PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL

The printing of this publication has been approved by the Director of the Bureau of the Budget, January 14, 1955.

UNITED STATES COAST GUARD

CG 129

Vol. 12 March 1955 No. 3

Proceedings of the

MERCHANT MARINE COUNCIL

Published monthly at Coast Guard Headquarters, Washington 25, D. C., under the auspices of the Merchant Marine Council, in the interest of safety at sea. Special permission for republication, either in whole or in part, with the exception of copyrighted articles or pictures, is not required provided credit is given to the Proceedings of the Merchant Marine Council.

The
Merchant Marine Council
of the United States
Coast Guard

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EDITOR'S NOTE:

FRONT COVER—SS *America* plunging into a heavy Atlantic sea.

BACK COVER—The poem, *Sea Nocturne*, by Antony O. de Courcy, Second Cook and Baker, which won second prize in the 1954 Artists and Writers Poetry Contest, sponsored by the Seaman's Church Institute of New York.

U. S. CORPS OF ENGINEERS ISSUES PUBLIC NOTICE ON OIL POLLUTION

The following Public Notice was issued on 20 January 1955:

Complaints are again being received against the oil pollution of the Rehoboth Beach, Del., area and in the Delaware River and Bay. This pollution is attributed to vessels discharging oil in violation of Federal law.

The Oil Pollution Act approved 7 June 1924, of the Federal laws for the protection and preservation of the navigable waters of the United States, prohibits the discharge of oil of any kind or in any form, including fuel oil, oil sludge, and oil refuse, from any vessel into the coastal and inland navigable waters, except in cases of emergency imperiling life or property or unavoidable accident, collision or stranding. Section 13 of the River and Harbor Act approved 3 March 1899 prohibits the discharge of refuse of any kind from shore establishments and ships into such waters.

Violators of these laws are guilty of a misdemeanor and are liable to a fine not exceeding $2,500 nor less than $500, or to imprisonment not exceeding one year nor less than 30 days, or to both such fine and imprisonment, for each offense committed. Masters or other licensed officers of any vessels found violating these laws are also subject to having their licenses suspended or revoked.

The Secretary of the Army is charged with the administration of the above laws with assistance from the officers of the Coast Guard and Customs Services. Full cooperation is requested, therefore, in the abatement of illegal discharges of oil and refuse from vessels and shore establishments. Masters of vessels engaged in coastwise shipping are warned that they must comply with the Federal laws and not discharge any oil that is likely to be washed up on the beaches and shores along the coastal and inland waters.

The Coast Guard and employees of this district have been alerted in this matter with a view toward prosecuting violators of the anti-pollution laws.

(S) ALLEN F. CLARK, JR.
Colonel, Corps of Engineers
District Engineer

PHYSICAL STANDARDS OF SEAFARERS IN RELATION TO SAFETY AT SEA

This is a sequel to the article by the same name printed in the December issue of this publication.

Since October 19, 1954, when the draft of proposed physical standards was first promulgated to all segments of the merchant marine, there has been much correspondence which indicates that there are groups that are not aware of the reasons for this proposal.

The Coast Guard is of the opinion that the existing statutory authority concerning physical standards for merchant seamen is inherently weak, and that the regulations based on these laws, which govern the physical standards, are vague and ambiguous. *In comparison with the other major maritime powers, the United States has the most lenient physical standards and, in contrast, the highest standards for materiel and mechanical safety.*

The basis for the proposed change was the information the Coast Guard has received in recent years concerning the employment of physical incompetents aboard merchant ships. Such persons are not only in a position where they are a danger to themselves but they are also a danger to fellow crew members. To do other than inform the merchant marine of the situation, would be a dereliction of the Coast Guard's vested duty of the protection and safety of life and property at sea. Irrespective of the final outcome of this proposal, the Coast Guard will continue in the performance of its duty as a public servant.

In considering the proposal for changes in the regulations that pertain to physical standards for merchant seamen, there is an old axiom that should be remembered, that reads as follows: "Nothing, man made, is so perfect but that it can be improved." It would be an understatement to say that the existing regulations are not perfect. The Coast Guard believes that the need for improvements has been clearly demonstrated and stands ready to assist all concerned in making improvements in these regulations for the best interest of safety at sea.

To more explicitly illustrate the knowledge the Coast Guard has had that gave rise to the original proposal, some typical case histories will be discussed. It should again be mentioned that as far as entry ratings are concerned, i. e., ordinary seamen, wipers and coal passers, *no physical examination is required.* This does not mean that all entry ratings are necessarily physically incompetent, but it does mean that a person who is suffering from any known affliction, contagious, infectious or otherwise, can procure a Merchant Mariner's Document which will authorize him to serve on any U. S. merchant vessel. Those members of the steward's department, who are food handlers, *are only required to be examined for a communicable disease.* A hypothetical case which is well within the realm of possibility, would be that of a homicidal paranoiac who decides he wants to go to sea. Having applied for a Merchant Mariner's Document with a messman (food handler) endorsement, he would be examined for a communicable disease. If the results were negative, he would be free to sail.

With the foregoing loopholes in physical standards in mind, let us examine a few actual case histories. These cases are representative of the type that are daily reported to the Coast Guard. It will be noted that the ships involved are all U. S. merchant vessels. These cases are as follows:

ABLE SEAMAN

Subject was issued seaman's documents on 2 May 1944 endorsed for able seaman. Following a short enlistment in the U. S. Navy, he was given a medical discharge in January 1947 because of *petit mal epilepsy.* He resumed sailing in the merchant marine until 24 August 1953. On that date he voluntarily surrendered his document to the Coast Guard until certified fit for sea duty by the USPHS. At this date he still remains unfit for sea duty. A résumé of his medical history during his service in the U. S. merchant marine is as follows:

(a) In his 9 years of sailing, *subject had epileptic seizures on 13 vessels.*

(b) On the last vessel on which he served, *he had 5 epileptic seizures during the 1 voyage.*

BOATSWAIN

This seaman sails as Able Seaman and Boatswain. He is now 63 years of age. Official records show that he did not commence sailing in the U. S. merchant marine until 1941 when he was 50 years old. Prior to that time he had served several enlistments in the U. S. Navy. Soon after receiving his first seaman's documents he reenlisted in the U. S. Navy and served until 17 November 1944. *On that date he was given a medical discharge from the U. S. Navy.* In 1952, subject told Coast Guard Investigating Officers that *he was receiving a disability pension from the U. S. Navy.* He stated that he was going to sea for "just a little longer to make some extra money." The summary of subject's medical history in the merchant marine since he left the U. S. Navy is as follows:

(a) From 1944–52, subject became incapacitated on at least eight occasions and could not perform duties aboard various vessels by reason of heart attacks.

(b) On 23 June 1952, subject was brought before the Civil Service Hearing Examiner in San Francisco on a charge of physical incompetence by reason of a heart ailment. The Examiner ordered the case dismissed when subject produced a USPHS certification that he was fit for sea duty.

(c) On 21 January 1954, while serving as Able Seaman on a freighter, subject was again unable to perform his duties and was hospitalized at Saigon.

Presumably, subject is again sailing as Able Seaman or Boatswain on a U. S. merchant vessel.

ORDINARY SEAMAN

Subject was issued a Merchant Mariner's Document endorsed as an Ordinary Seaman on 29 November 1945. In 1938 and 1939, subject was a patient at the Westboro Mental Hospital in Massachusetts for 19 months. Following his release, he enlisted in the U. S. Navy. In 1941, he was given a medical discharge from the U. S. Navy for reason of mental illness.

Subject's medical history while serving in the U. S. merchant marine, is as follows:

(a) On 19 August 1951, he was removed from a freighter and was hospitalized in a mental hospital at Dublin, Ireland. On 25 October 1951, he was repatriated to the U. S., under guard, with recommendation for further treatment. He resumed sailing on 7 February 1952.

(b) On 16 April 1953, subject, while serving as Ordinary Seaman on a freighter, went berserk and was handcuffed to his bunk. These measures were taken to safeguard other crew members, as well as himself, from possible harm. When the ship arrived in Seattle, he was removed to the USPHS hospital. On 25 April 1953, he was committed by court order, as insane, to the Northern State Mental Hospital.

(c) On 13 September 1953, subject was transferred to the Westboro Mental Hospital in Massachusetts. He was released after a few weeks and immediately initiated action to regain his Merchant Mariner's Document. It is noted that when released from the Seattle hospital, his diagnosis was manic depressive psychosis, manic type, and he was not considered to have recovered.

(d) On 22 December 1953, subject was again found fit for sea duty by the USPHS in Boston, Massachusetts. On review of the entire case by the USPHS in Washington, D. C., however, it was concluded that he was not fit for sea duty.

CHIEF COOK

This seaman sailed for many years in the steward's department on various U. S. merchant vessels, *usually as Chief Cook.* He might still be sailing, *cooking and spreading disease* if he had not died in 1953 while aboard ship. When the C–3 type freighter reached port, an autopsy was made, and it was determined that his death was due to *"chronic pulmonary tuberculosis with ulceration of the jejunum (active)."*

The results of the autopsy also indicated that subject had been suffering from tuberculosis for many years. The number of seamen who ate food prepared by this man, who had tuberculosis in its most contagious state, can only be surmised.

WIPER

Subject, who sails as wiper, was given a chest X-ray on 23 September 1953, at a USPHS marine hospital. The results of the X-ray showed that subject was suffering from *acute active pulmonary tuberculosis in its most contagious stage.* Subject disappeared before the USPHS could seek his commitment to a sanitorium. (It should be noted here that even if the Coast Guard had been advised of his condition, no action could have been taken to prevent his sailing, *until he had actually signed on a vessel and had been in a position to spread the disease.*)

Subject had just signed off a C–2 freighter after a 10 months voyage, 7 days prior to the X-ray, so presumably in that 10 months period he was able to infect several fellow crewmembers.

Subject, probably realizing his condition, traveled to another port and signed on another C–3 freighter for a foreign voyage. This voyage lasted 6 weeks and again fellow crew members were fortunate if they did not become infected. On the arrival in the first U. S. port, subject was contacted by the Coast Guard and voluntarily surrendered his Merchant Mariner's Document until cured of tuberculosis.

LICENSED SECOND MATE—ABLE SEAMAN

Subject was issued seaman's documents on 30 August 1937. Subject is now only entitled to possession of a validated Merchant Mariner's Document endorsed as Able Seaman, as he recently voluntarily surrendered his license on general principles. On 14 March 1944, following a voyage to the South Pacific on a freighter as boatswain, subject surrendered his documents until certified fit for sea duty by the USPHS. This surrender arose from the fact that subject had received numerous injections of morphine during the voyage and had refused to perform his duties unless given a daily shot of morphine. On 14 March 1944, he was found fit for sea duty by the USPHS and returned to the merchant marine.

On 25 July 1944, his seaman's documents were suspended for 3 months at Noumea, New Caledonia, for assaulting a chief mate while under the effect of an unknown intoxicant.

On 9 August 1945, his documents were suspended at Cristobal, C. Z. (until he was declared fit for sea duty by the USPHS), for physical incompetency by reason of using narcotic drugs while serving in the deck department of a freighter. On 1 October 1945, he was certified fit for sea duty and immediately returned to service in the merchant marine.

In 1947 subject was hospitalized from his ship in Gibraltar having suffered fits and convulsions. On 7 January 1948, he was declared fit for sea duty by the USPHS at New York.

In September 1953, on a voyage to the Pacific, subject, who was employed as an *able* seaman, refused to go aloft because of *ill health.*

An indication as to the reason for subject's *ill health* can be found in his police record, which is as follows:

(a) On 12 January 1933, at Portland, Oreg., he was given a suspended sentence for a charge of narcotic addiction.

(b) On 24 November 1950, in San Francisco, he was convicted for narcotic addiction and was sentenced to 90 days' imprisonment.

(c) On 18 May 1954, subject was arrested in San Pedro and was charged with possession of heroin. He admitted to arresting officers that he was using a *shot per day.*

Since subject was not arrested while serving aboard merchant vessels and prior to the enactment of Public Law 500, he is still entitled to his U. S. Merchant Mariner's Document. Presumably, as soon as he is released from jail on his most recent narcotic arrest, he will resume employment as an *able* seaman.

ORDINARY SEAMAN

This seaman was issued seaman's documents endorsed as Ordinary Seaman (no physical examination required) on 15 July 1942. He is now entitled to possession of a Merchant Mariner's Document.

On 7 August 1952, having sailed intermittently on deep sea vessels, subject secured employment on the Mississippi River as an operator of a 28-foot motor-propelled barge tender. He secured this employment on the basis of his Merchant Mariner's Document. On 11 August 1952, he collided his craft with a large freight vessel proceeding up the Mississippi River. It was a clear night and at the point of collision the river was more than 1,200 feet wide. The freighter sounded warning whistles when the motorboat was more than one-half mile away, but the motorboat, after erratic maneuvering, rammed the freighter.

Subsequent investigation disclosed that the subject was mentally retarded with the mentality of an eight year old (his own attorney admitted to this fact) and at the time of collision was under doctor's care for a mental condition. Subject made the following illuminating statement during the investigation, "Every time I turned my boat the ship was coming right after me."

Since subject was not serving under the authority of his document, the Coast Guard therefore has no jurisdiction under R. S. 4450. In view of the present lack of statutory provisions for physical incompetency, it can only be hoped that this seaman will not cause other accidents aboard merchant vessels which may result in serious injury to shipmates. This is a case that illustrates there are no statutory provisions *to protect bona-fide seamen from a shipmate who may be a mental defective.*

ABLE SEAMAN

Subject was issued seaman's documents on 28 December 1945. He has since received an endorsement for Able Seaman. A brief résumé of subject's medical history while serving in the deck department on U. S. merchant vessels is as follows:

On his first ship, in August 1946, he was removed at Algiers for medical treatment, and was repatriated to the United States.

On return to the United States, he was hospitalized, and voluntarily surrendered his documents until certified fit for duty by the USPHS. On 18 June 1947, he was found fit for sea duty and his documents were returned to him.

On 12 July 1948, he was hospitalized from his ship at Bristol, England. Following his release from the hospital in England he signed on another ship, but, in a few days, on 29 August 1948, he was hospitalized again, this time at Liverpool, England, and was repatriated back to the U. S.

On 25 May 1949, he was hospitalized from his ship at Gibraltar and was repatriated back to the U. S.

On 25 September 1951, he was hospitalized from his ship at Narsarsuak, Greenland, and was repatriated back to the U. S.

On 19 January 1954, he failed to join his ship at Bremerhaven, Germany. When he was located by the Coast Guard he was charged with misconduct and a hearing was held at Baltimore on 16 March 1954. Subject pleaded in defense that he had suffered a heart attack aboard ship and while ashore in Germany which resulted in his missing his ship. The Civil Service Hearing Examiner dismissed the case, in view of this plea of illness.

From 15 February 1954 to 16 March 1954, subject was a patient at the USPHS hospital at Baltimore. He has since been certified to be fit for sea duty by the USPHS and presumably is now serving as an Able Seaman in the merchant marine.

This case well illustrates the need for regulations setting forth certain minimum standards of ability and suitability for service in the merchant marine. Here is the case of a man theoretically qualified to serve as an able seaman on any ship in the U. S. merchant marine, yet, in nearly every ship in which he signs articles, he is unable to perform because of some ailment and is repatriated back to the U. S., only to repeat the cycle.

UTILITYMAN

This seaman sails as utilityman in the stewards' department on passenger vessels. In January 1949, while at sea, he threw a coffee mug at a shipmate. This incident occurred in the passenger area. On the same voyage, he was observed to carry on animated conversations with various bulkheads. In 1953, he attempted suicide while serving on a U. S. merchant vessel. In 1954, when examined by a company doctor, before signing articles on a passenger ship, he was rejected as a schizophrenic. He thereupon insisted on his union rights and was subsequently examined by the USPHS and was found fit for duty.

He signed articles and in less than an hour commenced to act in an irrational manner. He would berate fellow crew members at the top of his voice, using obscene language, until he would become incoherent. A few days after the voyage commenced the ship's doctor declared him unfit for duty and suffering from a psychosis. He was relieved from all duty.

When the ship returned to the U. S., subject's Merchant Mariner's Document was suspended until found fit for sea duty by the USPHS. It would appear from the record that subject was incompetent for sea duty in 1949 when he was found talking to bulkheads, yet, he was not declared unfit for sea duty until 5 years later. One of the reasons for this delay was undoubtedly due to the fact that the existing regulations are so vague the USPHS has no minimum standard by which to evaluate whether a person is capable of performing his duties at sea. In this particular case *there was no examination required when subject originally received his Merchant Mariner's Document, except for communicable disease.*

THIRD MATE

This seaman has a Third Mate's License. He is a tankerman, usually shipping out on the East coast. On 17 December 1951, while serving aboard a tanker which was underway with a full cargo of gasoline, smoke was observed to be coming from subject's quarters. An investigation showed that subject had set fire to his cabin and then described it to the crew as a *pretty* fire. When members of the crew attempted to extinguish the fire, subject furiously fought to prevent them from putting out the blaze. He was finally overcome by force and handcuffed to a berth in the ship's hospital. Later, he attempted to commit suicide by hanging himself from the top berth. He was removed to the USPHS hospital when the tanker docked at the next port.

Subject was released from the USPHS hospital and his present location is unknown. He still retains possession of his Merchant Mariner's Document and his license. The Coast Guard will take disciplinary action against subject when he is located.

It should be noted that once a person receives a Third Mate's License, he need not have another physical examination. This means that he could develop any type of mental condition, or other affliction, and there would be no way for medical authorities to determine the fact until, as happened in this case, the person commits some glaring act that brings his condition to the attention of the authorities. It also means that a person can obtain successive licenses, including that of Master Mariner, and only he required to take a color sense test.

ORDINARY SEAMAN

Subject received his Merchant Mariner's Document, endorsed for Ordinary Seaman, on 1 August 1951. He made several voyages on coastwise vessels. In January 1952, he turned himself in at a USPHS hospital for stomach pains. It was determined at the hospital that subject was mentally incompetent for sea duty. He could neither read nor write and could not read numerals. (This fact would preclude him from steering a gyro compass course.) He did not know his age, what day it was, or where he was. He had left the second grade at the age of seventeen (17) years. While this man is to be pitied, his presence aboard a large modern ship is not conducive to the safety of the ship or the crew.

ABLE SEAMAN

This seaman sails as Able Seaman. On a recent voyage, a few hours out of port, he had an epileptic attack and fell to the deck. It required four men to hold him down and another to prevent him from swallowing his tongue. When the vessel docked he refused to go to the hospital even though an ambulance was called. He admitted to the Chief Mate that he had experienced similar attacks for the past several years usually after being suddenly awakened. The possible results, if subject were suddenly called from a sound sleep to assist in an emergency, or even to go on watch, are readily apparent. Subject surrendered his Merchant Mariner's Document to the Coast Guard until certified that he is fit for sea duty.

This seaman had apparently been suffering from epilepsy for several years. While the regulations do provide that no one shall be endorsed as Able Seaman if he snffers from epilepsy, there is no provision for an Able Seaman to ever have a physical examination once he receives his Merchant Mariner's Document. Consequently, there was no way to determine that subject was so afflicted, until he was in a position aboard ship where of course he could be a hazard not only to himself but to his shipmates.

WIPER

Subject was issued a Merchant Mariner's Document on 20 January 1953 with an endorsement for wiper (no physical examination required). In April 1953, he signed articles on a C-3 freighter as wiper. A few days later he suffered an epileptic blackout and was removed to a USPHS hospital. Subject told the Coast Guard Investigating Officer that *he*

had been suffering from epilepsy since the age of 11. While this man is to be greatly pitied, a merchant ship hundreds of miles at sea is not the proper place to treat a person suffering from epilepsy.

WIPER

This seaman sails in the engine department as wiper (no physical examination required). On 28 May 1952, in the port of San Francisco, he suffered an epileptic fit in the engine room of a tanker. When he recovered sufficiently to walk, he left the ship to seek medical attention ashore. He remarked to shipmates that *he had been treated for several years for epilepsy* by the USPHS in Long Beach and San Francisco. Crew members stated to the Coast Guard Investigating Officer that they were concerned that the subject, through his union rights, would return to the ship and be a constant hazard.

OILER

This seaman sails in the engine department usually as an oiler. On his last ship, a tanker, he was observed to be smoking a cigarette on the main deck. The tanker was carrying gasoline. When an attempt was made to stop him he ran wildly about the deck to avoid capture. When the tanker docked at Los Angeles, in March 1953, subject was removed to a USPHS hospital where he was found to be suffering from a serious emotional disorder.

This oiler may have been mentally unbalanced for several years, but, as the regulations now are written, once a seaman receives an oiler's endorsement, he need never have another physical examination. Consequently, there was no way to determine that this oiler was dangerous until he made an overt act.

WIPER

This seaman sails in the engine department as a wiper (no physical examination required). During the month of September 1951, subject was serving aboard a Victory-type ship. Soon after the voyage commenced, it was noted that the subject, for no reason, would suddenly utter loud screams. When questioned about them he replied that he was talking to an animal. On another occasion, he was observed jumping up and down off a stool, and when questioned, he stated that he was not jumping but that someone was pulling the stool out from under him. He was placed in the sickbay and was hospitalized at Naha, Okinawa.

Present whereabouts of subject is unknown and he is wanted for examination by competent authority.

nautical queries

DECK

Q. Would you regard the metracentric height calculated for a cargo vessel using the cargo plan and hatch list as an exact or approximate value?

A. The calculated GM using cargo plans and hatch lists for location of weights should be regarded as an approximate value whose accuracy depends on the care with which the work is performed. The center of gravity of the weights in the various compartments, particularly when a varied cargo is carried, must be estimated; where homogeneous cargoes are carried with known centers of gravity, the possibility of inexactly estimating the center of gravity for each compartment is lessened.

Q. What liquid is usually employed in a telemotor system?

A. Usually a mixture of water and glycerine. Some light oils have also been tried with success.

Q. How are chain and wire connections between pilothouse and engineroom telegraphs adjusted?

A. Provision is made at certain parts of vessel whereby the chains and wires are adjusted by turnbuckles.

Q. A ship making 70 r. p. m., pitch of propeller 20 feet and slip 10 percent. What is the actual speed?

A.

$$\text{Speed} = \frac{70 \times 20 \times 60 \times .9}{6080} = 12.43 \text{ knots.}$$

Q. State some of the factors which would modify or disperse normal fog over water.

A. (a) Increase or shift in wind. (b) Increase or decrease in the difference between the temperature and dew point. (c) Mixture with drier air. (d) Front passage. (e) The sun has no effect on fog over water, although it does thin fog over land.

Q. How are the dense fogs off the Newfoundland coast formed?

A. Air flowing from a warm water surface over a colder water surface may form a fog which covers a large area of the open sea and remains dense for long periods. Off Newfoundland, where the Labrador current glides past the Gulf Stream, warm southerly winds (from ESE to SW) carry moisture from the warm Gulf Stream over the cold Labrador current where the temperature of the air is lowered and the water vapor it contains is condensed in the form of visible water droplets or fog.

ENGINE

Q. What are the possible effects of excessive wear in the main bearings of steam turbines?

A. When main turbine bearings become worn the position of the shaft is altered. The first and most important result of this condition is the wearing of radial dummy packing strips and gland strips on reaction turbines and of gland and diaphragm strips on impulse turbines. This damage reduces the efficiency of the turbine and causes an increase in the steam consumption. In aggravated cases, when the bearing drop is excessive (about 0.020 inch), the blades of reaction turbines will rub against the interior of the casing with the probability of dislodging sections of blading which, in turn, would cause a complete disablement of the turbine.

Q. Describe how the speed of the turbine is controlled by the lifting beam and nozzle control valves.

A. Steam is admitted to the turbine through throttle and nozzle control valves. Speed control is effected by varying the number of nozzle control valves that are open, through the operation of the lifting beam mechanism. Normally the throttle is left wide open. The mechanism consists of a steel beam drilled with holes in which the nozzle valves slide. The valve stems are of varying lengths and are fitted with shoulders at the ends. When the beam is lowered all valves will rest upon their seats. Raising the beam will open the valves in succession, in sequence of stem length. The beam is raised and lowered by the lever connected to the speed governor.

Q. What procedure should be followed when ballasting fuel tanks in port?

A. Pumps should be started before opening seacocks. When ballast is started, all tanks should be inspected to insure that only the tanks intended as ballast tanks are receiving water. The same attention and care should be exercised in filling ballast tanks that is given to topping off tanks when bunkering, since any oil residue remaining in the tanks would float out on the water in the event of a ballast spill. When completing the loading of ballast, seacocks should be closed before stopping the pumps to guard against any oil that may have been trapped in the lines from escaping overboard through the seacocks.

Side Lights on the Rules

In this, the 16th article in the *Side Lights on the Rules* Series, we shall continue with the comparison of the International Rules with the corresponding provisions of the local Rules applicable to Inland Waters, Western Rivers, and the Great Lakes by turning to Rule 19, International Rules, dealing with power-driven vessels on crossing courses.

Rule 19, International Rules, states:

Rule 19. When two power-driven vessels are crossing, so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way of the other.

The meaning of the Rule is more complete when considered in relation to Preliminary Observation Two and Rules 21, 22, 23, 28 (a) and 28 (b), International Rules, which provide that:

PRELIMINARY

2. Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing of an approaching vessel. If the bearing does not appreciably change, such risk should be deemed to exist.

Rule 21. Where by any of these Rules one of two vessels is to keep out of the way, the other shall keep her course and speed. When from any cause the latter vessel finds herself so close that collision cannot be avoided by the action of the giving-way vessel alone, she also shall take such action as will best aid to avert collision (see Rules 27 and 29).

Rule 22. Every vessel which is directed by these Rules to keep out of the way of another vessel shall, if the circumstances of the case admit, avoid crossing ahead of the other.

Rule 23. Every power-driven vessel which is directed by these Rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

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."

(b) Whenever a power-driven vessel which, under these Rules, is to keep her course and speed, is in sight of another vessel and is in doubt whether sufficient action is being taken by the other vessel to avert collision, she may indicate such doubt by giving at least five short and rapid blasts on the whistle. The giving of such a signal shall not relieve a vessel of her obligations under Rules 27 and 29 or any other Rule, or of her duty to indicate any action taken under these Rules by giving the appropriate sound signals laid down in this Rule.

Under the quoted wording of Rules 19, 21, 22, 23, and 28, International Rules, the vessel which has the other on her own starboard side is required to slacken speed, stop, reverse, or change course to starboard to pass astern of the other vessel. If she reverses her engines, she must sound three short blasts on her whistle as she does so. If she changes course to starboard to pass astern of the other vessel, she must sound one short blast as she does so. She can take one or more of the steps allowed her, but cannot attempt to cross ahead of the vessel to starboard if there is any risk of collision. The other vessel, the vessel to starboard, on the other hand, is required to hold course and speed until it becomes obvious the give-way vessel, the vessel to port, cannot avoid collision by herself. Only then can she take avoiding action and depart from her requirement to hold course and speed. Should it appear that the vessel to her port is not taking sufficient action to avoid collision, she is allowed to warn the other vessel of her obligation to keep clear by sounding five or more short, rapid blasts on the whistle. The giving of this signal is notice of possible danger due to the failure of the vessel to port to take ample avoiding action. However, it does not relieve the vessel to starboard from her obligations under Rules to hold course and speed until collision will be imminent without action on her part. She may repeat the five blast danger signal, if necessary, but, must allow the vessel to port every opportunity of living up to her obligation to keep clear. If she is finally forced to take avoiding action to avert a collision with the vessel to port, she must accompany a change in course or reversal of the engines with the proper whistle signal.

IT IS SUGGESTED THE READER REFER TO CG–169, "RULES TO PREVENT COLLISIONS OF VESSELS AND PILOT RULES FOR CERTAIN INLAND WATERS OF THE ATLANTIC AND PACIFIC COASTS AND OF THE COAST OF THE GULF OF MEXICO;" CG–172, "PILOT RULES FOR THE GREAT LAKES AND THEIR CONNECTING AND TRIBUTARY WATERS AND THE ST. MARYS RIVER;" AND CG–184, "PILOT RULES FOR THE WESTERN RIVERS AND THE RED RIVER OF THE NORTH;" WHICH CONTAIN THE LOCAL RULES TO PREVENT COLLISIONS BETWEEN VESSELS ON THE LOCAL WATERS OF THE UNITED STATES. REFERENCES TO RULES AND ARTICLES THROUGHOUT THIS SERIES MAY BE FOUND THEREIN.

It will be noted Rules 19, 21, 22, 23, and 28, International Rules, do not define the limits of the crossing situation. Consequently, it is necessary to remember in what manner meeting and overtaking vessels are defined. By implication, two power-driven vessels are crossing within the meaning of Rule 19, International Rules, when they are approaching on intersecting courses in the arcs between meeting and overtaking. In other words, two power-driven vessels are considered to be crossing so as to involve risk of collision if they are approaching each other on a constant, or nearly constant, bearing at right or oblique angles in the arc measured from approximately one point on the bow to two points abaft the beam.

The limits of the crossing situation are determined in a similar manner under the rules applicable to Inland Waters, Western Rivers, and the Great Lakes. There, too, two power-driven vessels are said to be crossing, so as to involve risk of collision, if they are approaching each other on a fairly constant bearing at right or oblique angles within the arc between meeting and overtaking.

However, what each vessel is required to do and what signals each must give vary in several respects under the latter Rules.

Art. 19, Inland Rules, is equivalent to Rule 19, International Rules, and is stated in similar terms:

Art. 19. When two steam vessels are crossing, so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way of the other.

It is supported in a similar manner by a Preliminary Observation to the Steering and Sailing Rules and by Arts. 21, 22, and 23, Inland Rules, which provide that:

PRELIMINARY—RISK OF COLLISION

Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing of an approaching vessel. If the bearing does not appreciably change, such risk should be deemed to exist.

Art. 21. Where, by any of these rules, one of the two vessels is to keep out of

the way, the other shall keep her course and speed. (See Articles 27 and 29.)

Art. 22. Every vessel which is directed by these rules to keep out of the way of another vessel shall, if the circumstances of the case admit, avoid crossing ahead of the other.

Art. 23. Every steam vessel which is directed by these rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

However, the similarity in provisions ends with Arts. 18 (Rules III, IX) and 28, Inland Rules:

Art. 18. Rule III. If, when steam vessels are approaching each other, either vessel fails to understand the course or intention of the other, from any cause, the vessel so in doubt shall immediately signify the same by giving several short and rapid blasts, not less than four, of the steam whistle.

Art. 18. Rule IX. The whistle signals provided in the rules under this article, for steam vessels meeting, passing, or overtaking, are never to be used except when steamers are in sight of each other, and the course and position of each can be determined in the day time by a sight of the vessel itself, or by night by seeing its signal lights. In fog, mist, falling snow or heavy rain storms, when vessels cannot see each other, fog signals only must be given.

Art. 28. When vessels are in sight of one another a steam vessel under way whose engines are going at full speed astern shall indicate that fact by three short blasts on the whistle.

It is necessary to turn to the Pilot Rules for Inland Waters in order to develop the requirements governing power-driven vessels on crossing courses in Inland Waters.

Sec. 80.03, Pilot Rules for Inland Waters, states that one short blast by the vessel to starboard is notice of intention to hold course and speed:

80.03 Signals. The whistle signals provided in the rules in this part shall be sounded on an efficient whistle or siren sounded by steam or by some substitute for steam.

A short blast of the whistle shall mean a blast of about one second's duration . . . .

One short blast of the whistle . . . . when two steam vessels are approaching each other at right angles or obliquely . . . . it signifies intention of steam vessel which is to starboard of the other to hold course and speed.

Sec. 80.3, Pilot Rules for Inland Waters, which is often referred to as the one-half mile rule, by inference, requires the vessel to port to answer the vessel to starboard with one short blast to indicate the intention to give way:

80.3 Vessels passing each other. The signals for passing, by the blowing of the whistle, shall be given and answered by pilots, in compliance with the rules in this part, not only when meeting "head and head," or nearly so, but at all times when the steam vessels are in sight of each other, when passing or meeting at a distance within half a mile of each other, and whether passing to the starboard or port.

The whistle signals provided in the rules in this part for steam vessels meeting, passing, or overtaking are never to be used except when steam vessels are in sight of each other, and the course and position of each can be determined in the daytime by a sight of the vessel itself, or by night by seeing its signal lights. In fog, mist, falling snow, or heavy rainstorms, when vessels cannot so see each other, fog signals only must be given.

Sec. 80.2, Pilot Rules for Inland Waters, prohibits the giving of cross signals:

80.2 Cross signals. Steam vessels are forbidden to use what has become technically known among pilots as "cross signals," that is, answering one whistle with two, and answering two whistles with one.

Sec. 80.1, Pilot Rules for Inland Waters, which reiterates Art. 18, Rule III, Inland Waters, and terms the four short blast signal as the danger signal, requires a vessel failing to understand the course and intention of the other to signify such doubt:

80.1 Danger signal. If, when steam vessels are approaching each other, either vessel fails to understand the course or intention of the other, from any cause, the vessel so in doubt shall immediately signify the same by giving several short and rapid blasts, not less than four, of the steam whistle, the danger signal.

Finally, Sec. 80.7, Pilot Rules for Inland Waters, requires both vessels to stop, and back down, if necessary, when one of the vessels sounds the four blast danger signal:

80.7 Vessels approaching each other at right angles or obliquely. When two steam vessels are approaching each other at right angles or obliquely so as to involve risk of collision, other than when one steam vessel is overtaking another, the steam vessel which has the other on her own port side shall hold her course and speed; and the steam vessel which has the other on her own starboard side shall keep out of the way of the other by directing her course to starboard so as to cross the stern of the other steam vessel, or, if necessary to do so, slacken her speed or stop or reverse.

If from any cause the conditions covered by this situation are such as to prevent immediate compliance with each other's signals, the misunderstanding or objection shall be at once made apparent by blowing the danger signal, and both steam vessels shall be stopped and backed if necessary, until signals for passing with safety are made and understood.

Under the Rules applicable to the Western Rivers, in the crossing situation the vessel which has the other on her own starboard side must keep clear of the other, except when one of the vessels is a descending steam vessel towing one or more vessels. A descending steam vessel with a tow has the right of way over any steam vessel crossing the river.

As in the Rules applicable to Inland Waters, the required signals are signals of intent. One distinct blast may be given by either vessel. If given by the vessel to starboard, it represents intention to hold course and speed. If given by the vessel to port, it represents intention to give way.

The signals must be given before the vessels have arrived within one-half mile of each other. The danger signal must be used in cases of doubt or misunderstanding. The giving of cross signals is forbidden.

A steam vessel descending a river with a tow desiring to hold on across the bow of a crossing vessel must indicate her intention by three distinct blasts of the whistle. The crossing vessel must answer immediately with a like signal and then stop or go around the stern of the descending vessel.

Rule Numbered 19, Western Rivers Rules, sets forth the basic procedure for vessels crossing in waters subject to Western Rivers Rules:

Rule Numbered 19. (a) When two steam vessels are crossing so as to involve risk of collision, other than when one vessel is overtaking another, the vessel which has the other to starboard shall keep out of the way of the other. Either vessel shall give, as a signal of intention to comply with this rule, one distinct blast of her whistle, which the other vessel shall answer with a similar blast: *Provided, however,* That a steam vessel descending a river and towing another vessel or vessels shall be deemed to have the right-of-way over any steam vessel crossing the river, and shall give as a signal of her intention to hold on across the bow of the other vessel, three distinct blasts of the whistle. The crossing vessel shall immediately reply with a similar signal, and shall keep clear by stopping or going under the stern of the descending vessel.

(b) If from any cause the conditions covered by these situations are such as to prevent immediate compliance with each other's signals, the misunderstanding or objection shall be at once made apparent by blowing four or more short and rapid blasts, the danger signal, and both steam vessels shall be stopped and backed if necessary until signals for passing with safety in accordance with these rules are given, answered, and understood.

This Rule is supported by a similar observation regarding risk of collision and by Rules Numbered 21 and 23, Western Rivers Rules, also by several sections of the Pilot Rules for the Western Rivers.

Rules Numbered 21 and 23, Western Rivers Rules, state:

Rule Numbered 21. Every steam vessel, when approaching another vessel so as to involve risk of collision, shall slacken her speed, or, if necessary, stop and reverse.

Rule Numbered 23. Where by rules 17, 19, 20, and 22 one of two vessels shall keep out of the way, the other shall keep her course, subject to the qualifications of rule 25.

Rule Numbered 25. In obeying and construing these rules due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger. When such departure becomes necessary neither vessel shall have the right-of-way and both shall navigate with caution until danger of collision is over.

The pertinent sections of the Pilot Rules for the Western Rivers, on the other hand, state:

95.05 Risk of collision. Risk of collision can, when circumstances permit, be ascertained by carefully watching the bearing of an approaching vessel. If the bearing does not appreciably change, such risk should be deemed to exist.

95.09 Danger and cross signals. (a) The alarm or danger signal shall consist of four or more short and rapid blasts. Steam vessels are forbidden to use what has become technically known among pilots as "cross signals," that is, answering one whistle with two, and answering two whistles with one. In all cases and under all circumstances, a pilot receiving either of the whistle signals provided in the rules in this part with which for any reason, he deems it injudicious to comply, instead of answering it with a cross signal, shall at once observe the provisions of this section.

(b) The pilot of any steam vessel shall sound the alarm or danger signal whenever required by the law, or any of the regulations hereinafter contained; that is to say, as follows:

(1) Whenever it is dangerous to take the side indicated by the passing signal of another vessel; or,

(2) Whenever any steam vessel does not understand or is in doubt regarding the signal of another steam vessel; or,

(3) Whenever, from any cause, one steam vessel is imperiled by another.

95.15 Ascending, descending steam vessels crossing river. The pilot of an ascending steam vessel shall in no case attempt to cross the river when an ascending or descending steam vessel shall be so near that it would be possible for a collision to ensue therefrom; and conversely, the pilot of a descending steam vessel shall in no case attempt to cross the river when an ascending or descending steam vessel shall be so near that it would be possible for a collision to ensue therefrom.

95.19 Passing signals. The passing signals, by the blowing of the whistle, shall be given and answered by pilots, in all weathers, when approaching each other; and, wherever possible, the signals shall be given and answered before the steam vessels, or if towboats pushing tows, the heads of such tows, have arrived at a distance of half a mile of each other.

95.21 Visual signal. All whistle signals shall be further indicated by a visual signal consisting of an amber colored light so located as to be visible all around the horizon for a distance of not less than one mile. This light shall be so devised that it will operate simultaneously and in conjunction with the whistle sounding mechanism, and remain ignited or visible during the same period as the sound signal: *Provided*, That the installation, use, or employment of the amber visual signal required by this section shall be optional in the case of (a) vessels operating upon the Gulf Intracoastal Waterway; (b) vessels operating on the Mississippi River below mile 237 AHP (Belmont Landing) as set forth in map No. 40, "Maps of the Mississippi River, Cairo, Illinois, to the Gulf of Mexico, Louisiana (1944 ed.)," published by the Mississippi River Commission; (c) newly constructed vessels while en route from point of construction to a point in waters where the aforementioned amber visual signal is not required; (d) motorboats of class A and class 1; and (e) motorboats of class 2 and class 3 not engaged in trade or commerce.

Turning to the Rules applicable to the Great Lakes, it can be seen that the statutory and regulatory structure of the requirements is similar to that in Inland Waters and the Western Rivers. It also can be seen that while the required signals are signals of intention, there are a number of differences in detail and application.

As in Inland Waters and Western Rivers, the statutory provisions outline the basic requirements:

Rule 18. When two steam vessels are crossing so as to involve risk of collision the vessel which has the other on her own starboard side shall keep out of the way of the other.

Rule 20. Where, by any of the rules herein prescribed, one of two vessels shall keep out of the way, the other shall keep her course and speed.

Rule 21. Every steam vessel which is directed by these rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

Rule 23. In all weathers every steam vessel under way in taking any course authorized or reqnired by these rules shall indicate that course by the following signals on her whistle, to be accompanied whenever required by corresponding alteration of her helm; and every steam vessel receiving a signal from another shall promptly respond with the same signal or, as provided in rule twenty-six:

One blast to mean, "I am directing my course to starboard."

Two blasts to mean, "I am directing my course to port." But the giving or answering signals, by a vessel required to keep her course shall not vary the duties and obligations of the respective vessels.

Rule 26. If the pilot of a steam vessel to which a passing signal is sounded deems it unsafe to accept and assent to said signal, he shall not sound a cross signal; but in that case, and in every case where the pilot of one steamer fails to understand the course or intention of an approaching steamer, whether from signals being given or answered erroneously, or from other causes, the pilot of such steamer so receiving the first passing signal, or the pilot so in doubt, shall sound several short and rapid blasts of the whistle; and if the vessels shall have approached within half a mile of each other both shall reduce their speed to bare steerageway, and, if necessary, stop and reverse.

The regulatory Pilot Rules for the Great Lakes, in turn, supplement the statutory provisions:

90.02 Definition and risk of collision. . . . .

(c) Risk of collision can, when circumstances permit, be ascertained by carefully watching the bearing of an approaching vessel. If the bearing does not appreciably change, such risk should be deemed to exist.

90.1 Signals. (a) In all weathers every steam vessel under way, in taking any course authorized or required by the rules in this part, shall indicate that course by the following signals on her whistle, to be accompanied, whenever required, by corresponding alteration of her course; and every steam vessel receiving a signal from another shall promptly respond with the same signal or sound the danger signal as provided in § 90.2.

(b) Except as otherwise provided in the rnles in this part, one blast shall mean, "I am directing my course to starboard"; two blasts shall mean, "I am directing my course to port."

90.2 Danger signal. If, when steamers are approaching each other, the pilot of either vessel fails to understand the course or intention of the other, whether from signals being given or answered erroneously or from other causes, the pilot so in doubt shall immediately signify the same by giving the danger signal of several short and rapid blasts of the whistle not less than five; and if both vessels shall have approached within half a mile of each other, both shall be immediately slowed to a speed barely sufficient for steerageway, and, if necessary, stopped and reversed, until the proper signals are given, answered, and understood, or until the vessels shall have passed each other.

90.3 Cross signals. Steam vessels are forbidden to use what has become technically known among pilots as "cross signals"—that is, answering one whistle with two, and answering two whistles with one. In all cases, and under all circumstances, a pilot receiving either of the whistle signals provided in the rules in this part, which for any reason he deems injudicious to comply with, instead of answering it with a cross signal, shall at once sound the danger signal and observe the rule applying thereto (§ 90.2).

90.4 Vessels passing each other. The whistle signals indicating course shall be given and answered in accordance with

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the rules, not only when an alteration of course is required, but at all times before vessels approach within half a mile of each other, from whatever direction, if their courses will bring them within that distance from each other.

90.10 Vessels approaching each other at right angles or obliquely. (a) When two steam vessels are approaching each other at right angles or obliquely so as to involve risk of collision, other than when one steam vessel is overtaking another, the steam vessel which has the other on her own port side shall hold her course and speed; and the steam vessel which has the other on her own starboard side shall keep out of the way of the other by directing her course to starboard so as to cross the stern of the other steam vessel; or, if necessary to do so, slacken her speed or stop or reverse. The steam vessel having the other on her own port side shall blow one distinct blast of her whistle as a signal of her intention to cross the bow of the other, holding her course and speed, which signal shall be promptly answered by the other steam vessel by one distinct blast of her whistle as a signal of her intention to direct her course to starboard so as to cross the stern of the other steam vessel or otherwise keep clear.

(b) If from any cause whatever the conditions covered by this situation are such as to prevent immediate compliance with each other's signals, the misunderstanding or objection shall be at once made apparent by blowing the danger signal, and both steam vessels shall be stopped, and backed if necessary, until signals for passing with safety are made and understood.

In the next article in this series, it will be seen that overtaking vessels face similar differences in signals and required procedures under the respective Rules. As in the meeting and crossing situations, the one and two blast signals accompany a change in course under International Rules, while the same signals denote intentions regarding passing—with or without a change in course—under Rules applicable to Inland Waters, Western Rivers and the Great Lakes. Then, too, it will be seen that though the Rules applicable to Inland Waters, Western Rivers, and the Great Lakes are based on the exchange of signals of intention, there are a number of differences in detail in each set of Rules.

Highlights on the Rules

Changing course 20° is harder on the steering gear than changing 2°, but easier on the blood pressure.

The area ahead of a steam vessel crossing from your right is forbidden territory.

No matter how little the visibility, half of it belongs to the other vessel.

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the Act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by Customs ports for the quarter ending 31 December 1954. Generally speaking, undocumented vessels are those machinery-propelled vessels of less than 5 net tons engaged in trade which by reason of tonnage are exempt from documentation. They also include all other vessels propelled in whole or in part by machinery which have not been issued marine documents by the Customs, owned in the United States and found on the navigable waters thereof.

Coast Guard District	Customs Port	Total
1 (Boston)	(4) Boston	13,012
	(1) Portland, Maine	8,631
	(2) St. Albans	942
	(5) Providence	3,955
	Total	26,540
2 (St. Louis)	(45) St. Louis	9,351
	(12) Pittsburgh	1,916
	(34) Pembina	72
	(35) Minneapolis	2,347
	(40) Indianapolis	3,981
	(42) Louisville	2,497
	(43) Memphis (part)	5,662
	(46) Omaha (part)	296
	(47) Denver	18
	Total	26,140
3 (New York)	(10) New York	41,414
	(6) Bridgeport	7,864
	(11) Philadelphia	17,560
	Total	66,838
5 (Norfolk)	(14) Norfolk	15,826
	(13) Baltimore	22,886
	(15) Wilmington, N. C.	7,580
	Total	46,292
7 (Miami)	(18) Tampa (part)	22,884
	(16) Charleston	1,648
	(17) Savannah	3,016
	(49) San Juan	418
	(51) St. Thomas	94
	Total	28,060
8 (New Orleans)	(20) New Orleans	20,103
	(18) Tampa (part)	508
	(19) Mobile	7,526
	(21) Port Arthur	4,286
	(22) Galveston	8,056
	(23) Laredo	1,338
	(24) El Paso	13
	(43) Memphis (part)	65
	Total	41,955
9 (Cleveland)	(41) Cleveland	7,625
	(7) Ogdensburg	2,611
	(8) Rochester	4,851
	(9) Buffalo	3,657
	(36) Duluth	2,476
	(37) Milwaukee	3,422
	(38) Detroit	17,813
	(39) Chicago	6,426
	Total	48,881
11 (Long Beach)	(27) Los Angeles	10,172
	(25) San Diego	1,958
	(26) Nogales	107
	Total	12,237
12 (San Francisco)	(28) San Francisco	12,443
	Total	12,443
13 (Seattle)	(30) Seattle	17,754
	(29) Portland, Oregon	8,703
	(33) Great Falls	495
	Total	26,952
14 (Honolulu)	(32) Honolulu	3,074
	Total	3,074
17 (Juneau)	(31) Juneau	7,454
	Total	7,454
Grand total		346,866

WINGS AWARDED TO MERCHANT SHIP

Through the initiative and foresight of Captain Malcolm Hammer, Master of the tanker SS *Sunoil*, the Ground Observer Corps' air surveillance against the possible approach of enemy aircraft, has been extended hundreds of miles seaward.

Captain Hammer first suggested the idea that U. S. merchant ships be utilized to act as advance spotting stations in the Air Defense Program. It is anticipated that eventually hundreds of merchant ships will participate in a common effort to insure the safety of this country.

In recognition of his suggestion, the Commanding Officer, Continental Air Defense Command, U. S. Air Force, recently authorized the issuance of the first pair of Ship's Wings to the SS *Sunoil*.

Complete information concerning participation in this program can be obtained by writing to the Office of the Director, Civil Air Defense, Headquarters, Continental Air Defense Command, Ent Air Force Base, Colorado Springs, Colo. Congratulations to Captain Hammer.

BOILER MAINTENANCE IN TANKER OPERATION*

One of the major factors affecting economic ship operation is boiler maintenance. With the advent of the watertube boiler came new problems, especially in the treatment of boiler water and the accumulation of slag. Operation of the old time boiler at 220 pounds working pressure was a fairly simple matter compared with the watertube "D" type boiler of 850 pounds working pressure, used in the Company's 26,700 deadweight super tankers.

Usually boiler water is taken from the city water supply system at the vessel's discharging port and contains many impurities, such as calcium carbonate, calcium sulphate, magnesium carbonate, magnesium sulphate, magnesium chloride, silica, oxygen, carbon dioxide, and iron as ferrous bicarbonate. Although all make-up feed is put through an evaporator, some of these impurities still remain. To prevent these impurities from forming encrusting solids within the boiler, a system of internal chemical treatment is employed.

Through the use of modern deaerating equipment, dissolved oxygen is no longer a major problem and the use of sodium sulphite takes care of small amounts of oxygen that may find its way into the boiler water.

To help reduce the amount of dissolved copper and iron that might get into the boilers as a result of corrosion in the steam and condensate piping systems, it has been found desirable to add a volatile amine to the boiler water, resulting in the pH of the condensate being maintained at 8 to 8.5.

Precautions are taken to avoid storing boiler feed water in cement-washed tanks. In one instance, silica had been deposited on the low pressure turbine blading and was traced from the double bottom tank which had a cement coating, through the evaporator—into the boiler and finally to the turbine.

Each vessel has equipment with which the ship's engineers can test samples of the boiler water and determine the amount of chemical treatment needed. A daily record is made of test results and once each trip a summary is sent to the office.

BOILER BLOW DOWN

Equal in importance to chemical treatment of the boiler water is the practice of "blowing down." On the water side of the boiler a great variety of solids eventually accumulates and a good system of blow down is essential in order to prevent difficulties such as foaming and priming, clogging of gage glasses and other small fittings, and deposits on the tubes that will surely cause blistering and tube failure.

On the 26,700 deadweight vessels of the fleet water samples are drawn (valve must be wide open to get a good sample) at least once each day from all sampling lines. This is the basis for determining blow down required, which may be any of the following:

Steam drum scum blow: Use only when there is foreign matter on water surface, which may result after a boiler has been opened for repairs.

Steam drum blow to evaporator: Use as necessary to maintain boiler water at proper density or to reduce boiler chemical values in case of an overcharge.

Bottom drum:
Rear water wall header:
Side water wall header:

Blow down once in about 15 days, while in port, as follows:

Add sufficient chemical treatment to compensate for that which will be lost while blowing down.

Cut boiler out and allow to cool for at least 2 hours. (Have drum filled to top of gage glass.)

Fully open the blow down valve of the side wall header and blow water overboard until gage glass shows half-full; then blow the rear wall header and bottom drum in the same manner. Add feed water to boiler as required and repeat cycle of blowing and feeding. This will result in a total of a full glass of water being blown from each of these blow down points.

It is important that the blow valve be wide open when blowing down, to create enough velocity to dislodge heavy matter in the lower parts of the boiler.

After blowing, adjust water level, raise steam, cut boiler in and repeat procedure on other boiler.

Maintaining this routine is a positive step toward preventing the aforementioned troubles.

OIL-FREE CONDENSATE

To stop oil from reaching the boilers a "deoiler" is installed and all condensate from the cargo heating coils, fuel and lubricating oil heaters, etc., passes through it. This deoiler will produce condensate having an oil content of less than one part per million.

BOILER OPERATION AND MAINTENANCE

Watertube boilers, operating at and above pressures of 450 p. s. i. gage and total steam temperatures of 700° F. and over, present a difficult problem in that the superheater tubes may become coated and bridged over with slag. This is particularly true of vessels bunkering in United States and Caribbean ports.

Our investigations indicate that slag may be caused by incombustibles in the fuel. Unless something is done about it, gas passages within the boiler become restricted and furnace air pressure will rise from 3 to 4 times normal. Several different methods of removing or eliminating the formation of slag from boiler tubes have been tried but a completely satisfactory solution has not yet been found.

WATER WASHING

The system of water washing at sea is the most satisfactory of all the procedures the Company has used to keep the fire side of the boilers clean. This method has been in use in the fleet since 1948. The cleaning procedure is as follows:

After consultation with the Master of the vessel, the Chief Engineer arranges to have the boiler to be cleaned taken off the line at least 8 hours prior to the start of the cleaning operation.

Superheater and furnace access doors are removed. A sheet metal trough is placed between the inner and outer access doors of the furnace to span the air duct and prevent water from the washing process from draining into the air duct. The boilers are fitted with a 6-inch drain on the floor near the back wall to allow the water to flow into the bilge. A section of hose is connected from the fire hydrant to a special connection on the steam line that supplies the soot blowers. The general service pump is started and sea water at 170° F. and 160 pounds pressure is pumped through the soot blowers. While this is being done, the air heaters are washed down from above with a hand hose. A thorough cleaning job may require as long as 4 to 5 hours. This is immediately followed by a fresh water rinse using the reciprocating feed pump so lined up that it pumps through the feed water heater into the boiler drum, where a pressure of 125 pounds is built up. The stop valve which normally supplies steam to the soot blowers is then opened and water passes through the soot blowers to rinse the boiler of any remaining salt water. During this procedure, the main feed pump is used to supply the other boiler through the auxiliary feed line.

*Extracts from a paper presented by T. J. McTaggart, Port Engineer, Esso Shipping Company, before the World-Wide Marine Operating Conference of the Standard Oil Company (New Jersey) and affiliates, at New York, May 17-19, 1954, with additions by the author.

When the washing is completed a hydrostatic test is applied and an inspection made for leaky tubes, etc. Defects in the brick work are repaired and the boiler closed up. It is very important that steam be raised slowly, because some water gets beneath the brick work and unless a slow fire is used the floor of the furnace may be pushed up due to the formation of steam under it.

The 26,700-ton vessels are fitted with air puff soot blowers and water cannot be put through them. However, water washing is carried out in much the same way, except that perforated pipes and hand lances are used to carry the water to the various sections of the boiler to be washed.

A thorough boiler washing job usually requires about 24 hours from the time the boiler is taken off the line.

When boilers are cleaned in the shipyard or on vessels preparing for lay-up, a lime slurry is sprayed over the heating surfaces immediately after the washing operation. This has two very desirable effects—the lime helps to neutralize any sulphuric acid that may remain as a result of washing and, in addition, it forms a coating on the tubes that resists the adhesion of slag. Experiments with lime slurry show that a boiler so treated will steam for about 25 percent longer before it has to be washed.

FIRE SIDE CORROSION

Fortunately, most of the Company's vessels operate in areas where the fuel has a sulphur content of less than 3 percent and the sulphur corrosion problem has not been too great. Air heater tubes have given trouble on the cold ends and holes have appeared 2 to 4 inches beyond the tube sheet. To prevent this, steel ferrules about 12 inches long have been put in the ends of the tubes. The ferrules cause a rise in the tube metal temperature above the dew point of the flue gases and thus prevent corrosion. There are indications that in the future fuels having a higher sulphur content may have to be tolerated, particularly in the Eastern Hemisphere. The sulphur corrosion problem will then require more attention.

Some high temperature corrosion has taken place on superheater protection plates and superheater supports. Where it was not possible to renew them without dismantling a great many tubes, wooden forms were built and castable refractory poured into the forms. It is believed that this type corrosion is due to a combination of high temperatures and incombustibles in the fuel.

For the successful operation of boilers it is of great importance to have close and conscientious attention by the ship's personnel to matters such as the condition of the burners, fuel oil and air pressures, combustion control equipment, flue gas analysis, fuel oil burning temperatures and the operation and maintenance of soot blowing equipment.

ICE PASSAGE

With increased military activity in the polar regions in the last few years many merchant ships have been called upon to navigate in northern latitudes that heretofore were never approached.

A good example of how the safety of a vessel that navigates through ice can be improved is the SS *Mormacisle*. Captain D. F. Sargent has set up the following as the standard navigation procedure in the vicinity of ice:

(a) Chief Mate to assist Master in conning from flying bridge.

(b) One mate and able seaman posted on bow as lookouts to assist in ice conn.

(c) One mate on watch on flying bridge.

(d) Helmsman steering from flying bridge, 1 hour on and 1 off because of cold and amount of maneuvering necessary.

(e) One mate in wheelhouse plotting continuous position and keeping bells.

(f) Carpenter and one dayman sounding all bilges every half-hour.

(g) Boatswain and one dayman inspecting all holds and deep tanks every half hour at quarter of and quarter past the hour.

(h) Chief Engineer in engine room pumping bilges in rotation continuously.

Captain Sargent should be complimented for his foresight and practice of good seamanship.

"EVEN THOUGH YOU ARE A RIVER TOW BOAT CAPTAIN I DON'T THINK THEY'RE GOING TO LIKE IT."

Courtesy Maritime Reporter

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. One of the names which has a distinguished place on this roll is that of CAPTAIN ELIS R. JOHANSON.

On 6 November 1943, the troop transport SS *Monterey*, while in convoy in the Mediterranean, was attacked by 22 Junker dive bombers. Two planes were shot down by the ship's gunners.

During the attack, the transport SS *Santa Elena* was struck by a torpedo. The SS *Monterey* was requested by the escort commander to attempt rescue operations. This operation was a success and 1,675 survivors were taken aboard the SS *Monterey*—one of the largest rescues in maritime history.

On 1 March 1944, the President of the United States conferred the Merchant Marine Distinguished Service Medal on ELIS R. JOHANSON, MASTER, in accordance with the following citation:

> For distinguished service in action with the enemy. In a night attack by enemy bombers, a troopship, carrying nearly 1,700 men, was torpedoed. In total darkness, and under most adverse weather conditions Captain Johanson located the sinking transport and rescued her crew and passengers in an outstanding display of seamanship and efficiency. The abandonment of the troopship and the rescue of her survivors was carried out with such dispatch that Captain Johanson's ship was able to clear the scene of action well before daylight, thereby avoiding further jeopardy from enemy aircraft and submarines.
>
> These operations, carried out without loss of life or injury, attributable to the rescue, was indicative of a well indoctrinated and highly trained ship and distinguished Captain Johanson as an outstanding officer and leader of men.

LIFEBOAT LADDERS

The steel and wood chain-type embarkation-debarkation ladders approved for use on board inspected merchant vessels of the United States are designed to furnish dependable and trouble-free service under all conditions of use. Nevertheless, as with most equipment, certain precautions must be observed in their use. The inherent hazard of any ladder whereby a man is exposed to the dangers of painful or fatal falls, is particularly pronounced in embarkation ladders where the height and sea and weather conditions may be especially dangerous.

Two recent accidents, one occurring on a passenger vessel in a Southern port of the United States and involving the death of the injured man, and the other occurring in a foreign port which involved injuries to two men, were both directly related to carelessness and improper use of the above-type ladders. In the first instance, a large vessel was moored at the dock and the crew were engaged in carrying out a pre-sailing boat drill. After mustering at boat stations, the Chief Mate ordered the crew of No. 2 lifeboat to take over No. 4 lifeboat (on the offshore side) for launching and rowing exercise. Although the regulations require fire and boat drills to be conducted as if an actual emergency exists, lowering of this lifeboat with a full boat's crew in it was not attempted. Instead, davits were swung out and the boat lowered to a point where its gunwales were level with the boat deck where the Third Mate, who was in charge of the boat, and two crew members embarked. The remainder of the boat's crew was then ordered to the embarkation deck on the next deck below the boat deck with the exception of the man who was operating the winch brake.

The boat was then lowered until, when about 4 feet below the embarkation deck, the ladder which was coiled between the second and third thwarts in the boat and was being payed out as the boat lowered, caught on either the bilge pump or the provision box or both. The Third Mate immediately shouted to stop lowering and the ladder was cleared. The lifeboat was then lowered to the water without further incident. At this time one member of the boat crew, wearing ordinary cotton work gloves, climbed over the rail at the embarkation deck and stepped around and onto the ladder. There was a sudden movement of the ladder and he lost his grip and fell into the boat, narrowly missing the men in the boat and striking his head. Serious head injuries resulted in his death, 1½ hours later at the hospital.

The closest investigation and analysis of this accident could not ascertain exactly what caused the movement of the ladder at the moment after the injured man stepped onto it, but the possibilities were narrowed down to two most likely explanations. The first is that one or two segments of the ladder had remained on top of the boat deck in such a manner that the ladder had "hung up" with the ears of one step caught inside of the fish plate or coaming so that all of the ladder below this point was suspended by the "hung up" ears rather than the shackles outboard of the fish plate, which are the proper suspension points. (See fig. 1.) When the man's weight first came upon the ladder, it was sufficient to dislodge the ears, causing the ladder to fall abruptly a few feet until it fetched up with a jerk at the proper suspension point, causing the man to lose his grip and fall. However, although this was the most plausible explanation, it is not completely acceptable since two experienced observers were present on the boat deck at the time and did not recall any spare segments of the ladder lying on this deck, and it would be almost certain that such persons would have noticed this condition had it existed.

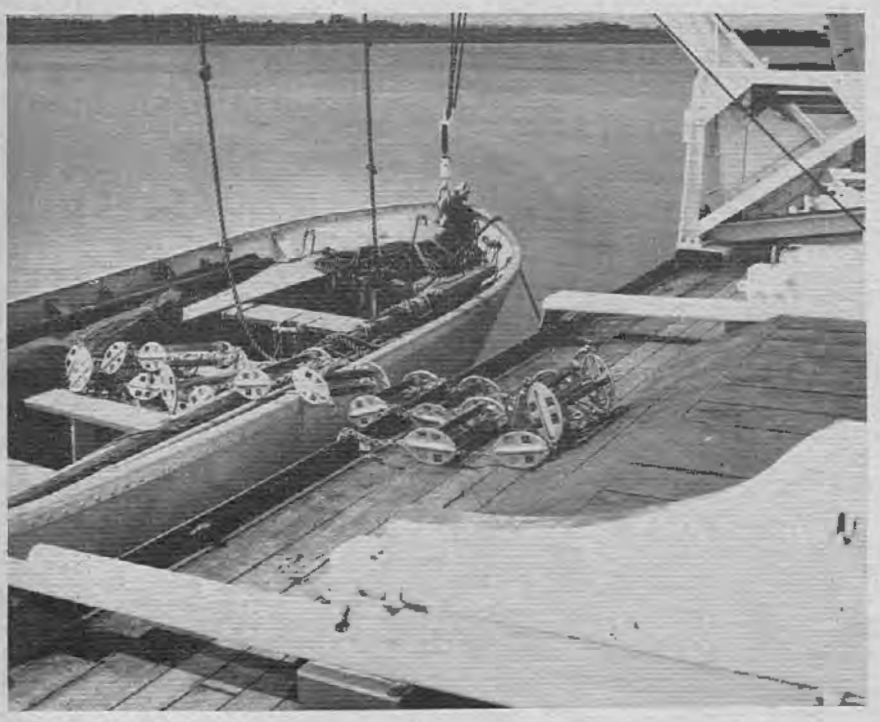


Figure 1.

The second most logical explanation was that one of the boat crew members standing on the embarkation deck had held the ladder against the rail at the point where the men would climb onto the ladder. This would be a distance of about 15 inches from the vertical line in which the ladder would normally hang. One of the crew members held the ladder in this manner but he claimed he had released it before any weight was placed on the ladder. If the deceased man's weight had come upon the ladder and the man holding the ladder in had then released it, the ladder would have "snapped" outward with somewhat of a jerk and with sufficient movement to easily break the grip of the man on the ladder.

The fall may well have been caused by the combination of both of the above circumstances, i. e., some of the ladder may have been caught above the coaming, and the ladder may have been held into the rail and released in such a manner that this slack "ran" over the coaming, the

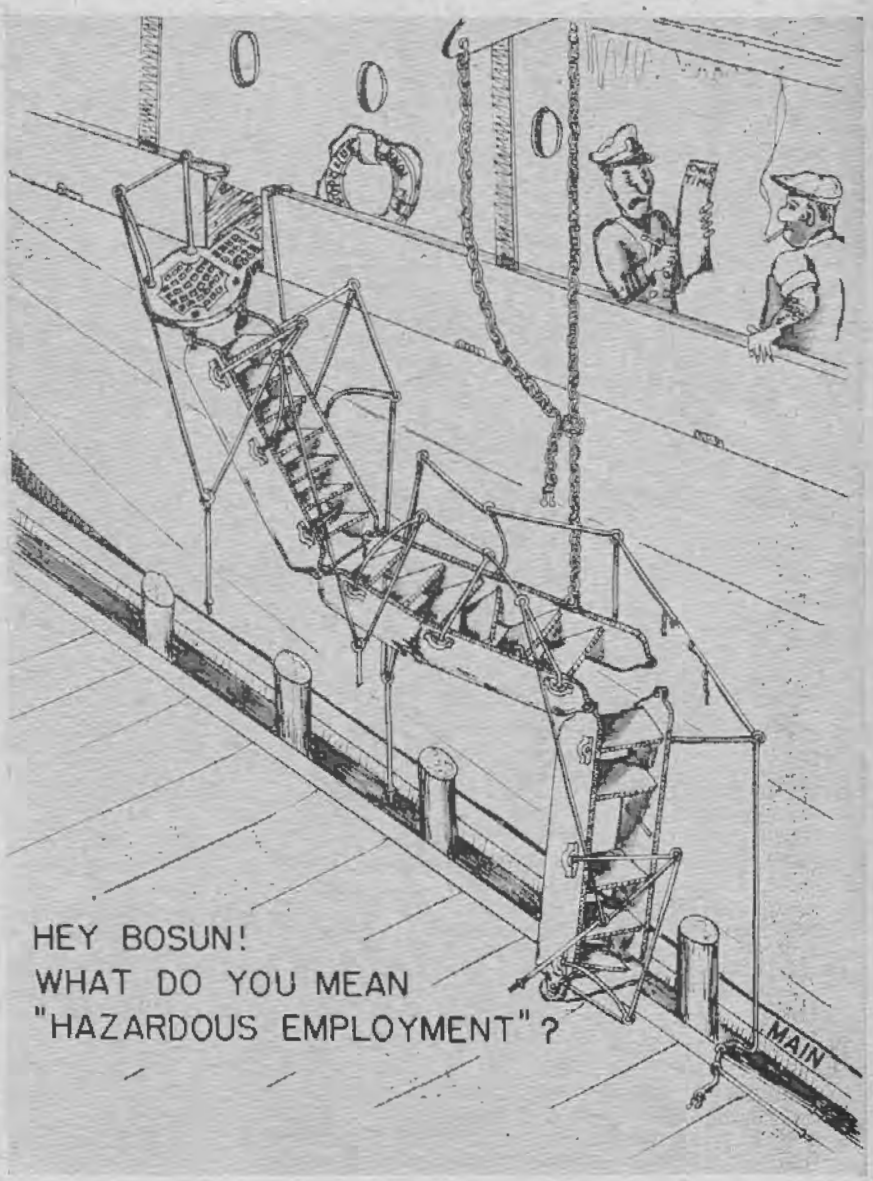
jerk at the end of the run throwing the man off the ladder. Kinking of the chain with subsequent abrupt straightening was discounted. The amount of chain between rungs is very small and minimizes kinking.

Regardless of which circumstances caused the fall from the ladder, it was due to lack of proper care and foresight by the personnel handling the gear and not by any fault of the equipment. There was no material failure. The principal error was the use of the embarkation ladder in this manner to carry out any part of emergency drills. It is the intent of the regulations that drills should be conducted as though a true emergency existed, i. e., boats should be lowered at boat drill as though the crew were actually abandoning ship, with a full boat's crew aboard. Embarkation-debarkation ladders are intended for emergency use only when personnel cannot be lowered with a boat and must have some other means of safely reaching waterborne boats. They are not intended for the convenience of ship's personnel in descending to lifeboats during drills.

Another error was the failure to use any portable steps at the rail of the embarkation deck to assist in climbing over the rail. This is particularly important in the case of passenger ships where the aged or infirm would otherwise have considerable difficulty climbing into lifeboats. Still another error, and perhaps most important of all, was the practice of stowing the coiled flexible ladders in the boats, to pay out as the boats are lowered. This method is awkward and uncertain as the ladder catches and fouls as it uncoils and the person in the boat tending the ladder as it pays out cannot check the ladder's condition at the top, or suspension point. These ladders should be stowed on deck or lashed to a rail or other object where they will not interfere with the operation of the davits or the lowering of the boats, and where they can run free, over and down the side. In this manner, men lowering the ladder from the boat deck can observe that its entire length is free of obstructions and also, that it is hanging properly from its suspension points.

2 In the second accident, two able seamen were ordered by the Boatswain to rig the embarkation ladder for means of access to a lifeboat which was in the water. The ship was moored in a foreign port and the Chief Mate, to take advantage of available inport time, decided to test lifeboat releasing gear and examine and lubricate boat falls and running gear. After the first boat was waterborne, the two AB's lowered the steel ladder from its stowage position on the boat deck. It was customary on this vessel to stow the ladders in a coiled-up bundle lashed on the inside of the steel pipe guardrail installed between or adjacent to lifeboat launching positions. Both inboard ends of the ladder chains were shackled to padeyes installed on the boat deck outboard of the rail and the bulk of the ladder brought in over the rail, coiled-up, and lashed to the inboard side of the rail in such a manner that the lashing could be quickly cast off and the coil of the ladder pushed over the rail where it would spill down the side. Twelve-thread line was used as lashing.

In casting off the ladder, the two AB's removed all lashings except one strand which held both sides of the ladder to the upper course of the pipe rail on the outboard side so that the bight of the ladder was actually supported at this point by the 12-thread line. Several trips were made up and down the ladder suspended in this manner, one man at a time, while working on the releasing gear with the boat waterborne. When the two AB's were finally ordered out of the boat, the second man started climbing on the ladder before the first was off at the top so that their combined weights came onto the ladder. With a sudden snap, the 12-thread lashing at the rail on the boat deck parted and the ladder fell about 5 feet, or the amount of slack which had been retained by the lashing. The jerk at the end of this fall was sufficient to dislodge both men, one falling about 3 feet into the boat and the higher



man 10 feet or more into the boat. The latter seaman suffered a severely dislocated left shoulder and was incapacitated over 3 weeks, while the former suffered minor injuries only. There was no mechanical failure of the ladder itself.

Here again was the careless overlooking of important details by men working on ladders. It is unbelievable that these two experienced seamen intentionally left the ladder suspended by a piece of 12-thread when they knew they would be entrusting their own safety to the ladder. Undoubtedly the oversight was due to carelessness and a lack of thoroughness in lowering the ladder. Since access to the ladder was then made from the main deck, the oversight of the lashing was not readily detectable. While the Chief Mate and Boatswain could be criticized for not checking the safe condition of the ladder before it was used, there was no reason for them to suspect that there was anything wrong with the ladder or that two experienced able seamen could not or would not perform so simple a task as rigging this ladder properly and thoroughly, especially when they were to use the ladder themselves. It is difficult to believe that people will be more careless with their own safety than with the safety of others, but the evidence all too often would indicate that this is true.

It would seem to be glaringly obvious that certain elementary precautions should be taken whenever it is necessary for crew or passengers to use this type ladder.

(1) Before any weight is placed on the ladder, the entire suspended length of the ladder should be hanging from the proper suspension point.

(2) If there is any obstruction in the path of the ladder which cannot be avoided or removed, make sure the ladder is not caught or "hung up" on such obstruction.

(3) If possible, shake out the ladder to see if it is hung clear and lies straight.

(4) If possible the ladder should be located so that it hangs just aft of the lifeboat for which it is to be used and not abreast of any portion of the boat where it could be damaged or damage the boat during or after lowering. If necessary, it is a simple matter to ease the boat slightly astern after lowering to make the bottom of the ladder more accessible.

(5) It is advisable to keep these ladders stowed and ready for use in such a manner that they can be dropped with a run, uncoiling as the free end falls. Many ships have found it practicable to lash the coiled-up ladder just inboard of a rail or horizontal member so that the lashing can be slipped quickly and the ladder can be pushed over the side where it will fall to its intended position suspended from permanent padeyes or shackles. An advantage of this method of stowage is that the ladder will not clatter about under the effects of heavy rolling or boarding seas. In addition, the strain imposed on the ladder by the jerk at the bottom of the drop is a simple test that it is properly secured and will not later slip or fail at the suspension points. Needless to say, the ladder should not be dropped in this manner if the lifeboat or any personnel are directly under it.

(6) If possible, wear no loose or baggy clothing which could catch on the ladder or any other object when descending or ascending the ladder. A wise precaution is to remove gloves, unless the weather is so frigid that fingers would be numbed, as it is an indisputable fact that the bare hand can grasp better than one with a glove on.

(7) When descending or ascending, it is wise to have one foot placed squarely on the next rung before the weight is removed from the foot on the preceding rung. Always step on the ends of the rungs. Breaks in rungs almost never occur near the ends, almost always near the center.

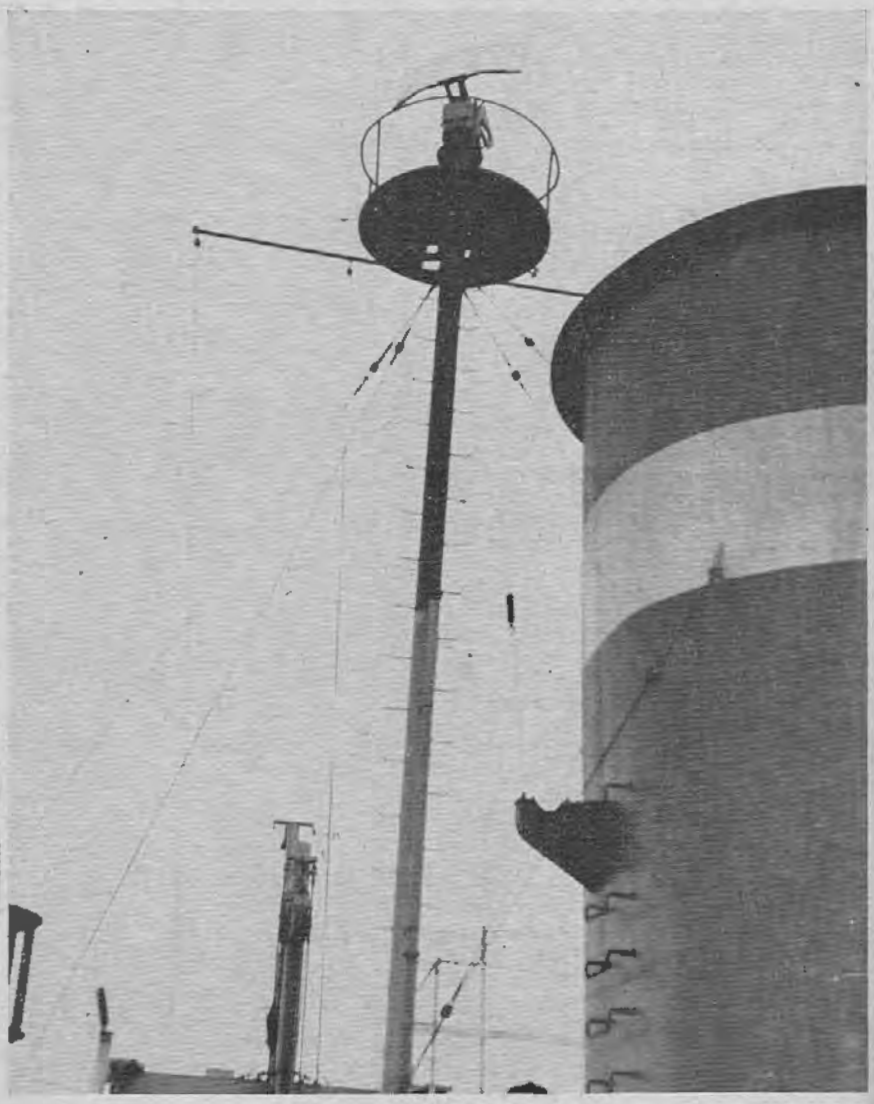


Figure 2.

SEAMANSHIP PLUS

Captain J. B. Brennan and his crew of the SS *American Judge* recently demonstrated that while this is an age of ultra-modern and technical instruments there are still resourceful and ingenious men sailing the seas.

On 26 November 1954, while enroute from Rotterdam to New York, the *American Judge* encountered a violent Atlantic storm with winds of hurricane force. During this period the radar reflector was carried away from its mounting and lost overboard.

Within a short while the engineering department was well underway on the replacement job. Measurements were taken from the schematic diagram of the original reflector installation and templates were drawn to actual size.

A section of expanded metal screening was removed from the storeroom and was formed to the template. One inch angle iron and flat bar was used as framing and was bolted to the screening to maintain shape and radial contour. This assembly was mounted on the existing flange on the radar antennae and was bolted in place. (*See fig. 2*)

The radar was energized and it was determined that targets were observed on the scope at original maximum range. Relative bearings were observed to be correct and presentation was normal with the exception that targets appeared elongated.

The time involved for construction and mounting of the rig was *6 man-hours*. Congratulations, Captain, on a job well done!

⚓ ⚓ ⚓

THE EXTRA TURN

We have, in the past, suffered an occasional accident because a mooring line or wire has slipped, under pressure, on the niggerhead.

Everyone realizes that more turns give the operator more control over his line—but do you realize just how much more? One round turn, for example, gives you a 5-to-1 ratio. In other words, a 10-pound pull by the man in control would hold a 50-pound pressure. A good rule of thumb, while not precisely accurate, would be to multiply the pressure by 5 for each round turn added. Therefor 2 turns (with the same 10-pound pull) would balance 250 pounds, 3 turns would balance 1,250 pounds, and 4 turns would be good for 6,250 pounds.

These figures should make you realize just how important that extra turn may be. You must only exert one-fifth of the pull when you use it, so don't strain yourself when an extra turn will do the trick, and don't take chances on a line slipping when the same easy solution offers perfect insurance.

Take the extra turn next time. It will help you.

—*Courtesy of Farrell Lines.*

MERCHANT MARINE PERSONNEL STATISTICS

MERCHANT MARINE OFFICER LICENSES ISSUED

Quarter Ending 31 December 1954

DECK

Grade	Original	Renewal
Master:		
Ocean	39	560
Coastwise	4	39
Great Lakes		25
B. S. & L	23	115
Rivers	4	43
Radio officer licenses issued	29	244
Chief mate:		
Ocean	37	118
Coastwise		2
Mate:		
Great Lakes		
B. S. & L	3	11
Rivers	5	22
Second mate:		
Ocean	57	114
Coastwise		1
Third mate:		
Ocean	23	77
Coastwise		1
Pilots:		
Great Lakes	9	11
B. S. & L	137	30
Rivers	84	20
Master: Uninspected vessels	4	22
Mate: Uninspected vessels	3	2
Total	461	1,457
Grand total	1,918	

ENGINEER

Grade	Original	Renewal
STEAM		
Chief engineer:		
Unlimited	28	567
Limited	9	126
First assistant engineer:		
Unlimited	57	206
Limited		7
Second assistant engineer:		
Unlimited	53	271
Limited		1
Third assistant engineer:		
Unlimited	36	274
Limited		1
MOTOR		
Chief engineer:		
Unlimited	18	119
Limited	33	155
First assistant engineer:		
Unlimited	4	26
Limited	11	17
Second assistant engineer:		
Unlimited	6	24
Limited		2
Third assistant engineer:		
Unlimited	8	341
Limited		1
Chief engineer: Uninspected vessels	2	13
Assistant engineer: Uninspected vessels	7	3
Total	272	2,154
Grand total	2,426	

INVESTIGATING UNITS

Coast Guard merchant marine investigating units and Merchant Marine details investigated a total of 3,132 cases during the fourth quarter of 1954. From this number, hearings before examiners resulted involving 29 officers and 303 unlicensed men. In the case of officers, 1 license was revoked, 3 were suspended without probation, 7 were suspended with probation granted, 6 licenses were voluntarily surrendered, 5 cases were dismissed after hearing and 1 hearing was closed with admonition. Of the unlicensed personnel, 30 documents were revoked, 19 were suspended without probation, 94 were suspended with probation granted, 65 documents were voluntarily surrendered, 18 hearings were closed with admonitions, and 30 cases were dismissed after hearing.

ORIGINAL SEAMEN'S DOCUMENTS ISSUED

Quarter Ending 31 December 1954

Type of document	Atlantic coast	Gulf coast	Pacific coast	Great Lakes and rivers	Total
Staff officer	52	8	41	----	101
Continuous discharge book	----	6	----	----	6
Merchant mariner's documents	905	291	833	394	2,423
AB any waters unlimited	100	34	69	18	221
AD any waters, 12 months	32	7	28	66	133
AD Great Lakes, 18 months	----	----	4	16	20
AB tugs and towboats, any waters	----	----	----	----	0
AB bays and sounds [1]	----	----	----	----	0
AB seagoing barges	1	----	----	----	1
Lifeboatman	94	9	139	2	244
QMED	104	29	63	75	271
Radio operators	2	4	6	----	12
Certificate of service	909	294	834	375	2,412
Tankerman	5	43	9	23	80

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

NOTE.—The last 11 categories indicate number of endorsements made on United States merchant mariner's documents.

WAIVER OF MANNING REQUIREMENTS

Waivers	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Total
Deck officers substituted for higher ratings	----	----	----	2	2
Engineer officers substituted for higher ratings	----	1	----	2	3
OS for AB	----	----	----	----	----
Wiper or coalpassers for QMED	1	----	----	2	3
Total waivers	1	1	----	6	8
Number of vessels	1	1	----	3	5

NOTE.—In addition, individual waivers were granted to permit the employment of 2 able seamen holding certificates for "any waters—12 months" in excess of the 25 percent authorized by statute.

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, Washington 25, D. C.]

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

[CGFR 54-54]

Subchapter D—Navigation Requirements for Certain Inland Waters

PART 80—PILOT RULES FOR INLAND WATERS

PART 82—BOUNDARY LINES OF INLAND WATERS

Subchapter F—Navigation Requirements for Western Rivers

PART 95—PILOT RULES FOR WESTERN RIVERS

APPLICATION OF PILOT RULES AND CHANGES IN NAMES

The amendments to 33 CFR 80.01, 80.15, 80.16, 82.2, 95.01, and 95.03 (b) bring the wording of the application of the Pilot Rules up to date and in agreement with Public Law 232, 83d Congress, approved August 8, 1953. Prior to this act of August 8, 1953, the Mobile River above Choctaw Point and all of its tributaries were governed by the Pilot Rules for Western Rivers. These waters are now governed by the Inland Rules and the Pilot Rules established thereto which are in 33 CFR Part 80.

The amendments to 33 CFR 82.200 to 82.245 are editorial and change the names from English to Spanish which are used in the descriptions of the lines of demarcation between the high seas and the inland waters in the Commonwealth of Puerto Rico and the Virgin Islands. The Spanish names used in these descriptions agree with the recent decision of the Geographic Names Board. These lines of demarcation have not been "shifted" or altered.

It is hereby found that compliance with the notice of proposed rule making, public rule making procedure thereon, and effective date requirements of the Administrative Procedure Act (5 U. S. C. 1003) is not necessary because the amendments contained in this document are editorial in nature and published for the benefit of the public.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Order No. 120, dated July 31, 1950 (15 F. R. 6521), to promulgate regulations in accordance with the statutes cited with the regulations below, the following amendments to the regulations are prescribed which shall become effective upon the date of publication of this document in the FEDERAL REGISTER:

1. Section 80.01 is amended to read as follows:

§ 80.01 *General instructions.* The regulations in this part apply to vessels navigating the harbors, rivers, and inland waters of the United States except the Great Lakes and their connecting and tributary waters as far east as Montreal, the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

2. Section 80.15 (a) is amended to read as follows:

§ 80.15 *Ferryboats.* (a) Ferryboats propelled by machinery and navigating the harbors, rivers, and other inland waters of the United States, except the Great Lakes and their connecting and tributary waters as far east as Montreal, the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway, shall carry the range lights and the colored side lights required by law to be carried on steam vessels navigating those waters, except that double-end ferryboats shall carry a central range of clear, bright, white lights, showing all around the horizon, placed at equal altitudes forward and aft, also on the starboard side a green light, and on the port side a red light, of such a character as to be visible on a dark night with a clear atmosphere at a distance of at least 2 miles, and so constructed as to show a uniform and unbroken light over an arc of the horizon of 10 points of the compass, and so fixed as to throw the light from right ahead to 2 points abaft the beam on their respective sides.

3. Section 80.16 (a) is amended to read as follows:

§ 80.16 *Lights for barges, canal boats, scows and other nondescript vessels on certain inland waters on the Atlantic and Pacific Coasts.* (a) On the harbors, rivers, and other inland waters of the United States except the Great Lakes and their connecting and tributary waters as far east as Montreal, the Red River of the North, the Mississippi River and its tributaries above Huey Long Bridge, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway, and the waters described in §§ 80.16a and 80.17, barges, canal boats, scows, and other vessels of nondescript type not otherwise provided for, when being towed by steam vessels, shall carry lights as set forth in this section.

(Sec. 2, 30 Stat. 102, as amended, sec. 1, 30 Stat. 98, as amended; 33 U. S. C. 157, 178. Interpret or apply R. S. 4233A, as amended; 33 U. S. C. 353)

4. Section 82.2 is amended to read as follows:

§ 82.2 *General rules for inland waters.* At all buoyed entrances from seaward to bays, sounds, rivers, or other estuaries for which specific lines are not described in this part, the waters inshore of a line approximately parallel with the general trend of the shore, drawn through the outermost buoy or other aid to navigation of any system of aids, are inland waters, and upon them the inland rules and pilot rules made in pursuance thereof apply, except that Pilot Rules for Western Rivers apply to the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

7. Section 95.03 (b) is amended to read as follows:

§ 95.03 *Definitions.* * * *

(b) The phrase "Western Rivers" shall include only the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

(R. S. 4233A, as amended; 33 U. S. C. 353)

[Federal Register of Tuesday, December 7, 1954]

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

PART 19—WAIVERS OF NAVIGATION AND VESSEL INSPECTION LAWS AND REGULATIONS

CROSS REFERENCES: For revocation of §§ 19.08, 19.09, and 19.10, see Title 46, Chapter I, Part 154, *infra*.

(Federal Register of Thursday, January 27, 1955)

EQUIPMENT APPROVED BY THE COMMANDANT

[EDITOR'S NOTE.—Due to space limitations, it is not possible to publish the specification numbers, approval numbers and other descriptive data regarding approvals and termination of approvals as published in the Federal Register. Copies of the Federal Registers may be obtained from the Superintendent of Documents, Washington 25, D. C.]

DEPARTMENT OF THE TREASURY

United States Coast Guard

[CGFR 54–61]

APPROVAL OF EQUIPMENT; AND CHANGE IN ADDRESS OF MANUFACTURER

CLEANING PROCESS FOR LIFE PRESERVERS

BUOYANT CUSHIONS, KAPOK, STANDARD

BUOYANT CUSHIONS, NON-STANDARD

LADDERS, EMBARKATION-DEBARKATION (FLEXIBLE)

SIGNALS, DISTRESS, HAND RED FLARE

CONTAINERS, EMERGENCY PROVISIONS AND WATER

DAVITS, LIFEBOAT

LIFEBOATS

SIGNALS, DISTRESS, HAND ORANGE SMOKE

BUOYANT VESTS, KAPOK OF FIBROUS GLASS, ADULT AND CHILD (MODELS AK, CKM, CKS, AF, CFM, AND CFS)

TELEPHONE SYSTEMS, SOUND POWERED

FLASHLIGHTS, ELECTRIC, HAND

BOILER, HEATING

SODA-ACID TYPE HAND PORTABLE FIRE EXTINGUISHER

VALVES, SAFETY RELIEF, LIQUEFIED COMPRESSED GAS

APPLIANCES, LIQUEFIED PETROLEUM GAS CONSUMING

INCOMBUSTIBLE MATERIALS

CHANGE OF ADDRESS

[CGFR 54–62]

TERMINATIONS OF APPROVALS OF EQUIPMENT

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Order No. 120, dated July 31, 1950 (15 F. R. 6521), and in compliance with the authorities cited below, the following approvals of equipment are terminated because (1) the manufacturer is no longer in business; or (2) the manufacturer does not desire to retain the approval; or (3) the item is no longer being manufactured; or (4) the item of equipment no longer complies with present Coast Guard requirements; or (5) the approval has expired.

DAVITS, LIFEBOAT

LIFEBOATS

BOILERS, HEATING

(Federal Register of Tuesday, January 18, 1955)

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

Subchapter Q—Specifications

[CGFR 54–46]

PART 160—LIFESAVING EQUIPMENT

MATERIALS

The purpose of the amendments in this document is to correct and to clarify certain requirements regarding vinyl plastic film used in manufacturing buoyant vests and buoyant cushions described in Coast Guard Document CGFR 54–46, Federal Register Document 54–10014, which was published in the Federal Register dated December 18, 1954, 19 F. R. 8691 et seq.

(Federal Register of Tuesday, January 18, 1955)

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 30 November 1954 to 28 December 1954, 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

Kelite Products, Inc., P. O. Box 2917 Terminal Annex, Los Angeles 54, Calif. Certificate No. 195 dated December 1, 1954 "KELITE KESOL."

FUSIBLE PLUGS

The regulations prescribed in Subpart 162.014, Subchapter Q, Specifications, require that manufacturers submit samples from each heat of fusible plugs for test prior to plugs manufactured from the heat being used on vessels subject to inspection by the Coast Guard. A list of approved heats which have been tested and found acceptable during the period from 15 November 1954 to 15 December 1954, is as follows:

The Lunkenheimer Co., Cincinnati 14, Ohio. Heats No. 496, 497, and 498.

AFFIDAVITS

The following affidavits were accepted during the period from 15 November 1954 to 15 December 1954:

Pacific Ship Repair, Inc., Pier 36, San Francisco, Calif. Valves, Pipe Fittings, Flanges, and Bolting.

Holby Valve Co., Inc., 1146 Second Ave., New York 21, N. Y. Valve (Water Tempering 150 p. s. i. at 212° F.).

Stearns Co., Screw Machine Products Co., 10 Dravus St., Seattle 9, Wash., Bolting.

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
Hobart Bros. Co., Hobart Sq., Troy, N. Y.	"ROCKET 24" (Contact).	E6012	2	2	2	2	------

SEA NOCTURNE

I will return no more
To the song of the town,
Avenues of joy and fear
Or laughter along the shore.

And for this beckoning sea
I forsake you, house of clay,
Know a new balm of peace
In waves of passionless rhapsody.

Far across my path, white-spun,
The moon spills her gems,
Cascading in liquid light
To an unknown horizon.

My ship moves suspended
In a vast, ageless dream
Out in who's gleaming space
Worlds and time have ended.

In the night's silent spell
My star-enchanted eyes,
Empty of desire and hate,
Recall no hand of farewell.

In this still, magic elation
Erase the loves that were lost,
Numb remembered pain, O sea,
With your strange compensation.

Antony O. de Courcy.

U. S. GOVERNMENT PRINTING OFFICE: 1955