

# PROCEEDINGS

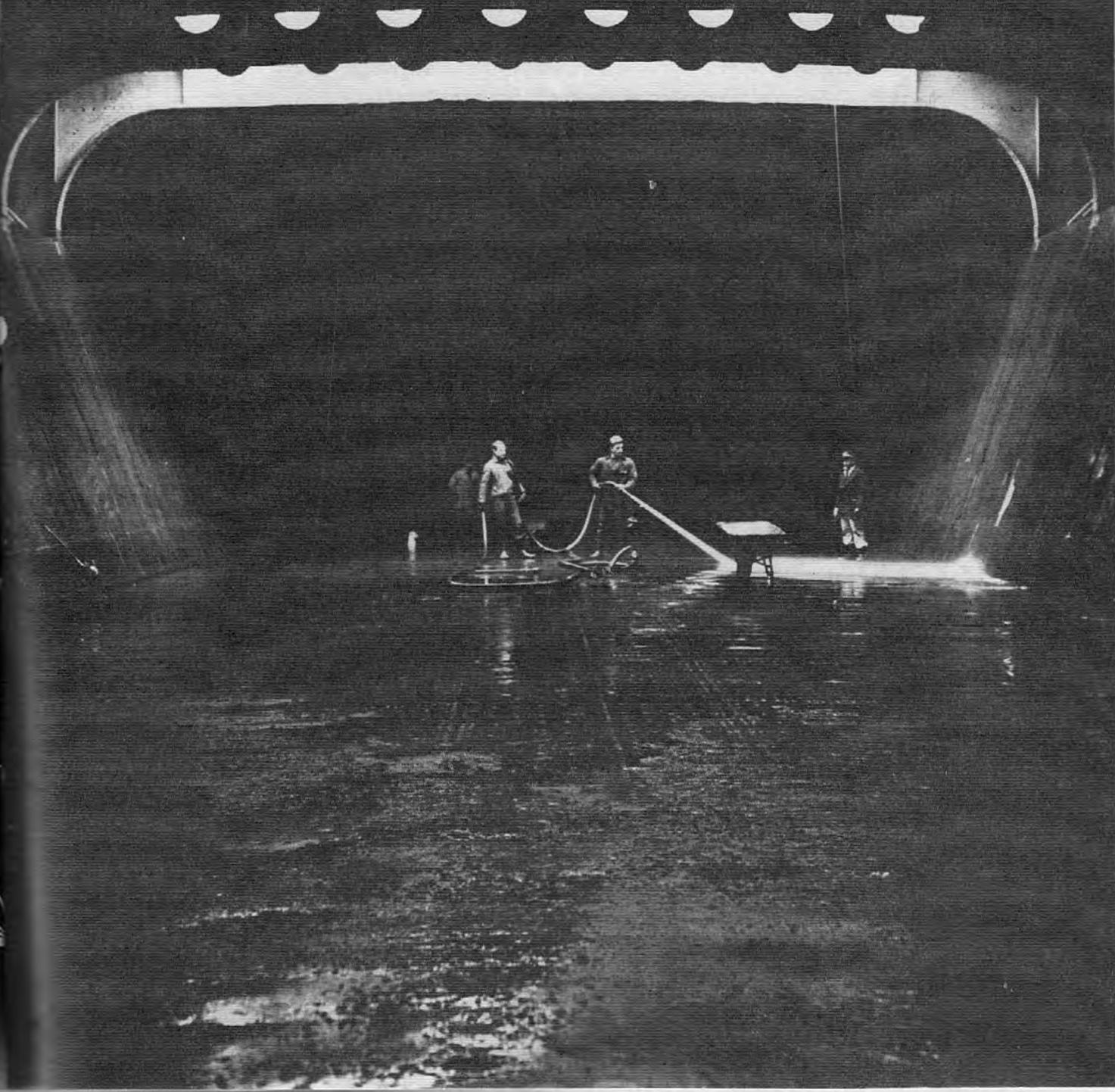
OF THE MERCHANT MARINE COUNCIL



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# PROCEEDINGS

OF THE

## MERCHANT MARINE COUNCIL

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The Merchant Marine Council of  
the United States Coast Guard

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## FRONT COVER

Hosing down a hold. This unusual photograph was taken in Toledo by Photographer Dwight Boyer of Cleveland, Ohio. *Courtesy Lake Carrier's Association.*

## BACK COVER

Instructions for completing the "Williamson Turn." *Courtesy The Safety Bulletin of the California Shipping Co.*

## DISTRIBUTION (SDL 70)

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## COUNCIL ACTIVITIES

### 1960 MERCHANT MARINE COUNCIL AGENDA

The Merchant Marine Council will hold a Public Hearing on Monday, 21 March 1960, commencing at 9:30 a.m., in the Departmental Auditorium, between 12th and 14th Streets on Constitution Avenue, NW., Washington, D.C., for the purpose of receiving comments, views, and data on the proposed changes in the vessel inspection rules and regulations as set forth in Items I to XII, inclusive, of the Merchant Marine Council Public Hearing Agenda, CG-249, dated March 1960. The Agenda contains the specific changes proposed, and for certain items the present and proposed regulations are set forth in comparison form, together with the reasons for the changes, where necessary.

Copies of the Merchant Marine Council Public Hearing Agenda (CG-249) are mailed to persons and organizations who have expressed a continued interest in the subjects under consideration and have requested that copies be furnished them. Copies of the Agenda will be furnished, upon request to the Commandant (CMC), U.S. Coast Guard, Washington 25, D.C., so long as they are available. After the supply of extra copies is exhausted, copies will be available for reading purposes only in Room 4104, Coast Guard Headquarters, or at the offices of the various Coast Guard District Commanders.

Comments on the proposed regulations are invited. Written comments containing constructive criticisms, suggestions, or views are welcomed. However, acknowledgement of the comments received or reasons why the suggested changes were or were not adopted cannot be furnished since personnel are not available to handle the necessary correspondence involved. Each oral or written comment is considered and evaluated. If it is believed the comment, view, or suggestion clarifies or improves the proposed regulation or amendment, it is changed accordingly and, after adoption by the Commandant, the revised regulation is published in the Federal Register. Each person who desires to submit written comments, data, or views in connection with the proposed regulations set forth in the Agenda should submit them so that they will be received prior to 17 March 1960 by the Commandant (CMC), U.S. Coast Guard Headquarters, Washington 25, D.C. Comments, data, or views may be presented orally or in writing at the hearing before the Merchant Marine Council on 21 March 1960. In order to insure consideration of comments and to facilitate checking and recording, it is essential that each

(Continued on page 19)

## ATLANTIC MERCHANT VESSEL REPORTING SYSTEM

(AMVER)



**CAPTAINS AND CREW** members of three merchant vessels visited the Coast Guard ships plot center at the Commander, Eastern Area Office, in the Custom House, New York City, recently. They were shown the magnetic "memory" where the reported or calculated positions of more than 600 merchant vessels then underway in the North Atlantic Ocean were stored.

Appearing in the photograph, from left to right are: Chief Mate C. Hanschildt and Captain E. Brandt of the *MV Capcastillo* of the Columbus Lines; Carlo Martines, third mate of the *SS Madda Bozzo* of the East Coast Overseas Lines; Captain K. M. Jansen and wireless operator Ben Jensen of the *MS Fernbank*, owned by Fearnley-Egger Lines of Oslo, Norway. Seated is Commander P. E. Burhorst, USCG, Officer in Charge, Ships Plot Center.

During October, the Atlantic Search and Rescue Coordinator (Commander, Eastern Area) used the AMVER System 34 times for operations, and answered a total of 91 requests for "surface pictures."

A medico was removed on 18 October from the *SS Tillie Lykes* in position approximately 300 miles southeast of Bermuda. The AMVER System located nearby the *SS Rio Tunuyan* with a doctor. Rendezvous was quickly arranged, and the patient was transferred in midocean to the doctor's care. Both ships were participating in AMVER and both benefited—the *Tillie Lykes* unloaded a serious hemorrhage case, and the *Rio Tunuyan* performed a humanitarian deed. In this case an open-sea landing by rescue aircraft, an extremely hazardous operation at best, was avoided.

As most people know, U.S. Public Health Service doctors very often communicate, via the local marine operator, directly with merchant ves-

sels having medical emergencies. This practice is a means of providing medical relief to the merchant marine, and is a part of the mission of the Public Health Service. Very frequently, in such medico cases, AMVER is used to provide the vessel's master with locations of surrounding "doctor" ships in the event that the situation should become critical.

Sometimes a "middleman" is needed even with AMVER. On 24 October, the *SS Confidenza* with a seriously injured seaman needed detailed medical advice, the kind that only voice communication between doctor and ship's master seems to satisfy. AMVER located six "doctor" ships nearby but no contact with *Confidenza* could be reestablished. We needed a relay station—a middleman. CGC *Campbell* occupying Ocean Station ECHO was used, and passed the information. The *Confidenza* was then able to speak with the doctor on the *SS Antilles*, and urgent medical advice was furnished in this manner.

# REVIEW OF MARINE CASUALTIES

By CDR John H. Hawley, USCG



THE TANKER *S. E. Graham*, fully loaded with gasoline, exploded and burst into flames after colliding with the tanker *S.S. Gulfoil* in the East Passage of Narragansett Bay, Newport, R.I. Hose carrying chemical foam pumped from a Navy Tug are placed into the open tank hatches of the *Graham* by a boarding party of firefighters, in the picture above.

DURING fiscal 1959 there were 10 casualties considered to be of sufficient importance to require investigation by Marine Boards. This is twice the number of cases investigated by Marine Boards during the previous fiscal year but this is not, in itself, significant.

The decision to convene a Marine Board is influenced primarily by what we hope to learn from the casualty. Even though there might be loss of life and/or considerable property damage, a casualty that clearly indicates its own cause or circumstances that are obviously uncomplicated does not justify a Marine Board. On the other hand a casualty of lesser consequences may occur in a new problem area, or in an area of technical importance, so as to necessitate convening a Marine Board made up of men of wide and diversified experience to look into every aspect of the case.

## GULFOIL—S. E. GRAHAM

The first Board case involved the collision between the tankers *Gulfoil*

and *S. E. Graham*. The collision occurred in dense fog at the entrance to the East Passage of Narragansett Bay, R.I., at 0553, 7 August 1958.

The inbound *Graham* was fully loaded with gasoline; the outbound *Gulfoil* was partially ballasted with a number of empty tanks which were not gas free.

As the vessels approached the narrow entrance to Narragansett Bay, between Conanicut Island and Newport Neck, each was proceeding at reduced speed with radars in constant operation due to low visibility. Although the buoy on Bull Point was on the radar screen until close aboard, it had not been seen or heard on the *Gulfoil* and her Master was reluctant to alter course to the right, as the pilot proposed until he had satisfied himself that his vessel was clear of the point. It had still not been sighted when the fog signals of the *Graham* were heard on the starboard bow, close aboard, and shortly thereafter she loomed out of the fog scarcely 50 feet from the bow of the *Gulfoil*. Collision appeared immi-

nent, and the general alarm was rung as the engines were ordered full astern.

On the *Graham*, only the Master and the Helmsman were on the bridge, and there was no lookout on the bow as she proceeded cautiously toward the bay entrance. On the radar screen, the Master could see the Bull Point Buoy and a much larger target (the *Gulfoil*) proceeding out. The *Graham's* Master expected the larger target to alter course to the westward as she passed Bull Point Buoy ahead but he noticed the *Gulfoil* was not changing course as he heard her fog signals on the *Graham's* port bow. He altered course to the right, heading for Fort Adams as each blast on the fog whistle appeared closer than the preceding one. Just before the collision he rang the general alarm.

The *Graham* was dead in the water or nearly so when her No. 1 port cargo tank was penetrated by the bow of the *Gulfoil*, a circumstance which permitted her cargo of gasoline to

escape and probably ignite through the impact. In the almost instantaneous fire which engulfed both vessels the crews were driven overboard and 17 crew members, among them the Master, of the *Gulfoil* were known to have lost their lives. Their bodies were recovered but one other disappeared and is presumed dead. Others of the *Gulfoil* crew suffered varying degrees of injury through burns and immersion, while those from the *Graham* escaped relatively unscathed.

Shortly after the collision the *Gulfoil* grounded on Newport Neck in the vicinity of Fort Adams where her No. 8 tank, which was not gas free, exploded. The *Graham*, aflame from stem to stern, drifted with the flooding tide into Narragansett Bay where she was grounded by vessels of the U.S. Navy and Coast Guard on the north end of Rose Island. The fires on both vessels continued to rage until the next day when they were finally extinguished by units of the Newport Naval Command and those of the First Coast Guard District. As a result of the collision, fires, and explosions, both vessels incurred severe structural damage.

The Board found that the fault lay with the *Gulfoil* in that her Master who was responsible for her navigation, failed to act on the advice of the pilot.

Damage to the *Gulfoil* was reported to be in excess of \$1 million. The *Graham* was considered a total loss with damage amounting to approximately \$500,000 and \$100,000 to her cargo.

#### OFFSHORE DRILLING PLATFORM

The second case was the fire on the *Offshore Drilling Platform 45-E*, in

#### ABOUT THE AUTHOR

COMMANDER John H. Hawley entered the United States Coast Guard in July 1942 after serving 3½ years in the U.S. Navy and 1 year in unlicensed capacities aboard American merchant vessels. He received his original license as Third Mate in early 1942. After 9 years as a Coast Guard aviator, CDR Hawley was transferred to Merchant Marine Safety duties in 1951. He has served as a hull inspector, investigating officer, and Senior Investigating Officer in the port of Philadelphia; Officer in Charge Marine Inspection and Captain of the Port, Guam, M.I. (1955-6); and as Assistant Chief, Casualty Review Section at Coast Guard Headquarters. In July 1958, CDR Hawley was designated Chief of the Casualty Review Section. This article is taken from a panel discussion by CDR Hawley at the annual meeting of the Marine Section, National Safety Council.



the Gulf of Mexico on 15 October 1958. This casualty is probably of only passing interest to the Marine people today but there is a specific lesson to be learned and might therefore bear brief recounting. The platform was a rectangular steel structure from which seven multiple wells were being directly operated and preparations were being made to drill the eighth. The main deck of the platform was elevated about 50 feet above the water. Ten feet below was a partial deck called the cellar deck on which was located the series of valves known as "Christmas trees" atop each well head. The main deck above the cellar deck was slatted or open grill construction.

At the time of the fire four wells were flowing and three were shut down. On one of the shut down wells a valve was being replaced; on one of the flowing wells production tests were being made and on the proposed well a 30-inch casing was being prepared. This latter function required welding which was being accomplished on the main deck. Hot flux from the welding was falling through the main deck to the cellar deck. The lateral distance from the scene of this operation to the Christmas tree of the nearest flowing well was 15 feet.

The exact cause of the casualty could not be determined; however, the Board concluded that a large volume of gases and oil was released in some manner from one of the wells' manifolds or piping under pressure and that ignition was provided by the flux from the welding in progress on the main deck.

As a result of the fire there was one known dead and six were missing and presumed dead. Property damage exclusive of the loss to petroleum products and cost of extinguishing the fire was estimated at \$6 million.

#### LACK OF SUPERVISION

Basically the cause of this casualty was lack of supervision. Drilling and production are two separate functions apparently with equal status on a drilling platform. Both groups were on the platform at this time and one group did not know what the other was doing. Hence welding was going on over producing wellheads. This situation has since been corrected by adding a new provision to the regulations for offshore drilling platforms which requires that the person in charge be specifically defined for all situations.

A parallel situation can occur aboard vessels, particularly in shipyards and when loading or discharg-

ing, when dangerously incompatible activities are permitted to take place at the same time. Fortunately, no major casualties aboard vessels were caused in this way last year but this is essentially a supervisory problem and only continued vigilance on the part of the masters or persons in charge will prevent such cases.

#### THE CARL D. BRADLEY

The third Board was convened to investigate the sinking of the *Carl D. Bradley* in Lake Michigan on 18 November 1958. This was by far the most serious casualty of the year.

The *Bradley* was a self-unloading bulk freighter built in 1927. She departed Gary, Ind. 17 November 1958 en route to Calcite, Mich. in ballast. The weather forecast was for whole gale winds of 50 to 65 miles per hour from the south shifting to the southwest. The vessel proceeded up the lake hugging western shore and although the wind continued to increase during the period the vessel was riding easily. In the vicinity of Cana Island in the early afternoon of 18 November course was altered to the northeast across the lake toward Lansing Shoal. Speed was 14 to 15 knots. The seas which were then on the starboard quarter nearly astern were estimated to be 20 feet high with 50 to 75 feet between crests but the vessel was riding smoothly both as to roll and to pitch. In describing these conditions one of the survivors stated that the sideboards for the mess table were not required at the evening meal. It was at 1730, just at dusk, when suddenly an ominous thud was heard. Looking aft the Chief Mate who was one of the two survivors saw the stern sagging. There was no doubt in anyone's mind that the vessel was in serious trouble. The general alarm was sounded and distress calls were sent out. Within 3 minutes the ship heaved up amidships and apparently broke in two. Subsequent information indicates that the vessel suffered extensive fractures, but that the two halves did not completely separate. Four men from the forward section managed to reach the life raft that had been stowed forward but two of those were lost during the night. A lifeboat from the after section was later found overturned but whether or not it was successfully launched and later capsized is not known.

Weather conditions and darkness severely handicapped the search and despite the fact that there was a German motor vessel close at hand when the disaster struck and response to the distress call was prompt it wasn't until after daylight that the two sur-



The bow of the *Constitution* almost completely severed the bow of the *Jalanta* forward of her pilothouse and approximately 25 minutes later the bow finally broke off. Considerable hull damage was sustained by the bow of the *Constitution*; miraculously, however, since the *Jalanta* was not gas free, there was no fire or explosion and there were no lives lost and no injuries to any persons.

vivors were located and bodies were recovered from the water.

After an exhaustive review of the case at Headquarters which eliminated all of the usual possibilities, it was concluded that there was evidence of a structural weakness. Since there are other vessels of similar age and design it was recognized that this could be of tremendous significance. A program of technical evaluation to determine if there was evidence of structural weakness in other bulk carriers operating on the Lakes was immediately embarked upon. In addition it was apparent that we in the Coast Guard should look over our own inspection procedures in an effort to increase the possibility of detecting structural weaknesses. This program is now in progress. Of course, the early detection of structural weaknesses by the Coast Guard is not the final answer. Owners and operators still have the initial responsibility to set up overall safe operating and maintenance standards and this is in addition to the master's responsibility to see that such standards are adhered to on the day-to-day and voyage-to-voyage basis.

The cause of the vessel sinking was,

of course, of utmost importance but also as a result of this casualty special study by the Merchant Marine Council is to be given to the possible need for an additional liferaft and the need for mechanical disengaging apparatus on lifeboats on Great Lakes vessels.

#### TUG BARBARA LEE

On 20 November 1958 an explosion occurred on one of three tank barges loaded with gasoline and being push-towed in the Ohio River by the diesel tug *Barbara Lee*. The mate on the tug had gone forward on the port lead barge to rig a running light using an extension cord from a receptacle on deck. At the time the hatch to the forward rake was apparently open. While the mate was so engaged an explosion occurred in the port rake compartment lifting the deck of the barge and killing the mate. Gasoline leaking into the water spread fire to the other barges. The total property damage was in excess of \$300,000. The Board found that vapors in the forward rake had been ignited either by faulty fixed wiring in the rake or by faulty portable wiring to the running light. The vapors had apparently seeped into the rake end through

previously sustained damage to the forward bulkhead of No. 1 port tank.

Since the Coast Guard is always interested in determining why boilers explode, a Board was convened to investigate the explosion aboard a non-propelled derrick barge on the Mississippi River on 30 January 1959 with the loss of 7 lives.

The derrick barge was not subject to any of the inspection laws of the United States and was not required to be manned by persons licensed or certificated by the Coast Guard.

The boiler, a single pass vertical fire tube type using oil for fuel, exploded with a force that scattered parts over a wide area, killing all of the responsible operating personnel. As a result the exact cause of the explosion could not be determined but it was apparent from the poor condition of some of the pieces that were recovered that improper maintenance was at least a contributing factor.

#### MV ANNE—MISS EMPIRE

Another case, involving two small passenger vessels, occurred in the Gulf on 22 February. The *MV Anne*, a 65-foot crew boat with five persons aboard was en route from an offshore oil rig heading north toward Bayou Fontanelle at 10 miles per hour. The weather was clear and calm. The *Miss Empire*, a 39-foot fishing vessel with 12 persons aboard, was heading south out of Bayou Fontanelle at 7 to 8 miles per hour. The *Miss Empire* first saw the *Anne* 2 to 3 miles away fine on the port bow in a meeting situation. The bearing between the two vessels remained constant up until the time of the collision and no attempt was made to establish a passing agreement. The operator of the *Miss Empire* claimed he sounded a two-blast signal on the mouth horn "to indicate danger" when the vessels were 75 to 100 feet apart but no one else heard this signal. Last minute evasive action was taken without success and the *Miss Empire* was struck and holed on her port quarter. Aboard the *Anne* the *Miss Empire* was first sighted 25 to 30 feet ahead on a crossing course only moments before the collision and evasive action, although taken instinctively, was futile. After the collision the *Miss Empire* sank with the loss of two lives, one man missing, and one injured. The cause of this casualty was simply the failure of the *Miss Empire* to initiate a passing agreement and failure of the *Anne* to keep a proper lookout. The Board also found both vessels carrying passengers for hire without a valid Certificate of Inspection and the *Miss Empire* in vio-

lation of manning requirements for not having a duly licensed operator in charge. In this connection it was also noted that the operator of the *Miss Empire* was obviously not familiar with the Rules of the Road. Remedial action in the form of assessment of monetary penalties has been taken.

The report of the Board convened to investigate the collision between the Canadian grain vessel *Royalton* and the Liberian freighter *Monrovia* in the Great Lakes on 25 June has not yet been reviewed at Coast Guard Headquarters. Preliminary information indicates that the vessels were proceeding in thick fog. The *Monrovia* sank as a result of the collision but no lives were lost and no one was reported injured. A resumé of this case will appear in the *Proceedings of the Merchant Marine Council* after final action on the Board's report by the Commandant.

#### PASSENGER LINERS

Of particular importance this past year were the two collisions each involving one of our top passenger liners and these cases were doubly significant because both were fog collisions in which radar was a factor.

Oddly enough, our casualty tabulations for the year reveal that another year has passed without death to a single passenger aboard an inspected passenger vessel as a result of a vessel casualty. I wish I could say that we point with pride to this record. Actually, but for the grace of God, this might have been the worst year for passenger casualties aboard U.S. inspected vessels since 1934 when 124 persons were killed on the *Morro Castle*.

#### CONSTITUTION-JALANTA

The first of these two collisions involved the *Constitution* and a Norwegian tanker, the *Jalanta*, about 5 miles southeast of Ambrose Light and occurred at 10:40 a.m. on 1 March. The *Constitution* was approaching Ambrose Light Vessel on a northerly course en route from Newport News, Va., to New York with 116 crew members and 33 additional persons. At approximately 0955 fog was encountered. The master began conning the vessel by radar and fog signals were commenced. The vessel was making slightly more than 18 knots and this speed was maintained. The radar target later identified to be the *Jalanta* was first sighted 5° on the port bow 7½ miles distant. Based on continued observations the master concluded that the target was on an opposite parallel course but no plot

was maintained. According to the course recorder the *Constitution* began coming right easily 8 minutes before the collision from a heading of 000° T and was steadied briefly on about 035° T. When the target was 2 miles away on the port bow it was lost in the sea return on the radar scope. At about 1037, 3 minutes before the collision, the fog signal of another vessel was heard on the port bow. Two minutes later the signal was again heard on the port bow at which time engine speed was reduced to the RPM which would deliver 11.1 knots when momentum was finally lost. However, almost immediately the bow of the *Jalanta* appeared out of the fog one-quarter mile off fine on the port bow on a course at right angles to that of the *Constitution*. Full astern and hard right rudder were immediately ordered on the *Constitution* but were not sufficient to prevent the collision.

The *Jalanta*, in ballast but not gas free, had taken departure at about 10 o'clock approximately 2 miles off Ambrose en route to Aruba. At 1005 visibility decreased, speed was reduced to one-half ahead, fog signals were commenced and a course of 144° T. was set. This course was maintained up until the time of the collision. Although no radar plots were made the vessel navigated with caution by proceeding at greatly reduced speed and using the radar to supplement eyes and ears. Sea return also affected the *Jalanta's* radar, depriving her of bearings and ranges for several minutes before the collision. She was proceeding at 5 knots when the signal of the *Constitution* was first reported abeam. Speed was reduced to dead slow and the Master, upon hearing the second signal, concluded the sound was forward of the beam and stopped his engines. Within moments the *Constitution* appeared out of the fog forward of the beam one-quarter of a mile away. The *Jalanta* ordered full astern and the vessel was estimated to be dead in the water at the time of impact.

The bow of the *Constitution* almost completely severed the bow of the *Jalanta* forward of her pilothouse and approximately 25 minutes later the bow finally broke off. Considerable hull damage was sustained by the bow of the *Constitution*; miraculously, however, since the *Jalanta* was not gas free, there was no fire or explosion and there were no lives lost and no injuries to any persons.

Unquestionably had a radar plot been maintained aboard the *Constitution* the true course of the *Jalanta* would have been determined and the collision could thereby have been

avoided, but only because the *Jalanta* maintained the same course throughout. In weighing the merits of the radar plot in this case we must not lose sight of the fact that the *Jalanta* could have changed course at any time and had she done so after the sea return obscured the *Constitution's* scope any information gleaned from previous plotting would have been useless. The principal fault, however, was the excessive speed and failure to stop when the fog signals of the *Jalanta* were heard forward of the beam. Had the requirements of the law been adhered to in this case the collision would never have occurred.

#### SANTA ROSA-VALCHEM

The second case involved the *Santa Rosa* and the tanker *Valchem*. This collision occurred at 0301 e.s.t., 26 March 1959. The failure to comply with the Rules of the Road once again accounted for the loss of 4 lives, injuries to 21 persons, and nearly \$2,000,000 in property damage.

The *Santa Rosa*, en route Pt. Everglades, Fla., to New York with 247 passengers, was proceeding at 21 knots on a northerly course off the Jersey coast in patchy fog. Ten minutes before the collision the *Valchem* was picked up on radar 5° on the starboard bow 4.9 miles away. Two ranges and bearings were taken 3 minutes apart and plotted and it was estimated that the *Valchem* was heading 202½° making 16 knots. These courses were converging slightly and it was further estimated that the two vessels would pass three-tenths of a mile apart. In the next 5 minutes, until collision occurred, no further plots were made. Course was altered about 10° to the left to allow for more room. Four minutes before collision a fog signal was heard off the starboard bow. A glance at the radar showed the *Valchem* had changed course to her own right. Two minutes before collision the fog signal of the other vessel was again heard. The *Santa Rosa* was ordered full left. Less than a minute the *Valchem* appeared out of the fog one-fourth of a mile away ½ to 2 points on the starboard bow and moving fast. Hoping to clear the stern of the *Valchem* the rudder was shifted to full right. Up until this time the engines which were still going full ahead were finally rung full astern by the mate on watch.

The *Valchem*, outbound from New York en route to Baytown, Tex., was empty, but not gas free. She first saw the *Santa Rosa* on radar at 8 miles 1° or 2° on the starboard bow.

Ten minutes before the collision the *Valchem* was on 194° T., speed 16 knots. Course was altered to the right and 6 minutes before the collision the *Valchem* steadied briefly on 210°. With the *Santa Rosa* now 15° on the port bow the *Valchem* began coming more to the right in 5° or 10° increments. The *Santa Rosa* continued to bear down on the *Valchem* on a collision course. Two separate fog signals were heard aboard the *Valchem* and at the time of the second, about 2 minutes before collision, the engine was ordered stopped. The *Santa Rosa* finally appeared out of the fog 100 yards off the port beam. The *Valchem* was still coming right, heading about 257° T., and making between 13 and 14 knots when the bow of the *Santa Rosa* penetrated the engineering spaces.

Once again fate was instrumental in preventing the explosion and fire which so often accompanies collisions with empty tankers.

In this casualty as in the previous case, the principal cause was violation of the International Rules—specifically immoderate speed and failure to stop when a fog signal was heard forward of the beam.

The misinterpretation of the radar aboard the *Valchem* needs no comment but the use of the radar aboard the *Santa Rosa* is particularly interesting when considered in the light of the *Constitution-Jalanta* case.

Although it could hardly be considered timely in the light of the speed she was making, the *Santa Rosa* did plot two ranges and bearings from which a predicted course and speed was obtained. If you will recall the *Valchem* was first picked up on the radar 10 minutes before collision and it was about that time that the *Valchem* began coming gradually to her own right from course 194° T. In other words the plotting which could have aided the *Constitution* did not and could not provide the information sought by the *Santa Rosa* simply because the *Valchem* was not steadied on a course at the time the observations were made.

Even when plotted radar observations establish a course and speed there is still no assurance that the other vessel is not going to change her mind at the last minute. It has been suggested that radio communication between vessels might overcome this difficulty. If all ships could be required to have radio and the problem of cluttered frequencies and a practical universal language could be overcome there would still be the problem of pairing off radio transmissions with radar targets

when more than one appears on the scope.

Suffice it to say, that neither of these cases did anything to change the Coast Guard's view that radar is still only an aid to navigation. Undoubtedly a safe system of navigation in fog can be devised. Obviously it is not here now. In the meantime the Rules of the Road is the only effective anticollision device. The Coast Guard is charged with the enforcement of the rules and the taxpayers, including those who travel by sea, are paying for such enforcement.

#### PLEASURE MOTORBOAT

The swamping of a pleasure motorboat with the loss of seven lives in Puget Sound on 26 April 1959 was also of sufficient importance to warrant a Marine Board. The boat, a 43-foot diesel-propelled cabin cruiser, had just been redesigned and rebuilt by her owner with the intention of using her to carry parties for hire. The boat had not yet been certificated by the Coast Guard for the carriage of passengers. The boat departed Tacoma, Wash., about noon on 26 April en route to Seattle with the owner and 11 guests including 2 infants. During the trip squalls were encountered and sea conditions varied with the boat's location. At about 1405, 1 mile south of Alki Point, winds were southerly at 30 miles per hour and a 5- to 6-foot chop was running. Suddenly it was noticed that the boat was low in the stern and water was coming in the freeing ports. The guests were directed to put on life jackets and were beginning to do so but before it could be determined why the vessel was flooding or what could be done about it she went down by her stern and then rolled over on her beam ends. The casualty was observed from the shore and help was summoned but before it arrived four adults and one infant had perished in the cabin and one other had drowned over the side and one was missing. Examination of the hull after the casualty showed that a union in the salt waterline to the heat exchanger had become uncoupled during the trip and flooded the aftercompartment. There was ample evidence in the record to support the conclusion that the boat was a stout and able craft, well built and well equipped. Certainly there was no negligence, but probably that coupling was no more than hand tight—an understandable oversight but a most disastrous one. The only lesson to be learned here is that important details can escape notice, and accordingly a system of checking and rechecking is the only assurance of

safety, particularly in motorboats, where the margin for error is comparatively small.

#### TABULATIONS OF CASUALTIES

During fiscal 1959 there were 5,016 marine casualty cases reported to the Coast Guard. This includes 3,125 cases involving vessel casualty and 1,891 cases of personal accident not involving vessel casualty. An even 200 persons were killed in vessel casualties involving commercial vessels of all sizes and 358 persons were killed in vessel casualties involving pleasure boats. On commercial vessels 211 persons died as the result of personal accidents and 1,393 persons were injured and incapacitated in excess of 72 hours. On pleasure vessels 157 persons died in personal accidents. The figures on personal injury accidents on pleasure boats are incomplete since the new reporting procedures under the Federal Boating Act did not go into effect until 10 March 1959. Natural deaths, homicides, and suicides are not included in the foregoing figures. Although these totals reflect a general increase in all types of casualties over the previous year, further studies will be required to determine the true trend of preventable accidents.

The tabulations thus compiled permit some interesting observations. The greatest loss of life on commercial vessels occurred as the result of foundering, sinking, or capsizing. Out of a total of 96 lives lost, 3 were lost on inland uninspected tugs, 33 were lost on the *Bradley*, and the remaining 60 were lost on commercial fishing vessels. In 24 cases, out of the 78 which involved fishing vessels, the failure of equipment or unseaworthiness was the principal cause. These vessels are not inspected by the Coast Guard.

On commercial vessels explosions and fires, which were not the result of any other casualty, accounted for 22 deaths, only one of which was on a tank ship and only 2 on tank barges.

It will probably come as a surprise to no one to learn that in grounding cases and collision cases which involved either another vessel or some other object, personnel fault appeared as the largest single cause.

In the tabulation of personal accidents aboard commercial vessels the greatest number of deaths resulted from natural causes which accounted for 174 and of which 108 were crew members who died of one of the cardiovascular diseases. The second largest group of deaths resulted from falling overboard. One hundred and four persons were lost in this type



A closeup view of the bow of the *Santa Rosa* carrying the stack and adjacent ventilators from the tanker *Valchem* after a collision 22 miles east of Atlantic City, N.J.

of accident. Next year we hope that there will be a marked decline in this category as a result of the recent Coast Guard approval of a work-type life-vest and the publicity that has been given it. Tugs and barges usually account for a large number of the casualties occurring in this category. This year was no exception. The final score was tugs 18 and barges 22.

#### SUICIDE—THIRD WORST KILLER

The third worst killer aboard U.S. commercial vessels in fiscal 1959 was suicide, with a total of 34 deaths. Obviously, this has become a particularly serious problem and one that is most difficult to do anything about, particularly aboard ship. Without entering the realm of the psychiatrist, however, a review of these cases has revealed that most individuals so disposed gave definite prior indications

of mental disorder. The most common and easily recognized symptoms were aural and visual hallucinations. Others were feelings of persecution, abnormal religious preoccupation, and abnormal feelings of insufficiency. In many instances the individuals appeared to return to normal shortly before they went overboard. A person afflicted with a mental disorder is dangerous to himself and possibly others. In addition, if a man goes overboard, the safety of others may be risked when rescue is attempted. The various manifestations of mental illness are indexed in the *Ship's Medicine Chest and First Aid at Sea* under mental diseases and insanity, depressions, hallucinations, excitement, and delirium. This text should, of course, be consulted for detailed guidance in every mental case but in addition, the following

basic steps should be considered whenever this problem arises at sea:

1. Set a round-the-clock watch on the man and have at least two men with him when on deck.
2. See that he is treated with patience, tact, and firmness.
3. Radio for medical advice.

If these precautions are taken the appalling death rate from this cause should be materially reduced.

#### FALLS ON DECK

Among the lost-time injury cases falls on deck accounted for the most, with a total of 124 injured, in addition to 2 deaths. In most instances the cure for this type of casualty is dictated by the circumstances with the human element being the largest single factor.

The second largest group of lost-time injury cases occurred as the result of slips and falls from ladders and stairways. In this category there were 113 injured and 7 killed. In 58 of these cases the cause could be classified only as a "mis-step" but no one can deny that the ladder or stairway itself was probably a factor. In those cases where vertical ladders are and must be employed perhaps little can be done but this is not true where stairway-type ladders are involved. The recent adoption of the minimum width of 28 inches and an upper limit of incline of 50 degrees from the horizontal for stairways aboard cargo and miscellaneous vessels is a step in the right direction. But like all regulations these are minimum safe standards. It would certainly seem that the designers of the modern super vessels—cargo, passenger, and tankers alike—could find some way to provide for wider ladders of gentler slope and deeper tread. It seems equally certain that any added expense would be more than adequately offset by the reduction in lost-time accidents and deaths from this source.

That, in broad terms, is the marine casualty picture for fiscal 1959. In many problem areas there has been a gratifying improvement over past years; in others renewed efforts are needed.

We are all continually hammering at individuals to think and act safely and of course we cannot afford to relax this pressure. Human nature being what it is, however, we can never expect to see the day when accidents are eliminated but if we are ever to approach the irreducible minimum we must continue to strive to increase the margin of safety by improving materials, methods, equipment, and conditions.

# CONSTRUCTION COMMITTEE'S PROPOSALS TO 1960 SOLAS CONFERENCE

By The Late Vice Admiral Edward L. Cochrane, USN



THE NATION last November lost a great proponent of marine safety with the passing of Vice Admiral Edward L. Cochrane, USN (retired), whose long and distinguished career included service as wartime Chief of the Navy's Bureau of Ships, Chairman of the Federal Maritime Board, Maritime Administrator, Dean of Engineering and Vice President for Industrial and Governmental Relations at M.I.T.

Admiral Cochrane was one of four marine experts called upon to analyze the *Andrea Doria-Stockholm* disaster for the House Merchant Marine and Fisheries Committee. This led to his appointment by the Commandant, U.S. Coast Guard, as Chairman of a committee to reevaluate standards of subdivision, damage stability, and ballasting, which was later expanded to become the Construction Committee in the organization preparing the U.S. position for the 1960 Safety of Life at Sea Conference. His service as Chairman was one of the last of Admiral Cochrane's outstanding contributions to the advancement of marine safety.

The Construction Committee's proposals for revision of the 1948 Safety of Life at Sea Convention were not elaborated upon in the November issue of the *Proceedings*.

The following article is drawn from Admiral Cochrane's report on the activities of the Construction Committee.

THE CONSTRUCTION Committee appointed by the Commandant, U.S. Coast Guard, includes representatives of all of the interested and knowledgeable American agencies in the Construction Committee's areas of responsibility.

## ORGANIZATION

The full Committee was so large and the areas so diverse that, following an initial meeting for organization and policy, this Committee was divided into five subcommittees. The assignments to these committees were made as far as possible with due consideration to the interests, special experience, and talents of the members.

Each of the subcommittees was charged with the review, study, and preparation of recommendations in an area of special significance in SOLAS, as follows:

- (a) Subdivision, under Mr. William F. Gibbs, Chairman.
- (b) Stability, under Mr. John P. Comstock, Chairman.<sup>1</sup>

<sup>1</sup> The eminent naval architect, Mr. John P. Comstock of the Newport News Shipbuilding and Drydock Co. has been appointed by the Commandant to carry on the duties of Chairman of the Construction Committee.

- (c) Ballasting, under Rear Admiral H. C. Sheppard, USCG (retired), Chairman.
- (d) Fire Protection, under Mr. Hollinshead de Luce, Chairman.
- (e) Mechanical & Electrical Installations, under Mr. John W. Heck, Chairman.

At the initial meeting of the Construction Committee, the policy that no proposals should be advanced which would decrease the current standards of safety for passenger ships now under or to be registered under the U.S. flag was unanimously adopted.

## STAFF

A technical staff to operate under the Technical Administrative Secretary was recruited by borrowing young naval architects from the Bureau of Ships, the Maritime Administration, the American Bureau of Shipping, and the Newport News Shipbuilding & Drydock Co. Studies and analyses were made of recent marine casualties, of the designs of recent U.S. ships, and of the bases for proposals for more effective standards for ship construction. All of these studies were in no small part influenced by the information available on the *Stockholm-Andrea Doria* collision.

## BALLASTING

The Ballasting Subcommittee proposed that ships be able to operate over at least their "normal operating" range (which is defined) without resorting to the use of oily ballast. United States ships are presently being so designed and built. It was felt essential, in view of the more effective enforcement of the various oil-pollution laws and the natural and understandable reluctance of marine engineers to ballast empty fuel tanks with salt water, that new ships should be required to be fitted with necessary tankage to permit any necessary ballasting to be done in a "clean ballast" system.

## SUBDIVISION AND STABILITY

The 1914, 1929, and 1948 Conventions dealt carefully with the problem of subdivision from the point of view of longitudinal stability. Transverse stability was covered in only the most cursory fashion and in the broadest terms. The Committee concluded that it was unrealistic to treat longitudinal and transverse stability separately.

The subcommittees on subdivision and stability, sitting in a joint panel, reached the conclusion that a new approach to the problem of ship resistance to damage is essential. The panel accordingly has prepared pro-

posals based upon the fundamental premise that every passenger ship should be able to withstand a specified extent of assumed damage at any point along her length. This "assumed damage" increases as a function of the length of the ship and also of the number of passengers for which she is to be certified. The damage is assumed to extend inward to the centerline but not penetrate a centerline bulkhead, and vertically from the keel through the bulkhead deck. For large passenger vessels the proposal will require a reserve of buoyancy and ability to withstand an extended length of shallow, ripping side damage.

In lieu of the traditional "margin" of freeboard of 3 inches below the upper surface of the bulkhead deck, it is now proposed that the margin line be drawn  $L/300$  ( $L$ =subdivision length) below the upper surface of that deck. Certain more realistic values for permeabilities for various shipboard spaces are also proposed.

#### FIRE PROTECTION

The proposals for fire protection are built around the U.S. philosophy and practice of containing any conflagra-

tion within incombustible partitions, minimizing the use of inflammables in the structure and outfit of a ship (i.e., Method I of 1948), and abandoning the reliance upon automatic sprinkler and detection systems covered by Methods II and III of 1948.

#### MECHANICAL AND ELECTRICAL INSTALLATIONS

In the mechanical-electrical areas, the 1948 Convention has been carefully reviewed for modernization and technical developments. Greater protection for the emergency source of electrical power is advocated. Limitations will be proposed regarding temperature sensitive materials to preclude their use in critical locations. Greater protection for the bilge main is put forward along with increases in the number of powered bilge pumps. Other proposed changes are to improve the fire extinguishing capability.

#### CARGO SHIPS

Following the precedent of the 1948 Conference, consideration has been given by all subcommittees to the inclusion of suitable provision for the safety of life of personnel (passengers and crews in cargo vessels).

Recommendations which are reasonable and in no case more demanding than the standards for subdivision, stability, and fire protection of U.S. cargo ships recently built or now under construction are included. Most cargo ships are now being constructed with at least one-compartment subdivision except for certain special types and the shelter deck ships. There seems to be little difficulty, if any, in attaining such compartmentation in the larger ships and the Committee is therefore proposing a minimum one-compartment requirement for cargo ships over 330 feet in length. International acceptance of this proposal, however, may depend upon the success of certain tonnage reforms now under discussion.

The fire protection requirements proposed for cargo vessels have the purpose of providing an island of refuge within the ship by segregating the accommodation, public, and control spaces from the remainder of the ship. The use of combustible materials within this enclosed zone is to be limited. Provision for isolation of one deck from another to prevent the spread of smoke and flame within the zone is also required.

## RADAR OBSERVER

Since 1 January 1959 the Coast Guard has required an applicant for an original, raise of grade, or increase in scope of license for service as a deck officer on ocean, coastwise, or Great Lakes vessels of 300 gross tons and over to qualify as a radar observer. This requirement is met by successfully passing an examination given at a Marine Inspection Office or by presenting a certificate of successful completion of a course of instruction at a Maritime Administration Radar Observer School or other Government operated school approved by the Commandant.

An officer who has qualified as a radar observer in order to obtain an original, raise of grade, or increase in scope of license is not required to qualify again as a radar observer for the issuance of any subsequent raise of grade or increase in scope of his license. However, the examination for such a subsequent raise of grade or increase of scope of license embraces the proper operation and utilization of marine radar equipment

and includes at least one practical plotting problem. A certificate of successful completion of a course of instruction is not acceptable in lieu of this examination in radar by the Coast Guard.

Every master who obtained a license prior to 1 January 1959 is not presently required by Coast Guard licensing regulations to become a qualified radar observer. Similarly, every deck officer who obtained a license prior to 1 January 1959 is not required to qualify if he simply renews his license without ever obtaining a raise of grade or increase in scope. Nevertheless, all officers who serve aboard radar equipped vessels are expected to be able to properly interpret and utilize the information presented to them by the radar equipment. Consistent with this expectation the Coast Guard has proposed a regulation which is a step towards insuring that end for the manning of inspected vessels. This regulation, on the Merchant Marine Council Public Hearing Agenda scheduled to be held begin-

ning on 21 March 1960, requires that every radar equipped vessel of 300 gross tons and over which, on or after 1 January 1961, is issued a Certificate of Inspection for the navigation on ocean, coastwise, or Great Lakes waters shall have in its complement of deck officers (including the master) only officers who have qualified as radar observers.

The masters and other deck officers who would be affected by the adoption of the above proposed regulation are encouraged to qualify as radar observers as soon as practicable, either by passing the Coast Guard examination or by successfully completing a course of instruction at an approved school. Those persons who desire to qualify by Coast Guard examination may appear at their convenience at a Marine Inspection Office to take the examination. Many have already taken the examination and have been furnished documentary evidence of their professional qualifications as radar observers.



# MARITIME SIDELIGHTS

Scientists at headquarters of the Coast and Geodetic Survey, U.S. Department of Commerce, are studying microseisms (earth vibrations) that have been recorded continuously in Antarctica during the International Geophysical Year and its continuation. As the vibrations usually are not carried across geological discontinuities (gaps), the findings may confirm or disapprove the theory that the land mass is not a single continent but divided.

The Survey operates IGY seismic stations at the South Pole and at Byrd Station. The Seismologists making the study are borrowing similar records from Mirny and Vostok stations operated by the Soviet Union; Halley Bay Station operated by Great Britain; Scott Base operated by New Zealand; and Mawson station operated by Australia.



The *Methane Pioneer* is well on its way to being accepted as the prototype of a new class of oceangoing carriers, according to an article in the *New York Times*. The vessel, after a year of operation, has completed her surveys, the results of which have given new impetus to the widespread belief that a new class of ship, liquid gas carriers, will soon be emerging from the world's shipyards.



New York voters, in their November 3d election, approved a proposed constitutional amendment permitting the State legislature to negotiate the sale or lease of the state's barge canal system to the Federal Government.



The SS *Atlantic*, the only U.S.-flag tourist-class liner on the North Atlantic run has discontinued operation. American Export Lines, according to the maritime press, has tentatively agreed to purchase the vessel, subject to Federal Maritime Board approval. Withdrawal of the only vessel of American Banner Lines will leave the route from New York to Zeebrugge and Amsterdam without a U.S.-flag passenger operator.

## NEW PFE SHIPS



A \$27,346,000 contract for construction of two cargo ships was signed by Pacific Far East Lines, Inc., of San Francisco, owner; Bethlehem Steel Co., Shipbuilding Division, Pacific Coast District, builder; and the Federal Maritime Board. The vessels, part of a nine-ship program, will be

of the basic Mariner type, 565 feet in length with a 76-foot beam. Modifications to the standard design will consist of additional deep tank and reefer space, bulk unloaders, lift-on lift-off features, and advanced safety and navigation features.

Work on the \$3,500,000 conversion to a container ship of the SS *Hawaiian Citizen*, a C-3 cargo vessel of the Matson fleet, has started at the Willamette Iron and Steel Company yard in Portland, Oregon. When completed, the *Citizen* will carry more than 300 aluminum containers in her holds and on deck. Matson Navigation Company, according to its president, Randolph Sevier, is also considering the purchase of two C-4 freighters for the Hawaiian sugar trade.



The Port of New York handled 145,531,300 short tons of water-borne commerce in the year 1959. Of the port's total commerce, 64.8 percent was oceangoing—either foreign or coastwise. The remainder moved on inland waterways or between points in the port. Although not a yearly record, it was the fifth highest year since 1924, when the Army Corps of Engineers started keeping complete annual statistics.

Over 50 executives of steamship and allied companies attended a conference at Kings Point recently to explore the application of electronics to maritime business administration. Rear Admiral Gordon McLintock, U.S. Merchant Marine Academy Superintendent, opened the proceedings, known as the Automatic Data Processing Conference which was jointly sponsored by the Academy, the Institute, and the firm of John Diebold & Associates, Inc.



Captain Hewlett R. Bishop, Atlantic Coast Director for the Maritime Administration, has announced that the Radar Observer School in New York has graduated its 100th class of deck officers. This brings to 1,609 the number of radar observer certificates issued by the school since its inception in 1957. All 112 deck officers including Masters in the fleet of 22 ships now in operation by the Gulf Oil Corp. have completed the one-week course.



# nautical queries

## MERCHANT MARINE STATISTICS

Q. a. What is the duty of the Master of a vessel with respect to the cargo gear of a vessel preparing to load explosives?

b. Has the Master of a vessel loading explosives the right to prohibit the use of stevedore or contractor furnished equipment to handle explosives?

A. a. Before explosives are loaded or unloaded on or from a vessel the Master or other person in charge of the vessel shall be required to ascertain by examination the condition and working order of all slings, crates, baskets, boxes, chutes, mattresses, tackle, and other equipment to be used in the transfer operation.

b. Any and all equipment which in the judgment of the Master or other person in charge of the vessel is not in safe working condition shall be rejected and he shall prohibit its use and take such precautions as he may deem necessary to be certain such rejected equipment is not used for the purpose of loading or unloading explosives. The Master or other person in charge of the vessel shall keep watch of all equipment used during the transfer of explosives and if any part of the equipment shows any defect or is damaged in use, work shall be stopped and the damaged or defective equipment repaired or replaced before permitting the loading or unloading to continue. The inspection of cargo working equipment shall apply to the vessel's equipment and to stevedore's or other contractor's equipment.

Q. What is the maximum amount of liner wear in a diesel engine at which the liner should be renewed? And what may be considered an excessive rate of wear?

A. Liners should be renewed when the amount of wear has reached .005 inch per inch of cylinder diameter. Any rate of wear in excess of .001 inch per 1,000 hours of operation should be thoroughly investigated and the cause remedied.

Q. Why is the lubrication of the piston-pin bearing less efficient than that of a journal bearing?

A. The lubrication is less efficient because the swinging motion does not help to form an oil film as much as the rotary motion of a journal.

Q. Why do the intake valves of four-cycle diesel engines generally require less maintenance than the exhaust valves?

A. The intake air which passes over the intake valve during each cycle acts as a cooling medium and keeps the valve at a relatively low temperature, whereas the exhaust valve is more apt to become burned and fouled with carbon.

Q. What would be the probable cause of a constantly decreasing alkalinity and chlorinity of the boiler water in a modern water tube boiler fitted with a superheater and a desuperheater, and operating under normal conditions of make-up feed?

A. A constantly decreasing alkalinity and chlorinity of the boiler water indicates a leak in the water-side of the boiler. If no excess extra feed was being used, the leak would probably be caused by a poorly fitted joint in the desuperheater line allowing the water from the drum to enter the desuperheater.

Q. List the internal fittings usually found in the steam drum of integral superheater boilers.

1. Internal feed pipe;
2. Internal blow pipe and scum pan;
3. Baffles, swash plates and separators;
4. Dry pipe;
5. Desuperheater.

Q. Explain why it is so important to keep air leakage into the furnace from the boiler casings to a minimum.

A. Waste in fuel due to air leakage into the furnace will be in proportion to the air pressure generally used and may amount to 10 percent or more. The air leaking through boiler casings does not become intimately mixed with the fuel and, therefore, does not aid in the combustion of unburned gases. On the contrary, it has a decided chilling effect on both the gases of combustion and the heating surfaces.

Q. When one of the line leads in a three phase supply to an induction motor opens up after starting what may result?

A. A three-phase motor may run on single phase causing an overload of that phase and excessive heating of the motor if one of the line leads opens after starting.

There were 904 vessels of 1,000 gross tons and over in the active oceangoing U.S. merchant fleet on November 1, 1959, according to the Maritime Administration. This was 12 less than the number active on October 1, 1959.

There were 30 Government-owned and 874 privately owned ships in active service. These figures did not include privately owned vessels temporarily inactive, or Government-owned vessels employed in loading grain for storage. They also exclude 26 vessels in the custody of the Departments of Defense, State, and Interior.

There was a decrease of 10 active vessels and an increase of 13 inactive vessels in the privately owned fleet. Two freighters, the *Biddford Victory* and the *Bulk Leader*, were returned from foreign to U.S. flags. The tanker *National Defender* was delivered from new construction. This increased the total privately owned fleet by 3 to 1,023.

Of the 149 privately owned inactive vessels, 72 dry cargo ships and 58 tankers were laid up for lack of employment, 13 more than on November 1. The others were undergoing repair or conversion.

The Maritime Administration's active fleet decreased by 2, while its inactive fleet decreased by 13. Sixteen Liberty ships were sold for scrap. The prototype tanker *American Explorer*, built for the Administration, was turned over to the Navy Department. One vessel was turned over by the Navy to the Administration for lay-up in the National Defense Reserve Fleet, making a net loss of 15 in the Administration's fleet, or a total of 2,052. The total U.S. merchant fleet, active and inactive, decreased by 12 to 3,075.

One cargo ship conversion to a containership was ordered. One new tanker was delivered for U.S. flag-operation, one for foreign flag registry and one to naval operation. The total of large merchant ships on order or under construction in U.S. shipyards decreased by 2 to 72.

Seafaring jobs on active oceangoing U.S.-flag ships of 1,000 gross tons and over, excluding civilian seamen manning Military Sea Transportation Service ships, were 49,156. Prospective officers in training in Federal and State nautical schools numbered 2,209.

## AMERICAN WATERWAYS OPERATORS RECEIVE AWARD



THE AMERICAN WATERWAYS OPERATORS, INC., in ceremonies during the 47th National Safety Congress in Chicago, was presented with the National Safety Council's Association Award for 1959 for establishing an industrywide safety program and for exceptional promotion of occupational safety. The award was presented to F. A. Mechling (right), executive vice president of A. L. Mechling Barge Lines, Inc., Joliet, Ill., by Carl F. Vander Clute, general manager of the Marine Section of the National Safety Council.

### SYNCHRONIZED WHISTLE LIGHT

The Coast Guard has received several inquiries from ship operators and a manufacturer concerning the installation and use of a signal light synchronized with a ship's whistle. There is now a requirement for such a light set forth in the Western Rivers Rules of the Road (33 CFR 95.21).

Under the other rules, in the opinion of the Coast Guard, it would not be improper to use such a light, provided that it cannot:

- a. "be mistaken for the prescribed lights or impair their visibility or distinctive character."
- b. "interfere with the keeping of a proper lookout."

The construction of the light should be in accordance with 46 CFR 111.60-35, which is amplified by the Underwriters' Laboratories, Inc., Standard 595, for marine type lighting fixtures. The installation of the whistle signal

light by the owner or operator of an inspected vessel, at his discretion and responsibility, would be inspected by a Coast Guard inspector, whose approval on the specific vessel would mean that, in the inspector's opinion, it meets the above requirements.

At present, this light would not be considered as a recognition light under Rule 13(a) of the International Rules. At the forthcoming 1960 SOLAS Conference in London, the United States will propose the permissive use of the whistle signal light under the International Rules. The Coast Guard intends to await further developments at that conference before taking any additional action.

It should be noted that because of the different speeds of transmission between light and sound, the light will be visible to an observer before he hears the whistle signal.

### SAFETY ACHIEVEMENTS

The American Merchant Marine Institute, 11 Broadway, New York 4, N.Y., in cooperation with the Marine Section, National Safety Council, is looking for illustrations of ship safety achievements. They need examples to enter in competition for the annual Ship Safety Achievement Award. One is issued to a tanker, to a passenger ship, and to a freighter each year, if there are suitable achievements in these categories to warrant such an honor. The problem has been learning about these safety feats. A rescue, while not the ideal type of event they are seeking to highlight, is acceptable. An unusual and documented safety educational effort by a ship, a particularly noteworthy safety device invented by the seamen aboard a ship or a new safety practice developed and tested—any of these might be documented and submitted to the AMMI for consideration.

## USE OF INFLATABLE LIFE RAFTS

Inflatable life rafts have been proven successful as primary lifesaving equipment aboard U.S. Coast Guard and Navy vessels. The United Kingdom and other nations have allowed their use aboard certain commercial vessels with considerable success.

The 1948 International Safety of Life at Sea Convention presently prohibits the use of inflatable life rafts as any part of the lifesaving equipment required to be carried by vessels subject to the Convention. The United States delegation to the 1960 SOLAS conference, to be held in May 1960, will recommend changes to chapter III of the 1948 Convention which would permit the substitution of inflatable life rafts for life floats, buoyant apparatus and other type life rafts aboard treaty vessels and will specify when and to what extent such rafts may be substituted for lifeboats.

At the 1959 Merchant Marine Council Public Hearing, a specification for the guidance of manufacturers in building inflatable life rafts which may be approved by the Coast Guard for use aboard merchant vessels was considered and accepted. Several manufacturers are now in the process of obtaining approval for specific inflatable life rafts. It is

anticipated that such rafts will be available in early 1960. The use of approved life rafts as excess equipment on board all types of vessels will be permitted under present law and regulation.

Item One of the 1960 Agenda for the public hearings of the Merchant Marine Council puts forth certain proposals regarding inflatable life rafts which would apply only to vessels not subject to the 1948 Convention. These proposals are as follows:

1. Inflatable life rafts shall be permitted as substitutes for other types of life rafts, life floats, and buoyant apparatus, wherever they may be required on board all types of vessels.

2. Inflatable life rafts shall be permitted as lifesaving equipment on tank barges (all waters and tonnages) and seagoing barges of 100 gross tons and over in lieu of lifeboats.

3. For vessels of less than 3,000 gross tons the substitution of inflatable life rafts for lifeboats shall be along the following lines:

a. All vessels under 100 gross tons—Inflatable life rafts for all of required lifeboat capacity. Inflatable life rafts are now permitted for small passenger vessels under P.L. 519, 84th

Congress, and 46 CFR Subchapter T.

b. All vessels from 100 to 500 gross tons—One boat, and the balance of required lifeboat capacity in inflatable life rafts.

c. All passenger vessels and nautical school ships of 500 to 1,600 gross tons—Two boats (one on each side) and the balance of required lifeboat capacity in inflatable life rafts.

d. All cargo or miscellaneous vessels and tank vessels of 500 to 1,600 gross tons—One boat and the balance of required lifeboat capacity in inflatable life rafts.

e. All vessels of 1,600 to 3,000 gross tons—Two lifeboats (one on each side) and the balance of required lifeboat capacity in inflatable life rafts.

Views, comments and data both for and against these proposals regarding the use of inflatable life rafts are solicited. Expressions are also desired with respect to whether or not it is desirable to permit substitution of inflatable life rafts for lifeboats on vessels of 3,000 gross tons and above. Comment should be addressed to the Commandant (CMC), U.S. Coast Guard, U.S. Coast Guard Headquarters, Washington 25, D.C., prior to March 17, 1960.

## ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 1 November to 30 November 1959, inclusive, for use on board vessels in accordance with the provisions of Part 147 (46 CFR 146-147) of the Dangerous Cargo Regulations are as follows:

### CERTIFIED

*Pacific Chemical Manufacturing Co.*, 15th N.W. at Shilshole, Seattle 7, Wash., Certificate No. 406, dated 10 Nov. 1959, DEGREASER S.

*E. I. du Pont de Nemours & Co.*, Wilmington 98, Del., Certificate No. 407, dated 17 Nov. 1959, BLOCK CORROSION AND MOISTURE CONTROL.



"GENTLEMEN, TO RESUME—HAVE WE ANYTHING TO ADD TO THE SAFETY LETTER?"

# UNITED STATES COAST GUARD

ADDRESS REPLY TO:  
COMMANDANT  
U.S. COAST GUARD  
HEADQUARTERS  
WASHINGTON 25, D. C.



MVI  
4 November 1959

## Commandant's Action

on

Marine Board of Investigation; collision between the SS *Santa Rosa* and the SS *Valchem*, off the coast of New Jersey, 26 March 1959, with loss of life

The record of the Marine Board of Investigation convened to investigate subject casualty, together with its Findings of Fact, Conclusions, and Recommendations has been reviewed.

At 0301 e.s.t., 26 March 1959, the United States passenger liner SS *Santa Rosa* collided in dense fog with the United States tank vessel SS *Valchem* off the coast of New Jersey in position 39°24' N, 73°59' W. Three crew members from the *Valchem* died, one is missing, and several others on both vessels were injured to varying degrees including passengers on the *Santa Rosa*. In addition, one crew member on the *Santa Rosa* suffered a fatal heart attack.

Early on the morning of 26 March the *Santa Rosa* en route Port Everglades, Florida, to New York with 247 passengers was proceeding in patchy fog at 21 knots on a course of 010° True off the New Jersey coast. The radar was on and targets were being plotted. At 0251 with the radar on the 6-mile scale the watch officer observed a target off the starboard bow and reported to the master who was also on the bridge. At 0252 the assistant watch officer plotted the target on a bearing of 018° T, 4.9 mile distant. Because the target could not be seen visually engines were placed on standby, manual fog signals were begun, and the course changed 1 degree to the left to 009° T. Three minutes later the radar target was again observed, this time bearing 020°, 3 miles. By plotting on a maneuvering board the closest point of approach was calculated to be .3 of a mile to starboard. Upon receiving this report at 0256 the master ordered the course changed to 005° T. The vessel steadied briefly on this heading when the course was again changed to 000° T at 0257. Visibility at this time was estimated at 1¼ miles and closing. In the meantime the watch officer estimated the target's course and speed to be 202.5° T, 16.3 knots, advised the master, then received a telephone report from the bow lookout of a fog signal off the starboard bow. Immediately after receiving this call he personally heard a one- or two-blast signal and passed this information to the master also. The master checked the radar and noticed that the target had apparently altered course and would pass closer than .3 of a mile. He immediately ordered full left, the time being 0259 plus. Stepping to the port wing he heard a fog signal forward of his starboard beam and 30 seconds later saw the *Valchem* appear out of the fog ¼ of a mile away ½ to 2 points on the starboard bow heading from right to left. Hoping to clear the stern of the *Valchem* the master ordered hard right and the watch officer, on his own motion, rang full astern on the engine order telegraph. At 0301, with still about 21 knots of way on and with the bow still swinging left despite hard right rudder, the *Santa Rosa* struck the *Valchem* on the port side at about a 90 degree angle and penetrated the *Valchem's* boiler room spaces.

The *Valchem*, empty but not gas-free, was en route from New York to Baytown, Texas, and was also encountering patchy fog. The radar was on but targets were not being

plotted. Aside from the helmsman the watch officer was alone on the bridge. Fog signals were placed on automatic at 0200. At 0248 while proceeding full ahead on course 194° T at about 16 knots the radar target later identified as the *Santa Rosa* was observed one to two degrees on the starboard bow about 8 miles away. Visibility was estimated at that time to be 2 miles. Sometime after 0252 the helmsman was ordered to come right and at 0255 the vessel was steadied on 210° T. At this time the *Santa Rosa* bore 15° on the port bow. Less than a minute later course was altered to either 215° or 220° but before the vessel was steady another 10° to right was ordered. Still the radar bearing did not appear to change and there followed a series of course changes to the right in 10 degree increments. While in this turn the lookout on the bow sounded the bell twice, indicating something to port. The watch officer could see nothing and as he proceeded to the engine order telegraph he heard the fog signal of another vessel on the port beam. Stop was rung on the engine order telegraph and the fog signal taken off automatic. The time was 0259. Two prolonged blasts were sounded and the helmsman advised that the ship was heading 255. The watch officer ordered 260 and in the meantime the master arrived on the bridge. Glancing at the radar he observed the target extremely close just abaft the port beam. After the watch officer sounded another two prolonged blast signal the lights of the *Santa Rosa* appeared abaft the port beam about 100 yards away. Seconds later with the *Valchem* still coming right 257° and making between 13 and 14 knots, the collision occurred.

On the *Valchem* the engineering spaces were flooded and all power was lost. There was no explosion and no fires of any consequence. On the *Santa Rosa* a fire broke out in the forward paint locker and among some miscellaneous gear stowed in the anchor windlass room. At 0457 after it was determined that the *Valchem* would not sink the *Santa Rosa* backed out of the *Valchem's* side taking with it the *Valchem's* stack. The fire on the *Santa Rosa* resisted firefighting efforts and was not completely extinguished until 1016.

During the course of the firefighting six fire hoses on the *Santa Rosa* burst under normal pressure. Subsequent tests disclosed that the cause was due to failure of the rayon filler yarns.

After the casualty the *Santa Rosa* proceeded under her own power to New York and the *Valchem* was towed into Brooklyn.

## REMARKS

Although the testimony of the *Valchem* witnesses would indicate that the collision occurred later than 0301 and that the *Valchem* was dead in the water or nearly so at the time of collision, the Board's reconstruction of the *Valchem's* navigation as set forth in the Findings of Fact is amply supported in the record and is considered to be the more accurate account.

As determined by the Board the principal cause of this collision was the failure of both vessels to slow to a moderate speed when conditions of reduced visibility and fog were encountered.

Misinterpretation of radar on the part of both vessels was also a factor in this case. On the *Santa Rosa* the two ranges and bearings which were plotted were insufficient to reveal the *Valchem's* gradual turn to the right and served only to provide a course and speed made good. This was erroneously regarded as the *Valchem's* actual track and in turn resulted in the false conclusion that the *Valchem* would pass clear. On the *Valchem* an almost identical situation obtained with the exception that no attempt was made to calculate the *Santa Rosa's* course and speed by plotting. Although timely detection of the other's turn would undoubtedly have been facilitated by a more moderate speed on the part of both vessels, accurate determinations on which to safely predicate evasive maneuvers could only have been obtained in this instance by nearly continuous plotting.

Also contributing to this collision was the further failure of both vessels to take timely action to stop. Aside from the statutory obligation to stop upon hearing forward of the beam the fog signal of a vessel, the position of which was not ascertained, it was manifestly evident to both vessels from radar observations that an uncertain and potentially dangerous situation was rapidly developing. On the *Santa Rosa* there was the final realization two minutes before the collision that the *Valchem* had altered course and would pass closer than three-tenths of a mile. On the *Valchem* despite a continued turn to the right the relative bearing of the radar target did not change until the final minutes before collision. Under the circumstances it is considered that the principles of safe navigation dictated a more timely stopping of both vessels.

Hearings under the provisions of Title 46 CFR 137 into the alleged negligence of the navigation personnel on both vessels in connection with this collision have been instituted by the Officer in Charge, Marine Inspection, New York.

The recommendation concerning the desirability of adopting minimum specifications for fire hose on inspected vessels will be presented to the Merchant Marine Council for study.

Although presently required for original license and raise of grade, there is no statutory authority which would permit the Coast Guard to require licensed masters and deck officers to qualify as radar observers at the time of renewal of a license. At the forthcoming International Safety of Life at Sea Convention, 1960, a proposal will be advanced to require all licensed masters and deck officers to take approved radar training courses, which would, if adopted, provide the necessary authority to extend

present requirements. In the meantime consideration is also being given to requiring every radar-equipped vessel of 300 gross tons and over, which is inspected and certificated by the Coast Guard for navigation on ocean, coastwise, or Great Lakes routes, to have in its complement of deck officers, including the master, only officers who have qualified as radar observers. With respect to this case, although both watch officers on the *Santa Rosa* were qualified as radar observers and it is reasonable to assume that had the watch officer of the *Valchem* been so qualified he would have been better prepared to more effectively utilize the radar, it is apparent from the record that formal training and qualification will not, in itself completely eliminate the personal errors in judgment in the use of radar which contributed to this collision.

The study recommended by the Board concerning the practical and legal feasibility of establishing separate tracks for north and southbound vessels navigating along the Atlantic and Pacific Coasts of the United States does not appear to be warranted at this time. Although substantially coastal in nature, the fact that such tracks would be on the high seas would require international agreement to effect their establishment. From the practical point of view the cross traffic on both coasts does not lend itself to the establishment of north/south tracks alone and it appears that a pattern of routes would not successfully reduce collision hazards until all or nearly all vessels using such routes were equipped to navigate within fairly narrow limits during conditions of fog and low visibility.

The Board's recommendations for suggested standard instructions to deck watch officers and suggested standard instructions delineating masters' and deck watch officers' duties and responsibilities when both are on the bridge are disapproved. The duties and broad responsibilities of masters and mates have long been established by law and regulation, by court interpretation, by practice and by custom. Moreover applicants for such licenses are required to show knowledge of these duties and responsibilities when undergoing examination. It is considered extremely doubtful that any standard set of written instructions could be sufficiently inclusive to cover the infinite number of situations encountered aboard ship. The promulgation of standard instructions could even curb the exercise of responsibility and sound judgment by suggesting that masters and mates would be accountable only for that which appeared in writing.

Subject to the foregoing remarks, the record of the Marine Board of Investigation is approved.

A. C. RICHMOND,  
Vice Admiral, U.S. Coast Guard,  
Commandant.

## PROPOSED RULE MAKING

### U.S. Coast Guard

[ 46 CFR Parts 35, 78, 97, 146,  
162 ]

[CGFR 59-50]

### POWER-OPERATED INDUSTRIAL TRUCKS

#### Written Comments on Proposed Regulations

Pursuant to the notice of proposed rule making published in the FEDERAL REGISTER on April 9, 1959 (24 F.R. 2746-2748), and Merchant Marine Council Public Hearing Agenda CG-

249 dated April 27, 1959, the Merchant Marine Council held a Public Hearing on April 27, 1959, for the purpose of receiving comments, views, and data. The proposed regulations to govern the use of power-operated industrial trucks were set forth in detail as Item VIII of that Agenda, as well as in the previously mentioned FEDERAL REGISTER of April 9, 1959.

A further notice of proposed rule making was published in the FEDERAL REGISTER on May 20, 1959 (24 F.R. 4057), stating that on the basis of the comments already received and those written comments which will be re-

ceived prior to October 27, 1959, the proposed regulations will be revised. These revised proposed regulations then would be included in the Merchant Marine Council Public Hearing Agenda for the next annual session scheduled for the spring of 1960. On the basis of the numerous comments already received and the evidence of studies and surveys underway and pending, it is apparent that additional time should be allowed for submitting written comments on these proposed regulations. Therefore, an extension until May 1, 1960, for the submission of written comments is granted with

respect to Item VIII, the proposed regulations regarding power-operated industrial trucks.

All views and comments should be sent to the Commandant (CMC), United States Coast Guard, Washington 25, D.C. In order to insure consideration of comments and to facilitate checking and recording, it is preferred that each comment regarding a section or paragraph of the proposed regulations be submitted on Coast Guard Form CG-3287, copies of which were attached to the Agenda and may be reproduced, or copies may be obtained upon request from the Commandant (CMC). However, all comments should show the section or paragraph number, the proposed change, the reason or basis, and the name, business firm or organization (if any), and the address of the submitter.

Dated: November 16, 1959.

[SEAL] A. C. RICHMOND,  
Vice Admiral, U.S. Coast Guard,  
Commandant.

[F.R. Doc. 59-9889; Filed, Nov. 20, 1959;  
8:48 a.m.]



### AFFIDAVITS

The following affidavits were accepted during the period from 15 October 1959 to 15 November 1959:

*Mueller Steam Specialty Co., Inc.*, 29 Meserole Ave., Brooklyn 22, N.Y., FITTINGS.

*Midwest Piping Company, Inc.*, 1450 South Second St., St. Louis 4, Missouri, FLANGES.<sup>1</sup>

*Phoenix Steel Corporation*, Phoenixville, Pennsylvania, PIPE AND TUBING (ferrous).

*Republic Steel Corporation*, 25 Prospect Ave., N.W., Cleveland 1, Ohio, PIPE AND TUBING.<sup>2</sup>

*Nibco, Inc.*, 500 Simpson St., Elkhart, Indiana, FITTINGS.<sup>3</sup>

<sup>1</sup> Presently listed in CG-190 as acceptable manufacturer of fittings.

<sup>2</sup> Presently listed in CG-190 as acceptable manufacturer of bolting. Also, new address is 25 Prospect Ave., Cleveland 1, Ohio.

<sup>3</sup> Formerly known as Northern Indiana Brass Co., 935 Plum St., Elkhart, Ind.



## MARINE SAFETY PUBLICATIONS AND PAMPHLETS

The following publications and pamphlets are available and may be obtained upon request from the nearest Marine Inspection Office of the United States Coast Guard. Date of each publication is indicated following title.

CG No.	Title of Publication
101	Specimen Examinations for Merchant Marine Deck Officers. 7-1-58
108	Rules and Regulations for Military Explosives and Hazardous Munitions. 8-1-58
115	Marine Engineering Regulations and Material Specifications. 3-1-58
123	Rules and Regulations for Tank Vessels. 4-1-58
129	Proceedings of the Merchant Marine Council. Monthly
169	Rules of the Road—International—Inland. 5-1-59
172	Rules of the Road—Great Lakes. 5-1-59
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids. 7-2-51
175	Manual for Lifeboatmen and Able Seamen, Qualified Members of Engine Department, and Tankerman. 6-1-55
176	Load Line Regulations. 9-2-58
182	Specimen Examinations for Merchant Marine Engineer Licenses. 5-1-57
184	Rules of the Road—Western Rivers. 5-1-59
190	Equipment Lists. 4-1-58
191	Rules and Regulations for Licensing and Certifying of Merchant Marine Personnel. 5-1-59
200	Marine Investigation Regulations and Suspension and Revocation Proceedings. 7-1-58
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels. 4-1-57
227	Laws Governing Marine Inspection. 7-3-50
239	Security of Vessels and Waterfront Facilities. 7-1-58
249	Merchant Marine Council Public Hearing Agenda. Annually
256	Rules and Regulations for Passenger Vessels. 3-2-59
257	Rules and Regulations for Cargo and Miscellaneous Vessels. 3-2-59
258	Rules and Regulations for Uninspected Vessels. 9-1-59
259	Electrical Engineering Regulations. 9-2-58
266	Rules and Regulation for Bulk Grain Cargo. 5-1-59
267	Rules and Regulations for the Numbering of Undocumented Vessels and the Reporting of Boating Accidents. 5-1-59
268	Rules and Regulations for Manning of Vessels. 9-3-57
269	Rules and Regulations for Nautical Schools. 11-1-53
270	Rules and Regulations for Marine Engineering Installations Contracted for Prior to July 1, 1935. 11-19-52
290	Pleasure Craft. 7-1-59
293	Miscellaneous Electrical Equipment List. 3-10-59
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf. 1-2-57
323	Rules and Regulations for Small Passenger Vessels. (Not More Than 65 Feet in Length) 6-1-58
329	Fire Fighting Manual for Tank Vessels. 4-1-58

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

#### Changes Published During November 1959

The following have been modified by Federal Register:

CG-267 Federal Register, November 19, 1959, and November 21, 1959.

## COUNCIL ACTIVITIES

(Continued from page 2)

comment regarding a section or paragraph of the proposed regulations shall be submitted on Form CG-3287, showing the section number (if any), the proposed change, the reason or basis, and the name, business firm or organization (if any), and the address of the submitter. A small quantity of Form CG-3287 is attached to the Agenda. Additional copies may be obtained upon request from the Commandant (CMC), or from any Coast Guard District Commander, or may be reproduced by typewriter or otherwise.

Each item in the Agenda has been given a general title, intended to encompass the specific proposals presented. It is urged that each item be read completely because the application of proposals to specific employment or types of vessels may be found in more than one item. For example, Item VI contains proposals applicable only to tank vessels, yet Items III and IX also contain proposals affecting tank vessels.

The items in the Agenda are:

Item No.	Title	Page
I.	MANNING OF RADAR EQUIPPED VESSELS Radar observers required.	1
II.	INFLATABLE LIFE RAFTS Use of inflatable life rafts. First-aid kits for inflatable life rafts.	2
III.	LIFE PRESERVERS AND OTHER LIFESAVING EQUIPMENT Prohibiting the use of certain previously approved life preservers. Unicellular plastic foam life preserver specification. Lifesaving equipment for Great Lakes' vessels and for freight motorboats. Ring life buoys; stowage and arrangement. Kapok or fibrous glass buoyant vest specification. Manufacturers' approval of present kapok or fibrous glass buoyant vests to be terminated.	7
IV.	RULES OF THE ROAD Lights for dump scows. Closeup and intermediate towing. Distress signal for small vessels. Warning signals for vessels loading or unloading dangerous cargoes in bulk.	53
V.	SPECIFIC PROPOSALS REGARDING SMALL PASSENGER VESSELS Vessels carrying freight for hire. Submission and approval of plans. Watertight integrity and subdivision. Stability. Lifesaving equipment. Machinery installation. Electrical installations operating at potentials of 50 volts or more.	59
VI.	SPECIFIC PROPOSALS REGARDING TANK VESSELS Elevated temperature cargoes. Cargo discharges and foundations for independent cargo tanks. Liquefied inflammable gas tanks located in tank or cargo spaces. Portable fire extinguishers. Spark producing devices. Watchmen for unmanned barges. Cargo handling responsibilities. Fresh-air or self-contained breathing apparatus.	114
VII.	FIRE-PROTECTION EQUIPMENT Portable fire extinguisher specification. Fire hose on inspected vessels. Fire main systems on barges.	127
VIII.	ELECTRICAL ENGINEERING Deenergizing of electrical circuits in cargo holds. Miscellaneous amendments.	137
IX.	MARINE ENGINEERING Hydraulic systems. Nuclear energy. Piping systems and appurtenances. Nodular cast iron for valves, fittings and accessories. Repairs involving welding or burning on vessels carrying certain dangerous cargoes in bulk. Venting and/or ventilation of void spaces adjacent to cargo tanks containing certain dangerous bulk cargoes.	147
X.	STOWAGE OF BULK ORE CARGOES	167
XI.	DANGEROUS CARGOES	168
XII.	MISCELLANEOUS PROPOSALS	194

## WILLIAMSON TURN

How does a ship sustain interest, spirit, and morale in routine Emergency Drills? Over and over, week after week, the officers and crew plod through the motions of Fire Drill, Boat Drill, and Man-Overboard Drill. The stimulation of a crisis disappears and petty gripes against a monotonous exercise emerge.

Suddenly—THE ACCIDENT happens—*automatically* the crew swings into action—seldom is an order necessary—every move is according to plan—and THIS IS THE PAY OFF!

When American President Lines proposed the "Williamson Emergency Turn" as a regular exercise for all ships in the fleet about a year ago, they had no idea WHEN the payoff would come.

Now they know. WHEN was exactly 1528 hours, October 29, 1959, aboard the SS *President Jefferson*. Here is the Master's report:

"Yesterday, October 29, 1959, a fire and boat drill was held at 1520 one day after departure Hong Kong.

"The vessel was in Formosa Straits, Latitude 24°31' North, Longitude 119°43 East. Weather at the time was fresh Northeast Monsoon, force 5-6, choppy sea.

"While securing Number 2 Lifeboat, a Deck Maintencenceman was reaching for the after gripe from a position on the boat deck, inside the railings. In so doing, he lost his footing and fell over the railings into the sea.

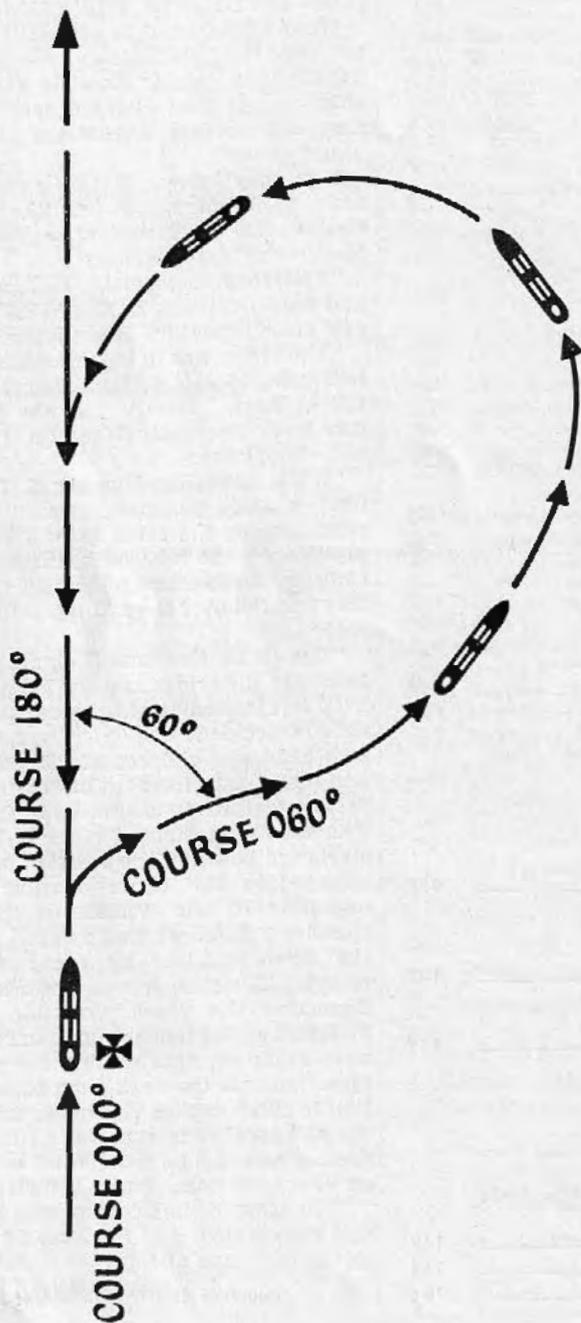
"The 'Man Overboard' signal was passed to the bridge and the helm put hard left immediately. Course at the time of accident was 057° Gyro, vessel's head was checked at 355° Gyro and helm put hard right, and the vessel steadied on course 235° Gyro. The man was sighted close on the starboard bow and the vessel's course changed to 240° Gyro. During the execution of the Williamson Turn, Number 2 Lifeboat was readied and the crew standing by for further orders. However, it was possible to maneuver the vessel alongside the man and a pilot ladder and man ropes were ready on approaching the seaman. He was too weak from exhaustion to climb aboard via the pilot ladder and another man placed a lifeline around him and he was hauled safely on deck with no apparent injuries.

"The time of the accident was 1528 and the all clear and full ahead rung on the telegraph at 1552."

*Courtesy American President Lines*

# Instructions for Completing the 'WILLIAMSON TURN'

✠ Spot where man fell overboard.



Depending on which side the man falls overboard put the rudder hard over to that side to swing the stern away from the man. Hold the rudder hard over until she is swinging then steady her up on a course about 60° off the original course.

When vessel heads on new course, swing rudder hard over to the other side until vessel is on a reverse course 180° from original course.

Original speed should be maintained until the vessel is steady on the reverse course.