vessels of 50 gross tons and over while navigating between Little Rapid Cut Lighted Buoy No. 87 and 6-mile Point Range Rear Light to 7.5 statute miles per hour for Northbound traffic and to 10 statute miles per hour for Southbound traffic.

This new regulation, designated as 33 CFR 92.14a, shall become effective on and after August 4, 1951, and shall remain in effect until the St. Marys River is closed to navigation for 1951. Because of the urgency in protecting this navigable channel in the St. Marys River, it is hereby found that compliance with the notice of proposed rule making, the public rule making procedure thereon, and effective date requirements of the Administrative Procedure Act is impracticable and contrary to the public interest. The Commander of the 9th Coast Guard District has held informal hearings and discussions with operators of vessels on the Great Lakes, the Corps of Engineers responsible for maintaining navigable channels, and other interested parties regarding the establishment of speed limits for certain vessels navigating the St. Marys River under normal navigating conditions in order to preserve the navigable chanels so vitally important to our national defense.

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 Act of March 6, 1896, as amended, part 92 is amended by adding a new § 92.14a, reading as follows, and this amendment shall become effective on and after August 4, 1951, and shall remain in effect until the St. Marys River is closed to navigation for 1951:

§ 92.14a *Speed limit between Little Rapid Cut Lighted Buoy No. 87 and 6-Mile Point Range Rear Light.* (a) All vessels of 50 gross tons or over navigating between Little Rapid Cut Lighted Buoy No. 87 and 6-Mile Point Range Rear Light shall not exceed the following speed limit over the ground:

(1) Northbound, 7.5 statute miles per hour.

(2 Southbound, 10 statute miles per hour.

(b) The speed limit for vessels of 500 gross tons or over contained in § 92.14 is modified to the extent described in paragraph (a) of this section.

(29 Stat. 54–55 as amended; 33 U. S. C. 474)

Dated: July 26, 1951.

[SEAL] MERLIN O'NEILL,
Vice Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 51–8780; Filed, July 30, 1951; 8:53 a. m., 16 F. R. 7460—7/31/51]

Equipment Approved by the Commandant

AFFIDAVITS

The following affidavits were accepted during the period from June 15 to July 15, 1951:

Great Lakes Engineering Works, River Rouge 18, Mich. Flanges.

Hinderliter Tool Co., Division, H. K. Porter Co., Inc., P. O. Box 2650, Tulsa, Okla. Valves.

CERTIFICATION OF ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of Ships' Stores and Supplies certificated from June 26 to July 25, 1951, 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:

Virginia Smelting Co., West Norfolk, Va., Certificate No. 329, dated June 28, 1951, "Lethalaire S–200 Formula."

Standard Oil Co., Linden, N. J., Certificate No. 330, dated June 28, 1951, "Flit."

Standard Oil Co., Linden, N. J., Certificate No. 331, dated June 28, 1951, "Flit Aerosol Insect Spray."

West Disinfecting Co., Long Island City, New York, Certificate No. 332, dated July 19, 1951, "Karspray."

West Disinfecting Co., 42–16 West Street, Long Island City, New York, Certificate No. 333, dated July 19, 1951, "Licresolis."

ACCEPTABLE WELDING ELECTRODES

Distributor or manufacturer	AWS symbol	Operating positions and electrode sizes, inches									Current limitation
		5/16	3/64	1/32	1/8	5/32	3/16	7/32	1/4	5/16	
Champion Rivet Co., Blue Devil	E–6010	.....	.....	1	1	1	1	2	2	NA	DC
Champion Rivet Co., Graydac	E–6013	.....	.....	1	1	1	1	NA	NA	NA	AC–DC
Champion Rivet Co., Blue Devil 85 (.50 Mo)	E–7010	.....	.....	1	1	1	1	NA	NA	.....	DC
Champion Rivet Co., Black Devil 75 (.50 Mo)	E–7020	.....	.....	.....	.....	2	2	.....	2	NA	AC–DC
Champion Rivet Co., Hy-Lo	E–6016	.....	.....	.....	1	1	2	2	2	3	AC–DC

NA—Not acceptable.
[1] This item is relisted to show new limitations.

WELDING ELECTRODES NOT ACCEPTED

The following brand names of welding electrodes have been removed from the list of those that were accepted:

Gray Devil E6012	Champion Rivet Co.
Red Devil E6030	Champion Rivet Co.
Weld-Arm Type 6030 E6030	Alloy Rods Co.
Weld-Arc Type 7020 E7020	Alloy Rods Co.

The 5/16-inch size weld-arc type 6010 electrodes manufactured by Champion Rivet Co. and sold by Alloy Rods Co. have been removed from the acceptable list since this size of electrode failed to meet the specifications.

Sloppy Navigation—Wasn't it Sir!!

U. S. GOVERNMENT PRINTING OFFICE: 1951