PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL

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Proceedings of the

MERCHANT MARINE COUNCIL

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The Merchant Marine Council of the United States Coast Guard

CONTENTS

DISTRIBUTION (SDL 63)

A: a aa b c d (2); remainder (1)
B: e (35); c (16); f (4); h (3); g (2); remainder (1)
C: a b (less Quonset Pt.) c d e f g i m o w (1)
D: i (5); a b c d e f g h j k m (1)
E: o (New London only) (1)
List 141M
List 111

Photograph courtesy United Fruit Company

MEDAL WINNERS! Gathered around K. H. Redmond, President of United Fruit Company, are officers and crew members of the SS *CAPE ANN* and guests who attended an award luncheon in New York. Left to right, back row, are: Thomas J. Benchek, John Lukens, Gilberto Velez, Elliott Fay; middle row, Roy Field, John B. Jensen, Mr. Redmond, Ralph Casey, President, American Merchant Marine Institute, Captain Joseph Boyd, Mr. Woodward, Woodrow P. Nayer, H. N. Robson; front row, Eric S. Lawrence, Joseph A. Rinkowski, Richard J. Scanlon, Norman A. Yon, and Mack Perry.

COSTLY CUSTOM

SOMETIMES a custom that is contrary to some rule or regulation is followed for years without any repercussions; however, it is always possible that at some unexpected time the failure to fully comply with a rule may result in costly consequences.

Rule 28 (a) of the *International Rules* requires that whenever vessels are in sight of one another any course change must be properly indicated by whistle signals. Apparently, it is a practice among some deck officers, especially on ships running coastwise, to maneuver to pass when a vessel approaches without sounding a whistle signal, if their sailor's eye has assured them there will be plenty of water when the ships are abeam.

Recently a mate on a ship found a routine meeting and passing situation suddenly changed into a nightmarish "in extremis" situation. His failure to comply with *Rule 28* resulted in his ship being held equally at fault with the other, even though the other ship's maneuvers were deemed to be "inattentive" and "inappropriate."

His experience should be of interest to other deck officers and any hesitation about sounding whistle signals that may be lingering in their minds should be permanently erased by a recent decision handed down by the United States Court of Appeals, Ninth Circuit, in the case of the *States Steamship Company* vs. *Permanente Steamship Corporation* operators of the SS *Colorado* and the SS *Permanente Silverbow*.

DISTRICT COURT RULING

A collision involving these vessels occurred off the coast of California, early in 1954, and was taken to the District Court, Northern District of California, where a decision in favor of the *Silverbow* was handed down. This court found the "inattentiveness" and "inappropriate" maneuvering of the *Colorado* the cause of the collision, and held that the "blowing of whistles" would not have prevented it.

On appeal, however, the Court of Appeals also found the *Silverbow* at fault. The Court reasoned: "The manifest policy of the *International Rules* prompts the holding that where a vessel labors under doubt as to the intended maneuvers of another, and proceeds to change course without signal, such maneuver coupled with failure to signal may reasonably be held to have been a proximate cause of the ensuing collision.

"To repeat the words of this Court in *Kaseroff* vs. *Petersen*, supra, 136 F. (2d) at 186: Both vessels being at fault, each had the burden of proving that her fault * * * could not have been one of the causes of the collision. * * * The burden was not sustained. The evidence * * * shows that each vessel's fault not only could have been, but probably was, one of the causes. We conclude that the damages should be equally divided."

The lack of whistle signals on the part of the *Silverbow*, and the resultant finding of mutual fault, saw damages of $475,000 libeled against the *Colorado*, which had been confirmed by the District Court, go up the veritable smokestack.

COLLISION CIRCUMSTANCES

In brief, the circumstances surrounding the casualty were as follows:

The *Silverbow*, a converted Victory-type vessel, was en route from Seattle to San Francisco in ballast on course 160° true and at a speed of 18 knots. The *Colorado*, also a Victory, was northbound with approximately 3,200 tons, at 16 knots. It was snapping clear, with calm sea, light wind, and the visibility was practically unlimited.

Shortly after 9:00 p. m. the mate on the *Silverbow* sighted a white light, which later proved to be the *Colorado*,

Photograph courtesy Bethlehem Pacific Coast Steel Company

Closeup shows battered starboard side of SS PERMANENTE SILVERBOW.

directly ahead at an estimated distance of 5 miles. The vessels were off the coast in the vicinity of Fort Bragg. They proceeded toward each other until the *Silverbow's* mate could see the side lights of the *Colorado*. Upon observing the masthead and range lights of the *Colorado* "open" in such manner to indicate a turn to the right, he altered course 15 degrees to the right which gave each vessel a relative bearing off the port bow of the other.

Proceeding for a port-to-port passage, the *Colorado* suddenly altered course to the left so as to cross the bow of the *Silverbow* when about 1 mile off. The *Silverbow*, seeing the side lights change, also altered course to the left and the vessels were then situated to pass safely starboard-to-starboard.

At this point, the Court says: "Instead of carrying out and completing this simple maneuver, the *Colorado* when almost abreast of the *Permanente Silverbow*, turned sharply to its own right, and its bow struck the starboard or right side of the *Permanente Silverbow* at approximately a right angle at a point about 90 feet from the stern."

The Court, in answering the *Silverbow's* argument that the *Colorado's* maneuver shortly before the collision was "insane," reasoned that the turn may have been a "frantic" maneuver to return to an orthodox port-to-port passage in keeping with *Rule 18*.

Ironically, on the day the casualty occurred the new *International Regulations for Preventing Collisions at Sea, 1948*, became effective. Although, insofar as meeting and crossing situations, the new rules are virtually the same as the old, it was quite a sendoff for the new rules.

RULE IS SPECIFIC

In the testimony the lack of whistle signals was brought up and one mate replied ". . . if I blew my whistle then it would have added to the confusion." The *Rules* are specific in this regard:

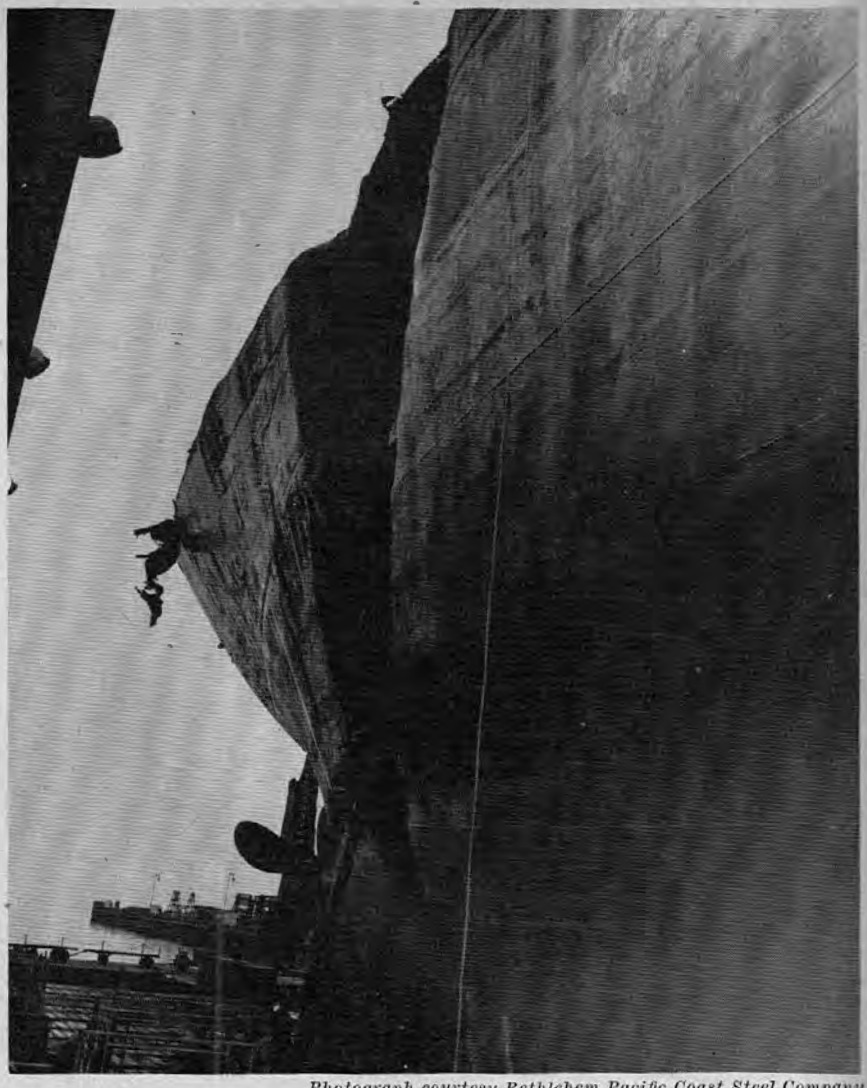
Rule 28 (a) When vessels are in sight of one another, a power driven vessel under way, in taking any course authorised or required by these Rules, shall indicate that course by the following signals on her whistle, namely:

One short blast to mean "I am altering my course to starboard."

Two short blasts to mean "I am altering my course to port."

Three short blasts to mean "My engines are going astern."

Without dwelling on the actual actions of the two watch officers involved, because in both cases they assumed charge and neither called the Captain, it becomes apparent from reading the testimony that positive action, coupled with whistle signals in accordance with the *International Rules* would have resulted in a happier ending all around.



Photograph courtesy Bethlehem Pacific Coast Steel Company

Looking aft on starboard side of SS PERMANENTE SILVERBOW prior to start of repair work.

The November, 1955, issue of the *Proceedings* contained an article on the subject of whistle blowing, and ends with the advice, "If exercising your prerogative will avoid a collision and perhaps relieve your blood pressure, then BLOW THE WHISTLE."

NOT FOR BOILERS

Included in a recent issue of the STATES MARINE LINES *Safety Bulletin* is an interesting excerpt from *"The Locomotive,"* relative to unusual boiler compound suggestions.

"Over the course of the years various ideas have been advanced for preventing scale in boilers, and there was a time when many strange boiler compounds were developed and marketed. However, we can't remember a more unusual one than that which follows, of which the origin is unknown, but for which a patent was granted many years ago. We pass it along without recommending it.

250	pounds potatoes
175	pounds cabbage
75	pounds carrots
50	pounds turnips
25	pounds celery
125	pounds caustic soda (76 percent)
17	pounds kerosene
1	pound graphite

"The ingredients should be placed into a suitable cooker, boiled from 6 to 12 hours until solids dissolve, and then used as necessary.

"If the last three items are omitted, the formula ought to produce a suitable soup—but not for boilers."

TURNING CIRCLES

Excerpts reprinted from The Ships' Bulletin, January-February 1956

STEERING and turning characteristics of a ship are of great importance in her safe handling, and, to illustrate the general behavior of single screw tankers, the Esso Shipping Company recently completed tests on two of their vessels.

These tests consisted of executing turning circles at various speeds, in both ballast and loaded condition. As there were 18 circles completed, space does not permit illustrating each run in this article. However, the turning circle illustrated, a composite of six circles completed by the supertanker SS *Esso Lima* is an example of the typical turning circle applicable.

Being primarily interested in single screw tankers, the effect of twin screws on steering characteristics will not be discussed nor referred to—other than pointing out that twin screw vessels have greater turning circles unless assisted in the turn by twin rudders or the use of their engines. Captain Ivar Boklund, in charge of the trials, made full use of radar and all bearings and distances were plotted directly on the ships' radar scopes by the use of radar reflection plotters. Targets were observed on the true presentation, with the radar placed on the lowest possible range scale, and all target bearings and distances were plotted with a wax pencil directly over the scope.

Primarily, the maneuverability of a single screw vessel underway, and incidentally the diameter of the turning circle, is dependent on the effect of rudder area and rudder angle on the underwater body of the vessel. Ship's lines, type of rudder, streamlined rudder post, and rudder location with respect to the propeller, while increasing the effectiveness of the rudder, are of secondary importance. Such features must, however, be mutually supporting—each advancing the effectiveness of the other.

MAXIMUM RUDDER ACTION

In general, a rudder area which is deep compared to its length gives a large turning moment at small angles, whereas the angle of maximum turning effect is less than with a rudder which is nearly square. In theory, the rudder angle for a minimum turning circle is 45°, however, it has been found that the use of more than 36° rudder actually increases the diameter of the circle and acts as a drag to slow down the vessel. For these reasons, most merchant vessels (except tugs, etc.) limit rudder action to 35° and have a rudder area of about 1¾ percent of the area of the immersed center line plane of the vessel.

With the ship steadied on course, at Point "A" the rudder is quickly put hard over to the right and maintained in this position until the circle has been completed. Momentarily, after the rudder takes effect, speed falls off slightly and there is a sidewise movement away from the center of turning, but without any change in heading. That is, the ship moves laterally in direction opposite to that of the rudder for a brief time. During this period, owing to its forward momentum, the ship has ranged ahead several ship lengths before gaining ground in the desired direction. At this point the turn commences, the stern is "kicked" to the left, the bow directed to the right and the ship moves bodily to the left, away from the direction of the turn.

By the time "B" is reached, the ship is pivoting about its center of gravity. The location of the pivoting point will vary with different ships, however, it will normally be between one-fourth to one-third ship length abaft the stem and on the same ship will be affected by load conditions. Due to the resistance offered by the rudder and the forward "crabbing" motion of the hull, speed continues to fall off until a point is reached where the speed and turn become uniform. This uniform turning movement, the course of which is practically a circle, generally commences when the original heading has changed about 90° at "C," and continues through "D" and "E," at which point the turn is completed and the ship is again on its original course.

STERN SWINGS OUT

It should be noted that the ship does not follow its own keel line but presents the bow and side to the water through which it moves. This results in the bow being at all times inside the path described by the center of gravity (pivoting point) and the stern swinging out in a circle considerably larger than the bow circle. The "drift angle," i. e., the angle between a tangent to the ship's path and its center line, remains constant after "C" is reached and the turn becomes circular. If the rudder is maintained hard over, the ship should continue to turn in a circle of the final diameter at reduced speed, unless influenced by wind, current, or sea conditions.

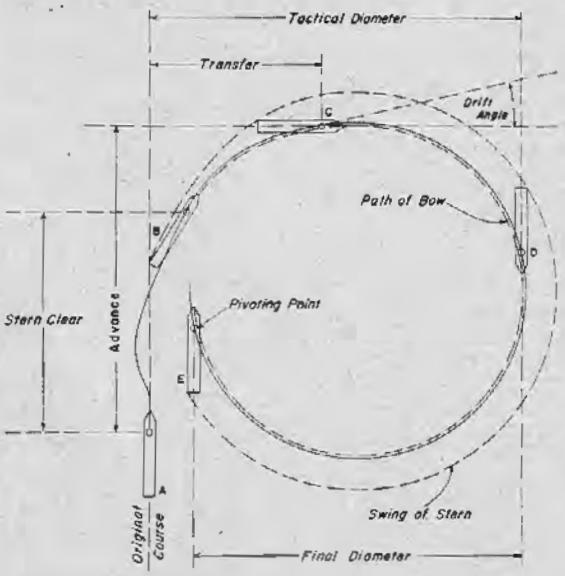


Figure 1. A typical turning circle.

LEGEND

STERN CLEAR - Distance measured over projected original course from point where rudder is put hard over to point where stern is clear of original course.

ADVANCE - Distance measured over projected original course from point where rudder is put hard over to point where ship's heading has changed 90°.

TRANSFER - Distance measured at right angles from projected original course to point where ship's heading has changed 90°.

TACTICAL DIAMETER - Distance measured at right angles to projected original course to point where ship's heading has changed 180°.

FINAL DIAMETER - Distance measured at right angles to ship's course at 180° change, to 360°, where turn is completed.

An analysis of the tests, with respect to the effect of speed on the diameter of the turning circles, substantiated experimental data. That is, the speed at which a vessel makes a turn has little effect on the diameter of the circle, although it does have a definite bearing on the time required to complete the circle. Circle diameters of both vessels at various speeds showed little variation; whereas the time consumed making the turns varied considerably.

In general, these observations also apply to the distance covered and the time required for the vessel's stern

(*Continued on page 180*)

nautical queries

Q. Explain why the evaporation rate is greater in small diameter tubes than in large diameter tubes, all other factors being the same.

A. With all other factors the same, the evaporation rate is a function of the ratio of generating surface area to the volume of contained water, and the smaller the tube, the greater will be the ratio of generating surface area to the volume of contained water.

Q. What determines the location of the superheater in a water-tube boiler, and how is it protected against excessive heat?

A. The exact location of the superheater depends upon the degree of superheat desired. The higher the degree of superheat for which it is designed, the closer to the furnace will be its location. The superheater is usually protected against excessive heat by screening rows of generating tubes placed between it and the furnace.

Q. What are the advantages of using waterwalls in boilers?

A. Waterwalls permit the use of higher furnace temperatures and higher combustion rates. They add greatly to the generating capacity of the boiler and at the same time reduce refractory maintenance by cooling the refractory lining of the furnace.

Q. (a) What is the purpose of gas baffles in water-tube boilers?

(b) What is the purpose of the steam baffles?

A. (a) Gas baffles are used primarily for the purpose of deflecting the gases over the tube banks in order that the maximum amount of heat may be transferred before the gases leave the generating tube banks. Gas baffles are also used to protect the steam drum, water drum, and superheater tube nests from excessive heat.

(b) Steam baffles are used for the purpose of reducing surface agitation in the steam drum in order to reduce the water carry over.

Q. Is the volumetric capacity of each gas pass the same in a water tube boiler?

A. No; it decreases in each succeeding pass. The gases contract as they cool, and in order to maintain the high gas velocity necessary to sweep off stagnant gas films to effect good gas transfer, the cross sectional area of the passes must decrease as the gases require less space.

Q. What is the purpose of the corbel in the furnace of a water tube boiler?

A. The corbel is installed to prevent or repair slag erosion and undercutting of the lower rows of firebrick in vertical furnace walls.

Q. What are the factors that tend to reduce the overall size and weight of modern marine boilers?

A. Minimum overall size and weight are obtained by: (a) Accelerated water circulation; (b) Increased velocity of gases of combustion, hence increased heat transfer per unit area of heating surface; (c) Increase in furnace loads, i. e., rate of fuel consumption, per cubic foot of furnace volume.

Q. What are the functions of the water drum on the two-drum water-tube boiler?

A. The functions of the water drum are to equalize the distribution of water to the generating tubes and to provide a receptacle for the accumulation of scale and other solid material which may be present in, or may be precipitated from, the boiler water. Removal of this solid matter is provided for by the bottom blow valve.

Q. Explain how the temperature throughout the furnace is partially equalized through the use of studded water walls.

A. At high steaming rates the rear of the furnace tends to be the hottest portion. To equalize this condition the water walls in the front section are fully studded and covered with chrome ore refractory while the water walls in the rear section are only partially studded and covered. This results in more heat being transferred to the rear water walls and a lowering of the furnace temperature in that section.

Q. What is the ecliptic?

A. The ecliptic is the apparent annual path of the sun among the stars; the intersection of the plane of the earth's orbit with the celestial sphere. This is a great circle of the celestial sphere inclined at an angle of about 23°–27′ to the celestial equator.

Q. What is an occultation?

A. An occultation is the concealment of a celestial body by another which crosses the line of view. Thus, the moon occults a star when it passes between the observer and the star. It can also be the concealment or extinguishment of a light of an aid to navigation during the dark periods of its cycle.

Q. What is the length of a nautical mile?

A. Nearly all maritime nations have adopted the international nautical mile of 1,852 meters (6,076.10333 . . . U. S. feet) proposed in 1929 by the International Hydrographic Bureau. The U. S. Departments of Defense and Commerce adopted this value on July 1, 1954.

NAUTICAL PUZZLE

Q. What force (force equals a push or pull) must be exerted by a 150-pound seaman to pull himself aloft as illustrated, neglecting friction?

(*See answer on page 183*)

LESSONS FROM CASUALTIES

HE LOWERED THE BOOM

TWO unfortunate accidents, involving the cargo gear on a modern freighter, occurred recently. Both accidents concerned the dropping of the same boom and both occurred on the same morning. In the first case a longshoreman was injured and subsequently died as a result. In the second case no one was injured, but there was extensive property damage.

The freighter arrived at the pier early in the morning and by 8 a. m. a stevedore gang was aboard readying gear for the discharge of cargo. Two longshoremen prepared to lower the forward port boom at No. 4 hatch for use as the yard boom on the inshore side using the "yard and stay" or "burtoning" rig. The topping lift of this boom was secured to cleats, welded on the upper deckhouse bulkhead, using three round turns and three figure eight turns; all turns seized in place by a light rope lashing. The topping lift consisted of ¾ inch 6 x 19 plow steel wire. At this moment the port boom was winged out over the inboard side so that the end was above the roof of the dock shed.

One of the longshoremen cast off the rope lashing and started to remove some of the turns of wire from the cleats. Since the other man was busy leading out the excess wire in order to feed it to the heel block, as the boom was lowered, he was not watching closely and could not state how many turns were taken off the cleats or in what manner. However, seconds after the operation started, he heard the wire beginning to run and glanced up just in time to see his partner trying to hold what was left on the cleats. The second longshoreman jumped free of the wire to save himself and could only yell to his partner words to the effect of: "You can't hold her. Let her go!"

The boom fell with a crash, punching a hole about 6 feet in diameter in the roof of the dock shed. As the slack turn of wire between heel block and cleat whipped about, it struck the longshoreman at the cleat a hard blow on the chest and abdomen. After the boom fell, and men came running in alarm, the injured longshoreman was seen staggering along the deck groaning and holding his side. He was able to walk off the ship where he was assisted into an ambulance and whisked to a hospital. Despite emergency treatment for shock and internal injuries, he died just after midnight, 16 hours after the accident.

BOOM TAKES CHARGE

Unfortunately, there was no witness who could state exactly how many turns had been taken off the cleats when the boom took charge. The injured man was in no condition to be questioned. Although one or more turns apparently jumped off the cleats while the boom was falling, it is certain that the topping lift wire actually started to run with at least the three round turns on the cleats and that the three round turns were still on the cleats at the moment when the boom landed. The injured man, who was wearing gloves, had tried to hold the slipping wire with his hands, using at least the three round turns to snub it, but this manifestly was not enough for one man to stop this 5-ton capacity boom. The boom started to run from a position about half way between vertical and horizontal where a considerable load would be exerted on the topping lift. In lack of evidence from eyewitnesses, it can only be concluded that the injured longshoreman took off one more figure eight turn from the cleats than he could safely hold with the applied load, and when the wire started to slip, he could not, by himself, exert enough snubbing pressure to stop the boom.

As a result of the accident and possible damage to the boom and rigging, it was decided to carry out a safety test of the gear. At 10:45 a. m. the same morning the boom, which had fallen, was rigged up and ready for the pull test. In a topped position of approximately 15° from the horizontal, the boom was secured to the bulwark through a heavy spring scale which registered up to a maximum of a 20,000-pound pull. A proof load was then applied by means of a force through the hauling part of the topping lift by heaving in with a deck winch. Difficulty was encountered in obtaining the desired proof load of 20,000 pounds, or twice the safe working load of 5 tons. The electric winch seemed to be unable to exert sufficient sustained pull to reach this load.

The decision was made to attain the required pull by jerking or whipping the topping lift; that is, to slack off a little and then take up the slack with a jerk with the winch "wide open." On one of these attempts the scale shot up to its maximum reading of 20,000 pounds and a sharp cracking sound was heard. Inasmuch as a sustained load of approximately 20,000 pounds for about five minutes was desired for the purposes of the test, another try was made to exert and hold this amount of load with the winch. On this try the scale rose to about 13,000 pounds, when suddenly the topping lift parted just below the block at the top of the king post and the boom crashed to the rail, damaging a section of the pipe railings at the after end of the cabin deck and inflicting a bad bend in the boom about 10 feet from its end. Fortunately, there were no injuries. As a result of the accident, it was necessary to renew the entire boom and topping lift and repair a 15-foot section of rail plus other repairs.

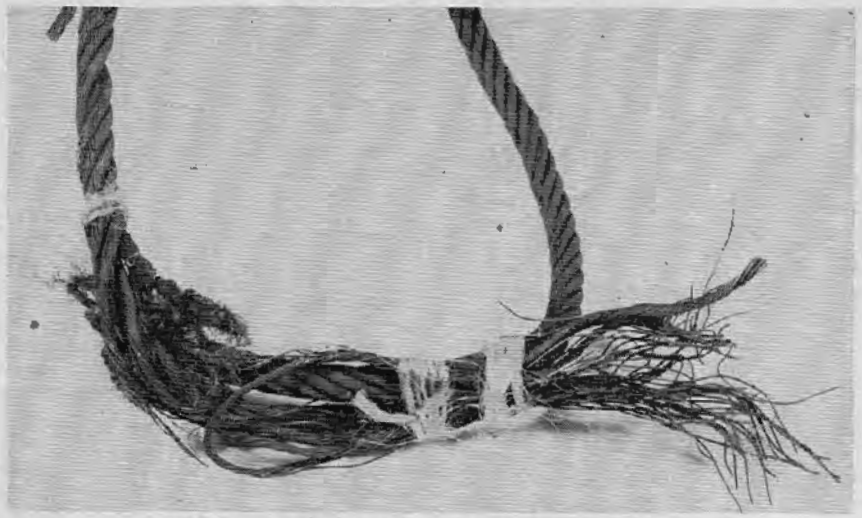


Figure 1. Section of ¾-inch 6–19 plow steel toppinglift which parted in boom test.

TOPPING LIFT WIRE BREAKS

Examination of the section of the ¾-inch topping lift wire which failed (see fig. 1) revealed numerous broken and flattened strands on both sides of the break. This condition was not noted in any other portions of the wire. Since this wire had been installed new only 13 months before the casualty, had been examined visually by the ship's officers at periodic intervals once every trip, or about every 6 or 7 weeks, and had not been subjected to any undue wear in use as a topping lift, the most reasonable conclusion was that the failure was due to excessive strain placed on the wire in the vicinity of the upper king post block during the early part of the test, when the "whipping" stress reached 20,000 pounds or more. Probably some strands were broken when the sharp cracking sound was heard, and the wire parted later when the applied load got up near 13,000 pounds.

The advisability of continuing the test after the "cracking sound" was heard may be questioned by hindsight, but the parting of the wire during the further testing with moderate damage and no injuries may well have prevented its failure at some future time with possible serious injuries or property damage. The principal point of questionable judgment, however, was not in continuing the test after the wire may have been (and was) damaged, but in the method of "whipping" or jerking the wire to get the test load up to the desired stress or a load of twice the normal safe working load. The method of exerting the test load by hauling on the topping lift is also questionable as the prescribed method of weight-testing cargo gear is to exert the load through the cargo fall and winch. Winch capacity on this type of vessel is usually less than 5 tons necessitating doubling the cargo fall or runner if a load of 5 tons or more is to be applied. The topping lift winch was severely overloaded in attempting to pull 20,000 pounds. In addition, the amount of dynamic load applied to the wire by jerking the winch could be very much higher than the load applied by a smooth operation of the winch, and could easily have been considerably more than the 20,000-pound maximum reading of the spring scale.

FATAL INJURY

With regard to the fatal injuries suffered earlier in the day by the longshoreman, when the boom got away from him, it is difficult to state just how this accident could have been avoided. The longshoreman was a man of considerable experience—a normally sober, reliable workman. His actions in preparing to lower the boom by slacking the topping lift himself without calling for assistance from the vessel's crew were in accordance with accepted longshoring and cargo handling practices throughout the world. While it must always remain the duty of the Master and each officer aboard to provide safe working conditions and guard against unsafe practices on board his vessel, the extent to which these duties pertain to the activities of longshoremen working aboard cannot be exactly defined and should be a matter of common sense and judgment.

It is clearly the responsibility of the vessel's officers to see that all rigging and cargo-handling gear is in safe and efficient condition for working cargo before longshoremen are allowed to use it. Once cargo-handling has started, however, this rigging and gear are the tools of the longshoremen's trade and longshoremen must be permitted wide freedom in using the gear, adjusting the rigging, and performing their job in the most efficient manner possible with the equipment available. Keeping in mind that the reason for the ship's existence is the expeditious handling and transportation of cargo and that anything which unnecessarily hinders the longshoremen in their job is unnecessarily interfering with the accomplishment of the ship's mission, the intelligent ship's officer will exert his authority only when he sees a condition of unsafe or improper cargo stowage or a condition which is likely to lead to injuries or to property damage. In such a case, a word from the deck officer to the hatch foreman or the ship's stevedore boss is probably all that is necessary.

Stevedoring management is safety-minded and the foremen of on-the-scene cargo operations will generally willingly cooperate with the ship's officers in the avoidance of painful injuries and the delays and expense of property damage. Since the primary duty of the ship's officer during longshoreman activities on board his ship is to insure the safe and proper stowage of cargo, his role in relationship to the longshoremen may be properly described as "alert watchfulness" with "aggressive assertion" only when absolutely necessary.

In the above case of the injured longshoreman, there was probably neither time nor opportunity for the deck officer on watch to check on the safe lowering of that particular boom. But it is a safe assumption that the members of the longshore gang who were present that day, and the deck officers of that ship will not drop another boom for many months to come and that each group will be more aware of the other's responsibilities and problems.

MERCHANT MARINE STATISTICS

There were 1,090 vessels of 1,000 gross tons and over in the active oceangoing U. S. merchant marine on October 1, 1956, according to figures released recently by the Maritime Administration.

There were 53 Government-owned and 1,037 privately owned ships in active service. These figures did not include privately owned vessels temporarily inactive, or Government-owned vessels employed in loading grain for storage or undergoing repairs.

The total merchant fleet, active and inactive, numbered 3,174. Seafaring jobs on active U. S. flag ships of 1,000 gross tons and over, excluding civilian seamen manning Military Sea Transportation Service ships, was estimated at 57,116.

TURNING CIRCLES

(Continued from page 177)

to clear the original course. However, a comparison of the full speed, half speed, and slow speed runs of both vessels indicates that the higher the speed, the greater the distance required to clear the course, although the time required is proportionately less. This may be explained by recognizing that at higher speeds, while the helm is being put over, the vessel ranges ahead farther. It will be noted that both vessels used in the tests required, depending on the speed, between two and three ship lengths to swing the stern clear of the course.

ALLOW TURNING ROOM

The preceding paragraphs, being based on individual maneuvering board plottings, lead to the conclusion that in order to avoid a stationary object dead ahead, putting the rudder hard over would probably prove ineffectual unless the separating distance was greater than three ship lengths. Further, in the case of two similar vessels approaching head on, on reciprocal courses and at comparable speeds, their helms would have to be put over in the same relative direction at least six ship lengths apart in order to avoid collision.

These trials, in conjunction with stopping trials included in a previous *Bulletin* article, indicate that the deck officers must always allow themselves plenty of room for maneuver. The deck officer must realize that the more complete knowledge he has of the anticipated influence of engine and rudder changes on ship's movements, the greater will be his ability to act promptly and handle his vessel properly under emergency conditions.

DON'T OPEN THOSE DOORS

Good advice for tankermen is keep the doors and ports closed!

A continuing list of casualties, ranging from minor to disastrous, are forwarded to Coast Guard Headquarters as a result of a deckhouse door or air port having been opened during loading and discharge operations aboard tank vessels.

It must be assumed that, under normal conditions, petroleum vapors are present in pumprooms and the opening of doors or ports for ventilation is an invitation to doom.

One incident concerned a tanker topping off a cargo of high octane gasoline when a crew member decided to open a deckhouse door. He used a hammer to back off the dogs. The ship's master saw the man coming through the door with a hammer in his hand and a lighted cigar in his mouth. Before he could take any action there was a loud crash. The master fetched up against an adjacent bulkhead with his hair burned off and lips badly split; the smoker had the cigar driven down his throat which necessitated hospitalization for removal.

Fortunately, there was no fire in this case, but it serves to show what can happen.

Remember, most petroleum vapors are explosive—so keep those doors shut.

HOLDS A SURPRISE

Freighter crews know that dry cargo holds are among the most dangerous areas on board, but because there is only one such hold on a tanker and its perils are encountered with correspondingly less frequency, there is a tendency for tanker personnel to forget or ignore its dangers.

The United States P. and I. Agency, Inc., relates the incident of two men ordered into a dry cargo hold of a tanker to prepare it for painting. One helped to get the gear down. The other took a whisk broom and climbed the side battens to do a little preliminary dusting. A few minutes later he was flat on the ceiling, an unbroken batten under him. Nobody knows what happened. He couldn't tell because he died without being able to speak. A few batten clips were bent, and it is possible that the batten he had been holding pulled out of the clips. This man climbed the sweat battens when he should have used a ladder, with somebody to hold it. He had climbed to such a height that when he fell he was instantly killed.

On another occasion a seaman entered the dry cargo hold to stencil a CO_2 warning sign on the upper 'tween deck bulkhead. He carried a stencil, brush, rags, flashlight, and a can of red paint. The hold had been cleaned and painted. The metal hatchboards were stowed nearby. A chain rail was rigged around the open hatch. *Lights were on.* Assuming the hatch boards were in place, he *walked under* the protective chain rail and stepped into the hold. He fell 16 feet and fractured his pelvis.

Adequate supervision on tank vessels should include the dry cargo hold in spite of its guileless appearance. Remember, a dry cargo hold may be empty but full of surprises.

Courtesy National Safety Council

SAFETY WINNERS

John D. Rogers, General Chairman of the Marine Section, National Safety Council, is pictured above presenting Colonel R. M. Hicks, Executive Vice President of the United States Lines, the first prize plaque in the 1955 annual competition among American-flag cargo and passenger ship lines. Looking on is Captain Jones F. Devlin, General Manager of the line. U. S. Lines turned in an enviable low-accident frequency rate of 5.45 lost-time accidents a million man-hours to nose out the Matson Navigation Co. with 5.58. Moore-McCormack Steamship Co. was third with 6.81.

SAFETY SESSIONS

Two day safety sessions, under the auspices of the Metropolitan New Orleans Safety Council, have been set up in New Orleans for inland masters and mates to reduce accidents involving inland vessels through education.

A recent issue of the American Waterways Operators, Inc., Safety News indicates that the navigation and safety clinics will be conducted by Capt. Samuel Larche, USCG Retired, and will cover the "rules of the road" and safe operating practices.

TRADITIONS OF THE SEA

The roll of American Seafarers who have performed their duties in an outstanding and meritorious manner in accordance with the highest traditions of the sea is long but never completed.

Officers and crewmen of the United Fruit Co. freighter SS *Cape Ann* should have a place on this honor roll. These men were recently given a singular honor for their participation in the rescue of passengers from the *Andrea Doria* which sank last July 26 off Nantucket Island.

At a luncheon in New York, company officials presented Capt. JOSEPH BOYD, Master of the *Cape Ann*, with a gold medal for meritorious service at sea. Silver medals were presented to crew members who took part in transferring passengers. A special award of an inscribed gold watch was given to HUGH ALLEN, messman, who leaped into the sea to save the life of a child who had fallen from the deck of the sinking liner. (*See photograph on page 174.*)

A summary of the incident is as follows:

At 11:25 p. m. on July 25, 1956, the *Cape Ann* was 15½ miles from the stricken *Andrea Doria* when her automatic radio alarm was triggered by distress signals. Immediately the ship was diverted from her Bremerhaven-New York route, and by 12:45 a. m., July 26, had arrived first on the scene. No. 2 lifeboat was lowered with Roy Field, Chief Mate, in command.

Ten minutes later No. 1 boat, with Second Mate John B. Jensen in charge, was speeding to the side of the liner. All told 129 survivors were snatched from the sinking ship and brought to the safety of the *Cape Ann*. With other ships on the scene the lifeboats then carried passengers from the *Andrea Doria* to the assembling armada of rescue craft. At 5:10 a. m. the *Cape Ann* was released and proceeded full speed to New York.

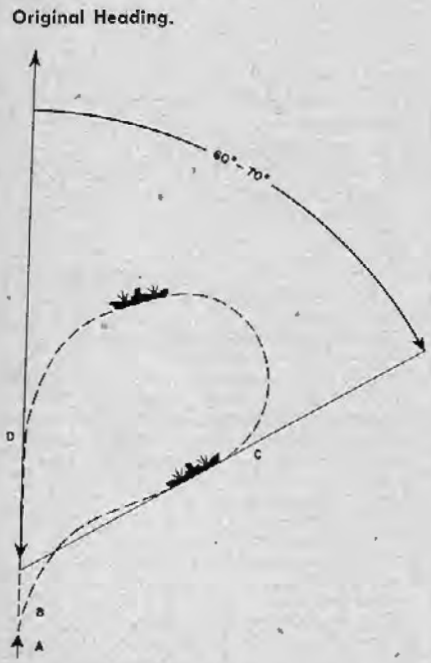
CAPT. BOYD'S mastery of a critical situation, supported by the quiet efficiency of his boat crews were in keeping with the finest traditions of the United States Merchant Marine.

MAN OVERBOARD

The ability of a deck officer to properly maneuver his ship if the cry "man overboard" is heard may well mean the difference between life and death.

Standard seamanship texts in the past have skimmed over the subject and summed it up by merely stating the "rule of the thumb" that the vessel's head be put over to the side the man fell from—to throw the screw away from him. While this "rule of the thumb" is excellent, as far as it goes, it does not assist in the recovery of the man.

There is an excellent method which was developed during World War II by Comdr. John A. Williamson, USNR. It is known as the *"Williamson Turn"* and while it has received wide publicity and endorsement in navy circles it is little known among merchant mariners.



A—Man Overboard.
B—Rudder Hard Right.
C—Rudder Hard Left.
D—Ship Steadied Up On Reciprocal of Original Heading, Engines Stopped.

The evolution, simple to execute, will give a merchant ship time to turn, stop its engines, and end up in the approximate position as when the alarm was sounded. It is particularly adaptable in rough weather and periods of low visibility having been developed with night rescue in mind under blackout conditions.

When the alarm is sounded, the conning officer should put the rudder hard over to the side from which the victim fell. With the rudder held hard over, engine speed is maintained until approximately 60° from the original heading. Then, the rudder is eased and put hard over to the opposite direction and held until the ship returns to a reciprocal of the original course. At this point, the engines are stopped, and the vessel will drift down to the victim's position dead ahead.

Experience has indicated that the turn takes approximately *5 minutes longer* than a standard turning circle, and for that reason it should not be used if it is possible to keep the victim in sight. It is possible that with calm seas or certain conditions of wind and sea that a quick turn at full speed or to "back down" would be the best maneuver; however, that is up to the "seaman's eye" of the conning officer.

The adjacent diagram shows the maneuvers a ship would make in using the *"Williamson Turn."*

QUESTIONABLE HONORS

Figures recently released by the National Safety Council covering 40 leading American industries, show marine transportation ranking third in accident frequency and accident severity, with coal mining and lumbering in number one and number two positions.

By way of comparison, the automobile industry showed 2.76 disabling injuries per million man-hours; steel 4.16; shipbuilding 4.54; and marine transportation 24.99 against an average for all industries of 6.96.

In accident severity, the overall average was 815 man-days lost per million man-hours. Maritime transportation showed a staggering 3,428 man-days lost per million man-hours.

The foregoing statistics should be compared with those statistics gathered by the Marine Index Bureau before any conclusion is drawn. The latter statistics show that the frequency of accident and illness varies inversely with employment. Following is a summary of accident and illness based on the total available jobs:

Year	Seaman's jobs	Total illness and injuries	Total percent
1951	86,000	40,934	47.5
1952	80,000	45,965	57.4
1953	70,000	42,320	60.4
1954	63,000	38,868	61.7
1955	57,400	41,462	72.2

PHONETIC ALPHABET

With an increased use of voice communication facilities, the United States Government has accepted as standard the phonetic alphabet used by the International Civil Aeronautics Organization.

Merchant vessels, long accustomed to the *Able, Baker, Fox, Uncle* alphabet may experience some initial difficulty in changing to *Alfa, Bravo, Foxtrot, and Uniform.*

The alphabet is reproduced below for information of all merchant mariners.

Letter	Phonetic Name
A	Alfa
B	Bravo (Brahvoe)
C	Charlie
D	Delta
E	Echo
F	Foxtrot
G	Golf
H	Hotel
I	India
J	Juliett (Jooleeyett)
K	Kilo (Keeloe)
L	Lima (Leemah)
M	Mike
N	November
O	Oscar
P	Papa
Q	Quebeck (Kaybeck)
R	Romeo
S	Sierra
T	Tango
U	Uniform
V	Victor
W	Whiskey
X	X Ray
Y	Yankee
Z	Zulu

COAST GUARD ACADEMY

Annual examinations for appointment to the United States Coast Guard Academy will be held the last week of February in the United States and Territories.

Appointments are made on the basis of competitive examination and evaluated general adaptability. There are no appointments or geographic quotas.

Applicants must have reached their 17th birthday but not their 22d on July 1, 1957, and be unmarried. An information booklet and application forms may be obtained by writing the Commandant, U. S. Coast Guard, Washington 25, D. C. The completed application forms must be returned by January 15, 1957.

APPENDIX

AMENDMENTS TO REGULATIONS

[EDITOR'S NOTE.—The material contained herein has been condensed due to space limitations. Copies of the Federal Registers containing the material referred to may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.]

TITLE 46—SHIPPING

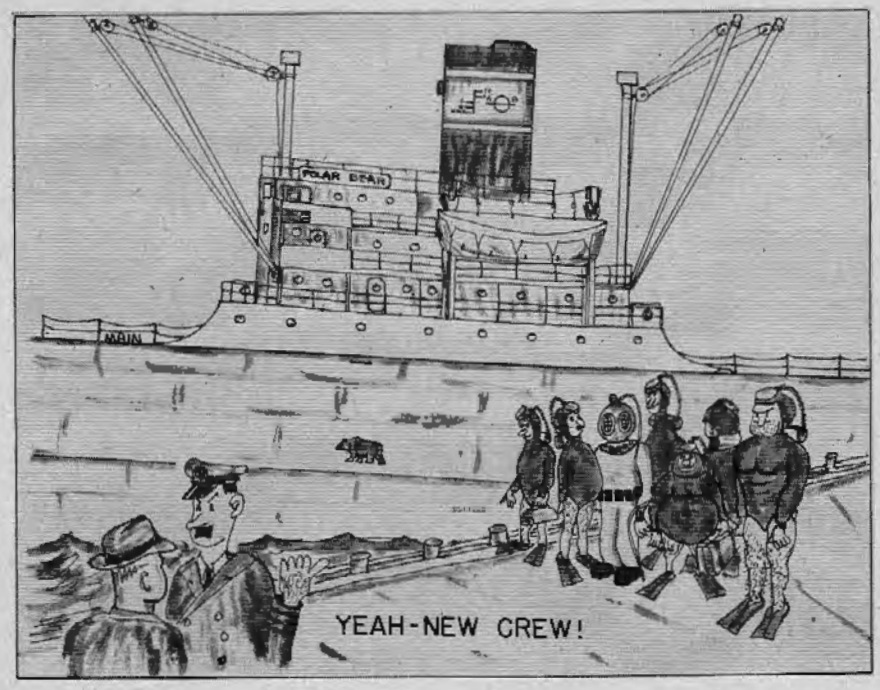
Chapter I—Coast Guard, Department of the Treasury

Subchapter N—Explosives or Other Dangerous Articles or Substances and Combustible Liquids on Board Vessels

[CGFR 56-29]

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

(Federal Register of Thursday, September 20, 1956)



NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 8-56

September 17, 1956

Subj: Statement of rating on service record furnished to person employed as Messman.

1. *Purpose.* To permit indication of nature of messman's service on Form CG-718A, Certificate of Discharge or CG-719, Continuous Discharge Book.

2. *Background.* The Commandant has recently been asked whether in furnishing record of service to a messman upon his discharge a parenthetical reference may be made indicating the type of messman's duties performed by him during the voyage, such as "Messman (BR-Pass.)," "Messman (Officers' BR)," "Messman (Galley Utility)," et cetera, in order that when seeking future employment the applicant may be able to prove that he is experienced in a particular phase of messman's duties.

3. *Discussion.* The Commandant can perceive no objection to the use of an auxiliary description of this nature on the record of service furnished to a messman upon his discharge and payment of wages under the provisions of R. S. 4551 (46 U. S. C. 643).

4. *Action.* Upon discharge of a messman the issuing officer may make a parenthetical insertion of the type described on the messman's certificate of discharge or continuous discharge book entry if such action is requested and is not objectionable to the master and the seaman involved.

AFFIDAVITS

The following affidavits were accepted during the period from 15 August 1956 to 15 September 1956:

OTM Corp., 1318 Nance St., P. O. Box 4625, Houston, Tex., FITTINGS AND FLANGES.

The Madden Corp., 1345 Jarvis Ave., Chicago 26, Ill., FITTINGS.

NAUTICAL PUZZLE

A. Slightly over 75 pounds.

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

The following are additions to the list of electrodes which are acceptable to the United States Coast Guard for use in welded fabrications.

Distributor's and/or manufacturer's	Brand	AWS class	Operating positions and electrode sizes (inch)				
			5/32 and below	3/16	7/32	1/4	5/16
Air Reduction Sales Co., 42d St., opposite Grand Central, New York 17, N. Y.	Airco Easy-arc 14	E6013	1	1	2	2	
General Electric Co., Schenectady 5, N. Y.	Strikeasy 614	E6013	1	1	2	2	
Metal & Thermit Corp., 120 Broadway, New York 5, N. Y. (Arcrods Corp. Manufacturer).	Speedex U	E6013	1	1	2	2	
The McKay Co., York, Pa.	McKay 716IP	E6016	1	2	2	2	3