PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

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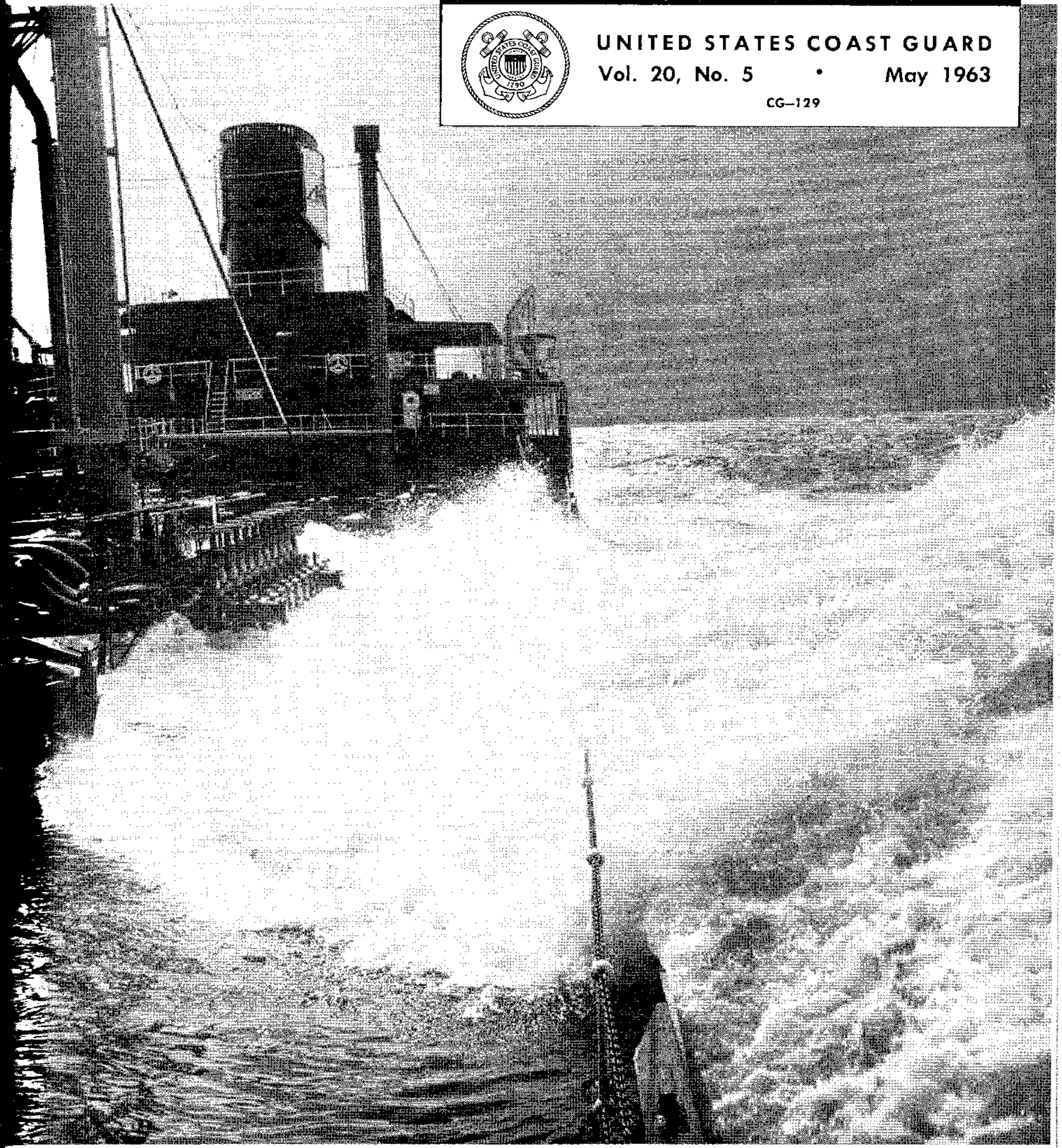

PROCEEDINGS

OF THE

MERCHANT MARINE COUNCIL

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FRONT COVER
Tanker underway in a sloppy sea, *courtesy Socony Mobil Oil Co.*

BACK COVER
"X" marks the spot for careless ship's housekeeping, *courtesy G. Seal, Pacific Maritime Assoc.*

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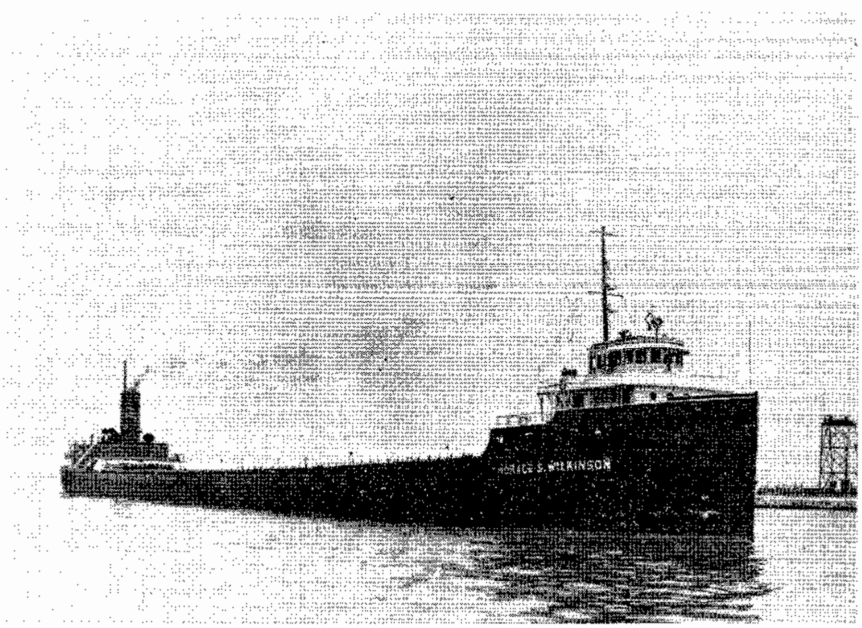

A PROJECT IS being instituted on the Great Lakes for conversion of elderly bulk ships into unmanned barges propelled by tugs. The first ship to undergo conversion will be the Wilson Marine Institute Company vessel, *Horace S. Wilkinson*. The 600-foot ship, built in 1917, will have its superstructure and powerplant removed by the Nelson Shipbuilding and Dry Dock Co., and a special "notched" stern will be installed. All deck machinery, including mooring wrenches will be modified to run on air supplied by diesel power compressors.

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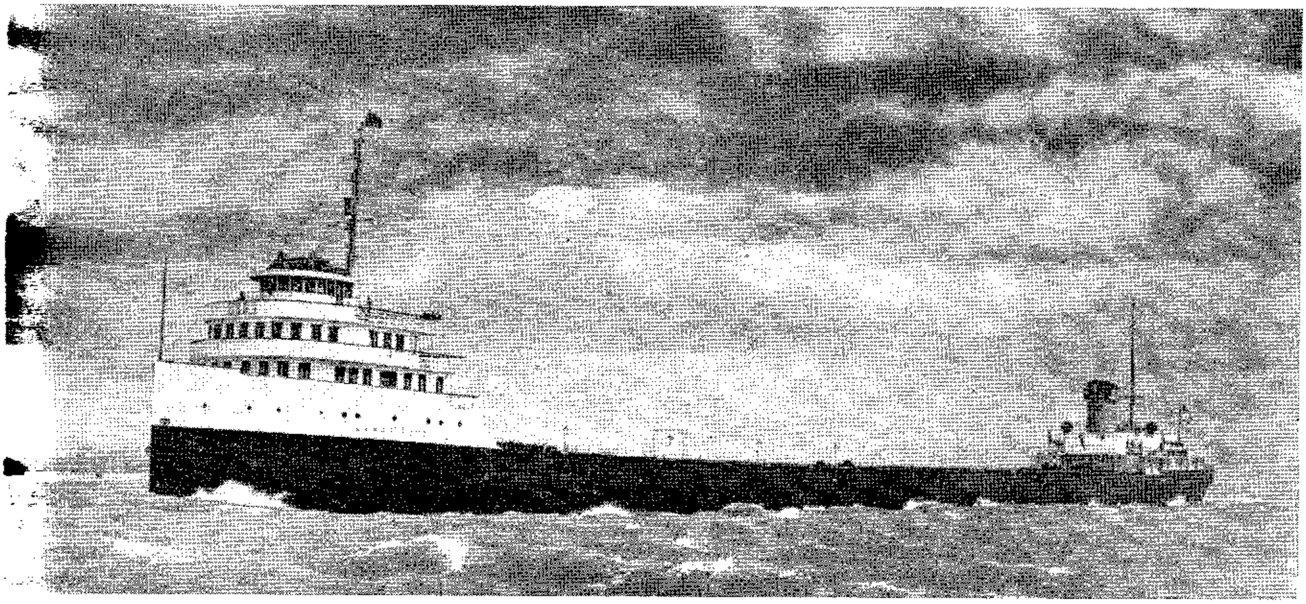


Photos courtesy Fraser-Nelson Shipbuilding Co.

THE 600-FOOT American Great Lakes Motor Ship *Henry Ford II*, 14,000-ton ore carrier of the Ford Motor Co. The vessel has recently been equipped with a bow thrust propeller.

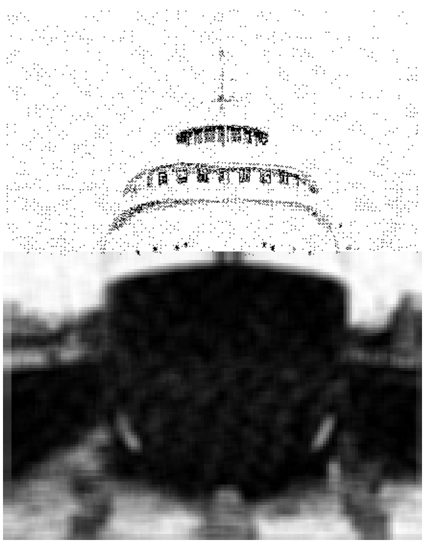
BOW THRUSTER FOR GREAT LAKES ORE CARRIER

INSTALLATION OF THE FIRST bow thruster in a standard American Great Lakes bulk freighter was completed recently at Fraser-Nelson Shipbuilding & Dry Dock Co. of Superior, Wis. The Motor Ship *Henry Ford* II, 14,000-ton ore carrier, has been equipped with a 500 hp controllable pitch propeller type bow thruster to increase the vessel's maneuverability in confined channels and in docking and undocking situations.

The *Ford's* bow thruster is a KaMeWa type manufactured by Bird-Johnson Co., South Walpole, Mass., and is the first unit of its kind on the Great Lakes to be direct-driven by a Diesel engine.

Bow steering devices are relatively new on the Lakes—the first thruster units having been installed in two self-unloading vessels in 1961. The following winter (1961–62) four more self-unloaders were equipped with electrically-driven thrusters.

A bow thruster, simply speaking, is a transversely mounted propeller located in the middle of a tunnel that extends through the ship from side to side near the bow and below the waterline. The KaMeWa thruster features a controllable pitch propeller that can force a stream of water out either side of the tunnel thus imparting lateral motion to the forward end of the ship. The unit is fully controlled from the ship's pilothouse, and the direction, either left or right, and the degree of force, can be regulated with a single lever.



Head-on view of M/S *Henry Ford II* in dry dock showing bow thruster tunnel openings in each side.

BOW STEERING

The M/S *Henry Ford* II, built in 1924 at Lorain, Ohio, has a 612 foot length, 62 foot beam, and depth of 32 feet. A normal ship must rely on forward motion through the water to provide steerageway, but with the bow thruster the head end of the vessel can be swung to right or left regardless of whether the ship is moving, stopped, or moving at dead-slow speeds.

This ability to "steer" the bow will be a big advantage when it is necessary for the ship to negotiate tight 90°, and even 180°, bends in rivers leading to some of the ore unloading docks. Also, where narrow canals must be traversed, and bridge abutments cleared while the ship moves at slow speed, the thruster will enable the captain to make adjustments in ship's heading without increasing speed through the water. Landing alongside docks and lock walls will be accomplished with much less rubbing and bumping by use of the thruster, and backing for long distances will be facilitated. There are a number of docks on the Great Lakes where the big ore carriers must turn 180° in confined basins as they leave in order to line up for the harbor entrance.

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HULL ALTERATIONS

The bow thruster is located in the blind hold, just aft of the forepeak bulkhead. It is approximately 36 feet back from the stem and 5 feet above the keel. The tunnel, 44 feet long and 5 feet 5½ inches inside diameter, was fabricated in shipyard shops out of ¾ inch steel plate. The tunnel flares out into a truncated cone where it joins the hull on port and starboard sides. Special cut-aways at the after side of the tunnel opening give the entrances a tear-drop shape. This is designed to avoid having the tunnel act as a scoop when operating in ice. The tunnel is fully submerged at ten foot draft. There are no protective grids at the tunnel entrances.

THRUSTER

The KaMeWa design consists of a steel tunnel, 88-inches long, cylindrical in section, with two sets of tripod vanes internally arranged to support the propeller and drive assembly. Between pod ends, the propeller rotates with four planar shaped blades that are fully controllable from zero pitch to maximum pitch in either direction without change in direction of rotation of the propulsion machinery.

Full thrust of the Ford's 500 hp unit when operating at its designed speed of 325 r.p.m. is 13,200 pounds. Pitch reversing time is 12 seconds.

PRIME MOVER

Propulsion machinery for the bow thruster consists of a Cummins supercharged Diesel engine that will develop 500 b. hp at 1,800 r.p.m. The engine is located in the Thruster Room a few feet aft of the tunnel and is connected to the thruster by a power takeoff. A clutch is provided to permit running the Diesel engine for warmup or servicing without operating the bow thruster.

Lever that actually controls direction and amount of thrust is located near front window of M/S *Henry Ford II*'s pilot house, so Captain can operate the bow thruster without leaving his usual conning position.

Starting air for the Diesel, and air for clutch and thruster controls, is supplied by the ship's main compressors. A 3,000 c.f.m. axial blower furnishes air to the Thruster Room area. Engine exhaust is piped through a stack along the after side of the forward cabin and exhausts to atmosphere above the pilothouse. Special engine mounts and hospital type muffler keep vibration and noise at minimum levels. A hydraulic pump and control unit is mounted adjacent to the bow thruster that contains the control valves for delivering oil to the pitch changing mechanism in the propeller hub. The hydraulic controls and main propulsion shaft reach the propeller pod through the support vanes.

PILOTHOUSE CONTROL

All control functions for the thruster and Diesel engine are handled from the bridge.

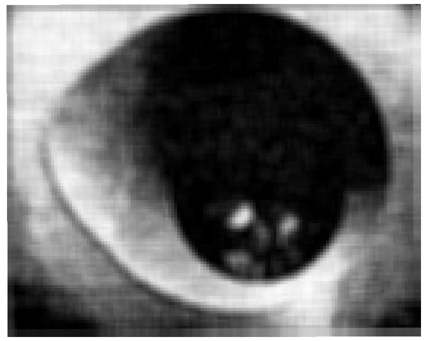
Mounted on a bulkhead in the ship's pilothouse is a control and indicating panel for the bow thruster. On it are start and stop buttons for the pitch control hydraulic pump, start and stop for the Diesel engine, and engage and disengage buttons for the clutch. These controls are interlocked electrically to insure proper sequence of starting and stopping procedure. Indicators on the panel show pitch position (left, right, or midships), tachometer for Diesel engine, low air or hydraulic pressure alarms, and high temperature alarms.

The pneumatic signal lever that actually controls the setting of propeller pitch and speed of the Diesel engine (in full synchronization), is located on a small stand alongside the engineroom telegraph. The Captain can operate the thruster control lever without leaving his usual conning position.

The thruster will not be operated while the ship is running in the open lake, but will be started up, the clutch engaged and the propeller turning in zero pitch, ready for instant use, when approaching maneuvering situations.

KaMeWa IS SWEDISH INVENTION

The name KaMeWa is derived from Karlstads Mechanical Works, of Sweden, which first developed controllable pitch runner blades for water turbines back in 1921. Adapting the hydraulically operated propeller for ship propulsion followed and the first such



BOW THRUSTER tunnel on M/S *Henry Ford II* showing tear-drop shape of hull aperture, and KaMeWa reversible-pitch propeller unit in center of tunnel.

installation was made in 1937. KaMeWa propellers are used for main propulsion in ships both large and small throughout the world. It has only been in recent years that the principal has been incorporated in bow thruster design.

The six American Great Lakes self-unloaders that are now equipped with bow thrusters include Columbia Transportation Division's *J. R. Sensibar* and *W. W. Holloway*, and Boland and Cornelius' *J. F. Schoelkopf, Jr.*, *Detroit Edison*, *Fred A. Manske*, and *Harris N. Snyder*. In addition, the converted T-2 Canadian ore carrier *Lake Winnipeg* has a motor-driven KaMeWa thruster, and the U.S. Engineers hopper dredge *Markham* (stationed on the Great Lakes) has a bow thruster of a different design.

SHIPBUILDING NOTES

U.S. private shipyards had 54 major ships of 647,900 gross tons (757,192 d.w.t.) building or on order, according to the Shipbuilders Council of America. Only 15 large merchant vessels were ordered last year as compared with 34 during 1961. Total major merchant orders received during the past years amounted to 113 ships, or an average of 22 ships a year for which 13 private shipyards regularly compete. During 1962 U.S. shipyards delivered 27 ships totaling 379,233 gross tons as compared with 25 of 369,000 gross tons completed in 1961. Of the 54 ships now on order, 39 are general cargo liners, 8 are tankers, 4 are passenger-cargo ships and 3 are ferryboats. The only order for new tonnage placed during December was for two 14,642-ton-d.w.t. cargoships for American Mail Line, to be built on the West Coast. Total launchings for the year numbered 36 of 415,800 gross tons.

TARGETS IN TRUE MOTION

By Loren M. Smith

Second Officer, SS *Illinois*

This article on true motion radar contains the views of Mr. Smith only, and does not necessarily represent the official views of the U.S. Coast Guard. His discussion of this topical and important subject is presented here because of its possible interest to the reader. A true motion plot standing alone does not give a full picture of the navigational problem; usually the conning officer will want to know these basic items:

(a) Is there danger from the targets? i.e.: What is the closest point of approach (CPA) and its time.

(b) Is the target changing course and/or speed?

In order to find the CPA from a true motion plot it is necessary to accomplish a vectorial subtraction of own ship's true velocity from the target's true velocity. On a relative motion plot the CPA may be estimated by merely extending the line of target relative motion to its closest point. With a true motion plot the estimation of CPA by eye is difficult and in some cases rather deceiving. Where the tracks of own ship and target ship diverge, there is no problem as the CPA is already past. Where they converge, however, CPA is in the future and will NOT be at the intersection of the tracks due to different distances and speeds of the vessels from that "intersection."

Changes of target course and/or speed may be seen from either true or relative plots just as readily, but determination of a target's new course and/or speed is much quicker from a true motion plot. However, again, to determine the effect of this change on CPA it will be necessary to obtain a vectorial solution on true motion, whereas relative motion plots will give the solution directly. It should be noted that a change in own ship course and/or speed will cause an error in the true motion plot unless promptly corrected for.

A full picture is obtained by maintaining both true and relative motion plots. If it were a matter of being able to maintain only one of these plots, on the open sea, I would select a relative motion plot due to the ease of obtaining the most important CPA information directly.

The plotting of own ship's track as always "up" might be possibly confusing in comparison to plotting own ship's track relative to North always being "up." Also, the latter presentation allows automatic correction for changes in own ship's course.

Some true-motion "setups" available commercially have a true motion presentation with long persistence so that target past positions show up as "tails" and allow rapid observation of target course changes with no plotting. In using long persistence scopes it is also necessary to have true motion stabilization so as to prevent land masses from "smearing"—particularly on short range scales. Some installations provide a range and bearing "bug" that is placed on the PPI target and then is also automatically printed on a relative motion plot (on a paper roll). Having both true and relative motion radar presentations with long persistence would give a maximum of information without manual plotting. If the long persistence is obtained by SCAN conversion, the displays may be viewed in daylight and the length of persistence can be adjusted as desired, and the picture can also be erased instantly, if necessary.—ED.

A NUMBER OF months ago I was assigned to the SS *California*, the first of four improved Mariner-class ships built for the States Steamship Co. at the Newport News Shipyard.

Equipped with the latest in electrical and hydraulic gadgetry the ship had on its bridge one of the first tri-RADAR installations to be installed on a freighter. The installation was composed of RCA 3-cm. and 10-cm. relative motion consoles with a unit of TRUE MOTION (TRUMOT) physically placed between the two other sets in the combination. Their location on *California's* bridge is illustrated in figure 1.

None of the licensed deck officers including myself had any prior experience with TRUMOT, so our emotions were slightly mixed at seeing this very complicated array, the general attitude being best described as one of doubtful fascination.

As the ship normally transits between Pacific ports, we had ample time to get acquainted with the rig. Our doubts slowly faded, giving way to natural acceptance of TRUMOT. Maneuvering situations in which we were involved were solved with precision and accuracy by employing TRUMOT without, in most cases, touching anything but a few knobs on the instruments themselves and a grease pencil. Thus we were able to obtain the TRUTH from TRUE MOTION easily and simply.

ABOUT THE AUTHOR

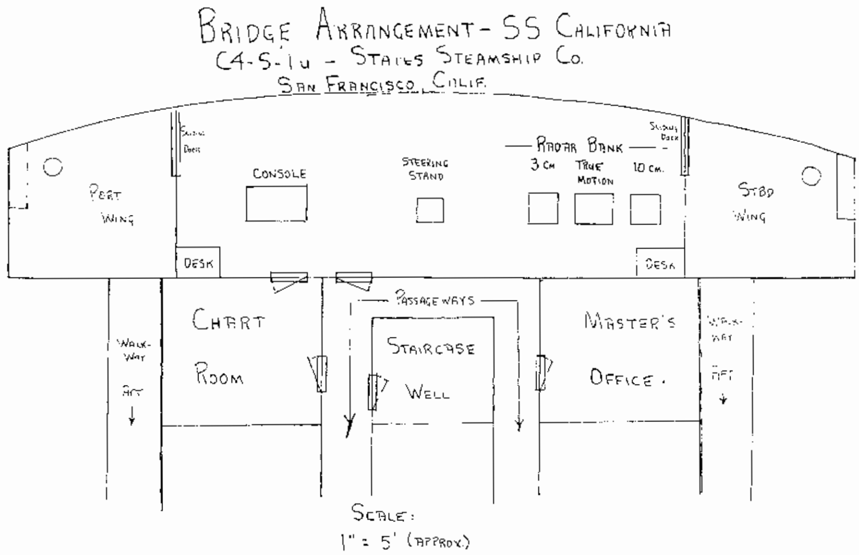
LIEUTENANT SMITH, USNR–R, is a graduate of the California Maritime Academy, Class of 1956. After active duty in the Navy on board destroyers and in the Navy Oceanographic Office he shipped as third officer on the SS *C. E. Dant* and, in a similar capacity, on the maiden voyage of the SS *California*. Mr. Smith is presently second officer on board the SS *Illinois*.

DISPLAY AND TECHNIQUES

I think it can be stated without much contradiction that the average merchant ship bridge is a poor area in which to attempt to receive and evaluate display information from radar.

During the day this space is bright, so that even with the radar scope hooded the display cannot be immediately recognized. (In some earlier radars it was virtually impossible to correctly read the true bearing dial with the hood in place.) At night the situation is different but can be equally as distressing. The mechanics of transferring display information to a maneuvering board or plotting sheet left much to be desired. A flashlight held under the chin was a common procedure before ultraviolet and luminous plotting ideas were marketed.

Naval ships do not have these problems to contend with, as they have radar units in their chartrooms and/or combat centers which are manned



by personnel who are not part of the bridge watch. These people collect, evaluate, and disseminate all tactical and maneuvering data and transmit this to the bridge. Watch personnel then evaluate the situation and maneuver the ship accordingly.

On the merchant ship, all of these functions are handled by one man—the Deck Officer. This requires a system from which target information can be readily determined and acted upon on the bridge of a merchant ship. TRUMOT has, for the most part, eliminated shoddy transferral methods previously subscribed to and allows the watchstander to retain most of his information right on the face of the scope. This can be done because both true course and speed are available to him through the "wonderful world of electronics."

Several versions of the TRUMOT idea are now on the market. Although each manufacturer has a different method of slaving TRUMOT to the masters, the concept of TRUMOT remains the same, and all TRUMOT is in Plan Position. In order to have a target move along its true course and speed you are required to develop, by some means, a "navigational plot" where your own ship also moves along true course and speed. The latter is accomplished in TRUMOT by a computer within the set itself with the manual adjustment of ship's speed being made by the operator.

A typical situation of relative versus TRUMOT is illustrated in figures 2 and 3. In this example initial target's course and speed were 270, 15 knots. At time 06 target's course was changed to 320 to show how much quicker the change appears in the TRUMOT presentation than that of relative. In relative motion (RM) one might possibly have had doubts about the accuracy of the 06 plot, thereby considering target's course and speed to be somewhat less than the actual values. Of course successive plots would rectify this error, however the point is that TRUMOT detected the change almost instantaneously. Parenthetically it is interesting to note that under certain conditions when minimum ranges are used and low sea state is experienced, own ship's as well as target's wake, can be observed when TRUMOT is slaved to the higher definition 3-cm. console. This, then, is just another way in which target maneuvers can be detected when operating the unit in TRUMOT.

Versatility varies, of course, with different installations, however I believe most TRUMOT units can be operated in the following manner: As we saw in the TRUMOT illustration in figure 3 the own ship presentation starts at the bottom of the scope and

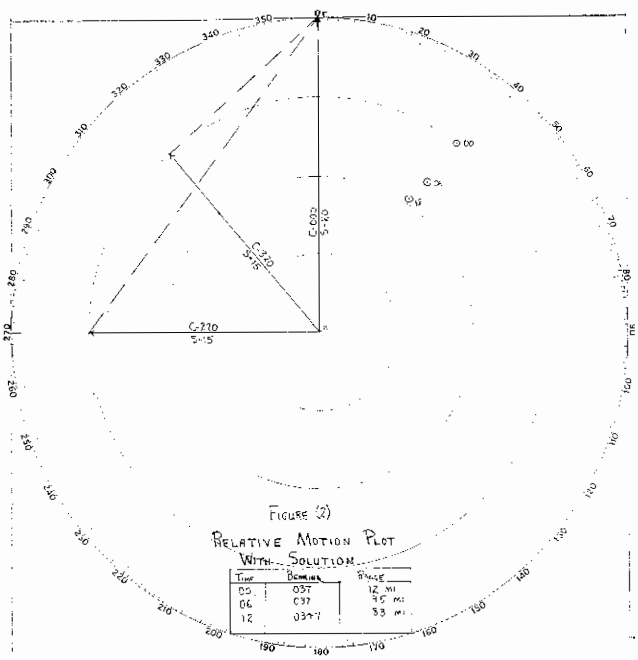
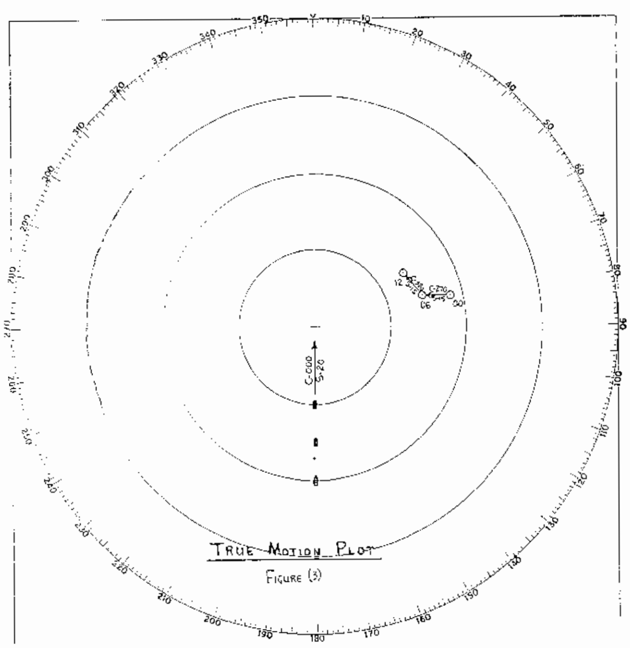


Figure (2)
Relative Motion Plot With Solution



True Motion Plot
Figure (3)

progresses upward at actual ship's speed (which is preset manually). To make it easy these presentations are generally "head up" so that the ship will track bottom to top no matter what heading is assumed.

The unit on the *California* has three modes from which to select—RM on center (as in the conventional type RADAR), RM off center, and TRUMOT. The range at which you can operate the TRUMOT unit is always the same or less than the range taken by the master console but never more than 16 miles. Manufacturers of TRUMOT with the RM offcenter mode will recommend that this mode be used to search. In this mode the sweep will originate not at the center of the scope as in the RM on center mode type but in a position between the physical center and bottom of the scope, usually about "5 miles" from the bottom. The sweep origin will remain fixed in this position with no bottom to top movement as there would be were the TRUMOT mode of operation used.

There are a number of advantages to be derived in operating the unit in the RM off center mode. In the first place your viewing range ahead is increased by approximately 10 miles without a decrease in the definition and bearing accuracy. Also, a shift to the TRUMOT phase is natural from the RM off center idea because the origin of the sweep begins in the same place in both modes. You can readily see how smoothly a TRUMOT problem can commence after initial CPA has been found in RM offcenter.

In figures 4 and 5 a typical problem is shown with illustrations in all modes of display. Figure 4 shows the RM oncenter display and figure 5 shows how the problem would look and be solved using a combination of RM offcenter and TRUMOT. Notice that in figure 4 had the set been in RM offcenter and had the target been of sufficient reflective quality, it might have been possible to exceed the 16-mile initial contact range and permit an earlier solution.

After 12 minutes of plot (excessive for illustration's sake) a CPA, as well as the distance at which the contact will pass ahead, is found. (Please bear in mind that even though plotting simplicity and convenience is stressed here there will be times when a black and white plot might be an advisable thing, especially where another ship is burdened to keep clear.)

Now, in the example, the modes are switched from RM offcenter to TRUMOT and the tracking of the contact along his true direction and at his true speed begins. In figure 5 this mode change was made at time 12 and this time so marked (in this case with the letters "TM"). This is done so that the operator knows where one leaves and the other begins thus eliminating possible confusion between the RM and TRUMOT phases.

At time 18 target has changed course to 180 and it is apparent that if each ship remains on its respective course they will pass clear. At time 30 your ships are passed and the range is opening. So, for 30 minutes you have been aware of every movement the other ship has made. Needless to say, timely and up-to-the-minute information such as this is fast becoming a very desirable and necessary commodity. Relative speeds of 50 to 60 knots during a meeting situation are not uncommon today, and things can develop all too quickly.

It is at this point, I think, that we can get more specific and describe some of the mechanical and electrical features of the TRUMOT unit which enable us to complete a problem in true motion.

Bearings are taken by a mechanical cursor and read on an azimuth scale in RM oncenter; they are also taken with an electronic flasher originating at sweep center and are read in a separate counter on the face of the unit in all offcenter modes.

Ranges are fixed and variable in all modes originating at sweep center.

View Time In Trumot depends on both the range scale used and the speed of the ship. Units having a maximum range of 16 miles in offcenter modes have 26.4 miles of viewing area ahead, because the center of the sweep starts 10.4 miles below the physical center of the scope. As the presentation moves from bottom to top in the TRUMOT mode the sweep is automatically reset when it reaches 4.0 miles from the top giving the operator 22 miles of viewing distance at his own speed (66 minutes at 20 knots).

Own Ship Reset To Start Trumot Sequence can be accomplished manually at any point during the sweep's travel upward on the face of the scope but is automatically reset when sweep

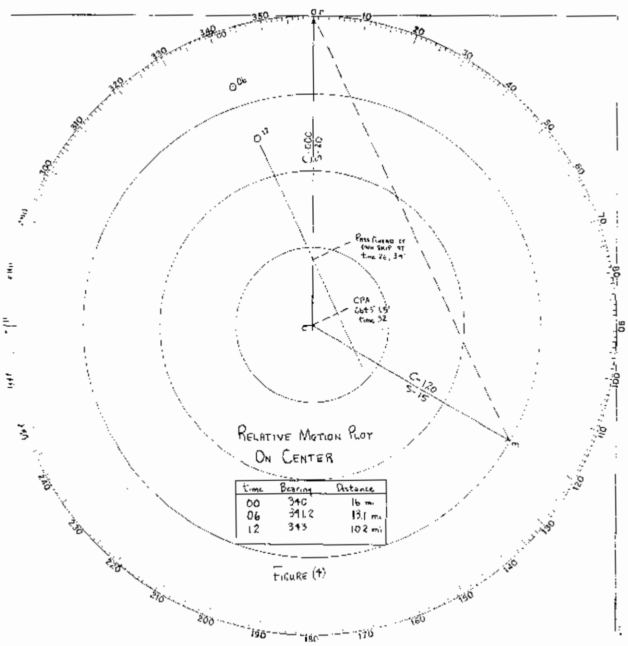


Figure (4)

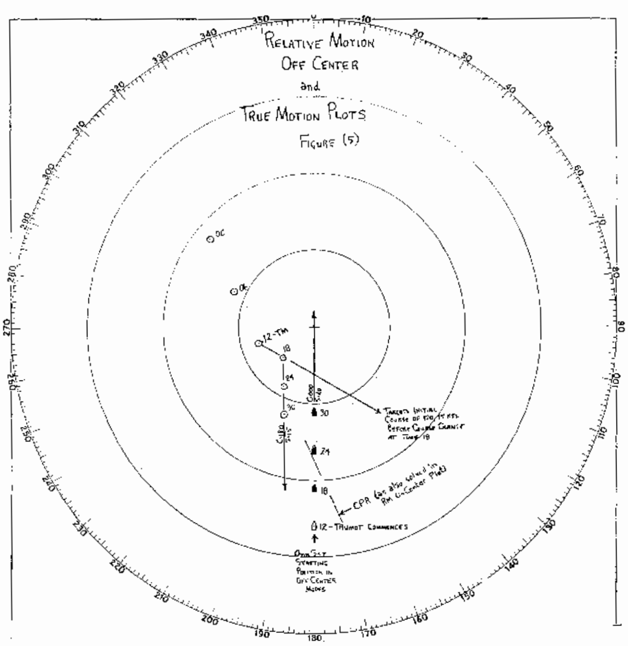


Figure (5)

origin is 4 to 5 miles from the top of the scope.

Own Ship Course Changes are dealt with on the *California's* unit by physically rotating the scope, azimuth scale, and reflection plotter simultaneously, not only to gain a "head up" presentation on the scope but also so that a continuous plot of targets can be retained on the RADAR plotting head.

Own Ship's Speed is quite important in order that a correct solution can be found. Errors in this preset speed should be determined as quickly as possible. Computers used in the TRUMOT mode probably will have an error of some kind. Adjusting these computers seems to be a tricky item for service personnel especially when the ship is stationary and does not have any movement on which to base these adjustments. Computer error, however, can be determined by the operator and a correction applied to ship's speed. With the computer set at ship's speed, place the unit in the TRUMOT mode and mark a nearby land mass (or stationary object) having a well-defined point. If this point can be observed to fall astern, the computer is actually moving your ship at too great a speed. The same idea applies in the case of points that move ahead or the computer is then moving the ship at too little speed. The effects of wind and current should also be taken in account. By trial and error the operator can get a reasonable idea of what correction will be necessary to correct computer speed.

IN CONCLUSION

Your judgment as to which mode in which to operate your radar(s) will have a definite effect on the outcome of the problem you are solving. Frequently one finds it necessary to use all the radars at his disposal if the ship is so equipped. An example (in a triradar installation) might be to use the 3-cm. console strictly for an uncluttered, high definition navigation picture while using the 10-cm. console for RM plot and TRUMOT unit in that mode for true direction and true speed problems.

After the mechanics of operating a new installation have been gradually mastered one will find that he is spending *more* time at the front windows than he ever did before in keeping a personal lookout for the safety of the ship. This is due in part to the elimination of certain primitive display transferral techniques, described earlier.

It is the author's feeling the TRUMOT is the long-awaited answer (or a "giant step" toward this answer) on merchant ship bridges. The future success of TRUMOT is, for the most part, in the hands of the mariner-operator. His understanding, prudent use and acceptance of TRUMOT equipment will not only mean better equipment with which to work in the future, it will also mean that one of the uses for which RADAR was intended—that of SAFE NAVIGATION AND SAFETY AT SEA—is nearer accomplishment.

RULES OF THE ROAD

Rules of the Road are safety measures which were devised by seamen after vessel traffic grew to the extent that the dangers of collision became very real. The rules have one objective: The prevention of collisions.

To enable the Rules of the Road to be effective wherever the vessels of all nations may navigate, they must be simple, straightforward, and uniform. These universal rules must be disseminated to and understood by all mariners; finally, there must be strict adherence to them.

Throughout history various maritime codes have been compiled by the mercantile powers. The codes merely followed the customs and practices of international shipping. The customs used by seamen to avoid collisions made up the general maritime law as applied by the courts of all maritime nations that were sitting in admiralty. Great Britain, which provided the body of law adopted by this country, did not enact statutes following the general maritime law until 1846. This country followed Britain's example in 1864, at which time the existing International Rules were adopted by Congress for all U.S. waters.

The first step away from uniformity of the Rules of the Road for U.S. waters occurred in 1885, when Congress made the then current revised International Rules apply to inland and international waters. This left the International Rules of 1864 applicable to the Great Lakes and western rivers. The Great Lakes rules were changed by Congress in 1895, while western rivers rules essentially have remained based upon the 1864 rules, with some amendments.

Additional complication of our rules occurred in 1897, when Congress enacted a set of rules for navigation in the Inland waters that differed from the current International Rules. Divergencies, which initially crept into our navigation rules during the latter 19th century, have increased steadily up to the present time.

The maritime nations of the world, through their delegates at the 1960 Safety of Life at Sea Conference, recognized that special local rules, under International Rule 30, exist throughout the world and are necessitated by circumstances and conditions. These delegates recommended that local rules be reviewed and that those which prescribe lights, shapes, and signals be brought into as near agreement as practicable with International Rules. The International Maritime Consultative Organization, which coordinates the maritime activities of the nations participating in the Conference, has questioned the various governments as to whether the steering and sailing rules should be included in the recommendation above. At its meeting in London during January 1963, this matter was discussed, but not resolved. In order to carry out the intention of Recommendation 53 with the inclusion of the steering and sailing rules, and attain some measure of uniformity, some degree of alteration or revision of presently existing rules would of necessity have to be considered.

A comparison of the existing U.S. rules and the 1960 SOLAS Convention Rules will be presented in forthcoming issues of the PROCEEDINGS.

RECOMMENDATION NO. 53—1960 SOLAS CONVENTION

"The Conference, recognizing that, whilst the local Rules referred to in Rule 30 of the International Regulations for Preventing Collisions At Sea must necessarily take into account particular circumstances and conditions prevailing in the waters in which they apply, such rules should, so far as is practicable, not be confusing to mariners, recommends that Contracting Governments should endeavour (a) to bring all special local rules which prescribe lights, shapes and signals for vessels in as near agreement as may be practicable with those in the International Regulations for Preventing Collisions at Sea; and (b) the Organization should initiate a study into the possibility of achieving further unification of local special rules."

MARITIME SIDELIGHTS

There were 902 vessels of 1,000 gross tons and over in the active oceangoing U.S. merchant fleet on March 1, 1963, 2 less than the number active on February 1, 1963, according to the Merchant Marine Data Sheet released recently by the Maritime Administration, U.S. Department of Commerce.

There were 20 Government-owned and 882 privately owned ships in active service. These figures did not include privately owned vessels temporarily inactive, or Government-owned vessels employed in loading storage grain. They also exclude 23 vessels in the custody of the Departments of Defense, State, and Interior, and the Panama Canal Company.

There was an increase of one active vessel and an increase of two inactive vessels in the privately owned fleet. A combination passenger-cargo-containership, *Santa Magdalena,* and three freighters, *African Neptune, American Courier,* and *C. E. Dant* were delivered from construction. A freighter and a tanker were transferred from inland to oceangoing service. One freighter was scrapped, and one transferred foreign, and one tanker was a marine casualty. This made a net increase of 3 to a total of 979. Of the 97 privately owned inactive vessels, 4 combination passenger-cargo ships, 9 freighters, and 1 tanker were under going repair or conversion. The others were laid up or temporarily idle.

There was a decrease of three in the Maritime Administration's active fleet and a decrease of four in the inactive fleet. Six freighters were sold for scrap and 1 freighter was transferred to the Navy, making a net decrease of 7 in the total government fleet to 1,880. The total U.S. merchant fleet dropped by 4 ships to a total of 2,859.

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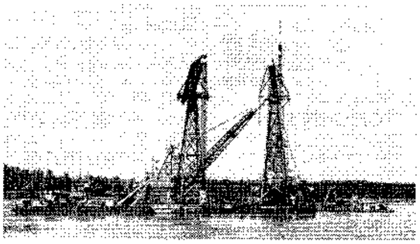
The U.S. Merchant Marine Cadet Corps celebrated its 25th anniversary last March. Organized in 1938 with less than 100 cadets, it reached a high of 7,780 men in 1943. That same year the Merchant Marine Academy at Kings Point was established.



VIEW OF THE heavy lift gear and equipment used during "Operation Chlorine" near Natchez, Mississippi. Four tanks, weighing over 300 tons each, and containing more poisonous gas (chlorine) than was used by all nations in World War I, were removed from a sunken barge.

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The National Fisheries Institute estimates that the 1962 fish catch of the United States will be the second highest in history. The Institute placed last year's fish and seafood catch in the neighborhood of 5.25 billion pounds as compared with 5.155 billion pounds in 1961.

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United States plans to complete a new 1,200-foot lock connecting Lake Huron with Lake Superior by 1967. With an anticipated 100-foot beam and 30-foot depth, the new lock will handle ships up to 1,000 feet and will be the longest link in the seaway chain. The U.S. Army Corps of Engineers stated that the Government is spending $154 million to deepen and improve Great Lakes Harbors for domestic seaway traffic.

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During 1962, 122 new ships arrived in New York on their maiden voyages, according to the maritime association. Of the new vessels, 110 were dry cargo or passenger ships for a total of 901,810 gross tons and 12 tankers of 260,978 gross tons. Norway accounted for the majority of the maiden voyages with 32, followed by Great Britain with 15, Germany with 9, and Denmark and Sweden with 8 each.

The American Chieftain, last of five American Challenger class ships was launched recently at the Newport News Shipbuilding & Dry Dock Co. This class of ships is the first federally subsidized to be built without passenger accommodations. The first of the Challenger vessels, the American Challenger, broke all speed records for cargo ships on both Atlantic and Pacific runs. Her speed of 24.4 knots for a transatlantic crossing last year was surpassed by only four passenger liners on that route.

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While many curious craft—ranging from family rafts to palatial steamers—floated on the western rivers in the last century, one of the oddest products of the naval architect's art during that period was probably the *Western Engineer*, launched in Pittsburgh during the Spring of 1819.

This vessel, according to the contemporary New York Commercial Advertiser, was "well armed," equipped with "an elegant flag" and "is 75 feet long, 13 feet beam, draws 19 inches of water with her engine which, together with all machinery, is placed below deck entirely out of sight.

"The steam," the Commercial Advertiser continued "passes out through the mouth of the figurehead, a large serpent." Why? It seems the *Western Engineer* was to carry into the Missouri country a surveying party which wished to discourage the attentions of hostile Indians.

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The first commercial shipment of one of the world's oldest building materials was delivered in Baltimore last February with the unloading of 20,000 tons of pumice at the Canton Railroad Ore Pier. The pumice comes from a volcanic island in the Mediterranean and is recognized as a superior "lightweight aggregate" which can be used instead of sand, gravel, or cinders to make lightweight concrete and concrete blocks. Pumice is so light that lumps of it will float on water.

nautical queries

DECK

Q. Rocking the sextant to determine if the horizon remains continuous is done to detect:

(a) Perpendicularity of the index glass to the frame of the sextant

(b) Perpendicularity of the horizon glass to the frame of the sextant

(c) Perpendicularity of the index glass to the horizon glass

(d) Error of collimation

(e) (c) and (d) above

A. (b) Perpendicularity of the horizon glass to the frame of the sextant.

Q. Gyroscopic inertia is one of the two properties upon which the gyro compass is based. Which of the following also describes this property?

(a) Torque

(b) Ballistics

(c) Rigidity

(d) Precession

(e) Gravity

A. (c) Rigidity

Q. In the sperry gyro compass the wire suspension is considered a part of the:

(a) Sensitive element

(b) Phantom element

(c) Mercury ballistic

(d) Spider element

A. (a) Sensitive element

Q. When a Loran set is tuned to the wrong basic pulse recurrence rate, the signals which appear to flicker and which are unbroken at the base of the pip are known as:

(a) Ghost pulses

(b) Double pulses

(c) Homing signals

(d) Grass

(e) Sweep signals

A. (a) Ghost pulses

ENGINE

Q. What would be the result of opening a hand expansion valve too much on a refrigeration system:

(a) No effect, as the automatic valve would control

(b) Head pressure will be increased

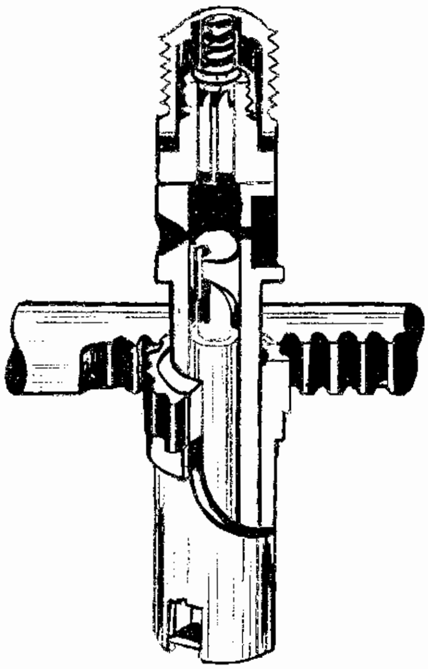
(c) Evaporator will freeze back to compressor

(d) Such an action would be handled by the relief valve

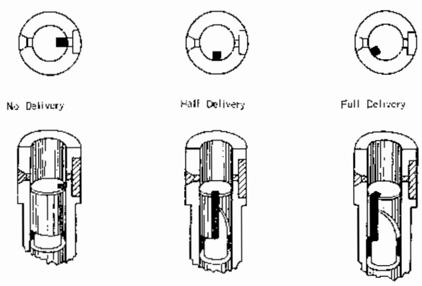
A. (c) Evaporator will freeze back to compressor

FUEL PUMP

Q. Sketch the "No Delivery," "Half Delivery," and "Full Delivery" positions of the plunger for the constant stroke, variable delivery fuel pump shown below.



A. See sketch below.



Q. In normal automatic operation of a refrigeration system, the following valves are open *except*:

(a) Before and after strainer

(b) Receiver liquid outlet

(c) Before and after dehydrator

(d) Expansion valve

(e) None are exceptions

A. (c) Before and after dehydrator

Q. What provisions are made in the telemotor system for automatic operation of the following:

(a) Replenishing leakage oil?

(b) Quick centering of the system?

A. (a) Leakage oil is automatically replenished by the spring-loaded valve on the forward telemotor, which is opened by a cam whenever the steering wheel is brought to the amidships position; thus permitting oil to flow from the supply tank to the top of both cylinders.

(b) The after telemotor has two strong centering springs which permit quick centering of the system whenever the steering wheel is released.

Q. Briefly describe the final alignment of the line shafting of a new vessel. Where and why is this accomplished?

A. The actual final alignment of the line shafting is accomplished by slightly shifting the bearings, with the coupling flanges open, until the peripheries of the mating shaft section flanges are concentric and the flange faces are truly parallel. The alignment of the shafting is not the same when the vessel is waterborne as when it is in drydock, hence the final alignment and bolting up of the main propulsion shafting should always be done when the vessel is waterborne.

Q. What precautions should be taken in the use of the filling hose and other connections to the potable water system?

A. A separate hose should be kept on each vessel and used only for loading potable water. The hose should be handled so that the ends are not dragged through or accidentally dropped into contaminated water, or otherwise contaminated. The hose should be stored near the vessel's filling line, preferably in a closed cabinet. If the hose is not stowed in a closed cabinet, the ends should be plugged or capped to minimize contamination of the inside surfaces. Potable water filling lines should be connected only to potable water tanks and should not be cross connected to any line of a nonpotable system. The potable water filling line should be located at least 18 inches above the deck and should be fitted with a screw cap.

TABULATION OF UNSAFE PRACTICES

July through December 1962

	Atlantic	Great Lakes and rivers	Gulf	Pacific	Total
A. Access to Vessel					
Gangways, accommodation ladders, etc.	1				1
1. Length, width, strength, etc., inadequate	9	16	8	2	35
2. Rigged or secured improperly	12	31	18	8	69
3. Angle too steep	11	23	13	4	51
4. Not clear at either end	6	14	4	2	26
5. Water discharging onto		2	2		4
6. Hand ropes or rails not provided or inadequate	9	26	7	5	47
7. Insufficient number	1	1		2	4
8. Lifeboat or other object suspended over access				2	2
9. Ring life buoy with lanyard not provided or inadequate	18	44	23	18	103
10. Other	36	16	6	5	63
B. Access to Spaces on Board Vessel					
Ladders					
11. Rigged improperly	5	2	1	2	10
12. Rungs, steps, or treads missing or loose	17	6	12	24	59
13. Deteriorated or weakened	11	11	12	15	49
14. Handrails missing or inadequate	9	7	7	14	37
15. Doors or passages cluttered	12	4	9	11	36
16. Escape means blocked or locked	6	1	7	20	34
17. Other	1	9		5	15
C. Deck and Hull Openings					
18. Hatch covers, dangerously piled or placed	2		1		3
19. Hatch covers, missing or defective	10	7	5	2	24
20. Hatch covers, securing means defective	11	28	8	7	54
21. Hatch beam locking lugs missing or defective	1	2	5	2	10
22. Lifelines, chains, rails, or guards missing or inadequate	17	4	11	18	50
23. Other	2	9	4	3	18
D. Decks and Platforms					
24. Slippery due to oil, grease, etc.	30	43	28	20	121
25. Cluttered	18	5	20	7	50
26. Floor plates or gratings loose or not in place	7	9	9	8	33
27. Rails and guards missing or inadequate	14	16	4	29	63
28. Other	15	17	1	4	31
E. Cargo Handling					
29. Safe load not marked on booms	3		3	3	9
30. Guys, falls, booms, etc. improperly rigged				1	1
31. Overloading gear					
32. Jury rig winch controls					
33. Failure to use guards and gates of cargo elevators and escalators				2	2
34. Using defective cargo gear			1		1
35. Smoking prohibition disregarded		5	2		7
36. Stowage or handling of cargo or gear					
37. Other	1	1		1	3
F. Lifesaving Equipment					
38. Not ready for use	35	3	7	17	62
Lifeboats—					
39. Hoisting fully loaded			1		1
40. Personnel riding to fully stowed position	1	2	1		4
41. Preventive lashings not used when working in boat			1		1
42. Winch power not shut off when using hand crank or performing maintenance	2			6	8
43. Starting engine without ventilating	1				1
44. Bypassed safety devices					
45. Tricing and frapping lines improperly used		3		4	7
46. Davit span lifelines not ready for use	4		2	5	11
47. Other	30	11	11	20	72
G. Firefighting Equipment					
48. Not ready for use	34	26	28	84	172
49. Fire screen doors blocked	5		3	2	10
50. Other	22	13	26	10	71
H. Ventilation					
51. Neglect to observe safety precautions prior to entering	3				3
52. Use of toxic solvent in confined spaces	3		1	2	6
53. Grease, dust, litter in ventilation system	7	9	5	11	32
54. Cowls, mushrooms, etc., frozen	13	2	6	11	32
55. Insufficient ventilation	6	3		4	13
56. Other	21	7	6	11	45
I. Electrical					
57. Extension cords defective	27	10	9	24	70
58. Portable equipment not grounded	30	39	7	27	103
59. Overfused circuits	27	8	9	7	51
60. Jury rigged circuits	59	35	31	49	174
61. Caps for receptacle outlets not in place	62	43	56	93	254
62. Switch and fuse box panels in passenger spaces left unlocked	7	7	3	6	23
63. General alarm bells muffled or dampened	23	9	8	30	70
64. Vapor globes and guards not in place	83	66	33	86	268
65. Use of defective equipment in hazardous spaces	6	4	1	5	16
66. Other	36	12	18	25	91
J. Machinery					
67. Failure to take safety precautions in lighting-off boiler		1	7	4	12
68. Spring loaded valves on sounding pipes secured in open position or not in place	17	1	6	30	54
69. Machinery guards not in place or defective	21	6	9	29	65
70. Failure to block or safeguard steam valves when working on steam lines or inside a boiler, evaporator, etc.	3				3
71. Other	34	17	16	14	81
K. Welding, Burning, Heating or Riveting					
72. No gas-free certificate for "hot work" where required	1		6	2	9
73. Inadequate fire watch	4	1	1	2	8
74. Ventilation insufficient	3		1		4
75. Personnel protective equipment inadequate	2				2
76. Other	1			1	2
L. Tank Vessels					
77. Ullage holes or expansion trunk openings open without flame screens	3	30	15		48
78. Vent header drains left open		3			3
79. Deck battens or wooden gratings not provided where needed		4			4
80. Failure to comply with "Declaration of Inspection Prior to Bulk Cargo Transfer"				2	2
81. Other	12	63	35	6	116
M. Ferry and Excursion Vessels					
82. Vehicles not properly secured during navigation		1			1
83. Vehicle motors not turned off during navigation					
84. Insufficient clearance between vehicles for egress of passengers in emergency					
85. Barricades and gates opened prior to docking				3	3
86. Passenger supervision inadequate	2				2
87. Other		1	1	8	10
N. Miscellaneous					
88. Job supervision inadequate	1	2		7	10
89. Lack of supervision in maintenance of equipment	3	8	1	8	20
90. Lack of supervision in conducting drills	4	20	1	2	27
91. Lack of sufficient personnel	6	2		4	12
92. Oil, fuel and/or debris in bilges	37	21	14	57	129
93. Stoves, ranges, heaters, hotplates, lanterns, etc., not secured against vessel's movement	3	1			4
94. Inadequate deck, gangway, passageway, lighting			3	4	7
95. Unsanitary conditions	4	3	4	9	20
96. Chain falls improperly used	2	1			3
97. Lack of precautions while effecting repairs (including warning notices, etc.)	4	2	1		7
98. First aid equipment not ready for use (medicine chest, litter)	4	2	2	5	13
99. Stowage of ship's stores improper	8	4		5	17
100. Access over deckloads	1		1		2
101. Other	5	48	12	7	72
Grand total	1,027	907	640	994	3,568

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 1–63

JANUARY 18, 1963

Subj: Notes on Inspection and Repair of Wooden Hulls

PURPOSE

The "Notes on Inspection and Repair of Wooden Hulls" are intended to disseminate to Coast Guard marine inspectors, vessel owners and shipyards general information relating to good practice in the inspection and repair of wooden vessels. The information contained therein parallels that contained in "Notes on Inspection and Repair of Steel Hulls" (enclosure (1) to Navigation and Vessel Inspection Circular No. 4–60). This information is furnished for guidance purposes. Where specifics are given, it should be understood that mandatory application is not necessarily intended. Nothing herein shall be taken as amending the applicable regulations, nor as prescribing or limiting the authority and responsibility of the Officer in Charge, Marine Inspection, in the exercise of his good judgment.

REVISIONS

It is expected that these notes will require modification in the light of their use in the field. Comments and suggestions are welcome and revisions will be issued as necessary.

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 2–63

JANUARY 24, 1963

Subj: Guide for Inspection and Repair of Lifesaving Equipment

PURPOSE

The "Guide for Inspection and Repair of Lifesaving Equipment" is intended to disseminate to Coast Guard marine inspectors, shipping companies, and vessel owners general information relating to acceptable procedures to be followed in the inspection and repair of lifesaving equipment.

DISCUSSION

For some time there has been evidence of the need for the promulgation of guidance material for the inspection and repair of lifesaving materiel. Although some of the guides were derived from previously issued instructions and circulars, most have been collected from the experiences of marine inspection personnel throughout the country. This circular was prepared by the Merchant Marine Technical Division. Its intention is to combine the most up-to-date technical information available with the best inspection procedures. However, it is expected that with experience in the use of these guides, need for amendments or additions may be evidenced. Constructive comments and suggestions will be welcome, and as necessary, revisions will be issued.

ACTION

This information is furnished for guidance purposes and as such is not intended to be a directive. Nothing herein shall be taken as amending the applicable regulations or as prescribing or limiting the authority and responsibility of the Officer in Charge, Marine Inspection, in the exercise of his good judgment.

AMENDMENT TO REGULATIONS

[EDITOR'S NOTE.—The following regulations have been promulgated or amended since the last issue of the PROCEEDINGS. A complete text of the regulations may be found in the Federal Register indicated at the end of each article. Copies of the Federal Register containing the material referred to may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.]

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

SUBCHAPTER I—CARGO AND MISCELLANEOUS VESSELS

[CGFR 63–12]

PART 90—GENERAL PROVISIONS

PART 91—INSPECTION AND CERTIFICATION

Seagoing Barges

The Merchant Marine Council held a public hearing on March 12, 1962, for the purpose of receiving comments, views, and data with respect to miscellaneous vessel inspection proposals. The notice of proposed rulemaking was published in the "Federal Register" on January 23, 1962 (27 F.R. 657–665). The Merchant Marine Council Public Hearing Agenda (CG–249), dated March 12, 1962, sets forth the proposed regulations in detail and copies thereof were furnished to all who had indicated an interest in the subjects set forth therein.

This document is the eighth of a series regarding the regulations and actions considered at the March 12, 1962, Public Hearing and Annual Session of the Merchant Marine Council. This document contains the final actions taken with respect to "Inspection and certification of seagoing barges" (CG–249, pp. 145–147), and "Inspection and certification of manned seagoing barges" (CG–249, p. 148) in "Item III—Vessel Operations and Inspections." In response to a number of comments and requests, an additional time for submittal of data was granted and final actions on these proposals and comments were deferred until after June 15, 1962. This action was also taken in order that an understanding with industry could be evolved regarding the specific inspection procedures which would be followed. The proposals as published in the Public Hearing Agenda (CG-249, pp. 145-148) are approved. In addition to these regulations, appropriate navigation and vessel inspection circulars are being issued describing Coast Guard's inspection requirements in general terminology for "seagoing barges when on voyages on the high seas for change of place of employment" and for "seagoing barges such as dump scows of 100 gross tons or over making short voyages on the high seas."

Subpart 90.05—Application

1. Section 90.05-25 is amended to read as follows:

§ 90.05-25 Seagoing barge.

(a) All nonself-propelled vessels of 100 gross tons and over that proceed on voyages on the high seas or ocean are subject to inspection and certification as seagoing barges.

(b) In applying the laws and regulations to manned seagoing barges, one criterion for invocation of safety standards is the description of seagoing barges by relative size in gross tons. When it is determined by the Commandant that the gross register tonnage for a particular manned seagoing barge, which is attained by exemptions, reductions, or other devices in the basic gross tonnage formulation, will circumvent or be incompatible with the application of specific safety requirements in the regulations in this subchapter for a manned seagoing barge of such physical size, the Commandant shall prescribe the regulations to be made applicable to such seagoing barge. When the Commandant determines that the gross register tonnage is not a valid criterion for the invocation of safety requirements based on relative size, the parties involved will be informed of the determination and of the regulations applicable to such manned seagoing barges, and before being permitted to operate such seagoing barges, compliance therewith shall be required. Endorsements or notations on the seagoing barge's certificate of inspection may be made as appropriate.

(R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply sec. 10, 35 Stat. 428, as amended; 46 U.S.C. 395)

Subpart 90.10—Definition of Terms Used in This Subchapter

2. Subpart 90.10 is amended by inserting after § 90.10-35 a new section reading as follows:

§ 90.10-36 Seagoing barge.

The phrase "every seagoing barge of one hundred gross tons or over" in subsections 395(a) and 395(b), Title 46, U.S. Code (sec. 10, 35 Stat. 428, as amended), includes every non-self-propelled vessel of 100 gross tons or over, if such vessel will navigate the high seas or ocean. The phrase "non-self-propelled vessel" means a vessel without sufficient means for self-propulsion and is required to be towed.

Subpart 91.01—Certificate of Inspection

Section 91.01-10 is amended to read as follows:

§ 91.01-10 Period of validity.

(a) Certificates of inspection will be issued for periods of either 1 or 2 years except as modified by paragraph (c) of this section. Application may be made by the master, owner, or agent for inspection and issuance of a new certificate of inspection at any time during the period of validity of the current certificate.

(b) Certificates of inspection may be revoked or suspended by the Coast Guard where such process is authorized by law. This may occur if the vessel does not meet the requirements of law or regulations in this chapter or if there is a failure to maintain the safety requirements requisite to the issuance of a certificate of inspection.

(c) (1) In the case of the following vessels, modification of the period of validity of the certificate of inspection will be permitted as set forth in this paragraph:

(i) Non-self-propelled vessels of 100 gross tons and over proceeding on the high seas or ocean for the sole purpose of changing place of employment.

(ii) Non-self-propelled vessels of 100 gross tons and over making rare or infrequent voyages on the high seas or ocean and returning to the port of departure.

(2) The certificate of inspection may be issued for a specific period of time to cover a described situation or for one voyage only but in no case to exceed 2 years. The certificate of inspection will include the conditions under which the vessel must operate. Unless the vessel is in compliance with this subchapter insofar as it applies to seagoing barges of 100 gross tons and over, such vessel shall not carry any person on board while underway, and the certificate of inspection will be endorsed as an unmanned seagoing barge.

(Federal Register of March 13, 1963.)

READERS INVITED TO SUBMIT MATERIAL FOR FUTURE ISSUES

ALL READERS are invited to submit comments, safety suggestions, cartoons, articles, or similar material for publication in future issues of this publication. Submissions should concern the promotion of maritime safety and will be selected and edited at the editor's discretion. Credit for published material will be given to the author, as appropriate, but unused items will not be returned. A brief biographical sketch is requested of the author of any article in excess of 1,000 words.

Articles or requests for further information should be directed to:

Editor
Merchant Marine Council Proceedings
U.S. Coast Guard Headquarters
Washington 25, D.C.

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

SUBCHAPTER A—GENERAL

[CGFR 63-11]

PART 3—COAST GUARD DISTRICTS, MARINE INSPECTION ZONES AND CAPTAIN OF THE PORT AREAS

Subpart 3.85—17th Coast Guard District

MISCELLANEOUS AMENDMENTS

The descriptions of the marine inspection zones and captain of the port areas in the 17th Coast Guard District have been revised to reflect changes made establishing new units.

A Marine Inspection Office has been established at Anchorage, Alaska. The mailing address is post office box 67, Anchorage, Alaska. This office is a Coast Guard unit headed by an Officer in Charge, Marine Inspection, who has been delegated authority as described in 33 CFR 1.01–20 to administer and give immediate direction to those Coast Guard activities relating to the navigation and vessel inspection laws within his marine inspection zone.

The Anchorage marine inspection zone shall consist of the land masses and territorial waters of the State of Alaska west of 139° west longitude, as well as artificial islands subject to inspection off the State of Alaska west of this line. This zone was formerly a part of the marine inspection zone assigned to the Juneau Marine Inspection Office. The description of the Juneau marine inspection zone in 33 CFR 3.85–10(b) is amended and a new section designated 33 CFR 3.85–15 is established describing the Anchorage marine inspection zone.

A captain of the port office has been established at Anchorage, Alaska. This office is a Coast Guard unit headed by a captain of the port who has been delegated authority as described in 33 CFR 1.01–30 to administer and give immediate direction to those Coast Guard activities concerning anchorages, movements of vessels, and handling of dangerous cargoes within his captain of the port area, which is a limited area around Anchorage as described in 33 CFR 3.85–55 in this document.

A captain of the port office has been established in Juneau, Alaska. This office is a Coast Guard unit headed by a captain of the port who has been delegated authority as described in 33 CFR 1.01–30 to administer and give immediate direction to those Coast Guard activities concerning anchorages, movements of vessels, and handling of dangerous cargoes within his captain of the port area, which is a limited area around Juneau as described in 33 CFR 3.85–60 in this document.

A captain of the port office is continued in Ketchikan, Alaska, but the description of the captain of the port area has been amended and redesignated as in 33 CFR 3.85–65 in this document.

The shipowners, operators, builders, vessels' operating personnel, and other persons affected by the navigation and vessel inspection laws when within the Anchorage marine inspection zone are requested to utilize the services available at the Marine Inspection Office, Anchorage, Alaska.

§ 3.85–10 Juneau Marine Inspection Zone.

* * * * *

(b) The Juneau Marine Inspection Zone comprises the State of Alaska east of 139° west longitude.

2. Subpart 3.85 is amended by adding after § 3.85–10 a new section reading as follows:

§ 3.85–15 Anchorage Marine Inspection Zone.

(a) The Anchorage Marine Inspection office is in Anchorage, Alaska.

(b) The Anchorage marine inspection zone comprises the State of Alaska west of 139° west longitude.

3. Section 3.85–55 is amended to read as follows:

§ 3.85–55 Anchorage Captain of the Port.

(a) The Anchorage Captain of the Port Office is in Anchorage, Alaska.

(b) The Anchorage Captain of the Port area shall comprise all navigable waters of the United States and contiguous land areas within the following boundaries: A line commencing at a point 60°50′ N. and 149° W., thence north to the north shoreline of Turnagain Arm, thence northwesterly along the shoreline to the junction of 149°40′ W., thence north to 61°25′ N., thence west to 150° W., thence south to the north shoreline of Knik Arm, thence westerly along the shoreline to 150°20′ W., thence south to the south shoreline of Turnagain Arm, thence easterly along the shoreline to the point of origin.

4. Subpart 3.85 is amended by adding after § 3.85–55 a new section reading as follows:

§ 3.85–60 Juneau Captain of the Port.

(a) The Juneau Captain of the Port Office is in Juneau, Alaska.

(b) The Juneau Captain of the Port area shall comprise all navigable waters and contiguous land areas within the following boundaries: Commencing at a point 58°35′ N., and the east bank of the Lynn Canal, due west to 135° W., thence due south to 58°10′ N., thence due east to 134°10′ W., thence northwesterly along the east bank of the Gastineau Channel to 58°20′ N., thence a straight northwesterly line from this point to the point of origin.

5. Subpart 3.85 is amended by adding after § 3.85–60 a new section reading as follows:

§ 3.85–65 Ketchikan Captain of the Port.

(a) The Ketchikan Captain of the Port Office is in Ketchikan, Alaska.

(b) The Ketchikan Captain of the Port area shall comprise all navigable waters and contiguous land areas encompassed within the following boundaries: Commencing at a point 55°27′ N., and 131°49′50″ W. due south to the west bank of the Tongass Narrows, thence southeasterly along the west bank of the Tongass Narrows to 55°17′30″ N., thence due east to 131°32′ W., thence due north to the north bank of Revillagigedo Channel, then to follow from that point along the shoreline westerly and northerly to the point of origin.

(Federal Register of March 27, 1963.)

EQUIPMENT APPROVED BY THE COMMANDANT

[EDITOR'S NOTE.—Due to space limitations, it is not possible to publish the documents regarding approvals and terminations of approvals of equipment published in the Federal Register dated March 20, 1963 (CGFR 63–9) and (CGFR 63–14). Copies of these documents may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.]

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from March 1 to 31, 1963, 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:

CERTIFIED

Harry Miller Corp., Fourth and Bristol Streets, Philadelphia 40, Pa., No. 556, dated March 1, 1963, STEEL-GARD 1505.

Octagon Process, Inc., 596 River Road, Edgewater, N.J., No. 557, dated March 15, 1963, KLEARALL 92.

Sea-Air Chemical Corp., 32–00 Borden Avenue, Long Island City 1, N.Y., No. 558, dated March 21, 1963, DART.

Sea-Air Chemical Corp., 32–00 Borden Avenue, Long Island City 1, N.Y., No. 559, dated March 21, 1963, MIGHTY MATE.

AFFIDAVITS

The following affidavits were accepted during the period from February 15, 1963 to March 15, 1963:

Wilhelm Weerts, Burgstrasse 6, Emden, West Germany, VALVES.

Hankison Corp., College and Pike, Cannonsburg, Pa., FITTINGS.

The Fairbanks Co., 393 Lafayette Street, New York 3, N.Y., VALVES AND FITTINGS.

MERCHANT MARINE SAFETY PUBLICATIONS

The following publications that are directly applicable to the Merchant Marine are available and may be obtained upon request from the nearest Marine Inspection Office of the United States Coast Guard. The date of each publication is indicated in parentheses following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (7–1–58).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (8–1–62).
115	Marine Engineering Regulations and Material Specifications (2–1–61). F.R. 9–30–61, 9–11–62, 12–28–62.
123	Rules and Regulations for Tank Vessels (1–2–62). F.R. 5–2–62, 9–11–62, 2–6–63.
129	Proceedings of the Merchant Marine Council (Monthly).
169	Rules of the Road—International—Inland (6–1–62), 1–18–63.
172	Rules of the Road—Great Lakes (6–1–62). F.R. 8–31–62.
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids (7–2–51).
175	Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (9–1–60).
176	Load Line Regulation (9–1–61). F.R. 7–27–62, 11–14–62, 2–2–63.
182	Specimen Examinations for Merchant Marine Engineer Licenses (12–1–59).
184	Rules of the Road—Western Rivers (6–1–62). F.R. 1–18–63.
190	Equipment Lists (4–2–62). F.R. 5–17–62, 5–25–62, 7–24–62, 8–4–62, 8–11–62, 9–11–62, 10–4–62, 10–30–62, 11–22–62, 11–24–62, 12–29–62, 1–4–63, 1–8–63, 2–7–63, 2–27–63, 3–20–63.
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel (6–1–62). F.R. 10–4–62, 12–28–62, 1–22–63.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (7–1–58). F.R. 3–30–60, 5–6–60, 12–8–60, 7–4–61, 5–2–62, 10–5–62.
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels (4–1–57).
227	Laws Governing Marine Inspection (7–3–50).
239	Security of Vessels and Waterfront Facilities (8–1–61). F.R. 11–3–61, 12–12–61, 8–8–62, 8–31–62, 11–15–62, 1–30–63, 3–27–63.
249	Merchant Marine Council Public Hearing Agenda (Annually).
256	Rules and Regulations for Passenger Vessels (1–2–62). F.R. 5–2–62, 9–11–62, 12–28–62.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (11–1–62). F.R. 2–1–63, 2–6–63, 3–13–63.
258	Rules and Regulations for Uninspected Vessels (9–1–61). F.R. 1–20–62, 4–24–62, 5–2–62, 9–11–62.
259	Electrical Engineering Regulations (12–1–60). F.R. 9–30–61, 9–23–61, 5–2–62, 9–11–62.
266	Rules and Regulations for Bulk Grain Cargoes (5–1–62). F.R. 9–11–62.
268	Rules and Regulations for Manning of Vessels (2–1–63).
269	Rules and Regulations for Nautical Schools (3–1–60). F.R. 3–30–60, 8–18–60, 11–5–60, 7–4–61, 9–30–61, 12–13–61, 5–2–62, 9–11–62.
270	Rules and Regulations for Marine Engineering Installations Contracted for Prior to July 1, 1935 (11–19–52). F.R. 12–5–53, 12–28–55, 6–20–59, 3–17–60.
293	Miscellaneous Electrical Equipment List (6–1–62).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (10–1–59). F.R. 10–25–60, 11–3–61, 4–10–62.
323	Rules and Regulations for Small Passenger Vessels (Not More Than 65 Feet in Length) (6–1–61). F.R. 9–11–62, 10–5–62, 12–28–62, 1–22–63.
329	Fire Fighting Manual for Tank Vessels (4–1–58).

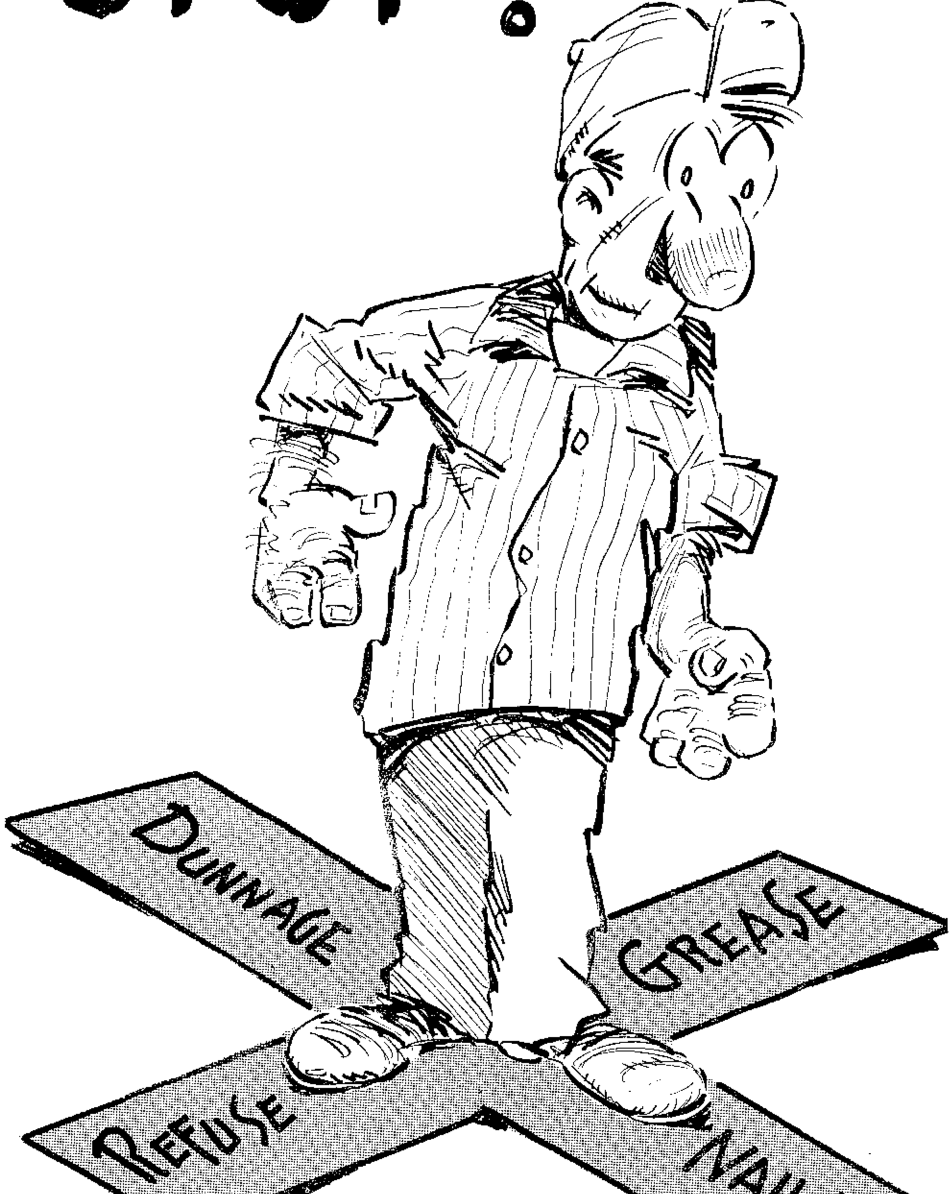
Official changes in rules and regulations are published in the Federal Register, which is printed daily except Sunday, Monday, and days following holidays. The Federal Register is a sales publication and may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. It is furnished by mail to subscribers for $1.50 per month or $15 per year, payable in advance. Individual copies desired may be purchased as long as they are available. The charge for individual copies of the Federal Register varies in proportion to the size of the issue and will be 15 cents unless otherwise noted in the table of changes below.

CHANGES PUBLISHED DURING MARCH 1963

The following have been modified by Federal Registers:
CG–257, Federal Register, March 13, 1963.
CG–190, Federal Register, March 20, 1963.
CG–239, Federal Register, March 27, 1963.

U. S. GOVERNMENT PRINTING OFFICE: 1963

ARE YOU ON THE SPOT?



CLEAN IT UP —

IT MIGHT BE **YOU**!

G.S. Seal