PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL
UNITED STATES COAST GUARD

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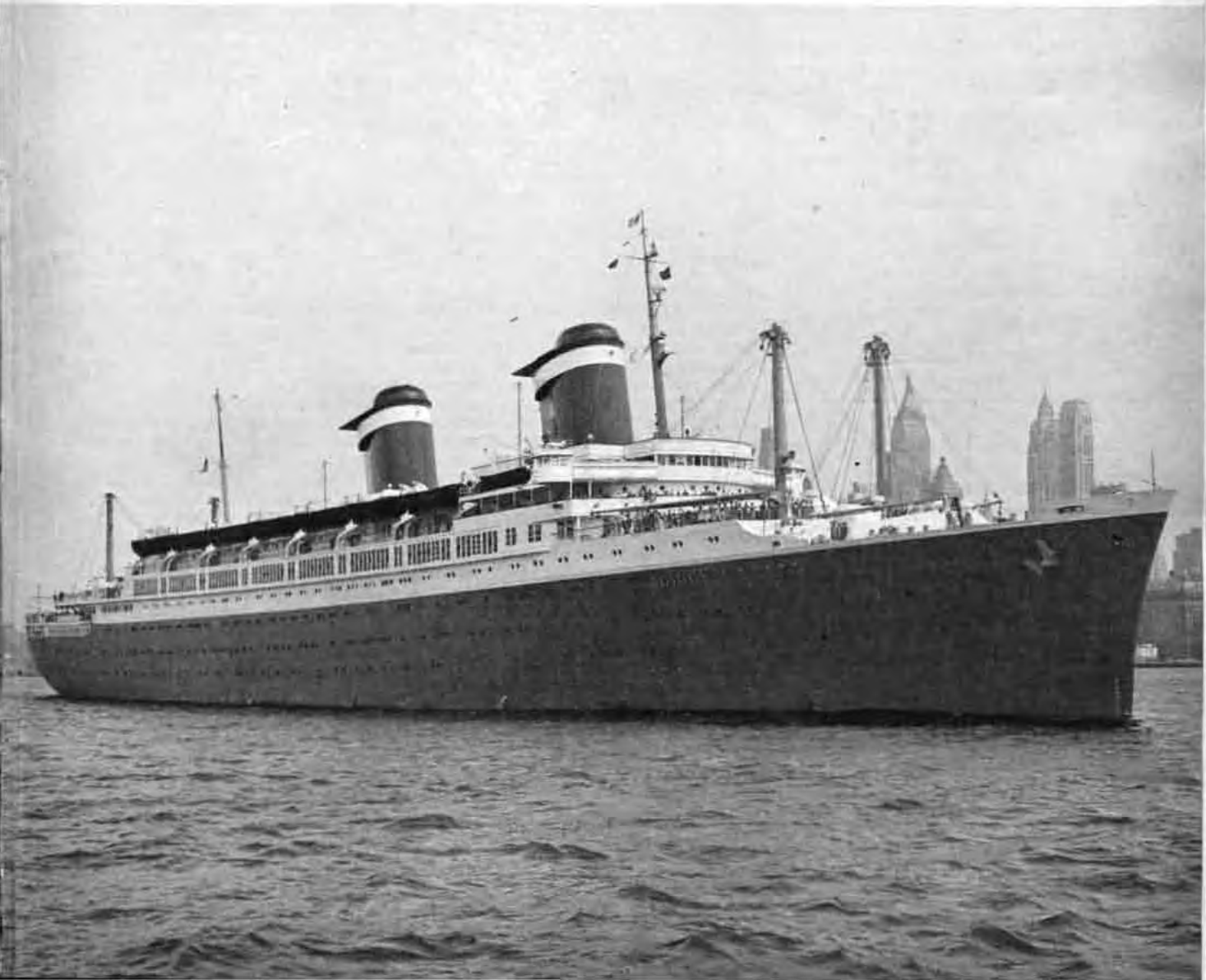

Proceedings of the

MERCHANT MARINE COUNCIL

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The Merchant Marine Council of the United States Coast Guard

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COUNCIL ACTIVITIES

The Merchant Marine Council held a semiannual meeting on September 20, 1950, at U. S. Coast Guard Headquarters, Washington, D. C. Public hearings were held on that day for the purpose of receiving comments on the proposed changes and new regulations in the rules and regulations which had been previously announced in the August 1950 issue of the PROCEEDINGS OF THE MERCHANT MARINE COUNCIL, as well as published in the Federal Register of August 25, 1950. In addition to the members of the Merchant Marine Council on duty at Coast Guard Headquarters, the following officers from Coast Guard Districts sat as members of the Merchant Marine Council: Rear Adm. Louis W. Perkins, U. S. C. G., Commander, 2d Coast Guard District, St. Louis, Mo.; Rear Adm. Roy L. Raney, U. S. C. G., Commander, 9th Coast Guard District, Cleveland, Ohio; Capt. George W. Callbeck, U. S. C. G., Marine Inspection Officer, 13th Coast Guard District, Seattle, Wash.; Capt. L. H. Shackelford, U. S. C. G., Marine Inspection Officer, 3d Coast Guard District, New York City, N. Y.; and Mr. John F. Oettl, Marine Inspection Officer, 8th Coast Guard District, New Orleans, La. The Merchant Marine Council recommended to the Commandant that the changes proposed in the rules and regulations as described in the Federal Register, August 25, 1950, be adopted with certain modifications in accordance with comments received and considered by the Council. The following items were recommended:

1. To cancel Part 100, "Safety of Life on Navigable Waters During Marine Regattas or Marine Parades" of Title 33 CFR and insert new regulations on this subject. The new regulations will define a marine regatta and marine parade and will require in certain situations, the submission in advance of detailed plans of proposed marine regattas and marine parades to the cognizant Commander of the Coast Guard District. The Commander of the Coast Guard District will advise the organ-

ization whether the proposed marine regetta or marine parade may be held in the requested location with safety to life on the navigable waters. If necessary it will be required that the regatta course be marked and patrolled.

2. To amend Section 80.16 of Part 80, Pilot Rules For Inland Waters of Title 33 CFR to require lights for nondescript vessels on certain navigable waters not otherwise provided for to be the same for those required to be exhibited by scows.

3. To amend section 10.02–5 (e) (5) of Part 10, Licensing of Officers and Motorboat Operators and registration of staff officers in Title 46 CFR by canceling the exception granted to applicants with monocular vision. It is recommended to amend section 12.15–5 (b) of Part 12, certificates of seamen by canceling the reference to monocular vision.

4. To amend section 25.4–1 (a), 26.2–1, and 27.2–1 of the Motorboat Regulations and section 113.45 (a) of the General Rules and Regulations for Vessel Inspection, Rivers in Title 46 CFR, to require life preservers for children on motorboats and motorvessels carrying passengers for hire. The additional number of approved life preservers suitable for children that will be required shall be equal to at least 10 percent of the total number of persons carried.

5. To cancel the regulations in Parts 30 to 38, inclusive, and to reissue revised regulations and new regulations for tank vessels as parts 30 to 39, inclusive, in Title 46 CFR. This will be a complete revision of the Tank Vessel Regulations, to be in effect on and after July 1, 1951. No new regulations have been added regarding bulk transportation of inflammable or combustible liquids having lethal characteristics, venting of cargo tanks on tank vessels, constructed on or after July 1, 1951, and fire-extinguishing systems for dry cargo spaces, lamp and paint rooms, pump rooms, etc., on tank ships constructed on or after July 1, 1951.

6. To amend sections 146.21–6 (c) regarding stoppage of inflammable liquids on passenger vessels; 146.22–100 regarding containers for sodium hydrosulfite, section 146.22–100 regarding packaging and labeling of sodium sulfide; section 146.23–100 regarding portable tank containers for certain corrosive liquids and section 146.24–100 regarding portable tank containers for certain liquified gases and transportation of liquified petroleum gas, which are in the regulations governing explosives or other dangerous articles or combustible liquids on board vessels in Title 46 CFR. The requirements for safety relief valves on bulk cargo tanks, carrying anhydrous ammonia in bulk and use in transportation of solidified carbon dioxide (dry ice) are still under consideration.

7. To amend section 61.14 (c) (2) regarding spray nozzle hydrants in boilers and machinery space or ocean and coastwise cargo and passenger vessels and to amend 114.14 (b) regarding fire-fighting equipment on vessels using oil as fuel, certificated for service on rivers, in Title 46 CFR—no changes were made in the regulations as proposed and described in the August 1950, PROCEEDINGS.

8. To amend sections 62.18, 78.18, 96.18, and 115.18 regarding emergency squad and emergency squad signals for passenger vessels required by the various general rules and regulations for vessel inspection as set forth in Title 46 CFR. No change was made in the regulations as proposed which will require an emergency squad and permit special emergency squad signals to be used on passenger vessels when the size of the crew will permit.

9. To amend section 59.10a (b) regarding care of lifeboats on ocean-going cargo vessels to permit lifeboats to be overhauled and painted during the voyage as set forth in Title 46 CFR. There was no change made in the regulations as proposed and described in the August 1950, PROCEEDINGS. In addition, however, a similar relaxation was allowed for the care of lifeboats on ocean going tank vessels and will be included in the complete revision of the Tank Vessel Regulations as described in paragraph 4 above.

10. To amend section 160.035–3 (w) (1) of the specification 160.035 for lifeboats for merchant vessels as contained in Title 46 CFR. There was no change made in the regulations as proposed and it will permit grab rails to extend approximately one-half the length of the lifeboat.

Use and transportation of solidified carbon dioxide (dry ice); safety relief valves and bulk cargo tanks, and carrying of anhydrous ammonia in bulk; the proposed changes in the Marine Engineering Regulations and Material Specifications; bulkheads, subdivisions, and watertight integrity of passenger vessels; and specification for lifeboat bilge pumps, fibrous glass life preservers and watertight doors are still under consideration. Further information regarding these items which are being considered further by the Merchant Marine Council will be published in a future issue of the PROCEEDINGS.

The proposed changes described above will be recommended by the Council to the Commandant and will appear in the Federal Register in the near future. The amendments when approved by the Commandant will be published in the appendix in a future issue of the PROCEEDINGS or adequate information will be given stating how copies may be obtained.

"IMCO CAN BE HELPFUL"

A paper given by Commander W. B. Scheibel, USCG, at the American Merchant Marine Conference on September 28, 1950, in Baltimore, Md.

The mere statement as a fact that "IMCO Can Be Helpful" will not convince even those of you who are receptive to international cooperative efforts. Certainly it is not difficult to understand reasons of skepticism regarding our international affairs. However, every organization, every group, and every individual interested in the promotion of shipping is concerned with the Intergovernmental Maritime Consultative Organization, or IMCO, as it is familiarly known.

In the following paragraphs it will be shown that:

IMCO, as a specialized agency, provides shipping with a status equivalent to that of other agencies in the international field.

IMCO provides the organization which brings together those of recognized competence to consider maritime matters.

IMCO provides the means of effecting desirable improvement in safety standards without undue delay.

IMCO insures through its checks and balances exclusion of undesirable regulations.

IMCO, through its regular sessions, provides continuity of effort.

IMCO, as an organization in being, provides the means for effecting the proper coordination of problems involving shipping and other fields.

IMCO provides the organization where our approved national standards can be put forward internationally.

A half century of promotion of human safety at sea by the maritime nations of the world has resulted in the ratification by the United States in June of this year of the convention of the Intergovernmental Maritime Consultative Organization. Within the general concept of the United Nations Charter, IMCO is to be the clearing house for problems regarding shipping.

As you know, there are within the United Nations many specialized agencies, such as the International Civil Aviation Organization (ICAO) for aviation, International Telecommunications Union (ITU) for telecommunications, World Health Organization (WHO) for health, International Meteorological Organization (IMO) for meteorology, and others covering specialized fields. To these groups is now added IMCO.

Historically, IMCO is the outgrowth of periodic international maritime committees, councils, and organizations dealing with safety and economics of the shipping industry. While heretofore it has been necessary for nations to deal with such problems by special international arrangements, IMCO now offers the means for the negotiation of problems in the perspective of relative importance and urgency. IMCO, therefore, provides the forum by which the cooperative efforts of many maritime nations can be directed on a continuing basis to the economic and technical maritime problems.

With the background of experience in other international organizations (particularly aviation and telecommunications) it is possible in this presentation to predict not merely potential but tangible benefits from IMCO as it especially applies to technical and safety measures. As an example of technical matters which IMCO will consider are: the assistance to vessels in distress, salvage, standardization of rules of the road, standardization of tonnage measurements, and the handling of dangerous cargoes.

First and foremost of the points of benefits to us is that problems affecting shipping are discussed by those best qualified to deal with shipping matters. If there were no IMCO, shipping problems would be dealt with by some other body under the United Nations. Of the greatest importance to us is that things of interest will be considered with adequate appreciation and understanding of the many details involved. This fundamental concern is fully satisfied by the constitution of IMCO.

The delayed processes by which desirable changes have heretofore been adopted in the international technical field of shipping admittedly left much to be desired. Inevitably the international conference which led to a convention could not devote the measure of consideration to the technical details essential from the safety standpoint. The long intervals between safety conventions in many instances placed an unequal burden on those nations whose practice of high safety standards preceded conventions' changes. It should be noted that the Safety of Life at Sea Convention of 1929 was not followed with a revising or an amending convention until 1948. A means must be provided whereby desirable agreements can be reached at reasonable intervals, otherwise there may be an attempt, in some circumstances with partial successes, to utilize international conferences on subjects other than maritime as a vehicle to include provisions directly burdening shipping.

In the international field, the design for specialized agencies is fixed by the United Nation's concept. The International Civil Aviation Organization for aviation and the International Telecommunications Union for telecommunications are the organizations in their respective fields which IMCO will complement in the shipping field. It is self-evident that IMCO then will permit shipping interests to be served in a manner similar to the interests of other fields. The ground rules of international negotiation as between shipping and other fields will be on equal terms. Therefore, far more important to us is that IMCO will fill what would otherwise be a vacuum in the international field to the detriment of the maritime industry. The pattern of organization which IMCO follows is logical and can be beneficial.

The long phrase, frequently heard: "International coordination of activities in the fields of aviation, shipping and telecommunications in regards to safety of life at sea and in the air" is used herein with concern for its possible misinterpretation. From a practical viewpoint means are necessary to place shipping interests on an equal footing with other fields in disposing of an overlapping problem. To enjoy any measure of success in upholding the maritime interests in discussions with other fields of interest on a mutual problem a recognized international maritime agency is necessary. International coordination of a problem overlapping the fields of shipping, communications, aviation, and meteorology was difficult of accomplishment before the arrival of IMCO. The real point of benefit of IMCO in this phase of international relationships is its recognition as the appropriate agency to deal with maritime issues. Thus, accomplishment of our purpose is gained by the cooperative efforts of all interested organizations.

The Convention for the Safety of Life at Sea, 1948, acknowledged the desirability of amending the convention within the provisions laid down under article IX. It must be remembered that the Convention on the Intergovernmental Maritime Consultative Organization was drawn up prior to the Safety of Life at Sea Convention. In fact, the latter convention considered the complementary provisions of IMCO as a means of its logical administration; thus the two conventions are mutually interrelated and take into account the scope of the other.

The fact that under IMCO there will be no long time lag between conferences does not mean that there will be frequent or frivolous changes. Our shipping industry is safeguarded against hasty or ill-considered proposals through the establishment of IMCO's Maritime Safety Committee. Eight of the fourteen members of this important committee are to be the largest ship-owning nations. United States membership is, therefore, assured. Two-thirds majority of the total membership (10 nations) must agree to the proposals made prior to their circulation for consideration to member governments of IMCO. This screening process in itself accomplishes the purpose of focusing attention on the proposal for concerted study and thus highlighting its necessity or its unimportance. An interval of at least 6 months shall precede assembly consideration of the recommendations of the safety committee and again a two-thirds majority of the assembly is needed for approval. Thus a system of checks and balances is provided for reasonable and objective endeavor within the organization. While the IMCO Assembly can improve a proposal, its approval is merely a recommendation to contracting governments. It cannot take binding action. The final acceptance still rests with the contracting governments. A positive answer must be received from each contracting government, which may accept or reject the proposal. Domestic legislative procedures can thus be observed.

To those who over the years have closely followed international action it is a well-established principle that unless a large majority of nations agree to a provision, it is never accepted. No proposal ever carries with strong opposition. Never does a one- or two-majority vote prevail. Acceptance of proposals can be secured only when those of major importance are put forth and then only with consideration of the standpoint of the problems facing those countries from which support is necessary.

One of the most useful functions of IMCO will be the centralized secretariat. As a clearing-house and information center it will provide the contracting governments with the necessary continuity. As was previously mentioned, specialized agencies are provided for aviation, telecommunications, meteorology, and other fields.

Each of these maintain a central secretariat. It is understood that IMCO will be administered in both a moderate and economical manner. No superbody is contemplated. The first year's budget will not exceed $100,000 and the United States share will be not more than $4,000. It will have a small secretariat primarily as an information center. One benefit to be derived from the secretariat will be the maintenance of casualty records. Adequate and accurate records can be the basis by which unreasonable, illogical, and fanciful proposals are discredited and thus unnecessary regulations are avoided.

One point on which the shipping industry of the United States may desire reassurance is the extent to which it will participate in the deliberations of IMCO or the Maritime Safety Committee. While the representative of the United States will necessarily be an officer of the Government, he will be accompanied by such advisers as are necessary and desirable, from both within and without the Government. The make-up of the United States Delegations to the various Safety at Sea Conferences or the Load Lines Conference bear testimony to the desire of the Government that industry shall have a full and adequate voice in any future conferences of a technical nature.

Along the same lines is the procedure established to obtain a coordinated national viewpoint. This coordinated national viewpoint is essential before IMCO recommendations can be accepted by the United States. Similarly, before proposing a measure for IMCO consideration, a coordinated United States viewpoint is needed. This viewpoint is obtained by the collaboration of interested government agencies assisted by industry advisers, including representatives of shipowners, shipbuilders, classification society and maritime labor, operating as the Shipping Coordinating Committee. This committee, within the framework of the statutory responsibilities and functions of the respective government agencies, acts as an advisory body to develop and recommend United States policy with respect to shipping matters. It acts to coordinate the activities of the government departments and agencies interested in shipping and motivates the implementation of policies adopted. The successful counterparts of the shipping coordinating committee are the coordinating committees for air and communications. In their respective fields each coordinating committee functions to weld policy for international as well as domestic guidance of the United States.

In the foregoing paragraphs it should be readily apparent that the machinery is provided both nationally and internationally for the strong influence of industry to be felt in shaping both policies and programs for shipping. To enjoy the benefits of IMCO which is designed to be helpful, industry is challenged to avail itself of the opportunities presented. Leadership of the United States maritime industry in the international maritime commerce without fear of competition from substandard operations demands an active and strong role in the Intergovernmental Maritime Consultative Organization.

SOME TECHNICAL ASPECTS OF RADAR AS A COLLISION PREVENTION DEVICE AND THEIR PRACTICAL APPLICATION

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Commander Loren E. Brunner, U. S. Coast Guard

Illustrations by Lt. Comdr. L. B. Kendall, U. S. Coast Guard

Four years ago in this annual conference the advent of radar in the Merchant Marine was hailed as a great aid to collision prevention. During the ensuing period a number of collisions have occurred which involved one or both ships equipped with radar.

Consequently there has been considerable discussion in various maritime publications about radar as a collision prevention device. Some of these discussions have been from the legal viewpoint and have concluded by blaming the accidents largely on "the technical limitations of radar" or "the human equation." Perhaps these conclusions are correct but radar is in itself only a professional tool and so long as collisions take place in clear weather it cannot be expected that radar will eliminate all collision hazards under conditions of poor visibility.

In observing the use of radar on the bridge (both on the largest ocean greyhounds and on the smallest yachts carrying radar), I have been frequently surprised and impressed to learn that many radar users have serious misconceptions regarding the technical characteristics of radar. These could possibly account for certain accidents which have occurred. To get the most from any navigational tool it is important to understand the elementary technical limitations and characteristics of the device. These things are too often taken for granted by the designing engineer and technical man and it is sometimes overlooked in the design of the radar that they can be very important considerations to the user if he is expected to apply the tool effectively.

Perhaps the "human equation" and the "technical limitations" need to be geared together a little better. A simple illustration can be taken from the art of flying. It has now become generally recognized that in teaching this particular art it is of prime importance that the airplane pilot have a clear physical concept of the primary technical principles involved. Almost every layman who aspires to fly has the original concept that the airplane throttle controls the speed and that the elevator controls the rate of ascent or descent. Actually the reverse is true—if you want to know why you must try flying an airplane—if you want to do it successfully you must understand this basic principle which is diametrically opposite to that governing the control of land or waterborne vehicles where the wheel or rudder controls space direction and the throttle controls speed.

In using radar it is likewise very easy to make false assumptions regarding the technical characteristics of the equipment. If it is to be used effectively as a collision-prevention device the user must have a clear mental picture of how the radar collects information and how it transforms it to a visual presentation. For instance, just because the radar viewing screen presents the navigator with a "plan" view it does not mean that

the radar collects information and presents it in a form which will directly compare with the "plan" view provided on a chart with which the mariner is so familiar. Since any surface obstruction which in itself is a target may in turn blank out all targets on the same azimuth at the same or greater ranges, the radar actually obtains a profile view and presents it in "plan" form. A concrete instance of this is a bridge. The piers under the bridge, boats underneath the bridge, or any piling or similar obstruction may be completely obscured by the bridge directly overhead. Further, targets way beyond the bridge may be completely blocked out if they happen to be in line with the bridge piers, boats under the bridge, or similar obstructions. The latter is an instance of a hazard, which is itself unseen, completely masking other hazards on the same azimuth. There are still other frequently unseen radar hazards in particular which the user should always bear in mind for the reasons explained following, such as ice floes or small bergs, small craft in heavy seas, small buoys, etc. Before going into the reasons why these targets are unseen, a little reflection on these simple technical characteristics of a radar will lead any prudent pilot to decide that in using radar he should:

(*a*) *Always* rely on targets that *are seen* on the radar scope.

(*b*) *Never* rely on what *does not appear* on the radar scope as an indication of freedom from collision hazards.

Now, if the navigator is going to make proper use of a radar, just as in the case of flying an airplane, he must first form a clear mental picture before trying to use this particular tool. Let us look at the fathometer which is pretty well understood by most navigators. This particular device throws a short sound burst to the bottom and measures the time for the sound to leave the ship, hit the bottom, and return to the ship. The time scale is then directly calibrated in terms of fathoms. Similarly, a radar throws a high-powered short radio-signal burst at an object, measures the time for the radio signal to arrive at the object and return as an echo and has a time scale calibrated directly in miles. However, in order to scan the horizon completely around the azimuth these radio-sounding signals are sent out at a rapid rate of about 800 pulses per second in a concentrated stream and this stream is swept around the horizon about 10 times a minute.

Now that this first mental picture is clear, the navigator can make a simple interpretation of some of the technical aspects of radar in collision prevention:

(*a*) Radar can penetrate fog and most rain squalls, snow, and similar physical barriers to a much greater distance than the human eye. Therefore, if you see a target on a radar and then look out of the bridge and cannot see the target with your eyes, trust the radar rather than your eyes. The target may be just inside a fog bank where the radar can see it and your eyes cannot. This explains why to believe the targets that are seen on your radar, rather than your eyes.

(*b*) Since the horizon is swept only about 10 times a minute, it is very easy to miss a small target such as a small boat or a piece of ice, since it may be repeatedly in a wave trough for several successive sweeps. Just because it is not seen on the radar, there is no assurance that possible collision obstructions do not exist. This explains why the navigator should never rely on a clear scope as an indication of clear sailing.

(*c*) Next, the size of the target indication on the scope depends more on the quality of the object as a radar reflector than on its physical size. For instance, a nun buoy with its sloping cylindrical surface reflects much of the radar signal up into the air from the sloping top and much of the remainder of the signal is scattered around the horizon from the cylindrical sides. A broadside flat metal upright sheet of the same size would be much more conspicuous as a radar target because it reflects much more signal.

(*d*) Since the radar operates by throwing out signals horizontally any hill or high point will show up clearly, but all obstructions behind it will be obscured. Beware the big ship target, breakwater or other large mass lest a smaller one be obscured behind it anywhere out to the horizon. Keep a clear mental picture—the scope does not give a complete and true plan view of all targets—it only shows the profile outline of the nearest targets. This explains why the ship on the other side of the bridge may be completely unseen if it is behind a bridge pier which in itself may show no indication on the radar scope.

(*e*) Ordinarily the surface of the water itself reflects very little signal back to the radar when the sea is calm but when the sea roughens up the broken surface itself becomes such a good target that large areas of scope patterns register an effect called "sea return" which can be so dense as to obscure a large ship target close by. There are means of controlling this effect which will be described later but beware the "sea return" which may conceal a much more dangerous object than mere rough water.

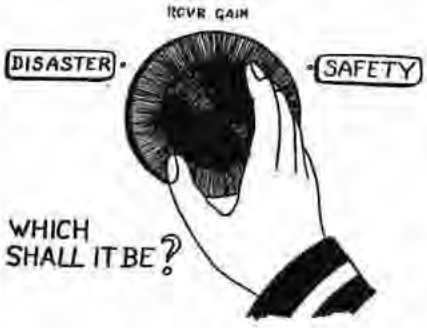
(*f*) In the radar sounding process it is necessary to use some practical means of probing with a fairly concentrated stream of signals or the echo would have no definite width. This is done with a special antenna to squirt the signals in a stream about 2° wide, since this is possible with a reasonable compromise in antenna size and cost. However, a 2° wide signal stream can only define two separate targets that are more than about 2° apart. Beware of the single target on the scope that may turn out to be one or several possible collision targets.

(*g*) In the process of depth sounding with a fathometer it is necessary after throwing out each signal to be silent for a moment in order to catch the echo or the reflected signal would be masked by the outgoing signal. In a radar this same method is applied by chopping off the signal into very short blasts. The length of each of these blasts will determine the depth of the target shown on the scope. Certain technical difficulties limit this characteristic shortening to not much less than one-half microsecond. The resulting display on the scope can therefore only discriminate between targets about 100 yards apart in range unless they are separated in azimuth by the 2° described above. Beware of the two targets which are so close together in range that they appear as one, such as a buoy and a small boat, either or both of which may finally resolve into potential collision targets. This case explains the unseen boat or pier under the bridge which cannot be detected because it has less than 100 yards difference in range from the bridge itself.

(*h*) In the art of visual piloting most navigators are so accustomed to looking for a lighthouse or artificial navigational aid that they will automatically ignore a natural land mass which is a better radar target. In using the radar a large land mass may show up well and the lighthouse or daymark may be unseen. Therefore in laying down bearings from the radar scope the navigator must keep this fact in mind. Likewise the long

ship with the high stern housing and low forward structure may have a considerable difference in bearing between the actual bow of the target and the radar indication, especially in close quarters.

(*i*) Controls on radar like any other controls are provided to permit the user to obtain much better performance from the instrument than would be possible without such controls. The most used control is that called receiver gain or sensitivity. Radar like the human eye has its limitations if subjected to extremely large signals or glare effects. The sensitivity control and others described later can largely counteract these limitations if properly used. The sensitivity control is roughly comparable to the squint of the human eye. Beware of squinting the radar so badly that its eye becomes shut. Nevertheless this control has special and real value in sharpening the received signal beam so that fine targets can be separated and also to enable better discrimination of targets inside of heavy rain squall areas. A radar with the sensitivity control turned down too far gradually becomes more blind to the distant targets and later those closer in, especially the smaller targets. Another control called sensitivity time control (STC) is very useful in certain conditions of sea clutter. This control affects time sensitivity to provide contrast. It might roughly be compared to blinking the eyes in a blinding light so that close in objects can be seen more conspicuously—but at the same time the more distant targets will be somewhat obscured. Beware of fast-moving targets coming in from outside the reduced range of vision when using STC. Still another control called fast time constant (FTC) is useful in certain other sea return conditions by reducing the clouding or fogging of the scope and permitting better selection of targets from the sea clutter. This control is perhaps roughly analagous to using smoked glasses on the eyes to prevent glare blindness. Still another control is the range switch. By a flick of a switch the user can have a picture spread out with a maximum range of a mile or two or a display of perhaps 30 or 40 miles. It should be obvious, but apparently isn't, to the navigator that the range should normally be displayed with at least a full horizon distance when cruising so as to see hazards as soon as possible and to permit necessary maneuvers. If the user switches to a short range to get a good look at close-by targets and forgets to return to long range there is danger of breezing along under the impression that the road is clear—until some hazard suddenly appears at short range, too late for safety. All of these controls are very valuable to the user if he understands them and uses them as intended by the designing engineer. If not properly understood and used they may greatly reduce or nullify the value of the radar in detecting collision hazards.



(*j*) Last but not least is the old problem of "relative" versus "true bearing" on radar indicators. There is good reason to suspect that this has been a contributing cause of some collisions of radar equipped ships, either through mental error in mistaking the radar display or in failure of a relieving deck officer to ascertain which display was in use. Certainly for direct avoidance of collision a "relative" bearing display is simplest. However, when making a turn "relative" display moves rapidly and the scope blurs badly because of the inherent retentivity of the radar scope which is necessary to provide a continuous picture when scanning around the horizon with glimpses of about only 10 times a minute. Also for plotting it is often convenient to have true bearing on fixed objects. Therefore the radar is usually provided with both choices but the user must install in his mental equipment a big red sign saying clearly "this picture is in relative" or "this picture is in true" bearing before he reads anything else.

All of these technical aspects of a radar are very well known to engineers and technical radar men, but they apparently do not appear to be quite so obvious to the practical navigator. Not only should the navigator strive to equip himself with a clear mental picture of how this equipment operates but the designing engineer must continually keep in mind that the practical navigator is an extremely busy man at times when he needs the radar most and therefore he must have the help of the engineer in making the controls as simple as possible, self-restoring or automatically returning to the SAFE position and preferably with unmistakable symbols for each of the functional controls or indicators. The modern merchant marine radar is a masterpiece of electronic ingenuity and is usually a rugged and reliable piece of seagoing equipment but there is still room for much improvement in making it a handy and foolproof bridge officer's tool.

Now let us consider a problem regarding radar accuracy as an example to illustrate one way in which the use of radar can lead to a false sense of security. We can set up a simple problem and examine the results assuming that reasonable range and bearing errors are introduced. For simplicity we can assume our ship is on a course of 0° true at a speed of 6 knots during foul weather. Further, we assume that a stranger is picked up forward of the beam, actually bearing 305° true at a distance of 10,000 yards. If the stranger is on a course of 75° true at a speed of 6.25 knots, he will collide with our stern, assuming that our vessel is 750 feet long and that the radar is located on a mast 150 feet from the stern. As a matter of demonstration his relative movement line is shown on figure 1 with his relative position noted every 4 minutes.

It is estimated that the radar has a ± 2° bearing accuracy and a ± 100 yards range accuracy. There are those who will disagree with this accuracy, however, when we are dealing with the average radar with average attention to maintenance, and taking into account human errors, this figure is not overly pessimistic. The squares around each position indicate all possible areas where the radar might indicate that a target is located. As the situation develops we can assume that the combination of errors is such that our plotted relative movement line starts at the upper left-hand side of the zero square and ends at the lower right-hand side of the 8-minute square with all intermediate points falling within the square of errors at intermediate plots. The stranger would be computed to be on a course of 91.5° true at the speed of 4.4 knots which would indicate that his nearest point of approach will be 3,000 yards and that he will pass astern. Some deck officers might be satisfied with this, but they should continue to plot. Another 4 to 8 minutes' plotting would make the danger apparent.

Assuming that another deck officer is not too touchy about how close he passes other vessels and that he considers 1,000 yards sufficient, we will assume a long plot, starting at the upper right-hand corner of the zero

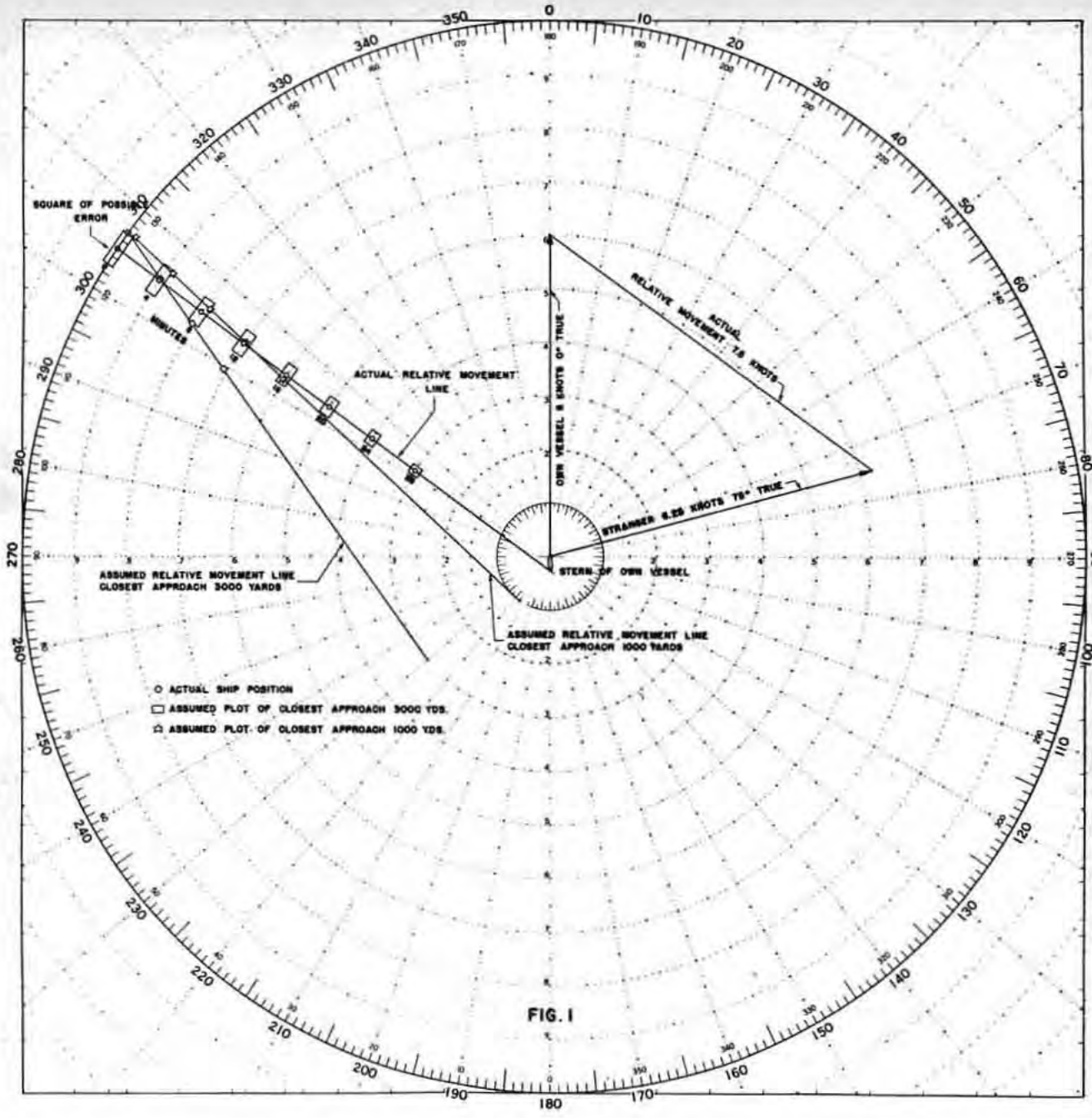


FIG. 1

square and running to the lower left-hand edge of the 12-minute square with all intermediate plots falling within the square of error at intermediate points. In this case the stranger will be computed to be on a course of 79° true at a speed of 5.5 knots with the closest point of approach 1,000 yards on the port quarter. Actually the vessel remains on a collision course and another 4- to 8-minute plot will bring this out to a careful plotter.

There are several points brought out by the foregoing discussion. There is of course the old and well-known point that if a deck officer will not accept a situation other than one in which the vessels will pass well clear, then errors will manifest themselves early in the course of events. On the other hand, if the situation is such that a close passing is planned, then the plot will not clear itself early, and one may find himself with a particular set of data which indicates that he will clear whereas in fact the opposite will be true.

Another point of interest is that a dangerous situation will manifest itself even with sizable radar errors, providing a careful and continuous plot is maintained. Even with the worst case presented here, after 20 minutes, while the vessels were still over 2 miles apart, the radar error would not have been large enough to have kept a careful plotter from noting that something was wrong.

The foregoing dictates that (1) a deck officer must know his radar errors, (2) that he must plan to pass sufficiently clear so that a dangerous situation will be noted early in the course of events, and (3) that he must continue to observe and plot until the danger is well past and clear.

A READER COMMENTS ON OUR FLAG

Under present world conditions every American merchant vessel that touches foreign soil is an official ambassador of American good will. Recently a reader of the "Proceedings" submitted to the Coast Guard the following article on "Our Flag." The Coast Guard congratulates him for compiling this information, and it is reprinted below for the benefit of all others interested in the respect that is due our flag. However, it does not necessarily represent the official views of the American Government.

OUR FLAG

At this time, it is imperative that we, as American citizens, give more thought to our flag—our national emblem. There is probably nothing which stirs the writer so much as the words from our national anthem, "Gave proof through the night that our flag was still there."

When British pressure began to increase in our colonies in 1775, the colonists placed upon their own banners a rattlesnake, cut into 13 pieces, representing the 13 colonies, and carrying the motto: "Join or die." When they became better united, they placed upon the flag, which had a yellow background, a rattlesnake about to strike, coiled over the motto: "Don't tread on me." This flag was first raised by Captain John Paul Jones on the ship of war *Alfred* in December 1775.

In June 1777 it was resolved in Congress that the flag of the United States be 13 alternate red and white stripes—7 red and 6 white, with the red stripes on the outside, and with a blue field containing 13 white stars, 1 for each State in the Union. In 1794 the flag was given 15 stars and 15 stripes, following the entrance of Vermont and Kentucky into the Union. In 1818 it was decided to reduce the stripes again to 13 and add only a star each time a new State was admitted to the Union.

OUR FLAG AND FLAG PROCEDURE IN THE U. S. MERCHANT SERVICE

IN THE U. S. A.—IN PORT

Every day:

All flags go up at 0800. First up is the "ensign" on the flag staff. The "jack" is hoisted on the jackstaff on approved vessels of the U. S. Naval Reserve. On some freight ships, it is the custom to hoist the "jack" only on sailing day, which is incorrect. The "house" flag is hoisted on the main truck with the Naval Reserve pennant above it. On some freight ships, it is the custom to hoist the Naval Reserve pennant only on sailing day, and then on the triatic stay; this is not correct procedure. The "house" flag and Naval Reserve pennant are generally secured to sticks so that when hoisted aloft, they will fly clear and not be fouled of stays, etc.

At sunset, haul down all flags. The "ensign" will always be hauled down last. The "ensign" should never touch the deck and old "ensigns" are always burned.

Sailing day:

0800. The every day flags go up as usual with the addition of the following: The flag of the country you are to sail for goes up on the foremast truck; it is a common practice to secure this flag also on a stick so that it will fly clear. The "Blue Peter" on the starboard yardarm and the U. S. Mail flag, on the port yardarm. If, by chance or through error, the Naval Reserve pennant is hoisted only on sailing day, it should be flown from the starboard yardarm and the "Blue Peter" on the triatic stay. The pilot flag, if any, will be flown from a convenient halyard, where it will fly clear and free.

When the last line is let go, the flagstaff "ensign" comes down and a gaff "ensign" goes up on the gaff, and if the vessel does not have a gaff, the "ensign" remains on the flagstaff. The "jack" and "Blue Peter" are also hauled down when the last line is cast off. All flags except the pilot flag are hauled down at sunset; or if the pilot station is well out, haul down all remaining flags after the pilot is away.

Arrival day:

Just before arriving at the pilot station, the following procedure should be followed: the ensign hoisted on the gaff. The flag of the country you sailed from (excepting your own country) hoisted on the foremast truck, the house flag with the Naval Reserve pennant on the main truck and the U. S. Mail flag on the port yardarm. The pilot flag "G" is hoisted on the triatic stay. If the run from the pilot station to the berth is a long one, the flags with the exception of the pilot flags are not hoisted until shortly before arriving at the Quarantine station. Then the appropriate quarantine flag is also hoisted on the starboard yardarm. Of course when the pilot comes aboard, the pilot flag "H" takes the place of the pilot flag "G." When practique is granted, the Quarantine flag is hauled down and the watch officer must be kept alert to see if the Quarantine flag has been hauled down before proceeding to berth. When the first line is ashore, the "ensign" at the gaff is hauled down and the flagstaff "ensign" is hauled up, and the "jack" is also hauled up on the jackstaff. When hoisting the "jack," always be sure that the two pointers of the stars point down and one up.

At anchorage:

At anchorage, arriving at or leaving, the same procedure is carried on as for arriving at berth or leaving berth. The anchor takes the place of the first line ashore and when the anchor is aweigh, it is the same as when the last line is cast off. Do not neglect to haul down the pilot flag when he leaves the vessel. When shifting ship, it is not necessary to raise the pilot flag "H" if a pilot or docking pilot is aboard. However, as a matter of courtesy, ask him and be governed by his orders.

FOREIGN PORTS

Arrival day:

The same as arriving in a U. S. port, with the following exception: The flag of the country you are entering must always be hoisted at the foremost truck—and kept flying during daylight hours, from 8 A. M. to sunset, while in that port. This is a sign of courtesy to said country and all foreign ships entering U. S. waters hoist the U. S. "ensign" at the fore truck. In some foreign countries, there is a fine incurred for not following this procedure. Local rules should be obtained from the pilot and strictly obeyed.

Sailing from foreign ports:

Same as the procedure for sailing from a U. S. port. On leaving a foreign port, the flag of that country is

flying from the fore truck. This is done for the same reason as on arrival day in a foreign port.

NOTE:

"Ensigns" are never made up and broken out.

When it is necessary to hoist your vessel's international call flags, they may be hoisted on the triatic stay or on any convenient halyard where they will fly free and clear.

DECORATING SHIP

When decorating ship, it is very important that all flags and pennants are ready to go up together at 0800. This is difficult to do on most ships, due to cargo being discharged, booms in the way, etc. The everyday flags are hoisted as usual, with the following additions: A gantline should be rigged as follows, one from the eyes of the ship to the foremast truck, with the haul-down by the foremast, secured to this gantline should be the flags of the International Code, every fourth one, a pennant. A long gantline must be rigged from the foremast truck to the mainmast truck with a haul-down at each mast. The distance between the two masts must be known so that when this gantline is hauled taut from both ends, with the International Code flags attached, they will all fly clear. Raising this gantline properly with code flags attached is a difficult maneuver. Place several men at certain places to clear the gantline. Use several bites of heaving lines along the length of the gantline to clear the wireless aerial. With these bites the gantline can be pulled clear of the aerial and then the heaving lines may be removed. Another gantline should be run from the base of the flagstaff to the mainmast truck with the haul-down by the mainmast and rigged similarly to the others. A number of International Code flags should hang over the stern from the base of the flagstaff with a weight attached and so rigged as to be just clear of the water.

When decorating ship, use only International Code flags with certain additions as given.

IN THE U. S. A.

A second "ensign" should be hoisted to the foremast truck. On Government vessels in a U. S. A. port, all masts should have an "ensign."

FOREIGN PORTS

Same as the U. S. A. except that the flag of the country you are in is always hoisted to the fore truck. NOTE.—If you arrive in any port or an Army base or a Naval base or a United States maritime commission base and find that all ships are decorated or that all ships are flying their "ensigns" at half mast, wait until you are secured to your berth before decorating ship or before you haul your flag to half mast.

At sunset, all flags should be hauled down at the same time, under all conditions.

"ENSIGN"

When the colors are to be placed at half mast, they should always be hoisted close up first and then down to the half mast; also, when the colors are hauled down from the half mast, they must be hauled up close first and then back down. This is very important as it really shows that the officer on watch is alert.

The "ensign" is always up first and down last. At sunset when the ship is decorated, haul the "ensign" down slowly so that it will not be hauled down before the rest of the flags.

Saluting:

There appears to be considerable misunderstanding on the part of merchant marine officers as to what classes of naval vessels should be saluted. Although this matter is not set forth explicitly, usage has determined that all men-of-war, including Coast Guard cutters, should be so recognized. Of course, as a matter of courtesy, there is no harm in saluting any auxiliary naval vessel, merchant vessel, or MSTS vessel. It is not necessary to salute naval combatant vessels when in inland waters.

It is, of course, necessary and a matter of good taste to salute any vessel flying the flag of any civilian or member of the armed forces or member of any foreign delegation or representative of a foreign government—who, under the law, is entitled to fly his own flag.

Shortly before a man-of-war is abeam of you, haul the "ensign" to the dip (meaning half way down the flagstaff or half way down the signal halyard on the gaff). When the man-of-war has hauled colors close up after he has dipped, you do likewise. Be sure your man at the halyards understands your directions thoroughly. The best procedure to follow is to have the man at the halyards haul the colors to the dip when you blow your whistle and then when you blow the second time haul the "ensign" up close again.

When you visit a man-of-war, the following is the correct procedure whether you are in uniform or not: When you reach the top platform of the gangway, place your heels together and smartly salute the colors, next right or left face and salute the officer of the deck. On leaving the man-of-war, salute the officer of the deck, salute the colors last. Occasions may arise where you cannot see the colors. If so, just salute in the general direction of them.

At colors 0800 and sunset, all men in uniform or out of uniform (on orders from the master) will face the colors and salute. If in civilian clothes, they will uncover and place their hats by the left shoulder with the right hand. If wearing no hats, they will stand at attention. In freezing weather, the hat need only be slightly lifted by the right hand. When the national anthem is played, stand, face the music at attention, and proceed as for colors.

INTERNATIONAL MARITIME CONVENTIONS

At Geneva a convention was drawn up for the Intergovernmental Maritime Consultative Organization to be the specialized agency within the United Nations to deal with maritime affairs both on the economic and on the safety or technical sides. Acceptances of this convention by various governments are deposited with the Secretary General of the United Nations.

The United States Senate gave its consent and advice to ratification of the convention by the United States with one minor reservation on June 27, 1950. The Governments of the United Kingdom and Northern Ireland, of Canada and of the Netherlands have already deposited their acceptances. It is understood that the acceptance of Greece is in process. The Intergovernmental Maritime Consultative Organization, or IMCO as it is abbreviated, will come into force when twenty-one nations of which seven must be countries having merchant fleets of one million gross tons or over have deposited their acceptances.

At London in April, May, and June 1948 a conference was held for the revision of the Safety of Life at Sea Convention, 1929. In addition to technical amendments, the convention itself was so drafted as to interrelate it with the general provisions of the IMCO Convention.

The Safety of Life at Sea Convention, 1948, will come into force one year after fifteen countries, of which seven at least must have merchant fleets of one million gross tons or over, have deposited their acceptances with the United Kingdom. So far the United Kingdom, New Zealand, the United States, France, the Netherlands, Sweden, Norway, and the Union of South Africa have accepted. Of these seven countries it will be noted that six of them are in the million-ton class.

In addition to this general revision

of the 1929 Convention at the London Conference, that part of the Convention dealing with the International Ice Patrol has been amended to redistribute the cost of the Ice Patrol in better relation to the present merchant fleets which derive benefit from the patrol. This redistribution was secured by agreement of the nations concerned and the charges for the calendar year 1950 will be made upon the revised basis.

LESSONS FROM CASUALTIES

LIGHT YOUR WAY

For the want of a lantern a life was lost. Recently a small motorboat was operating after sunset without any navigation lights because the operator overlooked providing his boat with a small and common article—a lantern. His boat was not observed and was hit by a tug. This operator paid for his negligence by losing his life.

This collision occurred off the Erie Basin Breakwater in Red Hook Channel, New York Bay. A Diesel tug of 1,200 horsepower and 194 gross tons was pushing a barge made fast on the port side through Gowanus Canal into the Red Hook Channel at about 8:30 p. m. with all her navigation lights properly displayed. Meanwhile a 13½-foot, flat-bottomed rowboat or skiff, which had been converted to a motorboat by the permanent installation of an inboard air-cooled, 1-cylinder gas engine, was proceeding from Sheepshead Bay toward Erie Basin with two men aboard. On the motorboat these men had a Navy issue type two-cell flashlight which was suspended and secured by string to the furthest forward thwart as a navigational light when the motorboat was observed at Erie Basin Breakwater. The attention of the two men was drawn to a tug bearing down upon them from astern. Both men arose in the motorboat and shouted loudly. This actually was the first warning or indication the pilot of the tug had of the presence of the motorboat. The tug's engine was immediately stopped and reversed, but the motorboat was struck and sunk. One of the men was fortunate enough to grab the bow fender of the tug and pulled himself aboard the tug. The other man fell into the water. He was quickly located in the water by another tug close at hand and brought aboard the second tug, however, artificial respiration failed to revive him.

This casualty points out the obvious. If the motorboat had been equipped with a good light, visible all around the horizon and carried aft in compliance with the motorboat regulations and the pilot rules, instead of having only a makeshift affair consisting of a flashlight secured forward and not visible all around the horizon, it is very likely that the pilot of the tug would have been aware of the presence of the motorboat. In all probability if the motorboat had been properly equipped this tragedy would never have occurred.

Motorboat operators should always check their navigation lights to assure themselves that they are in proper running order and in compliance with the motorboat regulations and the pilot rules, even if the motorboat is to be operated during daylight only. Mishaps may occur which may prevent the motorboat from getting back to port before sunset. Being careful and cautious may save a life—probably your own.

RESPIRATORY DISEASES

By Lieutenant John J. Walsh, U. S. P. H. S., assigned to U. S. Coast Guard Headquarters, Washington, D. C.

These are the diseases affecting the nose, throat, sinuses, and lungs. They are caused by bacteria and viruses which enter the body by way of the nose and mouth. These conditions are frequently associated with severe complications. More than $1,000,000,000 a year are lost in wages because of these infections. The number of days lost from work and the decreased efficiency of affected workers is incalculable.

These infections are contagious and are spread mainly by the careless habits of those who are affected with respiratory infections. The moisture sprayed into the air when an infected person coughs or sneezes contains many germs. Germs are also found on the eating utensils, handkerchiefs, and in the sputum of infected persons.

The Common Cold

This is probably the most frequent and expensive ailment to which man is prone. It is almost universally accepted that colds are caused by any one of several types of virus. Of themselves, colds are not dangerous. However, because they lower the patient's resistance to other infections, it is not uncommon for colds to be followed by infections of the ears, sinuses, and lungs.

Most of us experience two or three colds a year. This is so because colds are highly contagious and seemingly few people make any effort to prevent their spread. Finally, fatigue, chilling, and poor physical condition make one susceptible to catching colds. By and large, a cold will present the following symptoms: sneezing, running nose, scratchy throat, and a feeling of feverishness. A cold will disappear spontaneously within a week after its onset if no complications arise. Accordingly, by using a few simple measures, the cold will be milder, of shorter duration, and free from complications, if these principles are applied from the very beginning: drink as much fluid as possible, eat simple, easily digested foods, keep warm and dry, avoid chilling, get as much rest as possible. If chills or fever appear, or the symptoms of the cold seem more severe than usual, consult your family doctor immediately. By and large, there is no accepted treatment for a cold. Gargles, nose drops, etc., may possibly make the patient feel more comfortable but have little or no effect on the course of the cold. Antihistamine drugs are being intensively investigated at the present time. If such are used, the directions should be followed closely and medication discontinued at any indication of untoward effects due to these drugs. These include drowsiness, dizziness, agitation, an altered personality, or the appearance of fever, sore throat, and prostration.

Remember, coughs and sneezes should always be stifled with paper tissue or handcherchief. The eating and drinking utensils, handkerchiefs, and dirty hands of one who is suffering with a cold must be considered as the prime sources of colds and treated accordingly by victim and bystander.

Streptococcal Nose and Throat Infections

These infections are caused by bacteria which are spread in the discharges from the ears, nose, and throat of those already affected. They make their appearance in the form of a very sore throat and a sudden high fever. There is usually a marked feeling of weakness. These infections should always be treated by a physician who should be contacted without delay because of frequent and dangerous complications, including rheumatic fever, nephritis, and ear infections. Again, the pri-

mary conditions respond very satisfactorily to the newer antibiotic drugs.

Ear Infections

This is one of the most frequent complications incident to respiratory infections. It is one of the leading causes of deafness. There is a small tube connecting the inside of the oral cavity with the midportion of each ear. It is by way of this tube that germs gain entrance to the middle ear where they cause infection which may spread to the mastoids. Again, forcible blowing of the nose and prolonged irrigations thereof are among the principal causes for spreading the infection. In addition to respiratory diseases, the common contagious diseases such as scarlet fever, measles, chicken pox, and whooping cough are frequently complicated by ear infections. There is no place for the self-treatment of ear infections. At the first sign of pain, tenderness, noises in the ears, a sensation of fullness or pressure in the ear, or diminished hearing, a doctor should be consulted immediately. With the more recent advances in medicine, ear infections can be well-controlled provided treatment is instituted as soon as possible.

Sinusitis

The sinuses are air-containing cavities in the bones of the head and face. When a sinus becomes infected, the tissue lining the sinus becomes swollen and inflamed and pus may appear. These changes result in pressure which causes pain around cheeks or in the head. Usually sinuses become infected during the course of a respiratory infection when the germs, taking advantage of the weakened bodily defensive, gain entrance to the sinuses. It is well to note that forcible blowing of both nostrils may aid the germs' progress to the sinuses. That is why only one nostril at a time should be blown—never forcibly.

If a cold is accompanied by fever, headache, and pain and tenderness in the cheeks or over the eyes, you should consult your family physician. Frequently sinuses become infected during the course of a cold and, after the cold has disappeared, continue to present symptoms of a headache, soreness, and pain in the region of the sinuses and a feeling of stuffiness in the head. Again the family physician should be consulted as this may be the beginning of a chronic sinus infection.

Laryngitis

Frequently during the course of a cold, sore throat or bronchitis, there appear symptoms of laryngitis. The only specific symptom exists in progressive hoarseness until the voice is greatly diminished or even absent. In addition, there is usually an elevation of the temperature and sore throat. In conjunction with treatment for the cold or bronchitis there are specific measures which may be used to alleviate the symptoms of laryngitis and shorten the duration of the attack. These consist of strict avoidance of tobacco and of speaking or singing, complete rest and plenty of nourishing, nonirritating liquids. Moreover, inhalation of steam on several occasions during the day results in notable relief of symptoms. Cracked ice to suck or throat lozenges may relieve the local discomfort. Finally, gargles and the application of hot or cold packs to the neck may bring relief. It is advisable that a physician be consulted when symptoms of laryngitis appear.

Bronchitis

Bronchitis is an inflammation involving the bronchial tubes. In most cases it follows upon the heels of a cold or sore throat. It is characterized by chills, fever, muscle aches, headache, and a sore throat. Within a short time a severe cough develops. Since this condition is frequently complicated by pneumonia and other secondary infections, it is advisable that a physician be consulted as soon as possible. The usual measures which include bed rest and forcing of fluids are advised until the physician makes his appearance. Not infrequently as a result of repeated infections the patient may develop chronic bronchitis, presenting a persistent cough and shortness of breath as well as repeated respiratory infections. Any patient with this condition should be under the care of a physician.

Pneumonia

Pneumonia is a most serious infection of the lungs. It is not as common as in previous years nor is it considered quite as dangerous. However, it must still be treated with respect. Pneumonia is of two main types—bacterial and virus.

The most common of the bacterial pneumonias is that due to the pneumococcus. Pneumococcus pneumonia is quite often a complication of another contagious disease or secondary to lowered bodily resistance which may be subsequent to prolonged chilling, overfatigue, illness, alcoholism, and exposure. Characteristically the symptoms appear suddenly, there is a sensation of chills and fever, coughing productive initially of small amounts of sputum which rapidly assumes a rust color. The temperature rises precipitously. There is shortness of breath with rapid, shallow breathing, pain in the chest and varying degrees of collapse. It is imperative that the patient who is suffering from pneumococcal pneumonia be placed under a physician's care as soon as possible. The newer antibiotics are extremely efficacious in the treatment of this condition. However, expert medical and nursing care is necessary for all of these patients. Not infrequently hospitalization is necessary. During the course of the infection the patient must be kept in bed.

Virus pneumonia usually develops gradually, frequently after a prolonged upper respiratory infection. It is characterized by headache, fever, chills, fatigue and a general feeling of sickness. Initially there is a dry, hacking cough, which results in muscular pains in the chest and abdomen and eventually becomes productive of small or moderate amounts of sputum. This condition is relatively benign, the acute stage lasting about one week. Occasionally the symptoms may be much more severe. It is advisable that these patients be placed under a physician's care. It must be kept in mind that this condition is characterized by a period of lassitude and fatigueability which extends for several weeks beyond the actual period during which the symptoms are experienced.

Influenza

Influenza, also known as "la grippe," is caused by any one of several types of virus—two of which have been identified. Characteristically influenza occurs in epidemics and is associated with a high incidence of complications and some deaths. These are due mainly to complications secondary to influenza and respond well to the newer drugs, particularly the antibiotics.

Influenza appears within a few days of exposure. The onset is abrupt, with a rapid progression of symptoms to moderate severity. Usually there is fever, muscular aches and pains, particularly in the back and extremities, chills and prostration. It is frequently accompanied by the symptoms of another respiratory infection. In most cases the acute stage lasts for approximately one week and is followed by a varying period of fatigue and exhaustion. It is during this week of activity that care is indicated if one would avoid the complications. It is advisable that a physician be summoned at the first appearance of the above symptons. Until such time as he may appear, the usual precautionary measures are advised. These include bed rest, the forcing of fluids, avoidance of chills and fatigue and an easily digestible diet.

The successful vaccination or immunization against influenza types A

and B is an established fact. However, such immunity is transient in nature and revaccination is advisable. It must be remembered that to be successful, vaccination must be accomplished BEFORE the epidemic appears or at its onset.

The best treatment for respiratory diseases is to avoid catching them! This can be accomplished by observing the following rules:

(1) Maintain yourself in the best possible physical condition.
(2) Guard against chilling, overfatigue and overexposure to drafts and dust.
(3) Avoid people who fail to smother coughs and sneezes with their handkerchiefs.
(4) Wash your hands before eating and after using the toilet.
(5) Keep your hands away from your mouth.
(6) Use only your own towels, handkerchiefs, and toilet articles.
(7) Make an annual physical examination a habit.
(8) Check with your doctor for severe symptoms or repeated upper respiratory infections.

As soon as the first symptons of a cold appear, and in conjunction with previously mentioned measures, it is advised that you (1) avoid breathing into the faces of other people, and (2) that you smother all coughs and sneezes with a handkerchief or tissue and the tissue destroyed immediately.

APPENDIX

Amendments to Regulations

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

Subchapter C—Aids to Navigation

[CGFR 50-30]

PART 66—PRIVATE AIDS TO NAVIGATION

MISCELLANEOUS AMENDMENTS

By virtue of the authority contained in Title 14, United States Code, sections 83, 84, 85, and 92, the regulations are amended as indicated below.

In accordance with the exception indicated in section 4 of the Administrative Procedure Act (5 U. S. C. 1003 (a)), public hearings are not deemed necessary since the amendments are promulgated for the purpose of making editorial corrections and clarifying administrative procedure. However, any person who may feel aggrieved by the promulgation of these amendments may appeal therefrom to the Commandant (OAN), United States Coast Guard, Washington 25, D. C., in writing within 30 days from date of publication of this document in the Federal Register. The written appeal shall be presented in triplicate and shall include data and views as to why the amendments promulgated herein should be changed in the respect set forth in the appeal. All matters presented in writing within the prescribed time will be given careful consideration and any person submitting an appeal will be notified as to the disposition of the appeal.

1. Section 66.01–1 is amended to read as follows:

§ 66.01–1 *Basic provisions.* (a) No person, company, corporation, or municipality, not under the control of the Commandant, exclusive of the Armed Forces, shall establish, erect, or maintain in the navigable waters of the United States any aid to maritime navigation without first obtaining permission to do so from the Commandant, nor shall any person, company, corporation, or municipality, change, move, or discontinue any private aid to navigation so authorized without first obtaining permission to do so from the Commandant.

(b) Coast Guard authorization of a private aid to navigation does not authorize any invasion of private rights, nor grant any exclusive privileges, nor does it obviate the necessity of complying with any other Federal, State, or local laws or regulations. It merely expresses the assent of the Federal Government so far as concerns the public rights and benefits derived from the aids-to-navigation system of the United States.

2. Section 66.01–15 is amended to read as follows:

§ 66.01–15 *Classification.* The District Commander receiving the application will forward it to the Commandant with a recommendation, and will assign the aid one of the following classifications:

Class I. Aids to navigation on marine structures or other works which the owners are legally obligated to establish, maintain and operate as prescribed by the Coast Guard.

Class II. Aids to navigation exclusive of Class I located in waters used by general navigation.

Class III. Aids to navigation exclusive of Class I located in waters not ordinarily used by general navigation.

3. Section 66.01–20 is amended to read as follows:

§ 66.01–20 *Inspection.* All classes of private aids to navigation shall be maintained in proper condition. They are subject to inspection by the Coast Guard at any time and without prior notice to the maintainer. Class I and II private aids to navigation will be inspected at least once each year. Class III private aids to navigation will be inspected at least once every three years.

4. Section 66.01–50 is amended by striking out the citation at the end of the section.

(Sec. 8, 18 Stat. 127, as amended; 14 U. S. C. 92. Interpret or apply sec. 3, 34 Stat. 324, as amended; 33 U. S. C. 759)

Dated: August 25, 1950.

[SEAL] E. H. FOLEY, JR.,
Acting Secretary of the Treasury.

[F. R. Doc. 50-7846; Filed, Sept. 6, 1950; 8:51 a. m.; 15 F. R. 6017—9/7/50]

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CGFR 50-23]

EXAMINATIONS FOR ABLE SEAMEN; PERMITS FOR LOADING CLASS A EXPLOSIVES

The purpose of the following new regulations is to provide a guide for the administration of regulations and to inform the public of conditions which must be met. The new regulation to be added to 46 CFR 12.05–9 definitely states that no additional professional examination will be required for any person who is in valid possession of a certificate as able seaman indorsed "any waters—12 months" and who produces documentary evidence of sufficient service to qualify for a certificate as able seaman indorsed "any waters—unlimited." Neither will a physical examination be required unless the applicant obviously suffers from some physical or mental infirmity which, in the opinion of the Officer in Charge, Marine Inspection, would render him

incompetent to perform the usual duties of an able seaman at sea. This regulation is being added to remove any question of doubt as to the intent of the present regulations. It does not impose new requirements. It is therefore found that compliance with the notice of proposed rule making, public rule making procedure thereon, and effective date requirements of the Administrative Procedure Act is unnecessary.

The new regulation regarding permits for Class A explosives will be added to the Dangerous Cargo Regulations and is to provide a series of requirements which shall be met befor authorizing the transfer of Class A explosives. This regulation is considered necessary to provide adequate standards and to obtain uniformity in the issuance of permits. Since Class A explosives are presently being shipped in large quantities and the hazards to safety of life at sea are great it is hereby found that compliance with the notice of proposed rule making, public rule making procedure thereon, and effective date requirements of the Administrative Procedure Act is impracticable and contrary to the public interest. It is also found that an emergency exists and the provisions of R. S. 4472, as amended (46 U. S. C. 170 (9)), regarding publication of proposed rule making, public hearings thereon, and effective date requirements are contrary to the public interest and it is necessary that the regulation shall become effective on the date of publication in the FEDERAL REGISTER.

By virtue of the authority vested in me as Commandant, United States Coast Guard (R. S. 4405 as amended, 46 U. S. C. 375, and Section 101 of Reorganization Plan No. 3 of 1946, 11 CFR 7875, 60 Stat. 1097, 46 U. S. C. 1), as well as the additional authorities cited with the regulations below, the following amendments to the regulations are prescribed and shall become effective on the date of publication of this document in the FEDERAL REGISTER.

SUBCHAPTER B—MERCHANT MARINE OFFICERS AND SEAMEN

PART 12—CERTIFICATION OF SEAMEN

Section 12.05–9 is amended by adding a new paragraph (d) reading as follows:

§ 12.05–9 *Examination and demonstration of ability.* * * *

(d) Any person who is in valid possession of a certificate as able seaman indorsed, "any waters—12 months" and who can produce documentary evidence of sufficient service to qualify for a certificate as able seaman indorsed, "any waters—unlimited," may be issued a new document bearing this indorsement without additional professional examination. The applicant shall surrender for cancellation the document bearing the limited indorsement. No physical examination will be required at the time of this exchange unless it is found that the applicant obviously suffers from some physical or mental infirmity to a degree that in the opinion of the Officer in Charge, Marine Inspection, would render him incompetent to perform the usual duties of an able seaman at sea. If such condition is believed to exist, the applicant shall be required to undergo an examination by a medical officer of the Public Health Service to determine his competency.

SUBCHAPTER N—EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES AND COMBUSTIBLE LIQUIDS ON BOARD VESSELS

PART 146—TRANSPORTATION OR STORAGE OF EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES AND COMBUSTIBLE LIQUIDS ON BOARD VESSELS

SUBPART—DETAILED REGULATIONS GOVERNING EXPLOSIVES

Part 146 is amended by adding a new § 146.20–43, reading as follows:

§ 146.20–43 *Permits for Class A explosives.* (a) Before permits to load or discharge Class A explosives in amounts exceeding five hundred (500) pounds are granted in accordance with § 146.20–42, the requirements of this section shall be met.

(b) Where loading or discharge operations take place in designated explosive anchorages, the following requirements shall be determined:

(1) The requested amount of explosives to be loaded or discharged shall not exceed limits set by the applicable anchorage regulation of the Secretary of the Army in regard to the quantity of Class A explosives which a vessel may have on board.

(2) The vessel shall comply in all respects with the regulations in this subchapter.

(3) Conditions within the anchorage shall offer no more than normal acceptable hazards to the vessel or its cargo.

(4) If there are Department of Defense installations, such as a Navy or Army depot, navy yard, naval anchorage, etc., in the vicinity of an explosive anchorage, the Commanding Officer of the installation should be appraised of the proposed movement of explosives and if opposition is raised the permit shall be withheld.

(c) Where loading or discharge operations take place in civilian establishments outside designated explosive anchorages, the following requirements shall be determined:

(1) The Coast Guard District Commander, together with the cognizant Captain of the Port, shall be furnished a written permit or document having comparable legal effect from the municipal, state, or port authority authorizing the vessel to use a designated waterfront facility for explosives loading or discharge.

(2) The vessel shall comply in all respects with the regulations in this subchapter.

(3) The facility shall offer no more than normal acceptable hazards to the vessel or its cargo.

(4) The proposed loading or discharge facility shall offer isolation and remoteness from populous areas which compare favorably with the distance required by the American Table of Distances for inhabited buildings, unbarricaded, even though permission has been obtained for its use from local authorities.

NOTE: Under the exemption contained in § 146.10–4 railroad carfloats transporting railroad vehicles to vessel's side for the purpose of transferring their cargo to the vessel should not be required to obtain a permit as required by § 146.20–42. However, the Captain of the Port has the authority under 33 U. S. C. 471 to require a permit for such carfloats to enter an explosives anchorage. A permit is also required under § 146.20–42 for the transfer of explosives from the carfloats to the vessel.

(d) Where loading or discharge operations take place in the establishments under direct control of the Department of Defense, the following requirements shall be determined:

(1) The vessel shall comply in all respects with the regulations in this subchapter.

(2) Commercial vessels loading or discharging military explosives shipped by or consigned to the Department of Defense of the U. S. Government at facilities under its direct control such as a Navy or Army depot, arsenal, navy yard, port of embarkation, etc., where transfer of the explosives is supervised by Army, Navy or Air Force personnel, shall comply with the Coast Guard regulations pertaining to the safe handling, transportation, conveyance, stowage, or use of explosives or other dangerous articles or substances on board vessels.

(R. S. 4405, as amended; 46 U. S. C. 375. Interprets or applies R. S. 4472, as amended; 46 U. S. C. 170)

Dated: July 28, 1950.

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

[F. R. Doc. 50-6958; Filed, Aug. 8, 1950; 8:49 a. m., 15 F. R. 5142—9/9/50]

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of Ships' Stores and Supplies certificated from August 26, 1950, to September 25, 1950, inclusive, for use on board vessels in accordance with the provisions of part 147 of the regulations governing explosives or other dangerous articles on board vessels are as follows:

West Disinfecting Co., 42–16 West Street, Long Island 1, N. Y., Certificate No. 141, dated September 19, 1950. "Westone."

West Disinfecting Co., 42–16 West Street, Long Island 1, N. Y., Certificate No. 321, dated September 19, 1950. "Westone."

AFFIDAVITS

The following affidavit was accepted from August 15 to September 15, 1950:

Falcon Products, Inc., Pomona, Calif. Valves.

Observations of the Old Mariner

Nature gives everybody five senses * * * touch, taste, sight, smell, and hearing. Seems as though lots of folks need two more * * * horse and common.

Truth is stranger than fiction * * * and often much more interesting.

Do you know what the temperature is at the lighted end of a cigarette? The business end of a cigarette ranges from 800° to 1,200° F. Since paper burns at 450° and wood at about 475° F., you can readily appreciate the dangers inherent in every discarded cigarette butt. *Courtesy, Farrel Lines. Safety News, September 1950.*

ELECTRICAL APPLIANCES

The following list supplements that published by the United States Coast Guard under date of May 15, 1943, entitled "Miscellaneous Electrical Equipment Satisfactory for Use on Merchant Vessels," as well as subsequently published lists and is for the use of Coast Guard personnel in their work of inspecting merchant vessels. Other electrical items not contained in this pamphlet and subsequent listings may also be satisfactory for marine use, but should not be so considered until the item is examined and listed by Coast Guard Headquarters. Before listings of electrical appliances are made it is necessary for the manufacturer to submit to the Commandant (MMT), United States Coast Guard Headquarters, Washington 25, D. C., duplicate copies of a detailed assembly drawing, including a material list with finishes of each corrosive part of each item.

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	
The Anchor Clamp Corp., Los Angeles, Calif.:					
Cable hanger brackets and clamps, dwg. no. 3001, alt. 0	X	X			6/20/50
The Carlisle & Finch Co., Cincinnati, Ohio:					
Searchlight, 19", incandescent, lever control, standard base, 1000 watts, 120 volts	X	X	X		8/15/50
Federal Enterprises, Inc., Chicago, Ill.:					
Vibratory horn, #41, waterproof, 6, 12, 18, 24, 32, 48, and 115 volts DC, dwg. no. 8246-E-5-A, rev. 0 and parts list 8246-5	X	X			7/27/50
Vibratory horn, #40A, waterproof, 6, 12, 18, 24, 32, 48, and 115 volts DC, dwg. no. 8246-E-2A, chg. 0 and parts list 8246-2, sheets 1, 2, and 3, chg. 0	X	X			8/18/48
Vibratory horn, #42, nonwatertight, 6, 12, 18, 24, 32, 48, and 115 volts DC, dwg. no. 8246-E-6-A, rev. 0 with parts list 8246-6, rev. 0	X				8/21/50
Vibratory horn, #43, nonwatertight, 6, 12, 18, 24, 32, 48, and 115 volts DC, dwg. no. 8246-E-7-A, rev. 0 with parts list no. 8246-7, rev. 0	X				8/21/50
Horn, motor driven, waterproof, cat. #20—110 V AC, cat. #21—110 V DC, dwg. no. H-6080, rev. 2	X	X			9/15/50
C. C. Galbraith & Son, Inc., New York, N. Y.:					
Reproducer, sound, high powered marine type, for use with approved emergency loudspeaker systems, waterproof, dwgs. nos. E-27,544, alt. 1 and E-27,544-6, alt. 2	X	X	X		9/20/50
Gavan-Graham Electric Products Corp., New York, N. Y.:					
Panelboards for lighting and power distribution, flush and surface mounted, dripproof, tumbler switch, knife switch (dead front and live front types) and circuit breaker types, 250 volts maximum, 40 overload elements maximum, 2-wire and 3-wire service, 2-wire branches, dwg. nos. 1744, 1744A, and 1744B, rev. 5/19/50	X	X			6/23/50
Henschel Corp., Amesbury, Mass.:					
Mechanical telegraph transmitter with reply, single engine, double face, with red illumination, 12-inch, dwg. no. 11-101-1, alt. 2	X	X			6/30/50
Murlin Mfg. Co., Philadelphia, Pa.:					
Ceiling fixture, nonwatertight, 1 32-watt circline fluorescent lamp and 2 7-watt incandescent lamps, for 110-125 volts AC only, dwg. no. 1377/1377A, alt. 3	X				6/29/50
Desk light, nonwatertight, 1 8-watt fluorescent lamp for 110-125 volts AC only, dwg. no. 1446, alt. 2	X				6/29/50
Mirror light, nonwatertight, 1 14-watt fluorescent lamp for 110-125 volts AC only, dwg. no. 1462, alt. 5	X				6/29/50
Berth light, nonwatertight, 1 6-watt fluorescent lamp, for 110-125 volts AC only, dwg. no. 1463, alt. 2	X				6/29/50
Ceiling fixture, nonwatertight, 1 100-watt lamp max., dwg. no. 1375, alt. 1	X				6/20/50
Ceiling fixture, recessed, nonwatertight, 1 75-watt R-30 lamp max., dwg. no. 1483, alt. 1	X				8/15/50
The Simes Co., College Point, L. I., N. Y.:					
Ceiling fixture, recessed type, type 20, nonwatertight, 1 60-watt lamp max., dwg. no. 44466, alt. 0	X				7/5/50
Ceiling fixture, type INC-18, nonwatertight, 1 100-watt lamp max., dwg. no. 44464, alt. 0	X				7/5/50
Welin Davit and Boat, Perth Amboy, N. J.:					
Emergency switch, lifeboat winch, main line, 2-pole, 100-ampere, 600 volts AC, 250 volts DC; 3-pole, 100-ampere, 600 volts AC; waterproof, dwg. nos. 3243-7, alt. 1 and 3243-8, alt. 1	X	X	X		6/22/50
Limit switch, lifeboat, main line, 2-pole, 100-ampere, 600 volts AC, 250 volts DC; 3-pole, 100-ampere, 600 volts AC; waterproof, dwg. no. 3243-9, alt. 1	X	X	X		6/22/50
Portable power unit for Welin hand lifeboat winches, 115 and 230 volts DC, specification 500303	X	X	X		9/7/50

Merchant Marine Personnel Statistics

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 534 cases during the month of August 1950. From this number, hearings resulted involving 13 officers and 64 unlicensed men. In the case of officers, 1 license was revoked, 3 were suspended, 3 were suspended with probation granted, 1 was voluntarily surrendered, 4 cases were dismissed after hearing, and 1 hearing was closed with an admonition. Of the unlicensed personnel, 14 certificates were revoked, 22 were suspended, 19 were suspended with probation granted, 14 were voluntarily surrendered, 3 were closed with an admonition, and 6 were dismissed after hearing.

MERCHANT MARINE LICENSES ISSUED DURING AUGUST 1950

DECK OFFICERS

		Region								Total	
		Atlantic coast		Gulf coast		Great Lakes and rivers		Pacific coast			
		O	R	O	R	O	R	O	R	O	R
Master	Ocean	21	67	3	21	0	0	5	45	29	133
	Coastwise	0	11	1	1	0	0	0	0	1	12
	Great Lakes	0	0	0	0	0	1	0	0	0	1
	B. S. & L.	5	48	0	3	0	0	0	12	5	63
	Rivers	1	2	2	7	1	7	0	0	4	16
Chief mate	Ocean	17	47	6	13	0	4	6	37	29	101
	Coastwise	0	0	0	0	0	1	0	0	0	1
Second mate	Ocean	15	60	3	13	0	3	5	28	23	104
	Coastwise	0	1	0	0	0	0	0	0	0	1
Third mate	Ocean	5	66	5	7	0	9	13	56	23	138
	Coastwise	0	0	0	0	0	0	0	0	0	0
	Great Lakes	0	0	0	0	0	0	0	0	0	0
Mate	B. S. & L.	1	0	0	0	0	0	3	4	4	4
	Rivers	0	0	0	1	9	4	0	1	9	6
Pilots	B. S. L. & R.	61	106	24	29	18	17	8	32	111	184
Master	Uninspected vessels	0	1	0	0	0	0	4	5	4	6
Mate	do	1	0	0	0	0	0	1	0	2	0
Total		127	409	44	95	28	46	45	220	244	770
Grand total		536		139		74		265		1,014	

ENGINEER OFFICERS

Steam	Chief engineer: Unlimited	11	111	5	32	0	3	4	71	20	217
	Chief engineer: Limited	2	45	0	7	1	22	0	3	3	77
	First assistant engineer: Unlimited	12	47	7	15	0	7	6	33	25	102
	First assistant engineer: Limited	1	1	0	3	3	1	0	1	4	6
	Second assistant engineer: Unlimited	13	81	5	22	2	7	7	45	27	155
	Second assistant engineer: Limited	0	1	0	0	0	0	0	0	0	1
	Third assistant engineer: Unlimited	10	108	3	25	1	29	31	74	45	236
	Third assistant engineer: Limited	0	0	0	0	0	0	0	0	0	0
Motor	Chief engineer: Unlimited	3	25	1	6	0	3	2	14	6	48
	Chief engineer: Limited	4	24	2	6	2	9	4	12	12	51
	First assistant engineer: Unlimited	1	3	1	6	1	2	1	0	4	11
	First assistant engineer: Limited	3	0	2	0	0	1	0	1	5	2
	Second assistant engineer: Unlimited	0	6	0	0	0	1	1	2	1	9
	Second assistant engineer: Limited	1	0	2	0	0	0	0	0	3	0
	Third assistant engineer: Unlimited	2	110	1	24	0	23	26	88	29	245
	Third assistant engineer: Limited	0	0	0	0	0	0	0	0	0	0
Uninspected vessels	Chief engineer	2	0	0	0	0	0	8	2	10	2
	Assistant engineer	0	0	0	0	0	0	6	0	6	0
Total		65	562	29	146	10	108	96	346	200	1,162
Grand total		627		175		118		442		1,362	

RADIO OFFICERS

Total	32

ORIGINAL SEAMEN'S DOCUMENTS ISSUED MONTH OF AUGUST 1950

Region	(1) Staff officer	(2) Continuous discharge book	(3) U. S. merchant mariner's documents	(4) AB any waters unlimited	(5) AB any waters 12 months	(6) AB Great Lakes 18 months	(7) AB tugs and towboats any waters	(8) AB bays and sounds [1]	(9) AB seagoing barges	(10) Lifeboatman	(11) Q. M. E. D.	(12) Radio operators	(13) Certificate of service	(14) Tankerman
Atlantic coast	38	152	906	173	71	2	1	----	----	360	92	1	958	17
Gulf coast	7	2	279	56	27	5	----	1	1	35	37	1	251	15
Pacific coast	26	1	687	88	40	2	----	1	----	99	79	----	578	3
Great Lakes and rivers	3	3	631	15	89	48	----	----	----	78	102	----	611	7
Total	74	158	2,503	332	227	57	1	2	1	572	310	2	2,398	42

[1] 12 months, vessels 500 gross tons or under not carrying passengers.

NOTE.—Columns 4 through 14 indicate endorsements made on United States merchant mariner's documents.

U. S. GOVERNMENT PRINTING OFFICE: 1950