PROCEEDINGS OF THE

MERCHANT MARINE COUNCIL

UNITED STATES COAST GUARD

Vol. 1 October 1944 No. 10

Proceedings of the

MERCHANT MARINE COUNCIL

Published monthly at Coast Guard Headquarters, under the auspices of the Merchant Marine Council, in the interest of safety at sea and the prosecution of the war effort.

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U. S. C. G.
Commandant of the Coast Guard

The Merchant Marine Council of the United States Coast Guard

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Activities of the Council

THE Merchant Marine Council during the past month took action approving the use of Styrofoam, Type Q103.6, as a buoyant filler for life rafts. This approved buoyant material weighs between 1 and 2 pounds per cubic foot. The material had previously successfully undergone all previous tests except for the machine-gunning test. Extensive tests were conducted whereby 20 mm. and 50-caliber high-explosive incendiary and tracer shells were fired into wooden and metal containers filled with this new type Styrofoam. The material did not ignite when subjected to these tests and accordingly was approved. The first self-righting type improved life raft to be granted approval is filled with this new type Styrofoam. A buoyant apparatus filled with this new type Styrofoam has also been granted approval. Mr. John C. Chenery of the New England Houses Corporation and Mr. W. T. Corcoran of the Pittsburgh-Corning Glass Corporation appeared before the Council seeking approval of a life raft filled with Foamglas in lieu of air tanks. The Council directed that certain modifications in construction be made, further tests conducted, and the results submitted for consideration.

Count H. George Morner, of New York, appeared before the Council presenting a new type life preserver which obtains its buoyancy from hollow Neoprene molded cubes. Mr. Morner pointed out to the Council that this type jacket possesses several advantages over kapok. In view of statutory provisions in the Seaman's Act of 1915 and the International Convention of 1929 prohibiting the use of life preservers employing air compartments for buoyancy the Council referred this design to the Research and Development Division for study and recommendations.

The Council took further action in its year-long study seeking to simplify the directives issued to field officers and to the maritime industry. The Chief Council reported to the Chairman the presently effective circular letters, memoranda, directives, etc., pertaining to Coast Guard marine inspection functions which have been issued by the Director of Bureau of Marine Inspection and Navigation, the Commissioner of Navigation, the Supervising Inspector General of Steamboat Inspection Service, the Secretary of Commerce, and the Coast Guard. The Chairman appointed a Council subcommittee to examine these documents and to report a simplified procedure to be followed in issuing regulations, directives, and instructions, together with recommendations for cancelling those directives which it is not desired to continue in effect. The new policy when approved by the Commandant will be published in the *Proceedings* so that the maritime industry may be clearly aware of the current Coast Guard directives affecting the industry, and in the future may easily keep currently informed of Coast Guard directives and policy.

New specifications, and revisions of old specifications, for equipment for merchant vessels were approved by the Council. All lifeboat radio installations, both portable and nonportable, the manufacture of which is completed after 31 October 1945, will

be required to have a kite and a helium-inflated balloon to support the radio antenna instead of the presently required top-mast antenna. The balloon will be used in light airs and the kite in heavier winds. Specifications for kites, balloons, and helium containers for these lifeboat radio installations, dated 7 September 1944, were approved by the Council. These kites, balloons, and helium containers are to be approved by the Commandant. This action does not affect present radio installations on lifeboats.

Section 156.3, subchapter O, was amended to provide that the United States Coast Guard specification for electrical installations on merchant vessels, dated August 31, 1944, is, during the emergency, applicable as alternative provisions to those contained in section 32.6–1 to 32.6–5, inclusive, 63.9, 79.9, 79.11, and 116.16 of the regulations. The specification is based upon the A. I. E. E. Standards, *Recommended Practice for Electrical Installations on Shipboard*, to apply during national emergency only, except for certain modifications thereof which are prescribed in the Coast Guard specification.

A proposal to revise the Coast Guard specification for embarkation-debarkation ladders by doing away with the requirement that the chain between the rungs be canvas covered was disapproved. It was felt that the original reason for this requirement, the fact that casualty reports show that in cold climates damage to hands resulted if the chain was not canvas covered, continued to exist and that the specification should not be revised in this respect.

A waiver was granted to permit the omission of partitions between the toilets and to permit the omission of toilets on the starboard side of the EC–2–S–C1 Cargo Vessels. This waiver was granted, as the United States Maritime Commission indicated that the efficient prosecution of the war would be impeded by requiring compliance with the regulations on these vessels.

Routine action was taken approving items of equipment for safety of life at sea. Coast Guard approval was withdrawn from several items of equipment.

Commandant Speaks at Victory Fleet Day Program

IN ADDRESSING the American Merchant Marine Institute, Inc., in New York, on 27 September, Vice Admiral R. R. Waesche, Commandant of the Coast Guard, dedicated the Victory Fleet Day Celebration in honor of the American ship operators who have marshalled our seagoing fleet of some 3,400 vessels into efficient communications lines in global warfare.

In his appreciation of the cooperation given the Coast Guard in its merchant fleet functions, Admiral Waesche stressed the flexibility which the Coast Guard has sought in its regulatory actions, as follows:

"As the circumstances and conditions of war change and as emphasis shifts from one theater to another, many security restrictions which the Coast Guard has imposed no longer serve a purpose. It is definitely our policy to eliminate all such purposeless restrictions, and we are doing so. We have no desire to restrict merely for the purpose of restricting.

"The basic policies upon which the wartime security measures were built are equally sound and desirable in time of peace. The Coast Guard recognizes, therefore, that regulations which delay a vessel's sailing, lengthen the time required for turn-around, or in any manner increase the cost of construction, repair, or operation should be subjected to the closest scrutiny. It is to the interest of the Government as well as of industry that operational costs be kept to a minimum, and continual teamwork between Government and industry is necessary to that end. Before adoption of any regulation which imposes an economic burden upon the industry there should be careful consultation with the affected members."

International Safety-At-Sea Conference

ON Thursday, September 21, Assistant Secretary of State A. A. Berle, Jr., called a conference of representatives of various Government departments and agencies having an interest in safety-at-sea measures. At this conference he stated that, in the opinion of the State Department, the time was propitious to undertake preliminary work in preparation for a diplomatic conference, to be held after the cessation of hostilities in the European theater, for the purpose of revising and bringing up to date the International Convention on Safety-at-Sea adopted in 1929.

In addition to the State Department, there were present representatives of the Treasury (Customs Bureau), War Department, Navy, Commerce (Weather Bureau and Civil Aeronautic Administration), Federal Communications Commission, Maritime Commission, and Coast Guard.

Secretary Berle designated the Coast Guard as the agency responsible for laying out the groundwork and appointing the necessary technical committees for the preparation of specific proposals. A tentative agenda was laid before the meeting for comment. This agenda follows:

I. GENERAL CONSTRUCTION

(*a*) Admeasurement.
(*b*) Structural Standards.
(*c*) Subdivision, Stability, Load Line, and Pumping.
(*d*) Electrical Equipment and Standards.
(*e*) Fire Detection and Extinguishment.

II. SAFETY EQUIPMENT, PERSONNEL, AND PROCEDURES

(*a*) Lifesaving Equipment.
(*b*) Cargo Stowage.
(*c*) Personnel and Operation.
(*d*) Rules of the Road.

III. RESCUE PROCEDURES

(*a*) Aids to Navigation.
(*b*) Meteorological Services.
(*c*) Air/Sea Rescue.
(*d*) Ice Patrol.
(*e*) Communications.

Copies of this preliminary agenda have been sent to all organizations and associations concerned with maritime matters and they have been requested to nominate representatives to serve on such committees as they desire. In addition to representation on the technical committees, representatives of the maritime industry are being designated by the Commandant for membership on the General Committee, together with members from interested Government bodies. The General Committee will be the over-all body to review the work of the technical committees and to make final recommendations to the State Department.

Preliminary liaison with the British authorities is being conducted by Capt. H. C. Shepheard, USCGR, who, for the time being, is acting as the Commandant's personal representative in London for this purpose. It is expected that Captain Shepheard will return to Washington in time to assume a leading part in the technical work of the various committees.

In all of its activities in the direction of improved safety procedures the Coast Guard is in the closest contact with the Maritime Commission, in view of the paramount interest of that Commission in the future and safety of American shipping.

American Merchant Marine Conference

THE Coast Guard is glad to pay deserved tribute to the work done by the Propeller Club of the United States and its component ports in furthering at all times the interests of the American Merchant Marine and particularly in the Annual Merchant Marine Conference. This regular event will again be held in New York on account of the transportation situation, on October 18, 19, and 20. The usual full and instructive program of panel discussions will be carried out.

Through the courtesy of Mr. Arthur M. Tode, Honorary President, the Coast Guard has been allotted the afternoon of Thursday, October 19, for a meeting of the Merchant Marine Council with such representatives of the maritime industry as may care to attend. At this meeting several matters of interest will be discussed, with the view of securing the opinion of shipping people thereon, as a guidance to the Coast Guard.

Vice Admiral R. R. Waesche, Commandant of the Coast Guard, will preside, assisted by Rear Admiral Harvey F. Johnson, Engineer in Chief of the Coast Guard and Chairman of the Council. The slated topics for discussion are as follows:

- The Relationship of the Coast Guard and the Maritime Industry.
- International Convention on Safety at Sea.
- Proposed Consolidation of Seamen's Documents.
- The Role of the Shipping Commissioner in the Seaman's Agreement.
- Simplified Ship's Articles.

In addition to the topics listed, and following their consideration, the meeting will be thrown open to discussion of any matters which may be brought up, and it is hoped that those present will take full advantage of the occasion. The Commandant feels that only by a thorough understanding of all of the views and problems of the maritime industry can the Coast Guard intelligently and effectively carry out its duty of promoting safety.

Life Raft Tests

AT a public hearing at Headquarters on July 18 Rear Admiral Harvey F. Johnson, Chairman of the Merchant Marine Council, announced that it was proposed to hold a series of exhaustive tests at the Coast Guard Yard, Curtis Bay, Md., of the various improved type life rafts which hold final approval from the Coast Guard. Since that time plans have been progressing for the tests and samples gathered from all the manufacturers.

The Maritime Commission and War Shipping Administration have assisted the Coast Guard immeasurably by making available from their stock piles, yards, etc., samples of the rafts purchased by them. It was felt that, where possible, test samples should be selected in this manner, rather than from rafts specially constructed for the tests. The ideal situation would be to test samples that have been aboard ship, but for obvious reasons this is not practical.

The schedule of tests will be announced shortly in detail, and will include sea, stability, drop, fire, and machine gunning tests. The Liberty ship, *Alexander Graham Bell*, recently chartered to the Coast Guard by the War Shipping Administration, will be used to provide a setting for the tests as closely resembling actual service conditions as possible. Temporary quarters will be set up on board to house persons wishing to witness the tests. It is anticipated that the tests will consume the better part of a week.

According to latest reports from the yard, sample rafts have already arrived from the following manufacturers: Globe American Corporation, New England Houses, Jones-Gillis Manufacturing Co., Williams & Wells, L. A. Young Spring & Wire Co., Roof Structures, Inc., Weber Showcase & Fixture Co., Gunderson Bros. Engineering Corporation, Craftsman Equipment Corporation, and Flury & Crouch.

Samples are expected to arrive at the yard shortly from the following concerns: Peterson Manufacturing Co., Michael Hallward, Inc., Redwood City Boat Works, Buckler-Merwin Co., Bell Lumber Co., Kearns Bros., Colvin-Slocum Boats, Inc., Blaircraft, Leyde & Leyde, and Royal Marine Equipment Co.

New Artificial Respiration Method

ALL seagoing personnel are, or should be, familiar with one of the standard methods of giving artificial respiration. Promptness in undertaking resuscitation may mean the difference between saving a life and failing to do so. The two methods generally employed are the Sylvester and the Schafer techniques.

A new technique, called the Eve method, has been developed and is adopted by the British Navy as superior to either of the foregoing. This ingenious method, consisting of rocking the patient, securely lashed to a plank or stretcher, over a fulcrum, makes use of the weight of abdominal organs alternately to push and pull the diaphragm up and down in the manner of a piston.

The patient is laid face-downward and the ankles and wrists are lashed to the handles of the stretcher or plank. In resuscitating a drowned person, the first head-down tilt of 45 degrees is maintained until no more water drains from the stomach or lungs. The patient is then rocked at 10 double rocks a minute with a tilt each way of 45 to 50 degrees. After a few minutes, usually a tilt of 30 degrees each way will be enough to ventilate the lungs.

The method has certain obvious advantages: (1) It is easier on the patient; (2) it is less tiring to the operator; and (3) it requires less skill. Its obvious great disadvantage, as compared to the Schafer or Sylvester method, is the fact that some apparatus is required. However, Eve describes a way in which his method can be used for a few minutes in the absence of apparatus. This consists of having the patient lie prone on the four flexed forearms of two men standing up facing each other and gripping each other's hands. By swaying from their hips, these two men can rock their patient about twelve times a minute through an angle of 40 degrees each way.

An effort to determine the comparative efficiency of the three methods with respect to ventilation was made, using an anesthetized human volunteer. The yields were: Schafer, 340 c.c.; Sylvester, 400 c.c.; and Eve, 580 c.c. (with a tilt of 45° each way). Eve does not believe that this experiment quite imitates the condition of a drowned man because it is probable that the tone of the diaphragm is not completely lost during anesthesia.

Eve believes that his method has an important effect in restoring circulatory dynamics. According to his theory, gravity in rocking affects significantly the longitudinal blood vessels. When the patient is tilted into the head-down position, the hydrostatic pressure of four feet of blood in the arteries will slam shut the aortic valve, and the blood will be compelled to flow with increased force into the coronary arteries, tending to restart a stopped heart or to restore a feebly beating one. Similarly, the nerve cells of the brain and breathing center will receive blood rhythmically at a hydrostatic pressure calculated to be fully normal. The veins of the extended arms will acquire a reservoir of blood ready to fill the heart again when the legs are tilted down. There will be improvement in the blood flow to the venous side of the heart.

Air-Sea Rescue

THE PAGES of the *Proceedings* have been rigidly restricted to matters affecting safety at sea and applying to merchant vessels. It may be thought that the cover picture of this issue is a deviation from that policy, since it presents two types of Coast Guard craft designed to rescue distressed airplanes at sea. Actually this is indicative of the coming extension of the Coast Guard's long-time rescue functions to meet, as well as make use of, the trend towards aviation over the oceans.

Originally, the Coast Guard (or its predecessor services) had to face only the problem of going to the rescue of surface vessels in distress, and it possessed only surface craft to make such rescues. Subsequently it pioneered the use of aircraft in such work, chiefly to remove sick or injured seamen or fishermen, to search for and locate drifting small craft, and to deliver storm warnings to vessels not equipped with radio.

Probably everyone is familiar with the determined and effective measures taken by the Navy to rescue by plane aviators who are downed in distant waters. The Army has made extensive use of crash-boats where its fields are near water. The British have established a capable air-sea rescue unit, through the combined efforts of the Royal Navy and the R. A. F., which operates to save aviation personnel forced down in the English Channel. These units are concerned with military personnel but their experience serves as a guide for extending help to any aviator in distress on the water.

It is, of course, obvious that the post-war period will bring about a great expansion of transoceanic aviation on a commercial basis. Many of our American shipping companies are making plans to complement their steamer lines with air services. Such aviation, therefore, not only presents a safety problem over water, but may have close connection with merchant shipping.

The Coast Guard, during this war, has been maintaining an extensive antisubmarine and convoy patrol along our coasts by plane, under the Sea-Frontier Commanders. With a diminution of antisubmarine work, these units will become available to a greater degree for rescue work, and they will be so used. As private and commercial flying are resumed, the rescue units will be continued as part of the permanent rescue functions of the Coast Guard, the aviation era's counterpart of the service which has been rendered surface craft for over 150 years.

Thus, rescue procedures have progressed from surface craft aiding surface craft, through aircraft aiding surface craft, and now to aircraft aiding aircraft and to surface craft aiding aircraft. For, under unfavorable weather conditions, or where a large transport might be involved, rescues cannot be made by plane: Its mission is to locate the distressed aircraft and guide rescue vessels to it. Coast Guard surface craft, when available, will be specially equipped for this work. In the meantime and in the future, merchant vessels may find themselves increasingly concerned in the rescue of aircraft personnel—as in the case of Harry Hawker and Mackenzie-Grieve whose trans-Atlantic attempt ended in the water but close enough to a little Danish tramp to permit their rescue.

To provide for such a situation, where a surface craft is in the vicinity but not in sight of a distressed plane, the Coast Guard issued, on August 25, to surface craft operating in the Thirteenth Naval District, a *Notice to Mariners* containing the following:

"A plane will fly several times across the bow of the nearest surface vessel, opening and closing the throttle, and then will fly in the direction of the plane in distress. The signal will be repeated until the ship acknowledges by following the plane. If possible, the plane will remain in sight of the surface vessel until the latter sights the plane in distress. All planes will resort to use of available pyrotechnics as necessary to attract the attention of surface vessels.

"Air-Sea Rescue planes of the U. S. Coast Guard will have special markings of chrome yellow on the wing tips and wing tip floats. These planes are used in assistance of distressed surface vessels and planes. The cooperation of operators of fishing vessels with the Air-Sea Rescue planes may mean the difference between life and death of some fisherman or aviator."

Hearing Units

COAST GUARD Merchant Marine Hearing Units and Details, during the month of August, handled cases involving 377 officers and 2,789 unlicensed men. In the cases of officers, 3 were revoked, 44 were suspended, 145 were suspended on probation, 8 were suspended plus suspension on probation, 18 were voluntarily surrendered, 90 were admonitions, and 69 were dismissed. Of the unlicensed personnel, 53 were revoked, 426 were suspended, 1,242 were suspended on probation, 70 were suspended plus suspension on probation, 142 were voluntarily surrendered, 572 admonitions, and 284 were dismissed.

Damage to and Loss of Lifeboats and Life Rafts

DURING the winter of 1943–44 an exceptionally large number of merchant vessels reported the loss of or damage to lifeboats and life rafts. Investigation indicated that most of the casualties occurred when the vessels were rolling heavily and strong winds and rough seas prevailed. The

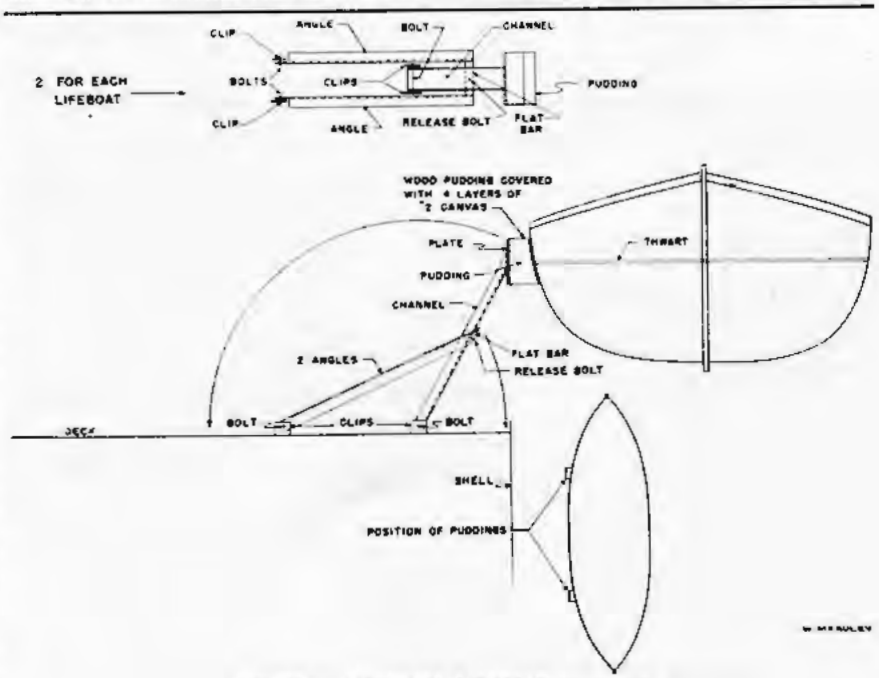

FIGURE A. OUTBOARD LIFEBOAT STOWAGE.

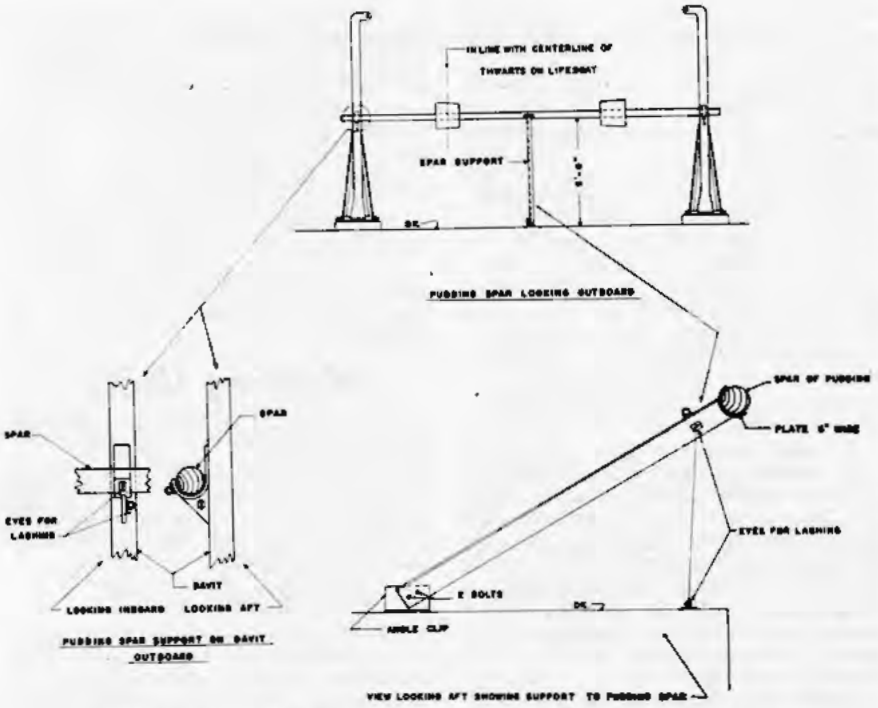

FIGURE B. SUGGESTED PUDDING SPAR ARRANGEMENT WITH SUPPORTS.

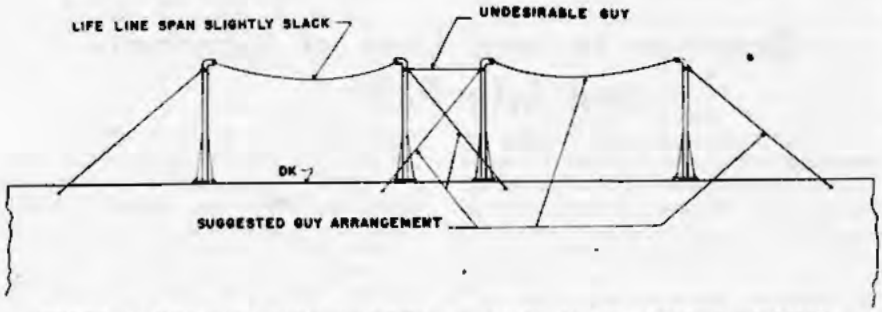

FIGURE C. STEADYING GUYS ATTACHED TO DAVITS (VIEW LOOKING INBOARD).

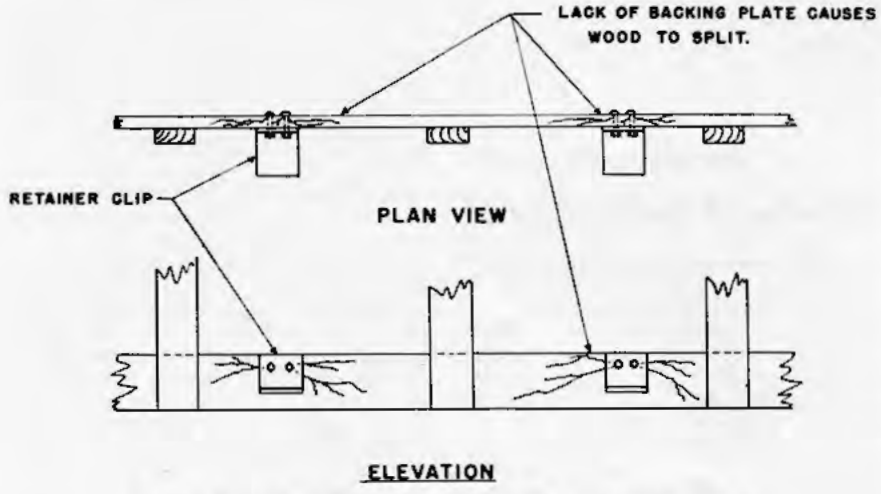

FIGURE D. RETAINER CLIPS AT UPPER END OF WOODEN RAFT.

vessels were generally traveling in convoy, were in various conditions of load and trim, and it can be reasonably assumed that they were not always free to maneuver to the best advantage. Nevertheless it was not conceded that the greater portion of this loss and damage was unavoidable, and recently a survey was made and the masters and officers of vessels interviewed in an effort to determine the cause, and if possible to provide means to reduce the number of such casualties to a minimum. It is however, realized that there are occasions when loss and damage to equipment of this nature cannot be prevented.

A considerable number of the casualties occurred on vessels of the Liberty type which are of course predominant on the high seas today. A special effort was made to ascertain any faults in the rig and security of the boats and rafts on these vessels. As a result of this survey and the observations made, it does not appear that there is any serious condition to be overcome with respect to the security of the boats. Damage to and loss of the lifeboats occurred both when the boats were carried inboard, nested in the chocks, and when carried in the outboard position. In many instances the gear and attachments for securing the lifeboats in both these positions were not of sufficient strength. On all new installations, also in renewal of defective equipment and alterations which may be made in existing installations, gear for securing lifeboats should have a safety factor of six, considering the weight of the boat and her equipment as a working load.

U-bolts welded directly to the deck, rails, or davits have not proved of sufficient strength for attaching any of the lifeboat securing assembly or davit guys. This may be attributed to poor welding practice, combined with the small diameter of the stock. Stay pads or pad eyes should be installed for this purpose.

Boats should be carried as high up as possible and it is recommended that means for outboard lifeboat stowage should be provided constructed of steel angles and channels with face plates and puddings attached. (See sketch **A.**) The puddings should be of sufficient area not less than 20 by 20 inches, well padded and properly located to meet the sheer strake of the boat in way of the thwarts. There are still a large number of vessels fitted with a pudding spar between the davits for securing boats in the outboard position, and reports indicate that many of these spars have broken during heavy weather, causing the boat to get adrift in many instances with serious consequences, and frequently the boat has been lost. It is recommended that a suitable shore or prop be fitted to the

center of the spar and lodged against a clip on deck to further strengthen the spar. This shore should be attached so that it will be readily removable. (See sketch B.)

Davit guys, as illustrated by sketch C, should be provided of not less than ⅜-inch wire, of sufficient length, and rigged with a good fore and aft lead. Each davit should be provided with an independent guy. The connecting of adjacent davits of separate sets with one span for guying purposes is not good practice, as the required supporting effect, when the vessel labors, is lost; it is also necessary to swing in both boats simultaneously or release the span prior to the operation. This involves risk to the seaman assigned to the task, especially during heavy weather. On many vessels it was found that the center span between the davits supporting the life lines was rigid. Under no circumstances should this center span be set up tight. Sufficient slack should be allowed so that in the event the davits are not swung out at an equal speed, they will not be strained or weakened, with possible subsequent damage.

Coast Guard regulations state, "When, in the opinion of the master it can be done with safety, all lifeboats attached to davits other than gravity davits shall be properly griped in the outboard position so as to provide for immediate lowering in case of emergency." It appears that there is a reluctance on the part of some masters to swing the boats in and secure them in the chocks when heavy weather is anticipated. It is much better to use good judgment and foresight in this respect than to hang on until it is too late, for the safety of the crew and the boat, to carry out this operation. It is suggested that boat chocks should be raised as high above the deck as practicable, consistent with the length of the tackles and the necessity of swinging the boats out without handling the falls. The higher the keels of the boats above the deck, the more room is allowed for seas breaking on board to pass under the boats and overboard without doing damage to the wood section of the chocks or the boats.

Most life rafts have been lost overboard on account of the vessels rolling heavily during gales, with rough seas. In most cases the retaining clips at the upper end of the raft have not been sufficiently engaged and the raft has toppled over into the sea. On a number of vessels the retainer clips are fastened to the raft with lag screws or light bolts with washers. Some of the wood members to which the plates are attached were found to be split, as illustrated by sketch D. Heavier bolts with backer plates should be used.

Many of the arrangements noted for securing the rafts at the upper ends were unsatisfactory. Holding-down angles were erected from the upper cross members of the raft structure bearing tightly on the raft. In some instances the rafts had been chamfered to make them fit, and there was insufficient holding-down bearing surface. Numerous other arrangements of retaining clips at upper ends of rafts without sufficient bearing surface were noted (illustrated by sketch E).

The main reason for the loss of life rafts overboard is that, combined with the limited overlap of the clips at the upper ends, the rafts have worked down on the skids, due to the following failures in the original installation: Base stop plates holding the raft on the skid not being properly seated on raft strength members; base stop plates made of iron bars, the edges of which penetrated the base of the raft; base stop plates made of angles seated on the end of the raft decking; base stop plates connected to weak revolving pins or bars which bent under the weight of the raft (see sketch F); single base stop plate resting on one light cross member of raft structure at the center, causing curvature (see sketch G); lack of strength of part or of the entire release and support assembly, consisting of chain or wire, shackles, pelican hooks, turnbuckles, and eye pads.

Rafts may have been lost occasionally by seas striking them at the base, but this is not a frequent occurrence as far as could be determined. When rafts are lost in this manner, it is generally found that the base stop plate has insufficient area and does not extend high enough on the base of the raft; or that it rests on the fragile lower ends of the raft decking

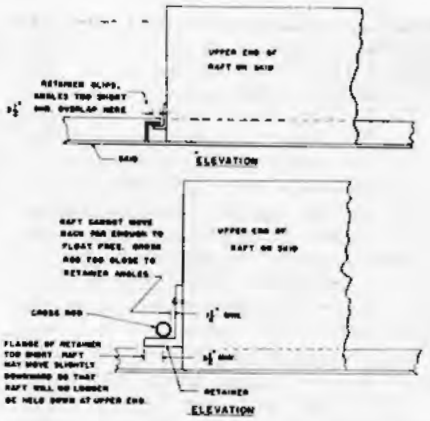

FIGURE E. FAULTY RETAINER CLIPS ON RAFTS.

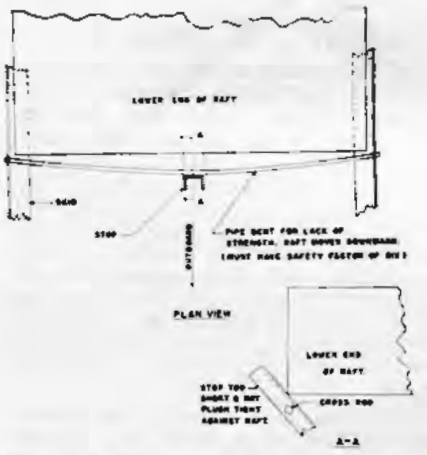

FIGURE F. STOP ATTACHED TO WEAK CROSS PIPE.

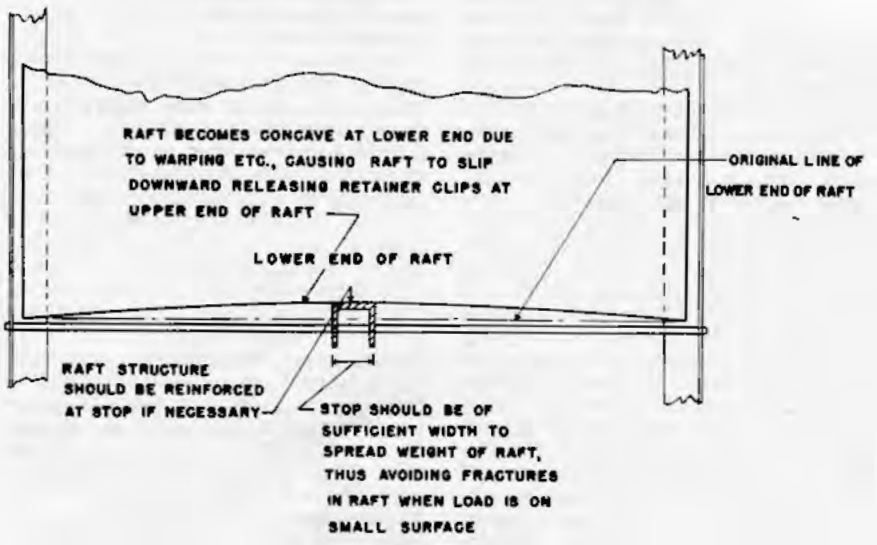

FIGURE G. DOWNWARD MOVEMENT WHEN RAFT BECOMES CONCAVE AT LOWER END.

and this decking is carried away, as shown by sketch F, detail A–A. A safety factor of six based on the weight of the raft and its equipment as a working load should be utilized in determining the strength of the releasing and supporting assembly.

When rafts are originally stowed and secured on the skids in such a manner that they will float free if not released, with the retaining clips at the upper ends having sufficient bearing surface and the base stop plates of ample area, extending well up under the base of the raft, there are very few occasions where the rafts will be lost overboard due to heavy boarding seas. Rafts should be originally stowed in a position on the skids with their base not less than 7 or 8 feet above the main deck. A combination releasing and securing assembly should not be installed to terminate at any great distance from the location of the raft, owing to the stretching of the assembly and the changes in the vessel's structure under different conditions of loading, and also the working and straining of a vessel in a seaway which causes the raft to move down on the skid and disengage the clips. When in port, rafts should occasionally be secured by a preventer and the base stop plate worked and lubricated, and once each year the rafts should be removed from the skids, overhauled and examined, and skid angles cleaned and greased.

The masters and officers of vessels must realize that no matter how securely the rafts and boats are originally stowed, continued vigilance and supervision must be exercised to maintain this security. Good seamanship and foresight must be displayed and any unsatisfactory conditions which may develop must be immediately corrected. A great many of the losses will thus be averted, and, in addition to avoiding the expenses and difficulties involved in replacing lost lifesaving equipment, vessels will not be compelled to travel in dangerous waters without sufficient boats and rafts to accommodate all persons on board.

LESSONS FROM CASUALTIES

Why Have Fire Drills?

Although the regulation requiring a fire drill on shipboard at least once in each week is complied with by ship's personnel, it is too often true that the drill is carried out in a perfunctory manner, with a mental attitude of indifference. This should not be. The drills should be taken seriously, with the realization that some day a situation may arise where a complete knowledge of the location and the method of handling all fire-fighting equipment and alarms is essential for the saving of the vessel and crew.

Reports often arrive at headquarters revealing the story of fires on vessels, and in some of these casualty reports there are found cases where the lack of thorough working knowledge of the fire-fighting equipment and alarms found on the vessels has permitted the fire to gain headway and further endanger the vessel and its crew.

Such a case recently came to the attention of headquarters. In this instance a fire originated in the engine room through failure of certain machinery. In the excitement that followed, some member of the ship's personnel pulled the cord in the first CO_2 gas control box he saw. The CO_2 alarm sounded signifying the release of the gas. The failure of this system to check the fire did not arouse any doubts as to its operation since the fans and ventilators to the engine room had not been turned off and it was believed this had interfered with the extinguishing effects of the CO_2 gas. It was therefore necessary to call the harbor fireboats for aid in extinguishing the fire. At the time of the investigation, the CO_2 cylinders were weighed and it was found that only one 50-pound cylinder had discharged. Upon reviewing the layout of this fixed system it was apparent that either through ignorance or excitement the wrong control box had been used. The seaman had pulled the cord in the box for the after pump room, thus releasing one cylinder of gas for the self-contained ventilation of the motors, generators, and cubicles.

This illustrates the need of frequent fire drills so that all personnel on shipboard become fully acquainted with the fire-fighting equipment, its location and use. In holding fire drills the officer in charge should assume that there is a fire in a certain location and have personnel respond to the signal by reporting to that location with fire-fighting equipment, one crew member standing by at the control box which governs the flow of CO_2 gas to the compartment supposedly containing the fire. In this way the fire drill parallels actual conditions.

At this time various members of the crew should be questioned as to what they would do if they discovered a fire in a certain compartment. They should be instructed that the first thing to do is to give the alarm which necessitates a knowledge of the location of the fire-alarm boxes. If a manual alarm system is not installed on the vessel, as would be the case with ships other than passenger ships, then the alarm should be given by word of mouth, calling to the next nearest crew member, etc. The next thing to do is to shut off all ventilators and fans. Finally, take the nearest fire extinguisher and direct its extinguishing agent at the base of the fire. This last act requires a knowledge of the various types of fire extinguishers and their method of operation. Ship's personnel should be taught the use of the various types of extinguishers and the method of putting such extinguishers into operation. If fire drills are conducted in this thorough fashion, the members of the ship's personnel become thoroughly acquainted with their duties and with the location and use of fire-extinguishing equipment.

Diesel Explosions

"Explosion" is a word which through the years has always connoted serious damage and loss of life. It is a force which mankind has harnessed to provide motive power, but one which occasionally escapes its bounds and wreaks havoc. Fortunately disastrous explosions are becoming less and less frequent as man extends each year his control over this force by the application of remedial measures. Two recent casualty files involving explosions of main Diesel engines and the measures recommended for minimizing the possibility of recurrence are analyzed for the information of operating personnel.

The casualties concerned two vessels, each of which had an explosion in the starboard main propulsion Diesel engine, bringing about the loss of four lives. In many respects the two explosions were similar, so much so that there is no need to give the story of both casualties. In each case the vessels were under way with all machinery functioning normally. Suddenly a knock was detected in the starboard Diesel and at this point the engine room crews operated differently. In the case of one vessel, the chief engineer was sent for, but before he could arrive, the engine exploded; in the case of the other vessel, the engine was secured and an examination was made in an effort to ascertain the nature of the trouble. This failed to uncover the cause of the noise so the Diesel was started ahead at half speed and, shortly after, the engine exploded. In each case the explosion originated from one cylinder.

At the time of investigating these two casualties, it was impossible to ascertain the true cause of the explosions due to the difficulty in judging what damage was causal and what was effect. However, since there was evidence of broken rings, ring seizure and carbonization, it seems quite probable that the causes of the explosions can be narrowed down to improper adjustment of fuel nozzles, the possibility that the entire unit was overloaded (which is rather common in Diesel practice), or improper functioning of the lubrication system.

It was apparent from the evidence, however, that rings had been broken, and that the piston skirt had fractured and had dropped sufficiently for the connecting rod to strike it. It was this noise which was detected by the engine room crew and was the first warning of impending engine trouble. Due to the failure of the rings, unburned fuel escaped into the crankcase where a preliminary explosion occurred. The pent-up gases, being unable to find complete relief through the small relief valves, generated a sufficient force to blow out the cover plate, admitting air, thus supplying the necessary oxygen for the violent explosion which followed.

Remedial measures recommended for minimizing the possibility of the recurrence of such explosions fall into two groups: Those affecting the design and construction of the Diesel engines; and those which can be carried out by the engine-room personnel.

As regards the change in design and construction of the Diesels, positive action is being taken without delay. Larger relief valves are being installed in the crankcase covers. Steel covers are being furnished to replace those of Plymetl and cast aluminum. The main engine drain is being extended below the oil level in the sump tank to prevent air and oil vapors from entering the crankcase; and finally, caution plates are to be attached to the control stands, these plates to read: "If engine develops an abnormal sound, stop engine immediately, investigate, and make correction before starting the engine again."

The engine-room personnel can aid greatly in preventing engine trouble and its possible disastrous effects. When painting an engine room, do not paint everything in sight. Do not paint relief valves or other equipment where paint will interfere with their proper and efficient operation. It is a good idea to check the relief valves frequently to see that they operate efficiently. Diesel engines should be kept in balance to insure maximum efficiency and power output. The lubricating systems must be watched and checked to insure complete and adequate flow of oil to prevent overheating. When laid up in port, the Diesel engines should be subjected to a thorough inspection. The engine head should be lifted and pistons drawn. In that way rings can be examined, broken ones replaced, and the cylinder can be examined for abnormal wear and scoring. All the personnel connected with the operation of Diesels should familiarize themselves with the instructions issued by the manufacturer in order that they may be in a position to put them into practice. These points are elementary, it is true, but nevertheless they are important and good engineering practice. For smooth operation of an engine, thorough and frequent inspections are as important as good fuel.

As mentioned above, these explosions have caused the death of four engineers and serious injury to four others. It is hoped that with the proposed alterations in design and construction, and with closer surveillance of engine operation, it will in the future be impossible for explosions of this nature to recur.

APPENDIX

Amendments to Regulations

TITLE 46.—SHIPPING

Chapter I—Coast Guard Inspection and Navigation

Subchapter O—Regulations Applicable to Certain Vessels and Shipping During Emergency

PART 153—BOATS, RAFTS, AND LIFE-SAVING APPLIANCES, REGULATIONS DURING EMERGENCY

Section 153.6a (b) (8) is amended to read as follows:

§ 153.6a *Additional equipment for lifeboats on seagoing barges of 100 gross tons or over.* * * *

(b) * * *

(8) *Hatchet.* One hatchet attached by a lanyard and readily available for use. All hatchets provided for use on merchant vessels on and after 1 October 1944 shall be of an approved type. Hatchets provided prior to 1 October 1944 may be continued in service provided they are in good and serviceable condition (9 F.R. 11611, 21 September 1944).

PART 156—INSPECTION AND CERTIFICATION

Section 156.3 is amended to read as follows:

§ 156.3 *Electrical installations.* The specification covering electrical installations titled "United States Coast Guard, Merchant Marine Inspection, Specification for Electrical Installations on Merchant Vessels", dated August 31, 1944, is, during the emergency, applicable as alternative provisions to those contained in §§ 32.6–1 to 32.6–5, inclusive, 63.9, 79.9, 97.11 and 116.16 of this chapter (9 F.R. 11181, 12 September 1944).

Waiver

Subchapter G—Ocean and Coastwise: General Rules and Regulations

PARTITIONS BETWEEN TOILETS IN TOILET ROOMS AND NUMBER OF TOILETS TO BE PROVIDED FOR MEMBERS OF THE CREW ON EC–2–S–C1 CARGO VESSELS

Vessels engaged in business connected with the conduct of the war.

The Acting Secretary of the Navy having by order dated 1 October 1942 (7 F.R. 7979) waived compliance with the Navigation and Vessel Inspection laws administered by the United States Coast Guard, in the case of any vessel engaged in business connected with the conduct of the war to the extent and in the manner that the Commandant, U. S. Coast Guard, shall find to be necessary in the conduct of the war; and

The United States Maritime Commission having indicated that the efficient prosecution of the war would be impeded by the application to certain ocean and coastwise cargo vessels of certain inspection regulations requiring partitions between toilets in toilet rooms and an increased number of toilets:

Now, therefore, upon request of the United States Maritime Commission, I hereby find it to be necessary in the conduct of the war that there be waived compliance with the vessel inspection regulations administered by the U. S. Coast Guard, 46 C. F. R. 63.18, to the extent necessary to permit the omission of partitions between toilets and to permit the omission of a toilet in the deck department toilet room on the starboard side of the midship house on EC–2–S–C1 Cargo vessels.

Dated: September 16, 1944.

R. R. WAESCHE,
Vice Admiral, USCG,
Commandant.

(9 F.R. 11547, 19 September 1944.)

Navigation and Vessel Inspection Circular No. 51

Proficiency in signalling of United States licensed deck officers sailing on vessels documented under registry under the laws of the United States

UNITED STATES COAST GUARD,
Washington, D. C., 29 September 1944.

Incls: (A) Copy of Part 161, Title 46 CFR.
(B) Basic curriculum in wartime merchant ship communications and specimen examination questions.

1. In response to a request of the Navy Department relative to the above subject, Inclosure (A) is a copy of new Part 161, Title 46, CFR, issued by the Commandant on 1 August 1944, 9 F. R. 9290. The effect of these regulations will be to require that on and after 1 January 1945, the master and all licensed deck officers required by the certificate of inspection of United States vessels departing under registry from ports of the United States, including Alaska, Hawaii, Puerto Rico, and the Virgin Islands, shall possess satisfactory evidence of proficiency in wartime merchant ship communications.

2. Certificates of Proficiency in Merchant Ship Communications for U. S. Masters and Mates issued by Navy certifying officers will be accepted as satisfactory evidence of the proficiency in communications required by the regulations. All licensed deck officers possessing such certificates shall have their licenses indorsed by any Coast Guard officer authorized to issue licenses: "Qualified in wartime communications." On and after 1 January 1945, deck officers required by the certificate of inspection of vessels registered under the laws of the United States shall be required to exhibit to the Coast Guard Shipping Commissioner at the time of signing on a duly indorsed license as provided above. Appropriate notations will be made on the shipping articles indicating compliance with the requirement. If any vessel fails to have a full complement of deck officers as required by its certificate of inspection who are qualified in communications as required by the new regulations, it shall be deemed to be failing to comply with the requirements of its certificate of inspection, and, unless the requirement is waived in accordance with outstanding instructions, the vessel shall be prevented from sailing.

3. All licensed deck officers should be informed of the requirement of this regulation and should be encouraged to obtain the necessary certificates as promptly as possible. Applicants for the certificates should have knowledge of the material set forth in the basic curriculum for training in wartime merchant ship communications approved by the Chief of Naval Personnel. A copy of the basic curriculum is attached as Inclosure (B). In order to obtain a certificate, every applicant will be required to pass.

4. Courses in wartime merchant ship communications are now included in the programs of the following basic schools:

a. U. S. Maritime Service Officers' Training School, New London, Conn.

b. U. S. Maritime Service Officers' Training School, Alameda, Calif.

c. Merchant Marine Academy, Kings Point, Long Island, N. Y.

d. U. S. Merchant Marine Cadet Basic School, Pass Christian, Miss.

e. U. S. Merchant Marine Cadet Basic School, San Mateo, Calif.

f. Maine Maritime Academy, Castine, Maine.

g. Massachusetts Maritime Academy, Hyannis, Mass.

h. New York State Maritime Academy, Fort Schuyler, Bronx, N. Y.

i. Pennsylvania Maritime Academy, 348 Bourse Bldg., Philadelphia, Pa.

j. California Maritime Academy, Morrow Cove, Vallejo, Calif.

In addition, instruction for merchant marine personnel is being provided by the Navy in Wartime Merchant Ship Communication "Brush-Up" Schools at the following addresses:

a. First Naval District: Office of the Port Director, 150 Causeway Street, Boston 14, Mass.

b. Third Naval District: Office of the Port Director, 17 Battery Place, New York 4, N. Y.

c. Fifth Naval District:

(1) Building T–1, Granby at Monticello Avenue, City Park, Norfolk, Va.
(2) U. S. Naval Receiving Station, Newport News, Va.
(3) 37 Commerce Street, Baltimore, Md.

d. Eighth Naval District: 1 Canal Street, New Orleans, La.

e. Eleventh Naval District: Naval Operating Base, Terminal Island, San Pedro, Calif.

f. Twelfth Naval District: 40 First Street, San Francisco, Calif.

g. Thirteenth Naval District: U. S. Navy Communications Training Center, Exchange Building, Seattle, Wash.

Naval officers have been especially assigned as instructors to the U. S. Maritime Service Officers' Schools and to the "Brush-Up" Schools. In the other schools, the heads of the Department of Naval Science have cognizance of training in wartime merchant ship communications. Inasmuch as the publications on which instruction is primarily based are included in the regular merchant ship allowance, it is considered that in some instances applicants will undertake to prepare themselves independently while at sea.

5. The following officers will be authorized by the Navy Department to give the examinations and issue the U. S. Navy Certificate of Proficiency in Wartime Merchant Ship Communications:

a. Instructors in Wartime Merchant Ship Communications "Brush-Up" Schools.

b. Officers in Charge, Wartime Merchant Ship Communications, U. S. Maritime Service Officers' Schools.

c. Heads of the Department of Naval Science, Merchant Marine Academy, Merchant Marine Cadet Basic Schools, and State Maritime Academies.

d. Officers assigned to duty in connection with merchant ship communications in certain U. S. Navy Routing Offices.

6. Copies of this circular should be made available to any interested person. If additional copies are needed, advise HQ and more will be furnished.

(Signed) R. R. WAESCHE,
Commandant.

WHAT THE CANDIDATE MUST KNOW

KNOW THE BASIC PUBLICATIONS.

Particular attention should be given to the topics listed below, but on no account should anything be disregarded not listed which is covered in the basic publications:

A. *Publications:* What they are; issue to Masters; security (stowage, accounting); availability to personnel concerned on board; corrections.

B. *Convoy organization afloat:* Convoy formation; authority and functions of Escort Commander, Commodore, individual Master; interrelated responsibilities of Master and communication personnel.

C. *Identification and distinguishing signals (visual and radio):* Harbor identification; challenge and recognition; distinguishing signals in convoy; radio call signs.

D. *Visual signaling in convoy:* Equipment and personnel; choice of medium; flags, flashing light, sound, pyrotechnics, colored lights (occasions for use, origination, answering or relaying, execution); signal logs.

E. *Radio organization:* Master's responsibilities (compliance with operational directives, general supervision of equipment and personnel, authorization to transmit, notifying radio room of emergencies, position reports on independents, checking the radio log); security (radio silence, radiation, approved equipment); BAMS Organization; watchkeeping (convoy radio organizations, watchkeeping for

independents, auto alarm, D/F); messages in convoy; messages out of convoy.

F. *Coding and decoding:* Use of publications; security (files, worksheets, etc.).

G. *Convoy tactics and maneuvers:* Alterations of course; zigzagging; speed signals; positions and rendezvous; alarm and attack.

SPECIMEN EXAMINATION QUESTIONS
(Unclassified)

1. What is the position number of the ship marked "X" in this convoy?

O O O O O O
O O O O O O
O X O O O O

2. A Convoy Commodore hoists a 6 pennant and a bearing and sounds a 5-second blast. What does the signal mean? What is to be done by other ships?

3. How are flag signals relayed in convoy when intended for all ships?

4. Explain how emergency turns are ordered (*a*) by day, (*b*) by night, (*c*) in thick weather. Indicate the mediums for signaling in each case, and give the executive signal.

5. What is the designation of the normal convoy radio organization except in the Mediterranean? Where is it described?

6. Your ship, carrying three radio operators, is traveling independently. What watches must be stood?

7. Still traveling independently, you encounter a suspicious merchant vessel, which flashes a challenge. What do you do?

8. What types of messages may be transmitted by radio (*a*) by a ship in convoy, (*b*) by an independently routed merchant ship?

9. State where you can find the meanings of the following: PQD9, CX1, 37727, ARGU, QQQQ, Flag E, WBA, BAMS, PV, PQKØ2.

10. Decode this message (*practical test*).

Equipment Approved by the Commandant

BILGE PUMP FOR LIFEBOATS

Bilge pump for lifeboats (Size U. S. C. G. No. 2) (Dwg. No. 222–A, dated 24 August 1944), submitted by Allied Marine Equipment Division, Tap-Rite Products Corp., Hackensack, N. J. (9 F. R. 11611, 21 September 1944).

CONTAINERS FOR EMERGENCY RATIONS

Emergency drinking water container (Dwg. dated 15 April 1944), submitted by Chemical Service Co., 1117–25 S. Howland Street, Baltimore, Md.

Emergency provisions container (Dwg. dated 15 April 1944), submitted by Chemical Service Co., 1117–25 S. Howland Street, Baltimore, Md.

Emergency drinking water container (Dwg. No. 668, dated 20 July 1943, revised 9 August 1944), submitted by The Multiple Breaker Co., Garwood, N. J.

Emergency provisions container (Dwg. No. 667, dated 20 July 1943, revised 9 August 1944), submitted by The Multiple Breaker Co., Garwood, N. J. (9 F. R. 11181, 12 September 1944).

DAVIT

Barclay Gravity Davit, Type G1 (Assembly Dwg. No. 565–E, dated 12 October 1943, revised 2 June 1944) (maximum working load of 7,505 pounds per arm, 15,010 pounds per set), submitted by Gunderson Bros. Engineering Corporation, 4700 Northwest Front Avenue, Portland, Oreg. (9 F. R. 11827, 27 September 1944).

EMBARKATION-DEBARKATION LADDER

Embarkation-debarkation ladder, Type B–1 (Dwg. No. 561–S1604–8, dated 28 July 1944), submitted by the Viking Marine Co., 314 Colman Building, Seattle, Wash. (9 F. R. 11611, 21 September 1944).

FIRE-DETECTING AND ALARM SYSTEM

Fire-detecting and alarm system (Sheets 1, 2, 3, and 4 of Dwg. No. 12243, Alt. 4, revised 12 May 1944) (Catalog No. 572), for U. S. A. H. S. *Larkspur* only, submitted by Auth Electrical Specialty Co., Inc., 422–430 East 53d Street, New York, N. Y. (Supersedes approval 18 August 1944, 9 F. R. 10204.) (9 F. R. 11181, 12 September 1944.)

FIRE RETARDANT MATERIAL FOR VESSEL CONSTRUCTION

Gold Bond Natcor (panel for class B bulkhead construction), ¾-inch panel consisting of ½-inch gypsum wallboard surfaced both sides with ⅛-inch Keasbey-Mattison cement asbestos board, submitted by National Gypsum Co., Clarence Center, N. Y.

Gold Bond Natcor (panel for class B bulkhead construction), ⅞-inch panel consisting of ⅝-inch gypsum wallboard surfaced both sides with ⅛-inch Keasbey-Mattison cement asbestos board, submitted by National Gypsum Co., Clarence Center, N. Y.

FIRING ATTACHMENT FOR LINE-THROWING GUN

Firing attachment for line-throwing gun (Dwg. No. F. A. 19 dated 1 September 1944), submitted by the Columbia Appliance Corporation, Long Island City, N. Y. (9 F. R. 11827, 27 September 1944).

LIFEBOATS

28′ x 9′ x 3′11½″ metallic motor propelled lifeboat (598 cu. ft. by the .6 rule, 692 cu. ft. by Stirling rule, 52-person peacetime capacity, 40-person wartime capacity) (Arrangement and Construction Dwg. No. S9–0–11, dated 9 November, 1943, Rev. U, dated 10 August 1944), submitted by the Imperial Lifeboat & Davit Corporation, Athens, N. Y. (9 F. R. 11181, 12 September 1944).

14′ x 5.2′ x 2.3′ metallic oar-propelled lifeboat (100 cu. ft. capacity by the .6 rule, 10-person peacetime capacity) (General Arrangement Dwg. No. G–346, dated 1 September, 1944), submitted by C. C. Galbraith & Son, Inc., 99 Park Place, New York, N. Y. (F. R. 11827, 27 September 1944).

LIFE PRESERVERS

Model No. 1, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–235, manufactured by Cluff Fabric Products, 457–467 East 147th Street, New York, N. Y. (For general use.)

Model No. 2, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–236, manufactured by Cluff Fabric Products, 457–467 East 147th Street, New York, N. Y. (For general use.)

Model No. 3, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–238, manufactured by Cluff Fabric Products, 457–467 East 147th Street, New York, N. Y. (For use with rubber lifesaving suits.)

Model No. 1, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–239, manufactured by Merit Manufacturing Co., 225–27 Powell Street, Brooklyn, N. Y. (For general use.)

Model No. 2, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–240, manufactured by Merit Manufacturing Co., 225–27 Powell Street, Brooklyn, N. Y. (For general use.)

Model No. 3, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–241, manufactured by Merit Manufacturing Co., 225–27 Powell Street, Brooklyn, N. Y. (For use with rubber lifesaving suits.)

Adult kapok life preserver (Navy Standard Type 23J1c) (Navy Bureau of Ships Dwgs. No. 83927 and No. 83928, and Navy Department Specification 23J1c), Approval No. B–243, manufactured by Cluff Fabric Products, 457–467 East 147th Street, New York, N. Y. (For general use and not for use with rubber lifesaving suits.)

Model No. 1, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–245, manufactured by Chesapeake Appliance Corporation, 127 West Barre Street, Baltimore, Md. (For general use.)

Model No. 2, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–246, manufactured by Chesapeake Appliance Corporation, 127 West Barre Street, Baltimore, Md. (For general use.)

Model No. 3, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–247, manufactured by Chesapeake Appliance Corporation, 127 West Barre Street, Baltimore, Md. (For use with rubber lifesaving suits.) (9 F.R. 11611, 21 September 1944.)

Model No. 1, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–242, manufactured by Jurgensen Manufacturing Co., 145 W. 15th Street, New York 11, N. Y. (For general use.)

Model No. 2, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–237, manufactured by Jurgensen Manufacturing Co., 145 W. 15th Street, New York 11, N. Y. (For general use.)

Model No. 3, adult kapok life preserver (C. G. Dwg. No. F–49–6–1, Alt. 1, and Specification dated 10 June 1944), Approval No. B–244, manufactured by Jurgensen Manufacturing Co., 145 W. 15th Street, New York 11, N. Y. (For use with rubber lifesaving suits.)

Adult kapok life preserver, Model No. BB–2 (Dwg. No. BB–2, dated May 1944), Approval No. B–216, submitted by Bogardus Brothers, New Rochelle, N. Y. (For general use and not for use with rubber lifesaving suits.) (9 F.R. 11827, 27 September 1944.)

LIFE RAFTS

20-person improved type Taylor life raft, Model No. 2 (Dwg. No. R104A, dated 11 July 1944), submitted by Flury & Crouch, West Palm Beach, Fla. (9 F.R., 11247, 12 September 1944).

20-person improved type reversible life raft, plywood construction filled with cork (General Arrangement and Construction Dwg. No. L. R. 11544), submitted by the Royal Marine Equipment Corporation, 310 West 68th Street, New York, N. Y. (9 F.R. 11611, 21 September 1944).

20-person improved type reversible life raft (Los Angeles Boiler Works Dwgs. No. B–1145, dated 3 December 1942, revised, and No. B–1146, dated 1 December 1943, revised) (9 F.R. 11611, 21 September 1944), constructed by the Manteo Boat Building Co., Manteo, N. C., for the Bell Lumber Co., 3961 Gage Avenue, Bell, Calif.

20-person self-righting, self-bailing, improved type life raft, Styrofoam filled (General Arrangement Dwg. No. 9505 as revised), submitted by Leyde & Leyde, Falls Church, Va. (9 F.R. 11611, 21 September 1944).

20-person improved type, aluminum plywood life raft (Arrangement and Details Dwg. No. R–205–X, dated 26 February 1944, revised 14 August 1944), submitted by Gunderson Bros. Engineering Corporation, 4700 Northwest Front Avenue, Portland, Oreg. (9 F.R. 11827, 27 September 1944).

20-person self-righting, self-bailing, improved type life raft, Styrofoam, Type Q103.6, filled (General Arrangement Dwg. No. 9505 as revised), submitted by Leyde & Leyde, Falls Church, Va. (Supersedes approval 20 September, 1944, 9 F.R. 11611.) (9 F.R. 11827, 27 September 1944.)

20-person improved type life raft, balsa wood filler (Dwg. No. P–101, dated 7 September 1944), submitted by Mr. C. Pantke, 45 West 45th Street, New York, N. Y.

20-person improved type life raft, balsa wood filler (C. Pantke Dwg. No. P–101, dated 7 September 1944), submitted by Roof Structures, Inc., 45 West 45th Street, New York, N. Y.

LUMINOUS MARKING FOR INTERIOR ACCOMMODATIONS

Luminous marking, Type C, submitted by the Century Lighting Co., New York, N. Y. (9 F.R. 11827, 27 September 1944).

PORTABLE ELECTRIC MEGAPHONE

Portable electric megaphone, Type M Model 100 (Assembly Dwg. No. M 100–05), submitted by the Hose-McCann Products Co., 163 Pacific Street, Brooklyn, N. Y. (9 F.R. 11611, 21 September 1944).

SAFETY VALVE

Duplex safety valve, Style DS–100 (maximum working pressure 600 p. s. i., maximum temperature 490° F.) (Dwg. No. 356B, dated 1 August 1944), submitted by the Ashton Valve Co., Boston, Mass. (9 F.R. 11181, 12 September 1944).

SIGNAL PISTOL

Mark IV parachute flare signal pistol (Assembly Dwg. No. B–4–3318, revised 16 September 1944), manufactured by Harrington & Richardson Arms Co., Worcester, Mass. (Supersedes approval 5 July 1943, 8 F.R. 9305.)

SKATE FOR LIFEBOATS

Skate for 24-foot Globe American lifeboat (Dwg. No. 5US–1108–1, dated 30 August 1944), submitted by Globe American Corporation, Kokomo, Ind.

WINCHES

Type HC–N lifeboat winch, fitted with quick-return mechanism (General Arrangement Dwg. No. 2564–13, dated 23 March 1943, revised 22 July 1943) (maximum working load of 3,400 pounds per drum, 6,800 pounds per winch), submitted by the Welin Davit & Boat Corporation, Perth Amboy, N. J. (9 F.R. 11612, 21 September 1944).

Lifeboat winch for gravity davits, Type G1 (maximum working load of 15,500 pounds at the drums, or 7,750 pounds per fall) (Assembly Dwg. No. 1172–D, dated 8 March 1944, revised 2 June 1944), submitted by Gunderson Bros. Engineering Corporation, 4700 Northwest Front Avenue, Portland, Oreg. (9 F.R. 11827, 27 September 1944).

CORRECTION

In Federal Register Document 44–12715, appearing on page 10306 of the issue of Thursday, August 24, 1944, the approval number for Model No. 3 adult kapok life preserver should read "B–234" instead of "B–324" (9 F.R. 11181, 12 September 1944).

WITHDRAWAL OF APPROVAL

BILGE PUMP FOR LIFEBOATS

Lifeboat bilge pump (Dwg. No. 2403, dated 13 October 1942), submitted by the Welin Davit & Boat Corporation, Perth Amboy, N. J. (Approved 26 February 1943, 8 F.R. 2605.) Bilge pumps installed in lifeboats may be continued in service so long as in serviceable condition (9 F.R. 11827, 27 September 1944).

PARACHUTE FLARE

Monty red parachute signal flare plastic cartridge, submitted by Monty Laboratories Corporation, Hamilton & Liberty Streets, Albany, N. Y. (Approved 14 June 1943, 8 F.R. 8188.) Cartridges now manufactured may be placed in service and cartridges in service may be continued in service if in serviceable condition (9 F.R. 11247, 12 September 1944).

WATER LIGHT

Ramsey-O'Neil electric water light (General Arrangement Dwg. dated 29 July 1941), submitted by Sun Shipbuilding & Dry Dock Co., Chester, Pa. (Approved 24 October 1941, 6 F.R. 5473.) Water lights now in service may be continued in use so long as in serviceable condition (9 F.R. 11827, 27 September 1944).

AFFIDAVITS

It is required by the Marine Engineering Regulations that manufacturers submit affidavits before they manufacture items of equipment in accordance with these regulations for use on vessels subject to inspection by the Coast Guard. These affidavits

are kept on file at Coast Guard Headquarters and a list of approved manufacturers is published for the information of all parties concerned. The affidavits received and accepted during the period from July 16 to September 15, 1944, are as follows:

Bethlehem Steel Co., Lebanon, Pa., bolts, studs and nuts.

Bergen Point Brass Foundry, Bayonne, N. J., castings.

Everett Brass Foundry, Inc., Everett, Wash., duplex strainers.

Fort Pitt Steel Casting Co., McKeesport, Pa., steel casting. (This listing replaces the listing published in the September 1941 Bureau of Marine Inspection and Navigation Bulletin, p. 3, for the Fort Pitt Steel Co.)

The Industrial Machine Products Co., Los Angeles, Calif., fabricated steel valves.

Ladish Drop Forge Co., Cudahy, Wis., forged steel pipe fittings.

Nemco Electric Co., 804 Sixth Avenue S., Seattle, 4, Wash., valves.

Reliance Foundry Co., 1933 Macomb Street, Detroit, Mich., bronze castings.

Fred Schulhof Engineering Co., 1211 West 58th Place, Los Angeles 44, Calif., valves.

William Sellers & Co., Inc., 1600 Hamilton Street, Philadelphia, Pa., hydraulic pipe fittings.

Service Foundry, Inc., 416 Erato Street, New Orleans, La., valves and fittings.

Wilgus Manufacturing Co., 1722 East Sixteenth Street, Los Angeles, Calif., pressure regulating valves.

ACCEPTABLE FUSIBLE PLUGS

The Marine Engineering Regulations require that fusible plug manufacturers who desire to have their products approved for marine service shall submit samples for testing from each heat to the Commandant. If the sample fusible plugs pass the test satisfactorily, the manufacturer is notified and then the plugs may be used on vessels subject to inspection by the Coast Guard. If the sample fusible plugs submitted do not pass the test, a fee of $20 for each sample submitted is required and must be paid to the National Bureau of Standards, Washington, D. C. For the information of all parties concerned, a list of approved heats which have been tested and found acceptable during the period from August 16 to September 15, 1944, is as follows:

M. Greenberg's Sons, 765 Folsom Street, San Francisco, Calif., heat No. 138.

The Lunkenheimer Co., P. O. Box 360, Annex Station, Cincinnati 14, Ohio, heat No. 209.

The Gibson & Kirk Co., Warner and Bayard Streets, Baltimore, Md., have purchased the special equipment, etc., for manufacturing fusible plugs from the *Glasgow Iron Works & Supply Co.*

ITEMS SUITABLE FOR MERCHANT MARINE USE

PRESSURE VACUUM RELIEF VALVES

The Vapor Recovery Systems Co., 2820 North Alameda Street, Compton, Calif., "Varec" triplex pressure and vacuum marine valve, figure 33, "Varec" triplex pressure and vacuum marine valve without unloaders, figure 33A, and "Varec" triplex pressure and vacuum marine valve with vacuum unloader, figure 33B (drawing No. C-537, revised 28 July 1944); for use with inflammable and combustible liquids of grade A or lower on tank vessels subject to jurisdiction of the Coast Guard.

ELECTRICAL APPLIANCES

For the use of Coast Guard personnel in their work of inspecting merchant vessels, the following items of electrical equipment have been examined. This list is not intended to be an all-inclusive list of miscellaneous electrical equipment; accordingly, items not included may also be satisfactory for marine use.

Manufacturer and description of equipment	Location apparatus may be used				Date of action
	Passenger and crew quarters and public spaces	Machinery cargo and work spaces	Open decks	Pump rooms of tank vessels	
Auth Electrical Specialty Co., Inc., New York, N. Y.: Engineer's signal and alarm panel, dripproof, drawing No. 7844, alt. 1	x	x			9/13/44
The Carlisle & Finch Co., Cincinnati, Ohio: Searchlight signalling, type 12-F-32, 12-inch, model No. 14600, drawing No. 2117, alt. 0	x	x	x		8/30/44
Coast Marine Engineering Co., Long Beach, Calif.: Comar terminal tube (octagon body), drawing No. 6-1201-1818, alt. 1	x	x	x		9/7/44
The Dayton Manufacturing Co., Dayton, Ohio: Water gauge light, fixture No. B-5533, watertight, drawing No. 1889, rev. 7	x	x	x		9/5/44
Edwards & Co., Inc., Norwalk, Conn.:					
Engineer's signal and alarm panel, dripproof, drawing No. 6970, alt. 0	x	x			9/12/44
Running light and dimmer panel, M. D. 2590, dripproof, drawing No. 6980, alt. 0	x	x			8/28/44
Running light and dimmer panel, M. D. 2591, watertight, drawing No. 6981, alt. 0	x	x	x		8/28/44
Wiring diagram for M. D. 2590 and M. D. 2591 running light panels, drawing No. 3798, alt. 0	x	x	x		8/28/44
Expediters, Ltd., San Francisco, Calif.: Terminal tube, X. P. fixture tube, bulkhead tube, and kickpipe tube, drawing No. 667-34, alt. 4 (for use with nonwatertight equipment and installations only)	x				9/13/44
Galbraith & Son, Inc., New York, N. Y.: Portable blower electric heater, type B, 1000 watts, 115 volts, drawing No. H-481, alt. 0	x	x			9/13/44
Paragon Electric Co., Two Rivers, Wis.: Running light and dimmer panel, watertight, drawing No. A-256, alt. 1	x	x	x		9/12/44
Perkins Marine Lamp & Hardware Co., Brooklyn, N. Y.:					
Side lights, electric, watertight, fig. No. 1150—No. 2, drawing No. 1150-2, alt. 0			x		8/18/44
Masthead, range, towing and bow lights, watertight, fig. No. 1151—No. 2, drawing No. 1151-2, alt. 0			x		8/18/44
Stern and overtaken lights, watertight, fig. No. 1152—No. 2, drawing No. 1152-2, alt. 0			x		8/18/44
Anchor light, watertight, fig. No. 1153—No. 2, drawing No. 1153-2, alt. 0			x		8/18/44
Not-under-command light, watertight, fig. No. 1154—No. 2, drawing No. 1154-2, alt. 0			x		8/18/44
Side lights, oil, fig. No. 1155—No. 2, drawing No. 1155-2, alt. 0			x		8/18/44
Masthead, range, towing and bow lights, oil, fig. No 1156—No. 2, drawing No. 1156-2, alt. 0			x		8/18/44
Stern and overtaken lights, oil, fig. No. 1157—No. 2, drawing No. 1157-2, alt. 0			x		8/18/44
Anchor light, oil, fig. No. 1158—No. 2, drawing No. 1158-2, alt. 0			x		8/18/44
Not-under-command light, oil, fig. No. 1159—No. 2, 1159-2, alt. 0			x		8/18/44
Robert H. Wager, South Orange, N. J.:					
Wager smoke indicator, type L, drawing No. 600, alt. 0	x	x			9/1/44
Wager smoke indicator, type L-A, drawing No. 731, alt. 0	x	x			9/1/44
Westinghouse Electric & Manufacturing Co., Pittsburgh, Pa.:					
Floodlight, type B, general purpose assembly, 500 watts, drawing No. N-869654, sub. 4	x	x	x		8/23/44
Floodlight, type B, general purpose assembly, 500 watts, drawing No. N-869647, sub. 3	x	x	x		8/23/44
Wheeler Reflector Co., Boston, Mass.: Portable cargo reflector, 5 100-watt lamps, drawing No. SK-15251-3, alt. 6	x	x			9/5/44
White-Rogers Electric Co., St. Louis, Mo.: Temperature control switch, type 1668-4, dripproof, rev. 6/19/44	x	x			8/22/44

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING AUGUST 1944

DECK OFFICERS

REGION	Master										Chief Mate										Second Mate									
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	65	104	3	16	----	----	3	37	----	8	93	12	1	4	----	----	1	2	----	----	185	14	----	----	----	----	----	----	----	----
Gulf coast	6	14	----	5	----	----	1	5	1	2	20	2	----	----	----	----	1	1	----	----	23	3	----	----	----	----	----	----	----	----
Great Lakes and rivers	----	2	----	----	----	12	----	3	2	13	----	1	----	----	----	----	----	1	10	8	----	1	----	----	----	----	----	----	----	----
Pacific coast	33	48	1	2	----	----	4	11	----	1	50	4	----	3	----	----	4	4	----	1	88	8	----	1	----	----	----	----	----	----
Total	104	168	4	23	----	12	8	56	3	24	163	19	1	7	----	----	6	8	10	9	296	26	----	1	----	----	----	----	----	----

REGION	Third Mate										Pilots						Master Mate				Total		
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Great Lakes		B. S. & L.		Rivers		Uninspected vessels, high seas				Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	311	19	----	----	----	----	----	----	----	----	5	9	26	149	4	6	1	2	----	1	698	383	1,081
Gulf coast	29	----	----	----	----	----	----	----	----	----	----	2	4	10	4	4	----	----	----	----	89	48	137
Great Lakes and rivers	----	1	----	----	----	----	----	----	----	----	----	9	6	17	57	17	----	----	----	----	75	85	160
Pacific coast	117	4	----	----	----	----	----	----	----	----	----	2	17	47	----	8	----	----	----	----	314	144	458
Total	457	24	----	----	----	----	----	----	----	----	5	22	53	223	65	35	1	2	----	1	1,176	660	1,836

ENGINEER OFFICERS

REGION	Chief engineer, steam				First assistant engineer, steam				Second assistant engineer, steam				Third assistant engineer, steam			
	Ocean		Inland		Ocean		Inland		Ocean		Inland		Ocean		Inland	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	23	93	9	23	33	48	2	9	50	24	------	1	289	17	------	1
Gulf coast	12	16	------	4	20	3	------	1	20	2	------	------	24	5	------	------
Great Lakes and rivers	2	11	2	33	6	2	2	13	2	4	4	6	6	2	2	------
Pacific coast	29	38	------	8	54	14	------	3	67	8	------	------	47	8	------	------
Total	66	158	11	68	113	67	4	26	139	38	4	7	366	32	2	1

REGION	Motor vessels								Uninspected vessels				Totals		
	Chief engineer		First assistant engineer		Second assistant engineer		Third assistant engineer		Chief engineer		Assistant engineer		Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	5	48	4	13	4	5	253	2	------	------	------	------	672	284	956
Gulf coast	7	7	3	1	4	------	10	------	------	------	------	------	100	39	139
Great Lakes and rivers	4	9	3	3	------	------	------	------	------	------	------	------	33	83	116
Pacific coast	8	17	4	4	10	2	10	------	------	------	1	------	230	102	332
Total	24	81	14	21	18	7	273	2	------	------	1	------	1,035	508	1,543

ORIGINAL SEAMEN'S DOCUMENTS ISSUED, MONTH OF AUGUST 1944

REGION	Continuous discharge book	Certificate of identity	A. B., green, 3 years [1]	A. B., green, 9 months emergency [1]	A. B., blue, 18 months, 12 months [1]	A. B., blue, 6 months emergency [2]	A. B., blue, 6 months emergency [3]	Lifeboat, 12–24 months [1]	Lifeboat, 6–12 months emergency [4]	Q.M.E.D., 6 months	Q.M.E.D., emergency	Radio operators	Certificate of service	Tankerman	Staff officer	Total
Atlantic coast	101	3,521	71	464	46	44	0	1,989	73	266	250	136	3,212	14	281	10,468
Gulf coast	99	953	68	36	7	0	3	157	15	24	56	15	868	76	24	2,401
Pacific coast	14	2,985	103	140	36	1	0	541	39	182	146	38	2,584	4	49	6,862
Great Lakes and rivers	1,746	182	24	22	7	27	0	25	28	29	80	32	1,846	15	11	4,074
Total	1,960	7,641	266	662	96	72	3	2,712	155	501	532	221	8,510	109	365	23,805

[1] Unlimited.
[2] Great Lakes, lakes, bays, and sounds.
[3] Tugs and towboats and freight vessels under 500 tons (miscellaneous).
[4] 12 months deck or 24 months other departments.
[5] 6 months deck or 12 months other departments.

NOTE.—There were 1,055 Panamanian Employment Cards issued.

WAIVERS OF MANNING REQUIREMENTS FROM 1 AUGUST TO 31 AUGUST 1944

Authority for These Waivers Contained in Navigation and Vessel Inspection Circular No. 31, Dated 13 March 1943

REGION	Number of vessels	Deck officers substituted for higher ratings	Engineer officers substituted for higher ratings	Able seamen substituted for deck officers	Ordinary seamen substituted for able seamen	Qualified members of engine department substituted for engineer officers	Wipers or coal passers substituted for qualified members of engine department	Wipers, coal passers or cadets substituted for engineer officers	Ordinary seamen or cadets substituted for deck officers	Total
Atlantic coast	525	257	328	28	644	74	69	18	32	1,450
Gulf coast	83	35	35	5	134	13	15	2	----	239
Pacific coast	276	90	105	22	544	73	110	6	16	966
Great Lakes	358	----	2	1	671	1	181	----	----	856
Total	1,242	382	470	56	1,993	161	375	26	48	3,511

CREW SHORTAGE REPORTS FROM 1 AUGUST TO 31 AUGUST 1944

These Reports Submitted in Accordance With Navigation and Vessel Inspection Circular No. 34, Dated 1 May 1943

REGION	Number of vessels	Ratings in which shortages occurred									Total
		Second mate	Junior third mate	Able seamen	Ordinary seamen	First engineer	Second engineer	Third engineer	Qualified member engine department	Wiper or coal passer	
Atlantic coast	13	1	2	3	2	1	1	----	5	2	17
Gulf coast	8	2	----	2	----	3	----	1	4	1	13
Pacific coast	25	----	----	51	19	----	----	1	15	8	94
Great Lakes	292	----	5	132	14	1	6	19	288	87	552
Total	338	3	7	188	35	5	7	21	312	98	676

What is the Future of the American Marine Industry?

attend the

AMERICAN MERCHANT MARINE CONFERENCE

THE WALDORF-ASTORIA – New York City

October 18, 19 and 20th, 1944

THE Propeller Club of the United States and the American Merchant Marine Conference will hold their Eighteenth Annual Meeting this year in New York.

Problems of vital importance to the future of the American Marine Industry growing out of the inevitable period of transition from an economy of war to one of peace will be explored and discussed by recognized authorities. The Conference will concentrate the experience and wisdom of its outstanding leadership upon subjects of transcending importance affecting the post-war ascendancy of the Merchant Marine.

Panel Discussion meetings will be held on October 18th and 19th; General Sessions on Friday, October 20th and, in the evening, the American Merchant Marine Conference Dinner.

The need for coordinated and constructive effort was never so necessary as at the present time . . . Your help and participation are needed in this program to foster the best interests of the American Merchant Marine for our military and economic defense . . . Arrange now to attend the Merchant Marine Conference, and to take part in this most important annual gathering of the American Marine Industry.

ARTHUR M. TODE, Hon. President
The Propeller Club of the United States

JOHN F. GEHAN, President
Propeller Club of the United States
Port of New York

J. LEWIS LUCKENBACH, Chairman
American Merchant Marine Conference Committee

LEWIS D. PARMELEE, Chairman
Conference Committees
Port of New York

●

For Complete Details and Advance Program, address

National Headquarters

17 Battery Place **New York 4, N. Y.**

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Travel by out-of-town members is not encouraged unless in the interest of the war effort.

U. S. GOVERNMENT PRINTING OFFICE: 1944