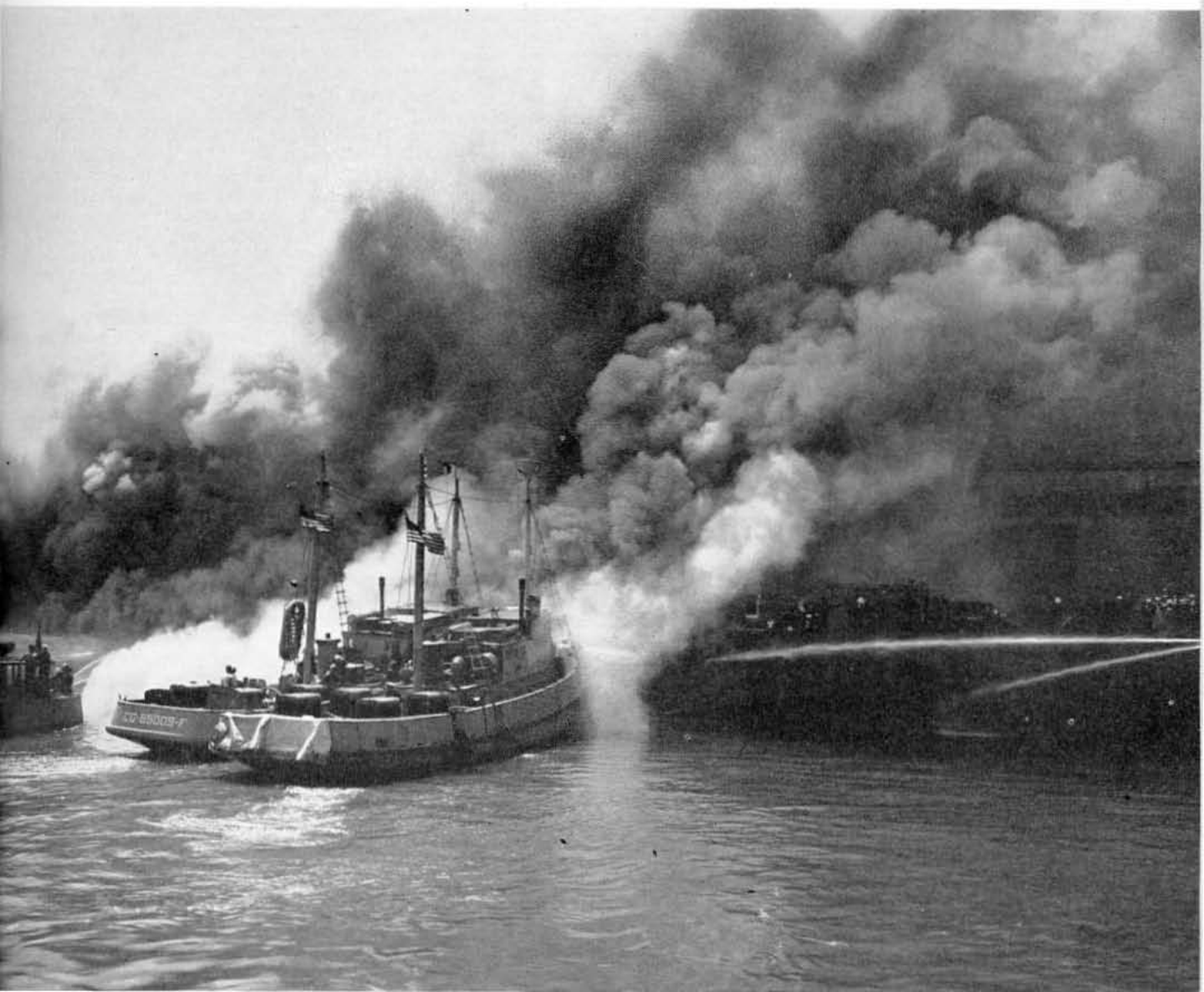


PROCEEDINGS OF THE
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Proceedings of the MERCHANT MARINE COUNCIL

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.

VICE ADMIRAL R. R. WAESCHE
U. S. C. G.

Commandant of the Coast Guard

The Merchant Marine Council of the United States Coast Guard

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Additional Members as Appointed by the Commandant

Captain KENNETH S. HARRISON,
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Chief Counsel, U. S. C. G.

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The cover: Two Coast Guard fireboats attacking a waterfront fire.

Activities of the Council

DURING the month of March the Merchant Marine Council gave consideration to the construction of emergency escape ladders from vessels' engine rooms. This was brought to its attention by the fact that some inspectors were requiring these ladders to be all steel, while others were approving ladders with wooden rungs. The Council decided that there was no element of serious risk in the use of wooden rungs and accordingly instructed that they were acceptable in such ladders.

Specifications for lifeboat and raft signaling mirrors were discussed. The problem in these mirrors is to enable the holder to aim the beam of deflected light exactly upon the aircraft, in spite of the motion of the boat or raft. Present designs make use of a sighting hole in the mirror and a back reflection, involving a certain degree of complication. A new type, utilizing a radically different principle, is being tested and gives promise of being a definite improvement. It is hoped, however, that the development of portable radio sets for boats and rafts will soon make all of the visual means of signaling obsolete.

The Regulations for the Protection of Waterfront Facilities were approved by the Council and were published in the Federal Register of March 31, 1944. These regulations apply to facilities located on the navigable waterways of the United States and its possessions except shipyards and facilities operated by the War or Navy Departments or assigned for security purposes to the Navy. By waiver, all facilities on the so-called "Western Rivers" under the jurisdiction

of the district Coast Guard officer, St. Louis, are exempted from the provisions of these regulations, existing security orders and regulations remaining in effect. The regulations will be distributed in booklet form to owners and operators of water front facilities about the first of May.

Commander R. F. Farwell, U. S. N. R., who has been studying for the Council the difficult problem arising in the intracoastal waterways in the Gulf region out of the conflict of pilot rules, reported that he had discussed the whole matter with the principal operators in the region and that they had all agreed that no changes should be made in the present rules, pending further study to arrive at a final and definitive recommendation. A change in pilot rules affecting lights on scows on the Columbia River and tributaries, due to become effective April 1st, was postponed to May 1st.

The phraseology of one of the wartime regulations requiring masters, "with due regard for safety" to carry lifeboats rigged out, was modified so as to make it clear that it was wholly within the master's judgment when this could safely be done.

The provisions of subsection 1 of section 4551 of the Revised Statutes, as amended, require reports as to the employment, discharge, or termination of service of seamen and apply to tugs, towboats, and seagoing barges, as well as larger vessels, not operating exclusively on rivers. There seemed no useful purpose served by requiring such reports from harbor and coastwise tugs and barges, and accordingly the Council waived the requirement that such vessels should submit reports on Form 735-T.

The administrative procedure necessary in the case of officers and seamen who have lost their documents was revised in the interest of standardization and simplification, and a memorandum covering the procedure will be found in the Appendix. The Council continued its effort to clear its list of approved equipment of all deadwood by withdrawing approval of equipment no longer manufactured. This has no effect on such equipment presently in service, which may be used as long as it is serviceable.

M. S. Chapin, of Charlestown, Mass., appeared before the Council to submit plans for an improved hull form for lifeboats for use on ships. Mr. Chapin had constructed a full-sized model from this design, which had shown good results. The Council instructed that this be given a sea test, in comparison with the Coast Guard standard-form boats.

B. E. Marean, Jr., of the Kelvin-White Co. appeared to submit an ingenious device for checking the compass error of lifeboat compasses. Due to their small size and to the variable local attraction in a lifeboat, the compasses of lifeboats and rafts show such wide ranges of error as seriously to impair their value. Mr. Marean's device consisted in principle of a portable pelorus by which azimuths of the sun could be obtained without the use of tables. The Council ordered this to be given a test in service conditions.

Other appearances before the Council included E. M. Campbell and J. P. Doyle of the Mine Safety Appliances Co., and F. R. Davis of the Davis Emergency Co., who discussed first-aid kits.

Beginning with this issue, the *Proceedings* will appear with narrower margins, and in smaller type, in order to effect economy of paper. The change should result in almost a 50 percent reduction in the space used for a given number of words. To improve ease of reading, a new and darker type face is used and the text set in three columns instead of two. The three-column page will permit a better and more varied use of cuts, where desirable.

The Council invites attention to the excellent report of a ship's safety committee, quoted on page 80. It would welcome the opportunity of publishing any other special and successful safety measures voluntarily adopted by experienced ship's officers or imposed by operating companies. The Council feels that a wide exchange of information on precautionary steps, outside of prescribed rules, should prove helpful, particularly to junior, or less experienced, officers.

Port Security Conference

A STEPPED-UP program of intensified use of volunteer services to ease the manpower problem in the field of port protection as the day of the great European invasion approaches was mapped by the joint conference of District Port Security Officers and the Commanding Officers of units of the Temporary Reserve performing port security duties, in the second annual conference held in Washington, March 27-30.

The joint conference which met in the Government Interdepartmental Auditorium included 75 Port Security officers, Captains of the Ports, and representatives of the Volunteer Port Security Forces and 18 other units of the Temporary Reserve. In addition to delegates from all districts within

continental United States, Captains of the Ports were present from Alaska, Hawaii, Puerto Rico, and the Virgin Islands.

Praising the Security Officers for their accomplishments of the last 2 years in coordinating and directing the efforts of the various governmental and private agencies in the field of port protection, Vice Admiral Russell R. Waesche, Commandant, said in opening the conference that new demands from the fighting fronts throughout the world would require a sharp increase in protection efforts at key ports of the Nation.

"The day of invasion is approaching," said the Commandant, "and the tremendous achievements of the past 2 years must not permit us to relax

THE WHITE HOUSE
WASHINGTON

February 25, 1944

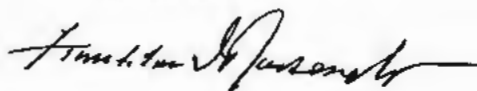
My dear Mr. Secretary:

I have read with interest and appreciation the report which you submitted to me on February 22, 1944 concerning the achievements of the Coast Guard in protecting our ports and vessels while in port since the responsibility for this important job was delegated to you on February 25, 1942 by Executive Order No. 9074. I feel that this report demonstrates an outstanding record of accomplishment in furtherance of the nation's war effort.

At the time I signed Executive Order No. 9074, I realized that the war potential which we could effectively bring to bear against our enemies on the far-flung battlefields of this war would be limited by the number of men and the volume of materials which we could transmit through our ports and upon our vessels. I understood how essential it was that all possible measures be taken to prevent any injuries to our ports and vessels which would retard the attainment of our overall war program.

This task of protecting our ports and vessels in port has been accomplished in a manner exceeding my most optimistic expectations. You, the Commandant of the Coast Guard, and the officers and men of the Coast Guard who have participated in this program are to be congratulated on the magnificently successful job which you have done and are doing.

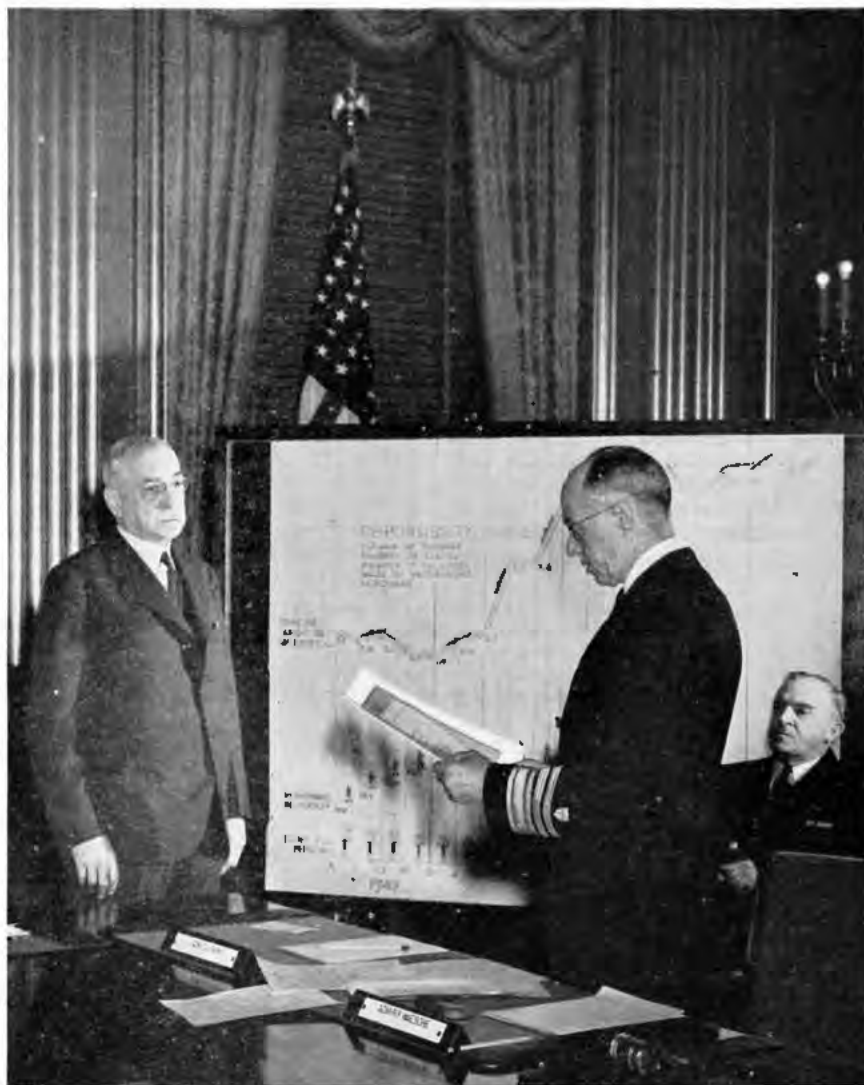
Sincerely yours,



The Honorable

The Secretary of the Navy

PRESIDENT PRAISES COAST GUARD—President Roosevelt congratulated the Coast Guard in a letter to Secretary Knox upon the successful completion of 2 years of port security work 25 February 1944. Other letters of congratulation were received from Secretary Stimson, Secretary Knox, War Production Board Chairman Donald M. Nelson, Petroleum Administrator for War Harold L. Ickes, War Shipping Administration Chairman E. J. Land, British Security Coordination, and others.



PRESENTING FIRST AWARD—Vice Admiral Russell R. Waesche presents the Coast Guard's Security Shield of Honor to the National Board of Fire Underwriters for important contributions made in the interest of successful port protection program. W. E. Mallalieu, general manager of the National Board, accepts the award on behalf of his organization.

for a moment in the difficult days ahead. You Security Officers are in highly important key places—places the enemy would like to put out of commission. The Coast Guard knows that it can rely on Port Security Officers and the able assistance of the volunteer units of the Temporary Reserve to continue the vigilant watch over all the Nation's ports. We all have a big job, an important job, in helping win the war. That this job will be done with distinction I have no doubt."

Rear Admiral C. A. Park, Chief of Operations, stressed the importance of close relationships between Headquarters and District offices. He praised the work of the entire field personnel and directed attention to the many letters of congratulation

which were received on the second anniversary of Port Security. Included in letters from public officials and private agencies were congratulations from the President, Secretary of War, Secretary of the Navy, Army Transportation Corps, Chairman of the War Production Board, Petroleum Administrator for War, Chairman of the War Shipping Administration, Petroleum War Council, National Board of Fire Underwriters, and the British Security Coordination.

Capt. Norman B. Hall, chief of the Port Security Division, and Capt. A. C. Marts, U. S. C. G. R., in charge of the Temporary Reserve forces, stressed the need for cooperation between the two organizations. Following the joint session which opened the conference Captain Hall and Captain

Marts met with their respective groups for panel discussions.

The Port Security Division panels included discussions of:

Coast Guard fire prevention and fire-fighting activities;

Coast Guard explosives loading supervision;

Problems of oil pollution;

Enforcement of port security regulations;

Coast Guard-Navy regulations;

Coast Guard relations with the Provost-Marshall General;

Coast Guard-British Security Coordination relations;

Proposed regulations for the protection of water-front facilities;

Coast Guard-Army Transport Service relations;

Establishment of enforcement in restricted areas; and

Port Security personnel problems.

The necessity for using volunteer units as replacements to release Coast Guard regular personnel for sea duty was outlined by Rear Admiral Robert Donohue, chief personnel officer of the Coast Guard. With the increased need for men for sea duty, Admiral Donohue pointed out in reviewing the needs for the coming 6 months, the requirement for more men in the volunteer units will become much greater.

During the discussions important contributions were made by conferees from other services. Col. A. F. McIntyre, Lt. Col. F. A. Kreidel, and Lt. Col. H. B. Hoopes spoke for the Army Transportation Corps. Lt. Comdr. Charles V. Broadley spoke for the Office of Navy Operations, Navy Department, and Comdr. W. L. Bates spoke for British Security Coordination. James Moss represented the petroleum industry.

Emphasis was placed in the discussions by Captain Hall on the fact that the "curve of responsibility" was projected steadily upward while the available manpower curve is going downward.

"With increased tonnage, we must tighten up our operation in order to do a bigger job with fewer men. This means real operational difficulties, but I am sure we can meet them," Captain Hall said.

A series of five panel discussions occupied the principal time of the volunteer units sessions. The topics included discussions of:

Duties of Volunteer Port Security Forces;

Operational activities of the Volunteer Port Security Forces;

Coordination and cooperation be-

tween the Captains of the Ports and the volunteer units;

Temporary Reservists from the Coast Guard Auxiliary;

The use of women volunteers as temporary members of the Coast Guard Reserve in the performance of office duties.

In concluding the meeting of the volunteer units, Captain Marts said, "This Headquarters conference between the volunteer units and the Port Security Officers under whom they work served to weld the two groups into a high degree of mutual understanding and of cooperation in the common devotion to the service of the Coast Guard and to the winning of the war."

Security Shield of Honor Awarded

THE NATIONAL BOARD of Fire Underwriters has the distinction of being the first organization to receive the United States Coast Guard's security shield of honor awarded "for important contributions to the Port Security program."

Vice Admiral Russell R. Waesche, Commandant, made the presentation of the award to W. E. Mallalieu, general manager of the Board, at the opening session of the joint conference of District Port Security Officers and Heads of Volunteer Temporary Reserve forces, March 27th, in Washington.

The Security Shield of Honor, the Commandant explained, was designed as an award for outstanding aid in "making possible the safe and uninterrupted flow of our country's manpower and war materials to the battle fronts of the world."

In thanking the Board for its assistance to the Coast Guard, Admiral Waesche, in his presentation remarks said, "... the National Board of Fire Underwriters has placed at the disposal of the Coast Guard services of its own trained personnel and that of its insurance inspection boards and bureaus, to assist in our campaign for the protection of waterfront facilities and vessels against fire hazards."

Following the formal presentation by the Commandant, Capt. Norman B. Hall, U. S. C. G., chief of the Port Security Division, introduced Rudolph C. Stange and Edward L. Zeltner, advisory fire protection engineers, now on loan from the National Board to the Coast Guard as dollar-a-year men.

The Commandant in a special letter April 6th to all District Coast Guard Officers outlined the criteria for further awards of the Security Shield.

(a) Management which has exhibited the utmost degree of voluntary cooperation with the Coast Guard in carrying out the spirit and purpose of the provisions of Executive Order 9074.

(b) Installation and maintenance, voluntarily or at the suggestion of the Captain of the Port or District Coast Guard Officer, of equipment, over and above accepted minimum requirements, on water-front facilities which evidences the application of the highest standards of safety engineering and operating efficiency, and the use of the most modern port security devices.

(c) Establishment and maintenance of highly trained, properly supervised, and efficiently operating guard forces.

(d) Adoption of appropriate measures designed to provide periodic inspections and proper structural maintenance of hazardous facilities.

(e) Exercise of exceptional originality, initiative, and aptitude in complying with various port security regulations of the Coast Guard, and constructive suggestions made in connection therewith.

(f) Extraordinary and voluntary personal contributions of talent and energy in fostering the port security program.

(g) Exceptional effort and time spent in the organization and operation of the Voluntary Port Security Forces or of the Coast Guard Auxiliary.

(h) In general, any outstanding, unselfish patriotic contributions, beyond those required by statutes, regulations, or other authority, in enabling the Coast Guard to discharge efficiently the various responsibilities delegated to it by the Secretary of the Navy for the protection of water-front facilities and vessels in port.



SECURITY SHIELD OF HONOR NO. 1—The first Security Shield of Honor awarded by the Coast Guard for port security assistance was presented to the National Board of Fire Underwriters at the Port Security Conference held in Washington March 27, 1944.

U. S. C. G. "Mackinaw" Launched

ON MARCH 4th, at the yard of the Toledo Shipbuilding Co., Toledo, Ohio, there was launched the U. S. C. G. *Mackinaw*, under the sponsorship of Mrs. R. R. Waesche, the wife of the Commandant of the Coast Guard. The *Mackinaw* is the latest and largest of the Coast Guard's icebreaker construction program. Other vessels in this program cannot be commented on for security reasons, but the *Mackinaw*, being restricted to service upon the Great Lakes, has no combatant functions.

The history and development of icebreakers and icebreaking techniques, in which the *Mackinaw* is expected to represent the greatest advance so far made, is of considerable interest. The first vessels designed solely for the purpose of icebreaking seemed to have been two paddle steamers, built in 1870, for service on the Delaware River. Twelve years later two somewhat similar craft were built for the Port of Baltimore and these latter craft are still in service at that port.

In the meantime European authorities were looking for means to extend navigation in waters where weather conditions normally forced suspension of all traffic for two or three months, particularly in the Baltic. In 1877 the Finnish government built the icebreaker *Express* from designs of Robert Runeberg for the purpose of maintaining passenger and limited cargo service between the ports of Hango and Stockholm. This vessel proved quite successful and her construction was followed in the early eighties by the building of several others for work in the harbors of Germany and Danish waters.

Runeberg made extensive study as to the proper bow form for most efficient icebreaking and gradually came to adopt one whose vertical cross section was V-shaped rather than rounded. The sloping stem of previous designs was retained. All icebreakers used a charging technique in which, whenever brought to a stop by the ice, the breaker was backed off and then sent against the ice with the maximum possible speed.

In the United States the need for ferrying railroad cars across parts of the Great Lakes during all winter conditions had led to study and investigation of the best means for continuing navigation in spite of the formidable pack ice that forms in the Straits of Mackinac. Frank E. Kirby submitted a design for an icebreaker to the Michigan Central Railroad, and in 1888 the steamer *St. Ignace* was constructed from his design. This utilized the studies of Runeberg as



U. S. C. G. *Mackinaw* on the ways.

U. S. C. G. *Mackinaw* launched at Toledo.



to the bow form and sections but contained the radical innovation of a propeller mounted under the fore-foot. The vessel's horsepower was distributed so that she had 2,000 horsepower on her after propeller and 1,000 horsepower on the forward one. The ship had great beam in proportion to her length and her midships section showed considerable flare to the hull at the water line.

The technique proposed by Mr. Kirby in the utilization of this design contemplated continual pressure against the ice, delivered through the after propeller. The forward propeller was to be alternately backed and set ahead while the ship was pressing against the ice. The backing of the forward screw helped to break up the ice ahead of the ship or, if it was covered with snow, to wash the snow clear. When the forward screw was sent ahead, its pull tended to carry the broken-up ice down and aft of the bow. The *St. Ignace* was so successful that she was followed in 1893 by the *St. Marie*, which was a larger and more powerful copy of the *St. Ignace*.

The performance of these two vessels interested European authorities and the Finnish government constructed the icebreaker *Sampo* along Kirby's designs for operation in Hango Harbor. The spectacular success of this craft led the Russian government to the view that it would be possible to keep open the harbor of Kronstadt in the winter, and after study of the American designs Admiral Makaroff ordered the construction of the *Ermak*.

This vessel, completed in 1899, was 305 feet long with 71-foot beam. She was powered with four 2,500 horsepower engines, three driving her after propellers and one her forward propeller. In this she deviated from Kirby's principle, which was that the power on the forward propeller should be at least 40 percent of the power of the after engines.

The Coast Guard had a number of cutters which were especially strengthened for working in the ice but until 1939 had no craft designed specifically for the primary purpose of breaking ice. In that year vessels of the *Raritan* class were brought out with an icebreaking bow although without the fore propeller. Since that time, a number of vessels have been constructed with special bow form and a certain number specifically for icebreaking, including the *Mackinaw*.

The *Mackinaw* embodies in her design everything that has been learned in the 70-year battle with frozen waters. She is 29 feet long, and has a 74-foot beam, with a displacement of 5,000 tons at the 19-foot draft. Her power plant is Diesel electric, of a

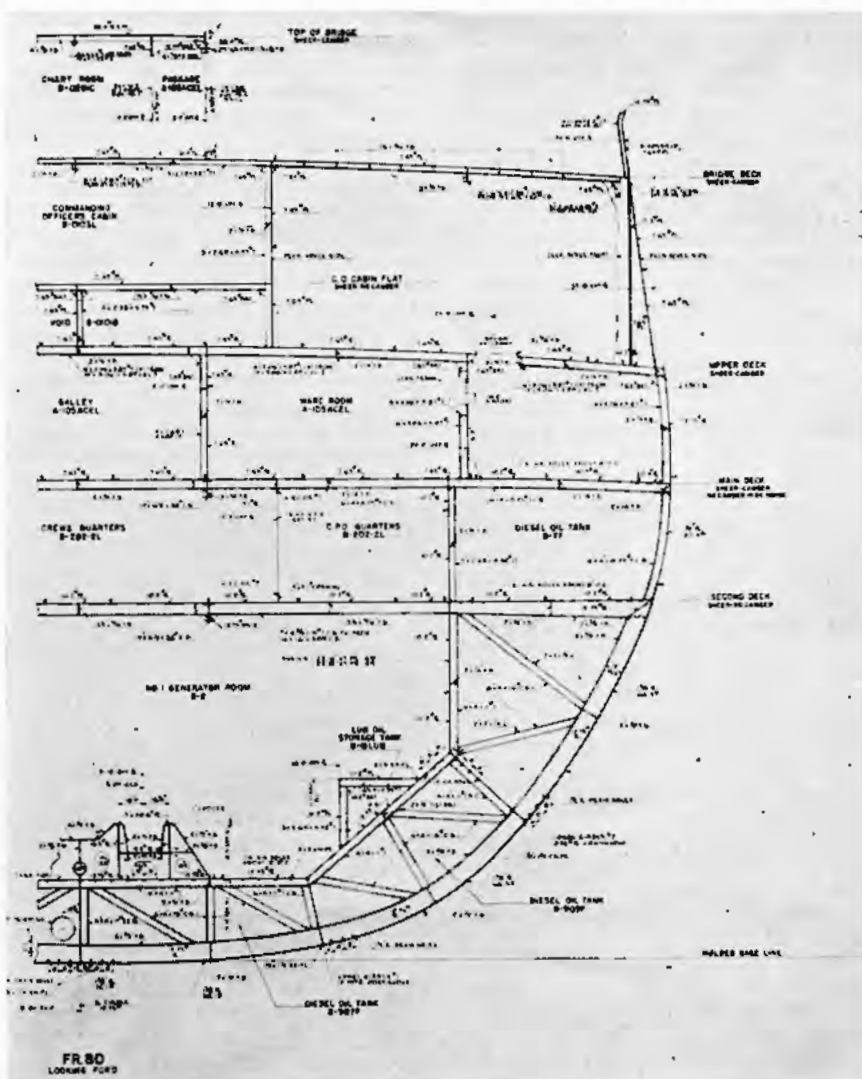
total 10,000 horse power driving two screws aft and one forward. Her stem is inclined at 50 percent to the vertical at the water line and bow sections are V-shaped as far aft as the forward skeg.

The midships section of the vessel is almost semicircular below the water line and at the water line a tangent to her shell plating is inclined 20° out of the vertical. This plating is 1½ inches mild steel for some distance above and below the water line and 1½ inches thick over the bottom. Her frames are set on 16-inch centers and are of exceptionally strong construction. Those in the bow are set normal to the shell plating instead of normal to the keel. Aft of the bow these frames are actually very large built-up girders, each of which constitutes an inverted bridge arch. The depth of these girders from the shell plating to the inner chord is as much as 11½ feet. The inclination of the shell

plating at the water line tends to make the vessel lift if squeezed by ice and the very heavy framing enables her to withstand such pressure.

On each side on the second deck there is fitted a large wing tank. These tanks are cross-connected and a powerful centrifugal pump is mounted in the connection. This pump can transfer 400 tons of water from one side to the other in approximately 2½ minutes. In so doing a roll can be caused which, taken in conjunction with the flare of the vessel's sides, causes her to break loose from any ice which may have tended to form or close in upon her at the sides. These tanks have the further purpose of being kept partially filled in summer in order to decrease the metacentric height.

It is expected that the *Mackinaw* will be completed in June and her performance the following winter will be watched with the greatest interest.



Cross-section amidships of newly built U. S. C. G. Mackinaw.

Safety Committees on Shipboard

THE great desirability of having every man on board ship thoroughly indoctrinated, not only in his own duties in emergency but in the general organization of the ship's personnel, needs no emphasis. Station bills alone will not accomplish this and a perfunctory drill is of small value unless its purpose is appreciated and understood. The exploration of a ship's readiness to meet sudden emergency, particularly in wartime, can best be accomplished by a conference of all responsible personnel of the vessel.

Capt. Logan Cresap, Marine Superintendent of the Isthmian Steamship Company, has furnished a copy of the minutes of such a conference, sitting as a Safety Committee, on one of his vessels. It seems so complete and shows such excellent effort to prepare in advance for all possible contingencies that it is given here in full.

"At 0900 all the Deck, Engineer and Cadet officers being present except those on watch, the meeting was called to order by the Master who officiated as chairman.

"The meeting opened with the chairman explaining the purpose and need for the various drills. To be calm and to carry out their emergency duties with the maximum of efficiency was impressed upon all those present. It was agreed that when the order to lower the boats was given to get them into the water as soon as possible and all stragglers would climb down the nets and ladders into the boat which would be riding to the painter as long as time would allow. The roll call would be taken then, thus saving valuable time. Grab ropes suspended from the davit spans would be cast free of the boat before launching in order to avoid having these ropes entangle any of the occupants. At all future drills, the nets and ladders would be put over the side so that the man handling them would be able to do so in time of necessity without fouling the boat painters. A general discussion on life rafts then took place and it was decided that the rafts were not to be released until so directed from the bridge. Instances were cited where the rafts had been cast loose upon being torpedoed while the vessel was still forging ahead and when the vessel was actually stopped the rafts were too far astern to be of any use. A brief discussion of provisions and water rationing was had with the steward exhibiting a sample of a water ration. The lashings on the vegetable locker are to be removed to allow it to float free and its contents recovered by the boats if vessel was

lost. The vital need for a man to obey orders was impressed upon everyone.

"The discussion then turned to the duties of the various departments upon attack. It was pointed out that attack from the air would be more likely than attack from the sea. The necessity for each man to thoroughly know his duties at his battle station was shown, and the chairman cited instances where poor organization, insufficient knowledge of what to do had led to heavy loss of life. The personnel aboard the vessel was to be divided into five separate units: 1. *Central Control* on the bridge consisting of the Master, Gunnery Officer directing fire control, helmsman, man at telephone central, bridge messengers. 2. *Gun Crew* consisting of the armed guard and such crew members assigned to the guns and magazines. 3. *Engine Room*. 4. *Damage Control* consisting of three parties located forward, midships, and aft. 5. *First Aid* in charge of the Steward. The various duties of each of these five groups were thoroughly discussed and agreed upon by all present.

"It was decided that each man keep his steel helmet at his gun station so as to have it available if occasion arose. In past drills it has often been necessary for a man to dash back to his quarters for his helmet. Five gallon buckets of sand are to be located at all gun stations to prevent slipping. A thorough discussion concerning the Engineers Department then took place and the necessity for each man to remain at his post and carry out his duties until ordered to abandon the engine room was impressed upon the members of that department. It was agreed that should the necessity to leave the engine room arise, the engine telegraph would be rung to the Stop position three times. Supplementing the telegraph in case of casualty to it, there would be the telephone and the speaking tube. Upon discussing a man's station at the smothering lines it was found that no such line was connected to the paint locker. This will be requested on the repair list.

"The *Damage Control* parties would stretch all the fire hoses and have them ready for instant use if attacked by air. Each member of the party is to familiarize himself with the various pieces of equipment used and its location on the ship. The necessity for quick removal of incendiary bombs was stressed. All tarpaulins and inflammable material about the decks would be wet down. In future drills the bridge would communicate with the various damage control parties notifying them of simulated damage

or casualty to test the efficiency of that department.

"The duties of the *First Aid* party were gone into and it was decided to locate the stretcher in the midships house where it would be readily accessible to all parts of the vessel. A first-aid kit is located at each gun station. All members present were advised on the use of antiseptics and tourniquets.

"All members present agreed that they had a more comprehensive idea of what was required of them at their respective stations and that they would so instruct members of the crew in their charge. The meeting was adjourned at 1100."

Meeting With Atlantic Coast and Gulf Towboat Association

ON MARCH 14th, the Commandant of the Coast Guard met with representatives of the Atlantic Coast and Gulf Towboat Association at the Association's office in New York to discuss problems affecting the towing industry and the Coast Guard. The following were present at the meeting:

James G. Conway, Atlantic Coast & Gulf of Mexico Towboat Association, President.

Herbert S. Evans, Boston Tow Boat Co.

Chauncey I. Clark, Burlingham, Veeder, Clark & Hupper.

William Card, Card Towing Line.
H. C. Jefferson, Curtis Bay Towing Co.

Ray Fox, Moran Towing & Transportation Co.

Chester Sanders, Red Star Towing & Transportation Co.

D. T. Sheridan, Sheridan Transportation Co.

Charles E. Heyl, Socony Vacuum Oil Co.

C. H. Paul, Southern Transportation Co.

Charles A. Mason, Tice Towing Line.
John Lennon, M. & J. Tracy Inc.

The Commandant was accompanied by Rear Admiral H. F. Johnson, Engineer in Chief of the Coast Guard and Chairman of the Merchant Marine Council, and Capt. R. T. Merrill.

Admiral Waesche outlined his views as to the place of the Coast Guard in the field of maritime safety, both now and in the future, and briefly sketched the policies that were being followed, particularly in the inspectional field. He also referred to the desirability of future legislation to stabilize the inspectional functions.

Members of the association discussed various questions that had arisen in connection with minor violations of navigation laws and in connection with fines levied and appeals therefrom.

LESSONS FROM CASUALTIES

Fires on Tankers

IN A RECENT CASE of collision between a loaded tanker and a freight vessel, a full cargo tank on the tanker was ruptured by the bow of the freighter and the contents of the tank were immediately ignited. Just prior to the impact, the master of the tanker had thrown the helm hard right in an endeavor to swing the stern of his ship out of the way of the oncoming freighter. This maneuver was in vain and the tanker was struck near the after part of the parallel portion of the ship. The flames following the collision spouted upward about 30 feet and the sight of this fire so terrified the master, officers, and crew of the tanker that immediate abandonment was ordered. No attempt was made to use the CO₂ smothering system, fire hose, or even to stop the engines. In fact, the port lifeboat was launched with the ship making full speed and the helm hard right.

The ship was equipped with two lifeboats, located one on either side of the engine room aft, two life rafts, one located on the port side abaft of the pilot house and the other on the starboard side abreast of No. 6 tank, and two donut rafts, one on top of the pilot house and the other on top of the engine room skylight. The starboard life raft and lifeboat were destroyed at once by the flames. The port lifeboat was the one which was launched in abandoning ship.

Four men remained on the vessel and attempted to steady the port boat as it was being lowered. Under the influence of the ahead motion of the engines and the right rudder, the boat was in imminent danger of being crushed and swamped as soon as it hit the water. Accordingly, it was cast off and the four men were left on board the vessel. In all of this confusion one life was lost, a man who, apparently even more terror stricken than the rest of the crew, jumped overboard and was drowned while the port lifeboat was being launched.

At this time, apparently, the panic which had possessed the crew subsided and the four men left on board went to work to save the ship. The Chief Mate headed the vessel up into the wind and the engineers released the CO₂ gas into the cargo tanks, started the fire pumps, and played the hose on the flames. They also launched the port life raft and attempted to tow it alongside. However, it was soon smashed and the men then

lifted the donut raft from the top of the pilot house and placed it near the port rail for use in case they needed to abandon ship in a hurry.

After about an hour a Coast Guard lifeboat came alongside and offered to take off the four remaining men. The tanker's engines were then stopped, the ship was anchored, and after several attempts, the four men were removed. A naval tug was then requested to go alongside the tanker and extinguish the fire. This she finally succeeded in doing with her fire hoses.

The performance of the officers and crew of this tanker shows the extent to which panic can undermine good judgment even in well-trained men. Apparently the fire on board the vessel had such an effect upon the crew that all they could think of was to abandon ship without waiting to evaluate the situation and see if there was a chance of saving the vessel or her cargo.

It is always easy after an event to sit in judgment and say what should or should not have been done, but in this case the correct procedure is so obvious that it is felt that it should again be brought to the attention of the seafaring fraternity.

There was a releasing lever for the CO₂ system on the vessel under discussion, right outside the pilot house, and even if abandonment had been justified, it would have taken the master scarcely a second to have tripped this lever on his way aft to

the boat. At the very least, the engines should have been stopped and an attempt made to get way off the vessel before launching the lifeboat, as was shown by the necessity of casting off before the last four men on the vessel could board the lifeboat, in order to prevent its being crushed against the ship's hull.

It should be clearly understood that a tank full of gasoline or oil practically never explodes after it is set afire. This being the case, opportunity is afforded to fight a tanker blaze as long as the engine room is intact and the smothering system still workable. The correct procedure would have been for the master to have swung the ship so that the injured tank was on the lee side, thus preventing the flames and smoke from crossing the deck or getting down into the engine room ventilators. The engines should then have been slowed so that in case abandonment became necessary, the ship would not have been traveling so fast as to make the operation of launching a lifeboat or raft a dangerous one.

CO₂ gas is not a very efficient fire extinguisher in a broken tank, owing to the fact that it cannot be retained, and thus the smothering effect is partially lost. However, it should have been turned into the burning tank as well as the adjacent ones, for the cooling effect it would have had on the fire and to prevent the spread of the blaze. Then, all available fire hoses should have been used to wash the



Monitors in operation on a Coast Guard fireboat.

oil from the deck of the ship into the sea, and finally, they should have been turned into the ruptured tank itself. These water hoses should be used both as a cooling and extinguishing agent on the flames and for their cooling effect on the surrounding deck and interior bulkheads, where the latter are within reach of the streams. If possible, the cargo pumps should have been started and sea water pumped into the ruptured tank so as to wash the remaining oil into the sea through the break in the ship's side.

The foregoing procedure has been developed through the experiences of hundreds of tankermen whose ships have suffered broken tanks, fires, etc., through enemy action, collisions, and other casualties. It is not contended that all tanker fires should be dealt with in exactly the same way or that there are no occasions in which instant abandoning may not be indicated. However, in the majority of cases an effort should be made to get the flames under control, and in a

great many instances it will be found possible for the ship's crew to extinguish the blaze by an intelligent use of the fire-fighting equipment available on board.

In the subject case it is felt that such precipitate abandoning was not justified by the circumstances and that if the master and crew had remained on board and fought the fire as described above, there is a strong probability that they could have extinguished it themselves, or at least maintained it under control until outside aid arrived.

Improperly Secured Life Floats

AN ACCIDENT occurred recently on a freight vessel carrying military personnel, which involved the death of one of the soldiers. Investigation disclosed that this man was lying on deck alongside the forward deckhouse. A number of life floats were stowed in tiers on top of this house, and, due

to the rolling of the vessel in a rough sea, one of these floats slid off the deckhouse crushing the man to death beneath it.

Although these floats were not lashed or otherwise secured, they had apparently remained in position during an entire previous voyage. The chief mate was of the opinion that the floats would not shift, and that the regulations required that they be stowed so as to float free. The regulations actually requires that these floats shall be stowed in such a location that they may be launched directly overboard, and so arranged that they may have the best chance of floating free of the ship, if there is no time to launch them.

The stowing and securing of additional lifesaving equipment on freight vessels carrying a large number of troops present many problems. While the vessel is in port and engaged in loading cargo, temporary but secure stowage of this excess lifesaving equipment must be arranged. How-



View showing C. G. C. Lantana breaking ice on the Mississippi River, thus permitting LCT barges to proceed to tidewater. The ice at this point was about 8 inches thick.

ever, this stowage is *not* suitable when the vessel proceeds to sea.

Once at sea, the master and Army Security Officer should confer to provide for proper stowage of these floats in conformity with the intent of the regulations, insofar as conditions will permit. Any suggestions or orders given by the master, especially those which involve a knowledge of weather conditions and practical seamanship, should be made immediately effective. It is the responsibility of the Security Officer to designate certain deck areas for the use of the troops, where there will be no danger from unstable equipment.

With this cooperation and supervision, there should be no cause for accidents of this nature endangering the lives of military personnel aboard freight vessels.

Disobeying Routing Orders

HEADQUARTERS has received reports describing a serious casualty occurring as a result of deviation from routing orders by the master of a vessel proceeding independently. This vessel was given a prescribed course which the master neglected to follow. Apparently, he decided to save time and take a short cut, not knowing that a large convoy was also under way in the vicinity. Because of his disregard of orders designed to keep his vessel out of danger he cut into the course of the convoy, was struck by one of the oncoming ships and sunk.

The master and eight other members of his crew lost their lives, together with one man from the colliding vessel who jumped overboard to help rescue some of the survivors of the sunken ship. In addition, the colliding vessel had to return to port for repairs, to the detriment of the war effort.

Investigation disclosed that the convoy was upon its proper route whereas the single vessel was well away from its assigned position, in spite of the fact that there were navigational facilities available to permit it to establish that position. With the death of the master, the reason for the deviation is unknown, but it resulted in the loss of ten lives and one ship and the damaging and delay of another.

Obey routing orders! There is a reason back of them!

Overtaking in Narrow Waters

THE SUCTION effect of two ships passing close aboard each other at other than very slow speeds has long been recognized. It was the subject of exhaustive study in the collision between H. M. S. *Hawke* and the S. S.

Olympic in British waters in 1911.

Less appreciated, perhaps, is the extent of water displacement and disturbance well ahead of a vessel moving at speed, particularly if that vessel is of a full form. This displacement is exaggerated if the vessel is moving in a confined waterway or channel. It can be noticed in any jetty-protected entrance by observing that the water level rises on the jetty at any point well in advance of the passage of that point by the vessel's bow. In other words, a full-bodied vessel, such as most cargo ships, tends to push ahead of her a small hill of water, sometimes as much as a foot high and extending in a semicircle around her stern. The actual extent depends on the vessel's lines, her speed, and the nature of the channel. The fact that a certain amount of water is pushed bodily ahead, before it can slip past the bows, tends also to cause a hollow or trough somewhere amidships of the vessel.

In the case of two steamers passing on opposite parallel courses these displaced waters act to some degree to keep the ships apart: the bow of each tends to be deflected away by the mound of water created by the movement of the other. But where two vessels are not passing bow to bow the effect may be very different and should be given careful consideration by the master of the burdened vessel.

A clear example of the need for care is given in a collision case occurring in the Delaware River some years ago. Two full-bodied cargo steamers were proceeding down river, the leading one at a speed of about 9 knots while the second was overtaking her at about 12 knots. Weather conditions were clear, with no wind. It was shortly after nightfall.

The overtaking vessel blew two blasts, and was answered by the leading ship which was keeping well to the right hand side of the channel. At that particular point the river is quite wide, giving the illusion of ample sea room, but actually the ships were obliged to pass in a narrow (300-foot) dredged channel. The sum of their cross-sectional areas amounted to almost 20 percent of the area of the channel prism.

When the overtaking vessel's bow had drawn abreast the stern of the other, the latter took a rank sheer to port, across the bow of the overtaking ship. That vessel backed hard with full left rudder, but collision was unavoidable. Fortunately, enough change of direction and loss of headway was produced by the overtaking vessel so that the contact was broadside to, and comparatively minor damage was suffered.

In the investigation the burdened

vessel claimed that, after passing signals were exchanged, the overtaken ship had failed to maintain course and speed, but instead had altered course under circumstances which rendered the collision inevitable. The overtaken vessel denied altering her rudder and claimed that the sheer taken was due to suction of the overtaking ship.

Actually, of course, this was the case, although it was water displacement rather than suction which caused the sheer. The two vessels were occupying a substantial amount of the cross section of the channel. As they drew abreast the displaced waters were further restricted. That pushed ahead of the overtaking vessel impinged upon the port quarter of the overtaken ship sufficiently to throw her stern to starboard.

An example of the opposite effect of displaced waters is found in a similar case where the overtaking steamer sheered into the leading vessel. This occurred in a 30-foot dredged channel with a bottom width of 150 feet. The overtaken vessel was of 60-foot beam and was drawing 28 feet. The vessel coming up astern was of 40-foot beam and 17-foot draft. It will be noted that not only was the larger vessel clearing bottom by only 2 feet, but that the cross-sectional area of the two accounted for almost 40 percent of the channel prism. In this case the bow wave of the burdened vessel was insufficient to affect the much larger leader, but when the bow of the former came about amidships of the overtaken vessel the suction of her trough caused the smaller craft to swing sharply into her, seriously damaging both vessels.

The obvious answer in such casualties is to avoid overtaking in a narrow waterway unless it can be done at a very slow speed. When a large vessel is overtaking a similar one, both steaming at practically full speeds for their respective hulls, the water disturbance, not to mention the tendency to "smell" bottom, renders the steering of both vessels subject to serious aberration.

SAFETY FIRST

Take No Chances

Damage to Navigational Aids

DURING the year 1943 there were 960 navigational aids made inoperative because they were struck by moving vessels. These were chiefly on the inland waterways. Each of these aids was placed on station to mark some point which it was necessary for navigators to recognize in order to keep within the navigable channel and away from the peril of stranding.

Destruction of, or damage to, one such aid may cause a serious stranding, which would retard the war effort because:

(a) The stranded craft are detained beyond their normal turn-around, and thereby thrown off schedule;

(b) To release the grounded craft, it is necessary to use other vessels, men, fuel, and equipment, otherwise gainfully employed in the war effort;

(c) Time is lost by all vessels—both grounded and assisting;

(d) There is a loss of time, material, and effort to the Coast Guard in replacing or renewing the affected light.

Over a long period of years, the United States Engineers, the United States Lighthouse Service, and latterly the United States Coast Guard, have endeavored to impress upon pilots, shipmasters, tugmasters, and all mariners, the urgency of reporting unlighted, missing, damaged, or destroyed aids to navigation which come to their attention. An element of self-interest enters this situation because the mariner's own safety lies in having an inefficient aid made operative with the least possible delay—and certainly before the individual navigator is called upon to pass over the same body of water wherein the aid had been observed to be inoperative.

Under present conditions the volume of traffic which moves on our inland waterways makes it more than ever imperative that every aid to navigation which is found to be out of commission or not properly marking the position to which it had been assigned, should be *immediately* reported to the Coast Guard in order that it may be promptly restored to operation. This is a subject in which all marine interests should share and take an active part. Every person who has an opportunity to observe the performance or nonperformance of a navigational aid should be impressed with the civic duty of immediately reporting to the Coast Guard any instance where a light fails to function or a marker is not in position.

Apart from the mariner's own interest in reporting collisions with aids to navigation, there remains a legal obligation imposed by Congress that such collisions be avoided where possible, but reported when they do oc-

cur. By the provisions of Title 33 U. S. C., Section 406, Congress has imposed a penalty of not exceeding \$2,500 nor less than \$500, coupled with a term of imprisonment of not to exceed one year, or both such punishments, for the alteration, defacement, destruction, removal, injury, or impairment of any work built by the United States or any piece of plant floating or otherwise used in the construction of such work for the improvement of any navigable waters or as boundary marks, buoys, or other established marks. It is not the disposition of the Coast Guard to enforce monetary penalties against owners or mariners unless it appears from the known facts in a particular case that the collision resulted from gross negligence on someone's part or a wilful disregard of well-recognized rules governing vessel operation.

There is, therefore, a dual responsibility imposed upon all vessel owners and navigators to avoid collisions with aids to navigation; first, because of their own self-interest in having these aids preserved for their own use as they traverse waterways of the United States, and second, because of the public interest which is involved and which affects not only the persons immediately using the waterway but many others who have an interest in the speedy turnaround of their vessels or the safe delivery of the cargo transported by such vessels.

In assembling information relating to this subject, it has been made most impressively clear that the greatest damage to, and destruction of, navigational aids can be attributed to either or both of two causes, viz:

(a) Incompetent personnel on moving vessels;

(b) Inadequate power of towing vessels.

In many of the cases that have been reviewed vessels actively engaged in transporting critical materials as part of the war effort were found to be in charge of personnel with very limited experience. The employment of such inexperienced persons on towing vessels makes it most necessary that they be afforded every possible aid in order to perform their assigned job.

Apart from personnel problems, however, a great responsibility rests upon the owner of a towing vessel to fulfill the warranty implied in every towage service that the towing vessel is sufficiently *powered* to perform its engagement. A towing vessel which does not have sufficient power to handle its tow under normal conditions of wind, tide, and weather is unseaworthy. Where tows are assembled in such size, weight, and volume, that

the towing vessel cannot handle them under normal conditions of wind, tide, and weather, they—together with the tug—are unseaworthy.

Instances have been noted where light barges were freely influenced by prevailing wind conditions and, because the tug had insufficient power, became entirely unmanageable. When this happened in the vicinity of aids to navigation, the damages sustained by such aids reached substantial figures. It is, therefore, earnestly desired that all persons having to do with the assembly and dispatch of tows will give serious consideration to the subject and take appropriate action to insure that towing vessels are not called upon to haul more tonnage than they are capable of efficiently handling.

The monetary value of aids destroyed in 1943 aggregated \$192,000. Some 15 percent of this will be recovered in cases where the cause of the damage was identified. But the danger to other craft navigating the waterway before the missing aid can be replaced is the paramount reason for exercising every possible care to avoid damaging aids and for making prompt report of any damaged or found inoperative or missing.

Watertight Doors

A WATERTIGHT bulhead is a bulkhead which has no opening in it. A bulkhead fitted with a watertight door is a watertight bulkhead only to the extent that the vessel's personnel insure, by precept and inspection, that the door is closed and securely dogged. Otherwise it is a delusion.

When a door must be opened while at sea the safety value of the entire bulkhead is lost during such time as the door is open. It might just as well not be in the ship. It is highly desirable, therefore, that the time the door is open and the value of the bulkhead thereby destroyed be kept to a minimum, and that when the door is closed it be properly secured.

Where a door must be repeatedly opened and closed, as for example, a shaft alley door, it is human nature to become careless. If the door operates stiffly, its whole purpose may be lost sight of in the desire to avoid a little effort. Every man on the ship may be jeopardized by such neglect. The particular individual who temporarily vitiates the integrity of a bulkhead should be concerned with its restoration at the earliest possible moment. The responsible officer authorizing or supervising such opening should satisfy himself of its adequate closing.

APPENDIX

Amendments to Regulations

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Navy

PART 7—REGULATIONS FOR THE PROTECTION OF WATERFRONT FACILITIES

Under authority of Executive Order 9074 (7 F. R. 1587) and pursuant to the Act of July 9, 1943 (Public Law No. 127—78th Cong.), the following regulations governing protection of waterfront facilities are hereby promulgated and approved, effective May 1, 1944:

GENERAL PROVISIONS

- 7.1 Purpose of regulations.
- 7.2 Application
- 7.3 Administration.
- 7.4 Special orders of the Captain of the Port.
- 7.5 Powers of the Captain of the Port.
- 7.6 Responsibility for compliance.
- 7.7 Waiver authority based on local or unusual conditions.
- 7.8 Special circumstances.

SABOTAGE

- 7.15 Precautions against sabotage.
- 7.16 Reporting of sabotage.

GUARDING OF WATERFRONT FACILITIES

- 7.20 Adequate guard protection.
- 7.21 How guards are provided.
- 7.22 Qualifications of guards.
- 7.23 Instruction of guards.

IDENTIFICATION AND PASSES

- 7.25 Basic requirements.

FIRE PREVENTION

- 7.30 Smoking.
- 7.31 Welding.
- 7.32 Fire watch.
- 7.33 Trucks and other motor vehicles.
- 7.34 Pier automotive equipment.
- 7.35 Rubbish and waste materials.
- 7.36 Maintenance stores and supplies.
- 7.37 Electric wiring.
- 7.38 Heating equipment.
- 7.39 Fire extinguishing equipment.
- 7.40 Marking of fire appliance locations.
- 7.41 Lighting.
- 7.42 Arrangement of cargo.

DANGEROUS CARGO

- 7.50 Approval of facility for dangerous cargo.
- 7.51 Handling of dangerous cargo.

SEPARABILITY AND PENALTY

- 7.55 Separability.
- 7.56 Penalty.
- Authority.*—Sections 7.1 to 7.56 inclusive, issued under Executive Order 9074 (7 F. R. 1587) and the Act of July 9, 1943 (Public Law No. 127, 78th Cong.).

GENERAL PROVISIONS

SEC. 7.1. Purpose of regulations.—The regulations contained in this part are promulgated for the protection of harbors, vessels, ports and waterfront facilities. Nothing contained in this part shall be construed to repeal or supersede the provisions of the regulations relating to the Security of Ports and the Control of Vessels in the Navigable Waters in the United States (33 C. F. R., Part 6), Explosives or Other Dangerous Articles on Board Vessels as amended (46 C. F. R., Part 146), or the Regulations Relating to Tank Vessels as amended (46 C. F. R., Parts 30–38, incl.), or any other law or regulation not inconsistent herewith promulgated by any Federal, State, municipal, port, or other lawful agency for the protection of waterfront facilities.

SEC. 7.2. Application.—The regulations contained in this part shall apply to all piers, wharves, docks, or similar structures to which vessels may be secured, buildings on such structures or contiguous to them, and equipment and materials on such structures or in such buildings on all navigable waters of the United States, Alaska, the Territory of Hawaii, Puerto Rico, and the Virgin Islands, but shall not apply to shipyards and facilities used in connection therewith or to such waterfront facilities as may be directly operated by the War Department or the Navy Department. Whenever the term "waterfront facilities" is used in this part it shall mean all piers, wharves, docks, and similar structures to which vessels may be secured, buildings on such structures or contiguous to them, and equipment and materials on such structures or in such buildings.

SEC. 7.3. Administration.—The reg-

ulations contained in this part shall be administered by the U. S. Coast Guard Captain of the Port under the general supervision of the District Coast Guard Officer. Pursuant to order of the Chief of Naval Operations any waterfront facility may be specifically assigned to the Navy for the purpose of security inspection. In any such case, the regulations in this part may be administered with respect to such facility by the Naval District Commandant. Such officer may exercise with respect to such facility all the powers and authority granted to the Captain of the Port by the regulations contained in this part. The Captain of the Port shall give notice to the owner, lessee, or operator of such facility of such assignment and of the officer of the Navy authorized to administer the regulations.

SEC. 7.4. Special orders of the Captain of the Port.—Whenever the Captain of the Port shall find that the conditions of construction, maintenance, equipment, or operation of any other waterfront facility or of any other waterfront property creates a hazard of destruction, loss, or injury from sabotage or other subversive acts, accident, fire or other causes of a similar nature to such waterfront facility or to any other waterfront facility, he is authorized to issue such special orders not inconsistent with the regulations contained in this part as he shall find to be necessary to eliminate such hazard, and the owner, lessee, and operator of such waterfront facility or such other waterfront property shall comply with such orders.

SEC. 7.5. Powers of the Captain of the Port.—The Captain of the Port and his duly authorized representatives shall have the right of entry to waterfront facilities at all times. The Captain of the Port may cause to be inspected and searched at time, any waterfront facility or any person or package thereon, may place guards thereon, and may remove therefrom any or all persons not specifically authorized by him to go or remain thereon.

SEC. 7.6. Responsibility for compliance.—Owners, lessees, and operators of waterfront facilities are required to comply with the regulations contained in this part and shall be responsible for taking all necessary measures to comply therewith. Nothing in the

regulations contained in this part shall be construed to relieve the owners, lessees, and operators of waterfront facilities from their responsibility for the protection of such facilities.

SEC. 7.7 Waiver authority based on local or unusual conditions.—Whenever the Commandant, U. S. Coast Guard, the District Coast Guard Officer, or the Captain of the Port shall find that the application of any provision of the regulations contained in this part is not necessary to the security of a waterfront facility or of the port, or that its application is not practical because the materials or personnel required for compliance are not available, or because the protection of the particular facility is not essential to the war effort or to the security of other facilities or vessels moored thereto, he may waive compliance with such provisions to the extent and upon the conditions determined by him; such waivers and requests therefor shall be in writing.

SEC. 7.8. Special circumstances.—In case of emergency circumstances causing imminent hazard to a waterfront facility or vessel and in the absence of specific orders from the Captain of the Port, nothing in these regulations shall be construed as prohibiting the owner, lessee, or operator thereof from pursuing the most effective course of action in his judgment for the safety of the property.

SABOTAGE

SEC. 7.15. Precautions against sabotage.—The owner, lessee, and operator of a waterfront facility shall take all necessary precautions to protect such facilities from sabotage.

SEC. 7.16. Reporting of sabotage.—The evidence of or suspicion of sabotage or any other subversive activity involving a waterfront facility or personnel employed thereon, shall be reported immediately to the Captain of the Port, the nearest representative of the Naval Intelligence Service and the Federal Bureau of Investigation.

GUARDING OF WATERFRONT FACILITIES

SEC. 7.20. Adequate guard protection.—Guards shall be provided for the protection of waterfront facilities in such numbers as to assure adequate surveillance, prevent unlawful entrance, detect fire hazards, and to check the readiness of protective equipment. The Captain of the Port is authorized to require additional guards upon a finding that the owner, lessee, and operator of such facilities have not provided guards in the manner required by this section.

SEC. 7.21. How guards are provided. All guards required by the regulations

contained in this part shall be provided by the owners, lessees, and operators of waterfront facilities.

SEC. 7.22. Qualifications of guards.—Guards shall be citizens of the United States, of good character and satisfactory physical condition. No person shall be employed as guard upon a waterfront facility if the Captain of the Port shall find that by reason of misconduct, inattention to duty, negligence or other causes, such person would thereby endanger the security of a waterfront facility.

SEC. 7.23. Instruction of guards.—The owners, lessees, and operators of waterfront facilities shall be responsible for the instruction of guards in their duties and for the supervision of the performance of such duties, except in the case of Coast Guard Police and Auxiliary Military Police.

IDENTIFICATION AND PASSES

SEC. 7.25. Basic requirements.—No person shall enter upon or be permitted to enter any waterfront facility unless he shall possess all of the following:

(a) A Coast Guard identification card or other means of identification acceptable to the Captain of the Port.

(b) Any of the following kinds of passes:

(1) A badge or card issued by the company or individual operating the waterfront facility and bearing the name of the person to whom issued.

(2) Express permission (oral or written) from the owner, lessee, or operator of a waterfront facility or his duly authorized representative, valid for a single day or for a single entrance to the waterfront facility.

(3) A daily work ticket or other evidence of legitimate employment on a waterfront facility, acceptable for the date of issue only, which is issued by stevedoring companies, welding companies, carloading companies, engineering companies, and others whose agents and employees are authorized by the owner, lessee, or operator of the waterfront facility, to be thereon.

(4) Credentials establishing status as an official of the government of the United States, or of the States or possessions thereof, or of a municipality thereof, whose duties require his presence on a waterfront facility.

(5) A pass when approved by the master, senior deck officer on duty, or representative of the owner in a position of authority of a vessel moored at the waterfront facility.

(6) A certificate of identification or seaman's service record issued to United States Merchant Marine officers and seamen when the holder

thereof is a member, or is to become a member of the crew of a vessel moored at the waterfront facility.

(c) A legitimate reason for seeking entrance to the waterfront facility at that particular time.

The provisions of this section shall not apply to any person entering a waterfront facility solely for the purpose of transportation as a passenger on board a passenger-carrying vessel to be boarded from such waterfront facility.

FIRE PREVENTION

SEC. 7.30. Smoking.—Smoking shall be prohibited on all piers, docks, wharves, and other waterfront facilities except at such portions thereof as may be designated by the owner, lessee, or operator thereof, and approved by the Captain of the Port, provided that smoking in such areas shall only be permitted in accordance with local ordinances and regulations. Signs shall be conspicuously posted marking such authorized smoking areas. "No Smoking" signs shall be conspicuously posted elsewhere on waterfront facilities.

SEC. 7.31. Welding.—Oxyacetylene or similar welding or burning, of other hot work including electric welding or the operation of equipment therewith shall be prohibited on a waterfront facility, except pursuant to the procedure and under the conditions prescribed by the Captain of the Port.

SEC. 7.32. Fire Watch.—No welding, burning, or other hot work on a waterfront facility in the presence of combustible material likely to become ignited, shall be done except in the presence of a fire watch to be composed of one or more fire guards as may be determined by the Captain of the Port. Suitable fire extinguishing appliance shall be kept readily at hand during the process of such work. The fire watch shall remain on duty from the time hot work is started until after it is completed and danger of ignition is past.

SEC. 7.33. Trucks and other motor vehicles.—Trucks and other motor vehicles shall not remain or park upon a waterfront facility except for the purpose of awaiting transportation for the purpose of discharging or loading cargo or passengers, or for the purpose of performing services in connection with the operation of the facility or in connection with a vessel moored thereto. No truck or other motor vehicle shall be left unattended in such a position as may block the access of fire-fighting apparatus. Refueling of trucks or cars on a waterfront facility is prohibited except in such areas and pursuant to such procedures as may be prescribed by the Captain of the Port.

SEC. 7.34. Pier automotive equipment.—Tractors, stackers, lift trucks, hoisters, and other equipment driven by internal combustion engines used on waterfront facilities, shall be of such construction and condition and free from excess grease, oil or lint as not to constitute a fire hazard. Each unit shall be provided with an approved type hand extinguisher. When not in use, such equipment shall be stored in a manner and location satisfactory to the Captain of the Port. Gasoline or other fuel used for such equipment, shall be stored and handled in accordance with accepted safe practices, and shall not be stored on waterfront facilities without the approval of the Captain of the Port. Refueling or repairing of such equipment on waterfront facilities is prohibited except in such areas and pursuant to such procedures as may be prescribed by the Captain of the Port.

SEC. 7.35. Rubbish and waste materials.—Waterfront facilities shall be kept free from rubbish, debris, and waste materials.

SEC. 7.36. Maintenance stores and supplies.—Supplies classified as dangerous by the provisions of the regulations entitled "Explosives and Other Dangerous Articles on Board Vessels" (46 C. F. R., Part 146), to be used in connection with operation or maintenance of the property or facility, shall not be stored on waterfront facilities except in amounts necessary for normal current operating conditions and such storage shall be in a compartment remote from combustible material and so constructed as to be readily accessible and provide safe storage. Storage compartments must be kept clean and maintained free of scrap materials, empty containers, soiled wiping rags, waste, and other debris. Covered metal containers shall be provided for storage of used wiping cloths and contents removed at the end of each working day. Clothing lockers shall be maintained clean and orderly and properly ventilated. Fire extinguishing equipment suitable for the type of hazard shall be readily available.

SEC. 7.37. Electric wiring.—New installations of electric wiring and equipment shall be made in accordance with accepted safe practices. Conformity with the requirements of the National Electric Code, 1940 Edition and supplement of November, 1943, and the requirements of applicable local regulations shall be deemed evidence of compliance with such accepted safe practices. Materials, fittings, and devices shall be of type and character approved for the intended use by Underwriters Laboratories, Inc., Associated Factory Mutual Laboratories, or U. S. Bureau of

Standards. Existing electric wiring shall be maintained in a safe condition, free of defects or modifications which may cause fire or personal injury. Defective or dangerous wiring, equipment, and devices shall be replaced, repaired or permanently disconnected from a source of energy.

SEC. 7.38. Heating equipment.—Heating equipment shall be safely installed and maintained in good operating condition. Adequate clearances to prevent undue heating of nearby combustible materials shall be maintained between heating appliances, chimneys, stove pipes, gas vents or other heat producing elements, and any combustible materials of the floors, walls, partitions or roofs. In general clearances shall be such that continuous operation of the heat producing device at full capacity will not increase the temperature of nearby woodwork more than 90° above the ambient temperature. Where necessary to prevent contact with movable combustible materials, heating appliances shall be enclosed or screened. Spark arresters shall be provided on chimneys or appliances burning solid fuel used in locations where sparks constitute a hazard to nearby combustible materials. As a guide to safe installation of heating equipment, the appropriate chapters of the National Board of Fire Underwriters Building Code, 1943 Edition, shall be used.

SEC. 7.39. Fire extinguishing equipment.—Fire extinguishing appliances shall be made available in such minimum quantities, locations, and types as the Captain of the Port may prescribe. Installation and maintenance of first aid fire appliances shall not be less than equivalent to the requirements prescribed in the "Standards for First Aid Fire Appliances", issued by the National Board of Fire Underwriters. Fire extinguishing equipment, fire alarm systems and devices, and fire doors and other safety equipment shall be maintained in good operating condition at all times. When the Captain of the Port shall find that the existence of hazardous conditions require such precaution, emergency hose lines shall be led out and other emergency fire-fighting equipment shall be located immediately adjacent to said hazards.

SEC. 7.40. Marking of fire appliance locations.—The locations of all fire appliances, including hydrants, standpipe and hose stations, fire extinguishers, and fire alarm boxes, shall be conspicuously marked and ready accessibility to such appliances shall be maintained.

SEC. 7.41. Lighting.—Subject to applicable dimout and blackout regulations, piers, docks, and wharves to

which cargo vessels are moored, shall be illuminated during the hours of darkness. The use of kerosene and gasoline lamps and lanterns on such waterfront facilities is prohibited.

SEC. 7.42. Arrangement of cargo.—Cargo shall be arranged on waterfront facilities according to the individual structures of such facilities, in a manner to permit complete access for the purpose of fire extinguishment. Cargo shall be placed on waterfront facilities under the following conditions:

(a) Two feet of clear and open space shall be maintained free of rubbish, dunnage, or other obstructions, between cargo piles and any side of covered piers and cargo stored thereon. This distance shall be measured from the most prominent projection of the wall such as studding, bracings, or other obstructions that are a part of the structure.

(b) Inflammable and combustible cargo shall not be tiered higher than 12 feet. All cargo including inflammable and combustible cargo shall be so tiered as to maintain a clearance between the upper level of the top tier and trusses, beams, girders, or other structural members of not less than 36 inches and between such upper level and sprinkler heads, a clearance of 12 inches shall be maintained.

(c) There shall be maintained four feet of clear and open operating space around any fire-alarm box, standpipe and fire hose, sprinkler valve, fire doors, deck hatches, or any first-aid fire appliances.

(d) When first-aid fire appliances, alarm boxes, other safety equipment, or deck hatches are located in a space surrounded by cargo, there shall be maintained a straight, free, and open space three feet in width running to the center aisle. This space shall be kept clear of all rubbish, dunnage, or other obstruction.

(e) A center aisle of at least twenty feet in width shall be maintained the entire length of the waterfront facility when control of fire requires trucks to come on the pier. The aisle may be reduced to eight feet in width if such access by fire trucks is not required.

(f) Cross aisles, five feet wide, straight and at right angles to the center aisle, to be maintained at intervals not exceeding seventy-five feet, and extending to the side of the waterfront facility.

Where the type of cargo to be worked and the construction of a waterfront facility makes compliance with the foregoing provisions impracticable, the Captain of the Port may prescribe such rules for the arrangement of cargo as he may deem necessary and appropriate.

SEC. 7.50. Approval of facility for dangerous cargo.—Explosives, military ammunition, inflammable liquids, and other dangerous cargo as defined in the regulations "Explosives and Other Dangerous Articles on Board Vessels" (46 C. F. R., Part 146) shall not be processed, stored, or packed upon any waterfront facility unless such facility has been authorized by the Captain of the Port for such use.

SEC. 7.51. Handling of dangerous cargo.—Freight classified as dangerous by Coast Guard regulations entitled "Explosives or Other Dangerous Articles on Board Vessels" (46 C. F. R., Part 146) shall not be handled or stored on any waterfront facility except in accordance with the following regulations:

(a) Explosives and ammunition (except small-arms ammunition) shall not be handled or stored on waterfront facilities except when laden within a railroad or highway vehicle, and then only upon such waterfront facilities that are specifically approved for such purposes by the Captain of the Port.

(b) Small-arms ammunition may be handled or stored on waterfront facilities, provided local regulations do not prohibit handling or storage thereon.

(c) Inflammable liquids in metal containers, in amounts exceeding 10 tons, shall not be handled or stored at any one time on waterfront facilities except upon permission of the Captain of the Port. Such liquids in any amounts shall be so handled and stored as to provide maximum separation from combustible materials.

(d) Inflammable liquids and compressed gases shall be so handled and stored upon waterfront facilities as to provide maximum separation between freight consisting of acids or corrosive liquids. Storage for inflammable solids or liquidizing materials shall be so arranged as to prevent moisture coming in contact therewith.

(e) Acids or corrosive liquids shall be so handled and stored as to prevent such acids or liquids in event of leakage from contacting any organic materials.

(f) Poisonous gases or liquids shall be so handled and stored as to prevent their contact with acids, corrosive liquids, or inflammable liquids.

(g) All dangerous articles of freight, including combustible liquids and hazardous articles, shall be arranged in such manner as to retard the spread of fire. This shall be accomplished by interspersing piles of dangerous freight with piles of inert or less combustible materials.

SEC. 7.55. Separability.—If any provision of the regulations contained in this part of the application of such provision to any person, waterfront facility, or circumstance shall be held invalid, the validity of the remainder of the regulations contained in this part and applicability of such provision to other persons, waterfront facilities, or circumstances, shall not be affected thereby.

SEC. 7.56. Penalty.—Wilful violation of any of the provisions contained in this part or of any order issued thereunder is a misdemeanor, punishable by a fine of not to exceed \$5,000 or by imprisonment for not more than one year, or both.

(Signed) R. R. WAESCHE,
Commandant, U. S. Coast Guard.

Approved: March 29, 1944.

(Signed) JAMES FORRESTAL
Acting Secretary of the Navy

RECOMMENDED DUTIES FOR GUARDS FOR WATERFRONT FACILITIES

1. Standing orders for all guards:

(a) Take charge of your post or beat and the security of life and property which it covers, informing yourself of the location, purpose, and operation of the nearest fire, safety, and alarm apparatus.

(b) Cover your post in an efficient manner, keeping always on the alert and observing everything that takes place within sight or hearing.

(c) Report to your superior all violations of orders you are instructed to enforce and submit written reports on occurrences or violations of consequence.

(d) Quit your post only when properly relieved.

(e) Receive, obey, and pass on to your relief all orders from those to whom you report.

(f) Maintain a courteous and dignified bearing, refraining from conversation with others except as required by your duties.

(g) Give the alarm in case of fire or disaster. Fire alarms shall be sounded immediately, then use shall be made of all means at hand for extinguishment until assistance arrives.

(h) Notify immediately, those to whom you report in cases not covered by your instructions.

(i) Be especially watchful at night and during periods of alarm and blackout; challenge and hold for the Coast Guard or other authorities, anyone whose appearance and actions you suspect; and deny entrance in to

the premises to any who attempt to enter without proper identification and pass.

2. Entrance guards; special duties:

(a) Stay on duty in the close vicinity and view of the gate or entrance to which assigned.

(b) Deny entrance to the premises to all persons not having in their possession valid passes, credentials or Coast Guard identification and passes, as required by Section 7.14 of this part.

(c) Examine parcels and packages as may be necessary to insure the security of a waterfront facility.

3. Interior and roving guards; special duties:

(a) Patrol continuously within assigned area, and observe and report immediately any violations of security regulations and any circumstances adversely affecting the safety of the waterfront facility.

(b) Require that persons suspected of being on the premises without authority, properly identify themselves as required by section 7.14.

(c) Maintain close watch over vessels, barges, lighters, and tugs lying alongside the waterfront facilities, and the personnel thereof.

(d) Ascertain the location of all fire protection and alarm equipment and report immediately to the pier or plant superintendent, security officer, or other proper authority, any fire protection equipment which is missing, inoperative, improperly placed, or not readily accessible.

(e) Take measures to prevent the obstruction of fire lanes, alarm boxes, scuttles, and fire-fighting equipment.

(f) Maintain close watch for fire hazards and see that they are eliminated.

(g) Report defects in illumination which tend to decrease security.

(h) Maintain close watch to prevent the approach of and challenge and identify all craft approaching from the waterside.

(i) Enforce smoking and other security regulations.

(j) Maintain close watch for any evidence of fire, smoke, or gas fumes.

Chapter III—Coast Guard: Inspection and Navigation

PILOT RULES

PART 312—PILOT RULES FOR INLAND WATERS

The document dated February 5, 1944, published in 9 F. R. 1535, is amended by changing the effective date to read May 1, 1944, instead of April 1, 1944 (9 F.R. 3515, April 1, 1944).

TITLE 46—SHIPPING

Chapter I—Coast Guard: Inspection and Navigation

SUBCHAPTER C—MOTORBOATS, AND CERTAIN VESSELS PRO- PELLED BY MACHINERY OTHER THAN BY STEAM MORE THAN 65 FEET IN LENGTH

PART 25—REQUIREMENTS FOR ALL MOTORBOATS EXCEPT THOSE OF OVER 15 GROSS TONS CARRYING PASSENGERS FOR HIRE

LICENSED OPERATORS

Section 25.8-8 (a) is deleted and the following is substituted instead:

§ 25.8-8 *Lost License*.—(a) In case of loss of license from any cause, except as stated in section 25.8-9, the Officer in Charge, Marine Inspection, upon receiving a properly executed affidavit on form NAVCG 719-E, giving satisfactory evidence of such loss and a record of the lost license from the marine inspection office that issued same, shall issue a Certificate of Lost License to the licensee which shall have the authority of the lost license for the unexpired term. In all cases the Certificates of Lost License shall state the marine inspection office that issued the lost license (9 F. R. 3356, March 28, 1944).

SUBCHAPTER D—TANK VESSELS

PART 36—LICENSED OFFICERS AND CERTIFICATED MEN

LICENSED OFFICERS

Section 36.1-16 (a) is deleted and the following is substituted instead:

§ 36.1-16 *Lost license—T/ALL*.—(a) In case of loss of license of any class from any cause, any Officer in Charge, Marine Inspection, upon receiving a properly executed affidavit on form NAVCG 719-E giving satisfactory evidence of such loss and a record of the lost license from the marine inspection office that issued same shall issue a Certificate of Lost License to the licensee, which shall have the authority of the lost license for the unexpired term unless in the meantime the licensee shall have the grade of his license raised after due examination, in which case a license in due form for such grade may be issued. In all cases where a Certificate of Lost License is issued by a marine inspection office other than the office that issued the lost license, the Certificate of Lost License shall state what marine inspection office issued the lost license (9 F. R. 3356, March 28, 1944).

SUBCHAPTER F—MARINE ENGINEERING

PART 55—PIPING SYSTEMS

Section 55.19-11. *Class II piping* is amended by deleting subparagraph (c) (2) therein.

Section 55.19-6 is amended by adding a new paragraph (g) reading as follows:

§ 55.19-6. *Class I piping*. * * *

(g) Seamless or welded fittings fabricated from plate or seamless steel pipe conforming with the appropriate section of Part 51 may be used if welded in accordance with the requirements of Part 56 (9 F. R. 2668, March 9, 1944).

SUBCHAPTER G—OCEAN AND COASTWISE: GENERAL RULES AND REGULATIONS

PART 62—LICENSED OFFICERS AND CER- TIFICATED MEN

INSPECTED VESSELS

Section 62.7 is amended by deleting the first sentence of paragraph (a) and substituting the following instead:

§ 62.7. *Certificate of lost license*. (a) Whenever a person who holds a license loses his license, he shall report such loss to an Officer in Charge, Marine Inspection, who shall issue a Certificate of Lost License after receiving from such person a properly executed affidavit on form NAVCG 719-E, giving satisfactory evidence of such loss, and a record of the lost license from the marine inspection office where it was issued. * * * (9 F. R. 3356, March 28, 1944).

UNINSPECTED VESSELS

Licensed Masters, Mates and Engineers

Section 62.118 (a) is deleted and the following is substituted instead:

§ 62.118. *Lost license*.—(a) In case of loss of license of any class from any cause, except as stated in Section 62.119, any Officer in Charge, Marine Inspection, upon receiving a properly executed affidavit on form NAVCG 719-E, giving satisfactory evidence of such loss, and a record of the lost license from the marine inspection office that issued same, shall issue a certificate to the licensee which shall have the authority of the lost license for the unexpired term, unless in the meantime the licensee shall have the grade of his license raised after due examination, in which case a license in due form for such grade may be issued. In all cases the Certificate of Lost License shall state what marine inspection office issued the lost license (9 F. R. 3356, March 28, 1944).

REGISTRATION OF STAFF OFFICERS

Section 62.204 (n) is deleted and the following is substituted instead:

§ 62.204. *General*. * * *

(n) Any person whose certificate of registry has been stolen, lost or destroyed shall report that fact to an Officer in Charge, Marine Inspection, as soon as possible, and if a duplicate certificate is desired, a properly executed affidavit on form NAVCG 719-E, giving satisfactory evidence of such loss shall be furnished an Officer in Charge, Marine Inspection, along with the one photograph as required in the case of an application for an original certificate. The Officer in Charge, Marine Inspection, shall transmit the affidavit and photograph to Coast Guard Headquarters and the Commandant shall cause to be prepared a certificate which shall be similar to the former certificate, bear the same book or identification number as the former certificate and be marked "Duplicate" (9 F. R. 3356, March 28, 1944).

SUBCHAPTER H—GREAT LAKES: GENERAL RULES AND REGULA- TIONS

PART 78—LICENSED OFFICERS AND CERTIFICATED MEN

INSPECTED VESSELS

Section 78.7 is amended by deleting the first sentence of paragraph (a) and substituting the following instead:

§ 78.7. *Certificate of lost license*.—(See § 62.7 of this chapter which is identical with this section.) (9 F. R. 3356, March 28, 1944.)

REGISTRATION OF STAFF OFFICERS

Section 78.105 (n) is deleted and the following is substituted instead:

§ 78.105. *General*. * * *

(n) (See § 62.204 of this chapter which is identical with this section.) (9 F. R. 3356, March 28, 1944.)

SUBCHAPTER I—BAYS, SOUNDS, AND LAKES OTHER THAN THE GREAT LAKES: GENERAL RULES AND REGULATIONS

PART 96—LICENSED OFFICERS AND CER- TIFICATED MEN

Section 96.7 is amended by deleting the first sentence of paragraph (a) and substituting the following instead:

§ 96.7. *Certificate of lost license*.—(See § 62.7 of this chapter which is identical with this section.) (9 F. R. 3356, March 28, 1944.)

SUBCHAPTER J—RIVERS: GENERAL RULES AND REGULATIONS

PART 115—LICENSED OFFICERS

Section 115.7 is amended by deleting the first sentence of paragraph (a) and substituting the following instead:

§ 115.7 *Certificate of lost license.*—(See section 62.7 of this chapter which is identical with this section.) (9 F.R. 3357, March 28, 1944.)

SUBCHAPTER K—SEAMEN

PART 138—RULES AND REGULATIONS FOR ISSUANCE OF CERTIFICATES AND CONTINUOUS DISCHARGE BOOKS

Section 138.11 is amended by deleting the undesignated paragraph of this section which starts with the phrase "The seaman will be required to make affidavit in duplicate * * *" and substituting the following paragraph instead:

§ 138.11. *Duplicate; Procedure for obtaining.* * * *

A seaman shall be required to furnish one properly executed affidavit on form NAVCG 719-E, giving satisfactory evidence of the loss of his documents; such as continuous discharge book, certificate of identification, certificate of service or efficiency, or certificate of discharge, to the Officer in Charge, Marine Inspection, Collector of Customs, Deputy Collector of Customs, or other authorized person. The affidavit shall be accompanied by one photograph for each duplicate document requested, except no photograph is required for a duplicate certificate of discharge. The affidavit and necessary photographs shall be forwarded by the official receiving them to Coast Guard Headquarters and the Commandant will cause to be prepared a duplicate of lost document requested. The duplicate continuous discharge book, certificate of identification, certificate of service or efficiency, or certificate of discharge will be marked, "duplicate", and will bear the same number as the original book or certificate of identification with the addition of the suffix "D-1" on the first duplicate, "D-2" on the second duplicate, "D-3" on the third duplicate, etc.; such suffix shall then become part of the serial number and shall be recorded in all subsequent records (9 F. R. 3357, March 28, 1944).

SUBCHAPTER O—REGULATIONS APPLICABLE TO CERTAIN VESSELS AND SHIPPING DURING EMERGENCY

PART 153—BOATS, RAFTS, AND LIFESAVING APPLIANCES: REGULATIONS DURING EMERGENCY

Section 153.3 (b) is deleted and the following is substituted instead:

§ 153.3. *Lifeboats on ocean and coastwise vessels.* * * *

(b) *Readiness for lowering.*—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 gripped in the outboard position so as to provide for immediate lowering in case of emergency. On all vessels guys are to be rigged from the davit heads when the boats are carried in the outboard position (9 F. R. 3357, March 28, 1944).

Waiver

TITLE 46—SHIPPING

Chapter I—Coast Guard: Inspection and Navigation

SUBCHAPTER K—SEAMEN

PART 138—RULES AND REGULATIONS FOR ISSUANCE OF CERTIFICATES AND CONTINUOUS DISCHARGE BOOKS

WAIVER OF COMPLIANCE WITH CERTAIN PROVISIONS

The Acting Secretary of the Navy having by order dated October 1, 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, United States Coast Guard, shall find to be necessary in the conduct of the war.

Now, Therefore, I hereby find it to be necessary in the conduct of the war that there be waived compliance with the provisions of subsection (1) of section 4551 of the Revised Statutes, as amended (46 U. S. C. 643 (1)), and with paragraphs (i) and (j) of section 138.9 of the Rules and Regulations for Issuance of Certificates and Continuous Discharge Books (46 C. F. R. Part 138) as amended (9 F. R. 1826), relating to the reporting of the employment, discharge, or termination of the services of seamen on Coast Guard Form 735-T, in the case of tugs, towboats, and seagoing barges engaged in business connected with the conduct of the war. Nothing

herein shall be construed as effectuating a waiver of the requirements for the filing of crew lists on Coast Guard Form 710-A in cases of departure for foreign ports (9 F. R. 3159, March 23, 1944).

Marine Inspection Memorandums

No. 67

Submerged Melt Welding Qualification Procedure

UNITED STATES COAST GUARD,
Washington, D. C.,
3 March, 1944.

1. Manufacturers desiring to secure process approval in order to fabricate boilers, pressure vessels, etc., by use of the submerged melt welding process shall prepare test plates in the presence of a Coast Guard inspector who will stamp the plates with the official stamp of the Coast Guard. One test specimen of the reduced section tensile, guided side bend, free face bend, free root bend and two macro etch specimens shall be machined from the test plates.

2. The test plates shall be of marine boiler plate complying with any of the grades given in section 51.2 of the Marine Engineering Regulations. The thickness of the test plate material shall be an average of that to be used in fabrication, but not less than three-fourths inch.

3. Specimens may be tested in the manufacturer's laboratory, a recognized testing laboratory, or at the National Bureau of Standards. If the tests are made at a laboratory other than the National Bureau of Standards, they shall be witnessed by a Coast Guard inspector. Specimens other than the etch specimens shall be tested in accordance with and meet the requirements of section 56.20-4. One retest will be permitted for each of the original test specimens. Should the retest fail to meet the requirements, the manufacturer shall secure the services of an engineer from the vendor of the submerged melt equipment to check the equipment and give further instruction to the operator prior to the preparation of an additional set of test plates.

4. Results of the physical tests, together with etch specimens shall be forwarded to Headquarters for consideration and action prior to the manufacturer using the subject process for production.

5. The etching reagent shall be one part ammonium persulfate to nine

parts of water by weight. The solution should be used at room temperature and applied by vigorously rubbing the surface to be etched with a piece of cotton saturated with the solution. The etching process should be continued until there is a clear definition of the weld structure. After etching, the specimens shall be rinsed in hot water and dried with alcohol and given a transparent protective coating to prevent oxidation.

6. A sketch shall be prepared showing the joint preparation, and information relative to the voltage, amperage, size and number of rod, size and grade of melt, and speed of travel shall be submitted for the submerged melt equipment. If manual welding is used on the opposite side of the plate, information as to the number of passes, size of electrode used for each pass, type of electrode and name of manufacturer shall be submitted.

7. The inspector witnessing the preparation of test specimens should submit a report, together with the physical test report, furnishing any information which he deems pertinent.

(Signed) R. R. WAESCHE,
Commandant.

No. 68

Lost Document Affidavit Revised Form NAVCG 719-E

UNITED STATES COAST GUARD,
Washington, D. C.,
15 March 1944.

Refs:

- (a) Lost Document Affidavit revised form NAVCG 719-E
- (b) Amendments to regulations in Title 46 C. F. R., Chapter I (46 C. F. R. 25.8-8, 36.1-16, 62.7, 62.118, 62.204, 78.7, 78.105, 96.7, 115.7, and 138.11).

1. Form NAVCG 719-E, Lost Document Affidavit, has been revised to provide for its use in reporting the loss of licenses as well as other seamen's documents. The applicable regulations in Title 46, C. F. R., Chapter I, have been revised to provide for the submission of this affidavit when licenses or other seamen's documents are lost, destroyed, or stolen. The marine inspection offices shall, therefore, discontinue the use of special mimeographed forms for reporting the loss of license, since the revised form is to serve this purpose.

2. In order to avoid unnecessary duplication as between the seamen's records kept in the field and at headquarters in accordance with the revised regulations in reference (b), 46 C. F. R. 138.11, each seaman should be instructed to prepare a single copy of the affidavit rather than two copies

required under the practice heretofore. In the case of a licensed officer who has lost both his license and continuous discharge book or certificate of identification, etc., he will be required to submit an affidavit in duplicate. The original copy, after being reviewed by the marine inspection office, shall be forwarded to Headquarters where the required duplicate seamen's documents shall be prepared, following which the affidavit will be filed in the Headquarters' records. The duplicate copy of the affidavit will be retained in the marine inspection office, since the Certificate of Lost License is prepared and issued locally under the regulations.

3. There are two important changes in the form:

(a) The affidavit signed by the affiant requires a declaration to the effect that the lost documents requested are not currently suspended or revoked; and

(b) The affidavit may be sworn to and subscribed before a Coast Guard officer or other authorized person in lieu of a notary public.

4. Notwithstanding the fact that the affidavit form has been revised and the procedure for applying for the issuance of lost documents has been changed somewhat, the existing procedure for the collection of fees for the issuance of duplicate documents is still in effect.

5. Copies of references (a) and (b) are attached for your information.

(Signed) R. R. WAESCHE,
Commandant.

Equipment Approved by the Commandant

DAVITS

Schat low type davit, type S. S. L. 5-10.5 (Arrangement Dwg. No. B. A. 343, dated 31 January, 1944) (Maximum working load of 2,500 pounds per arm), submitted by Lane Lifeboat & Davit Corporation, Foot of 40th Road, Flushing, N. Y. (9 F. R. 2934, March 17, 1944).

Sheath Screw davit, size 5-S-6-O (General Assembly Dwg. No. 445-D, dated 12 November, 1943, revised 21 February, 1944) (Maximum working load of 4,500 pounds per arm), submitted by The Landley Company, Inc., 15 Park Row, New York, N. Y. (9 F. R. 2934, March 17, 1944).

Schat gravity davit, type GR.19.B (Arrangement Dwg. No. A. A. 113, dated 12 January, 1942) (Maximum working load of 9,500 pounds per

arm), submitted by the Lane Lifeboat & Davit Corp., Foot of 40th Road, Flushing, N. Y. (9 F. R. 2677, March 9, 1944).

DISENGAGING APPARATUS FOR LIFEBOATS

Rottmer type releasing gear (Dwgs. No. 5US-904, dated 25 February, 1944, and No. 4US-910, dated 3 March, 1944) (Maximum working load of 7,000 pounds per hook), submitted by the Globe American Corporation, Kokomo, Ind. (9 F. R. 3357, March 28, 1944).

EMBARKATION-DEBARKATION LADDER

Embarkation-debarkation double wood rung chain ladder (Dwg. No. D-2230-O, dated 16 February, 1944), submitted by Brisbane & Co., 8653 Atlantic Street, South Gate, Calif. (9 F. R. 2677, March 9, 1944).

FIRE EXTINGUISHER

C-D/Fog Model 4A seat type, 4-pound carbon dioxide fire extinguisher, (Assembly Dwg. No. CO-237D, and Parts List Dwgs. Nos. CO-173A, CO-174A, CO-175A, dated 12 November, 1942, and CO-236A, revised 2 April, 1943) (For use on all motorboats except those of over 15 gross tons carrying passengers or freight for hire), manufactured by The General Detroit Corporation, Detroit, Mich. (9 F. R. 2934, March 17, 1944).

FIRE-RESISTIVE SUBSTANCE

Tolex, 304DC, smooth grain, fire-resistant finish for use in the treatment of cotton drill covers of life preservers, submitted by Textile Leather Corporation, Toledo, Ohio (9 F. R. 2934, March 17, 1944).

FIRST-AID KITS

First-aid kit, 24-unit, type MM, submitted by the E. D. Bullard Co., 275 Eighth Street, San Francisco, Calif. (9 F. R. 2934, March 17, 1944).

First-aid kit, Model X-172W, submitted by the Davis Emergency Equipment Co., Inc., 45 Halleck Street, Newark, N. J. (9 F. R. 3357, March 28, 1944).

First-aid kit, Model G-11, submitted by Mine Safety Appliances Co., Brad-dock, Thomas and Meade Streets, Pittsburgh, Pa. (9 F. R. 2668, March 9, 1944).

First-aid kit, Model IW24, submitted by Industrial Drug Supplies, Inc., 108 Greenwich Street, New York, N. Y. (9 F. R. 2668, March 9, 1944).

First-aid kit, type H-24, submitted by A. E. Halperin Co., Inc., 75-87 Northampton Street, Boston, Mass. (9 F. R. 2668, March 9, 1944).

First-aid kit, Model LB-753, submitted by Burroughs Wellcome & Co., Inc., 9-11 East Forty-first Street, New York, N. Y. (9 F. R. 2668, March 9, 1944).

First-aid kit, Model OC-44, submitted by the Oceanic Chemical Co., Inc., 280 Pearl Street, New York, N. Y. (9 F. R. 3439, March 30, 1944).

HAND DISTRESS SIGNAL

Hand distress signal, type VK M-2, submitted by the Van Karner Chemical Arms Corporation, 202 E. Forty-fourth Street, New York, N. Y. (9 F. R. 2677, March 9, 1944).

LIFEBOATS

27.8 by 8.5 by 3.8 feet clinker built oar propelled wooden lifeboat 538 cubic feet capacity (construction details Dwg. No. D. P. L. B. 61, Type A, Sheet 2, dated 28 October, 1943), manufactured by the Fox River Boat Works, De Pere, Wis. (9 F. R. 2677, March 9, 1944).

18 by 6 by 2.6 feet metallic oar-propelled lifeboat 199 cubic feet S. R. capacity (general arrangement and construction Dwg. No. 1815, dated 8 February, 1944), submitted by the Lane Lifeboat & Davit Corporation, Foot of 40th Road, Flushing, N. Y. (9 F. R. 2934, March 17, 1944).

LIFE FLOATS

25-person, rectangular balsa wood life float (Dwg. No. 3491-25, dated 3 January, 1944), submitted by the Bell Lumber Co., 3491 Gage Avenue, Bell, Calif. (9 F. R. 2677, March 9, 1944).

10-, 15-, 20-, 25-, 40-, and 60-person, elliptical balsa wood life floats (Dwg. No. G-331, revised 13 December, 1943), submitted by C. C. Galbraith & Son, Inc., 99 Park Place, New York, N. Y. (9 F. R. 2677, March 9, 1944).

10-person, elliptical balsa wood life float (Dwg. No. L. F. 10-1, dated 7 February, 1944), submitted by Paul, Rice, & Levy, Inc., 2933 Dauphine Street, New Orleans, La. (9 F. R. 2677, March 9, 1944).

LIFE RAFTS

20-person, all steel well deck life raft, type No. 2 (Dwgs. Nos. 1, 2, and 3 of 3 sheets), designed by Jones-Gillis Manufacturing Co., McComb, Miss. (9 F. R. 2677, March 9, 1944).

20-person, improved type metal life raft (Dwg. No. 50, Sheets 1, 2 and 3), submitted by Kearns Bros., Redwood City, Calif. (9 F. R. 2668, March 9, 1944).

LUMINOUS CLOTH OR TAPE FOR MARKING INTERIOR ACCOMMODATIONS, ETC.

Luminous tape, types 11-1031, 11-1032, 11-1033, and 10-1332, submitted by Charles F. Heaphy Co., Graybar Building, New York, N. Y. (9 F. R. 3439, March 30, 1944).

SEA ANCHORS

Sea anchor, type AR-13 (U. S. Coast Guard Dwg. No. MMI-562 and specification, dated 1 November, 1943), submitted by Aero Materiel Corporation, 2480 Sixteenth Street NW., Washington, D. C. (9 F. R. 2677, March 9, 1944).

Sea anchor, type SEAWAY (U. S. Coast Guard Specification and Dwg. No. MMI-562, dated 1 November, 1943), submitted by Seaway Manufacturing Co., 511 North Solomon Street, New Orleans, La. (9 F. R. 3439, March 30, 1944).

SKATES OR FENDERS FOR LIFEBOATS

Lifeboat skates (Dwg. No. 100, dated March 8, 1944), submitted by the Boatcraft Co., Corner Cropsey and Twenty-sixth Avenues, Brooklyn, N. Y. (9 F. R. 3357, March 28, 1944).

WINCHES FOR LIFEBOATS

Welin MacLachlan winch with quick return mechanism, type "CW" N single drum (General Arrangement Dwg. No. 2676-6, dated 19 August, 1943) (Maximum working load of 6,970 pounds at the drum), submitted by Welin Davit & Boat Corporation, Perth Amboy, N. J. (9 F. R. 2677, March 9, 1944).

Welin type "CW" 6-N gravity winch with quick return mechanism (general Arrangement Dwg. No. 2676-2, dated 11 August, 1943) (Maximum working load of 13,500 pounds at the drums), submitted by Welin Davit & Boat Corporation, Perth Amboy, N. J. (9 F. R. 2677, March 9, 1944).

CORRECTION

LIFE PRESERVER

Adult kapok life preserver (Dwg. No. 2, dated 19 November, 1943) (For general use only and not for use with lifesaving suits), approval No. B-204, manufactured by the Merit Manufacturing Corporation, 225-27 Powell Street, Brooklyn, N. Y. (originally approved 8 F. R. 17235, 22 December, 1943) (9 F. R. 2934, March 17, 1944).

APPROVAL WITHDRAWN

LINE-THROWING GUNS

Line-throwing gun manufactured by The Hilyard Co., Norristown, Pa. (originally approved in 1919) (9 F. R. 2668, March 9, 1944).

Line-throwing gun manufactured by the James Walker Co., 123 Light Street, Baltimore, Md., (originally approved in 1919) (9 F. R. 2669, March 9, 1944).

Line-throwing gun manufactured by The Landley Co., Inc., 15 Park Row, New York, N. Y. (originally approved in 1919) (9 F. R. 2669, March 9, 1944).

Line-throwing guns, Hall breech loading, model A (fixed mount) and Hall breech loading, model B (swivel mount), manufactured by the Naval Co., 3419 Richmond Street, Philadelphia, Pa. (originally approved 13 March, 1919) (9 F. R. 2934, March 17, 1944).

Line-throwing gun, manufactured by the New York Gun Co., 31 South Street, New York, N. Y. (originally approved by the Executive Committee in 1938) (9 F. R. 2934, March 17, 1944).

Line-throwing gun, manufactured by R. S. Newbold & Son Co., Norristown, Pa. (originally approved in 1919) (9 F. R. 3439, March 30, 1944).

(Notwithstanding the withdrawal of approvals, any of the foregoing line-throwing guns now on board merchant vessels may be continued in service, provided such line-throwing guns are in good and serviceable condition) (9 F. R. 2669, March 9, 1944).

ITEMS SUITABLE FOR MERCHANT MARINE USE

FLAME ARRESTERS

The Vapor Recovery Systems Co., 2820 North Alameda Street, Compton, Calif., "Varec" Fig. 50ACU, Fig. 50 ABCU, and Fig. 50ACCU iron-housed flame arresters with copper banks, in sizes 2½, 3, 4, 6, 8, 10, and 12 inches (drawing No. D-555) satisfactory for use with inflammable or combustible liquids in bulk of grade A or lower on tank vessels subject to the 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.

AFFIDAVITS

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	
Appleton Electric Co., New York, N. Y.: Terminal tubes, female, drawing No. 58807 (no alt. No.)	x	x	x		1944 Mar. 2
Bart Laboratories, Belleville, N. J.: Searchlight, lever control and slip ring assembly, type No. BPT-20, catalog No. 20B1055-M, drawing No. M-4401, alt. 2			x		Mar. 7
Edwards & Co., Inc., Norwalk, Conn.: Running light and dimmer panel, dripproof, catalog No. M. D. 2351, drawing No. 6832, alt. 4	x	x			Mar. 3
Running light and dimmer panel, watertight, pedestal mount, catalog No. M. D. 2353, drawing No. 6837, alt. 5	x	x	x		Do.
Running light and dimmer panel, dripproof, catalog No. M. D. 2351, drawing No. 6832-A, alt. 4	x	x			Mar. 4
Running light and dimmer panel, watertight, pedestal mount, catalog No. M. D. 2353, drawing No. 6837-A, alt. 4	x	x	x		Do.
A. Ward Hendrickson & Co., Inc., Brooklyn, N. Y.: Light shield for class No. 2 anchor light, drawing No. 21917 (no alt. No.)			x		Feb. 24
Justrite Mfg. Co., Chicago, Ill.: Portable hand lantern, explosion proof, model No. 17-8 Justrite service light				x	Mar. 7
The Kilborn-Sauer Co., Fairfield, Conn.: Light shield for anchor light, drawing No. 108-OE, revised			x		Feb. 24
Russell & Stoll Co., Inc., New York, N. Y.: Lighting fixture, junction box type, vaportight, 200-watt maximum, drawing No. F-9397, alt. 4: Catalog No. 6283 M. C., without guard Catalog No. 6284 M. C., with guard	x x	 x	 x		Mar. 2 Do.
The Simes Co., Inc., New York, N. Y.: Hand portable lighting fixture, watertight 50-watt maximum, drawing 1040-G-COM, rev. 11/22/43	x	x	x		Feb. 17
United Fruit Co., New York, N. Y.: Cargo hold light fixture, watertight, 100-watt maximum, drawing No. 864-1-1, rev. 2/7/44 Cargo hold light fixture, watertight, 100-watt maximum, drawing No. 864-1-2, rev. 2/7/44	x x	 x	 x		Mar. 4 Do.

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 February 16 to March 15, 1944, are as follows:

Gulf Star Foundries, Corpus Christi, Tex., valves.

Oregon Shipbuilding Corporation, Portland, Oreg., flanges, fabricated fittings, and manifolds.

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, U. S. Coast Guard. 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. For the information of all parties concerned, a list of approved heats for manufacturers which have been tested and found acceptable during the period from January 16 to March 15, 1944, are as follows:

M. Greenberg's Sons, San Francisco, Calif., heat Nos. 134 and 135.

The Lunkenheimer Co., Cincinnati, Ohio, heat No. 206.

H. B. Sherman Manufacturing Co., Battle Creek, Mich., heat Nos. 423 to 429, inclusive.

Activities of Merchant Marine Hearing Units

Coast Guard Merchant Marine hearing units, during February, handled cases involving 168 licensed officers and 1,525 unlicensed men. In the case of officers, 5 licenses were revoked, 26 were suspended, 35 were suspended

on probation, 5 were suspended plus suspended on probation, 2 were voluntarily surrendered, 57 admonitions were given, and 38 cases were dismissed. Of the unlicensed men, 21 certificates were re-

voked, 170 suspended, 329 were suspended on probation, 25 were suspended plus suspended on probation, 10 were voluntarily surrendered, 703 admonitions were given, and 267 cases were dismissed.

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING FEBRUARY 1944

DECK OFFICERS

REGION	Master										Chief Mate										Second Mate									
	Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Ocean		Coast-wise		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	49	37	5	16	3	7	27	1	10	45	17	3	1				1	3			107	14	1	3						
Gulf coast	14	12		6	1	1	3	1	4	20	3		5				1			1	19	2								
Great Lakes and rivers		2		1	20	48	4		8	13		1		2					6	5	1	1								
Pacific coast	35	25		6			2	10		1	56	7					2	4			73	5								
Total	98	76	5	29	20	52	14	40	10	28	121	28	3	8			4	7	6	6	200	22	1	3						

REGION	Third Mate										Pilots						Totals		
	Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Great Lakes		B. S. & L.		Rivers		Original	Re-newal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	349	14	2									5	48	68	10	7	629	225	854
Gulf coast	13										2	2	3	17	14	9	88	65	153
Great Lakes and rivers		2									74	60	1		62	33	175	168	343
Pacific coast	68	3									1		24	38		3	261	102	363
Total	430	19	2								77	67	76	123	86	52	1,153	560	1,713

ENGINEER OFFICERS

REGION	Chief engineer, steam				First assistant engineer, steam				Second assistant engineer, steam				Third assistant engineer, steam				Motor vessels								Total		
	Ocean		Inland		Ocean		Inland		Ocean		Inland		Ocean		Inland		Chief engineer		First assistant engineer		Second assistant engineer		Third assistant engineer		Original	Re-nwal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R					
Atlantic coast	47	97	6	61	68	34	4	11	197	45	1	5	256	19			8	41	19	12	22	6	391	6	1,019	337	1,356
Gulf coast	9	9	1	6	13	9		5	19	4			16	5			4	8			2	1	9	1	73	48	121
Great lakes and rivers		10	27	87		12	50	46	1	8	81	24	1	1	24		8	5	5	4		1	1		198	200	398
Pacific coast	25	50	1	12	60	7		5	87	11			90	2			8	22	5	6	5	1	115		396	116	512
Total	81	166	35	166	141	62	54	67	304	68	82	29	363	27	24		28	76	29	22	29	9	516	7	1,686	701	2,387

ORIGINAL SEAMEN'S DOCUMENTS ISSUED, MONTH OF FEBRUARY 1944

REGION	Continuous discharge book	Certification 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		Q. M. E. D., 6 months	Q. M. E. D., emergency	Radio operator	Certification of service	Tanker man	Staff officer	Totals
								12-24 months ⁴	6-12 months emergency ⁵							
Atlantic coast	40	3,284	383	202	71	19	1	1,955	158	407	356	225	2,511	7	205	9,824
Gulf Coast	79	790	66	25	10	0	0	706	21	174	82	9	621	35	15	2,633
Pacific coast	471	135	27	20	13	10	0	16	14	51	43	0	591	21	3	1,415
Great Lakes and rivers	22	1,810	228	76	27	6	0	995	69	341	265	15	1,262	3	42	5,161
Total	612	6,019	704	323	121	35	1	3,672	262	973	746	249	4,985	66	265	19,033

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.

WAIVERS OF MANNING REQUIREMENTS FROM 1 FEBRUARY TO 29 FEBRUARY 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 substituted for qualified members of engine department	Wipers, coalpassers or cadets substituted for engineer officers	Ordinary seamen or cadets substituted for deck officers	Total
Atlantic coast	346	174	214	43	493	122	49	19	29	1,143
Gulf coast	47	26	29	5	77	13	7	1	2	160
Pacific coast	216	94	90	15	345	38	23	3	6	614
Great Lakes										
Total	609	294	333	63	915	173	79	23	37	1,917

CREW SHORTAGE REPORTS FROM 1 FEBRUARY TO 29 FEBRUARY 1944

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
		Chief mate	Second mate	Third mate	Able seaman	Ordinary seamen	Third engineer	Qualified members engineer department	Wiper or coalpasser	
Atlantic coast	10	1	2	2	2		1	3	2	13
Gulf coast	8		1		4	1	1	3	1	11
Pacific coast	6		1		2	2	1			6
Great Lakes										
Total	22	1	4	2	8	3	3	6	3	30

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