PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL

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The Merchant Marine Council of the United States Coast Guard

LIEUTENANT B. F. RUSH, USCG, *Editor*

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EXECUTIVE SECRETARY TRANSFERRED

On June 13, after 3 years as Executive Secretary and Member of the Merchant Marine Council, Captain Eugene A. Coffin, Jr., will relinquish his post to Commander Alexander W. Wuerker.

Relieved to take command of the Seattle, Wash., Captain of the Port Unit, Captain Coffin terminates his tour of duty at Coast Guard Headquarters following a period which saw many changes in requirements applicable to the marine field.

Some of these were the establishment of regulations governing fixed structures and artificial islands on the outer continental shelf, the law authorizing denial or revocation of seamen's documents to persons involved in narcotics violations, the change from annual to biennial inspections of cargo and tank vessels, and in the small boat field the requirements relative to lights required to be carried by motorboats. The proposed rules and regulations for small passenger vessels are under revision, and the House of Representatives' study on recreational boating safety has been submitted to the Congress.

In his association with the latter report, the Committee on Merchant Marine and Fisheries said "Particular recognition is due Captain Coffin, who was designated by the Commandant to accompany your committee on its nationwide study. He was most helpful at all times."

The Merchant Marine Council wishes him every success in his forthcoming assignment.

GOOD HOUSEKEEPING=SAFETY

By Lt. John F. Mundy, Jr., USCG

THE relationship of good housekeeping with safety has been preached by leaders of industry and governmental bodies for so long that it would be impossible to find a responsible person who would deny the association. However, there are additional benefits of good housekeeping that are not as well known as safety.

The "payoff" of a good housekeeping program in the coin of safety is immediate. If an oil spill is sanded and scooped up, it is obvious to all hands that the odds are high that someone has been spared a nasty fall.

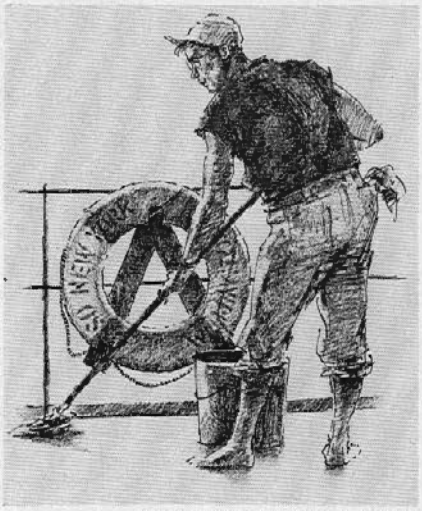


Illustration by Joseph Hirsch
Courtesy Standard Oil Co. (N. J.)

GOOD HOUSEKEEPING is typified in this excellent drawing of a seaman ready to start his day's work

The additional benefits are relatively unknown due to their long-term nature. They are the material condition of the vessel and the psychological orientation of the crew. The first is difficult to measure for the simple reason that if you give a vessel the benefit of a rigorous good housekeeping program for 20 years, her material condition at that time can not be compared with what her condition would have been had she not received the good housekeeping routine.

This is somewhat akin to the acid test to determine if you have a genuine meerschaum pipe—soak the pipe in an acid solution and if the bowl dissolves, you *had* a "sho 'nuff" meerschaum. The second benefit, while abstract and smacking of "double dome-ism," is not so difficult to determine. Perhaps it would be better defined as nothing more than the attitude of personnel conditioned by their immediate working environment.

PRIDE IN WORK

It is a well-established fact that men perform duties more efficiently and with pride when their surroundings are clean and wholesome. It is just as firmly established that their efficiency and vitality are sapped when their surroundings are dirty and unappealing. Industrial psychologists have made exhaustive and conclusive research into this matter and their resultant findings have been widely applied in industry since the end of World War II. Hardly any corporation that has built a new plant since then, has done so without the consultation of industrial psychologists.

To determine the long-range effects of good housekeeping, then, it is necessary to find two vessels with comparative service, operated by two different concerns with opposing views as regards good housekeeping. Such a comparison was recently conducted at a port on one of the Western Rivers. Company A, which operates *Vessel A*, is a long-established concern that must be considered as one of the pioneers in marine petroleum transportation. It operates a large, efficient sea-going fleet as well as numerous vessels on the Great Lakes, Western Rivers and other inland waters of the United States. It conducts a vigorous, conscientious and effective good housekeeping and maintenance program on all of its vessels.

Company B, which operates *Vessel B*, is a younger, rapidly expanding concern with its operations restricted solely to the Western Rivers. Company B's good housekeeping and maintenance program is desultory, halfhearted and ineffective.

VIVID COMPARISON

Both of these vessels were inspected in drydock within a week's time, which made for a vivid comparison. Both were unmanned tank barges, carrying the same grades of petroleum products over the same river route for 20 years. Company A's program calls for the barge to be painted frequently in keeping with the company's system of colors: one color for the hull, one for the deck, one for walkways around the deck edges and locations that require high visibility identification for safety's sake, and one color for pipelines and pumps. Oil spills are to be attended to immediately; rags, waste, etc. are not permitted to accumulate. The barge identification numbers are neatly cut in on the

Illustration by Joseph Hirsch
Courtesy Standard Oil Co. (N. J.)

CLEAN UP, PAINT UP means a better looking, cleaner, and safer ship

bows and the company's identifying sign is mounted conspicuously overall.

Company B's concept towards painting barges is that it is unnecessary since it doesn't extend the life of the barge any appreciable amount and that the amount of money saved on paint, frequent drydockings and lost time due to the lay up would more than offset the additional service the barge could give if it received this attention. While company B has effective instructions regarding treatment of oil spills posted at their terminals, they are not effectively adhered to when spills occur. Their barges receive one coat of preservative paint at the time of building and from then on they are strictly on their own. The company has a distinctive trade sign but it is not displayed on their barges.

COMPARISON MADE

As to the comparison of the material soundness of the barges, *Barge A* had minor indents on bottom, side and rake end platings. *Barge B* had at least three times the number of indents on bottom, side and rake end platings. Several indents in the sides, bottom and especially the rake ends

(Continued on page 89)

SECTIONAL HEADER TUBE REPAIRS

By Commander A. J. Larsen, USCG

DURING an inspection of a sectional header type boiler, it was discovered that a "leaky" downcomer tube had been repaired by applying a seal weld at the outside of the header. The Inspector ordered the tube joint to be radiographed. The radiographs proved the tube to be split circumferentially.

To many, this would appear to be nothing more than a routine inspection—no casualty prevention here; or many others would say, "leaky tube, it happens every day—weld it."

Actually, both trends of thought are erroneous. It may have been just a routine inspection; but casualty prevention was present, and the application of the seal weld without forethought disguised the dangerous condition of the tube joint.

In order to explain this more fully, let's refer to a series of sketches.

SEE SKETCH

Figure 1 shows a tube which has been expanded into a header, a hydrostatic test has been applied, and there is no evidence of leakage. It can be safely assumed that the tube is tight in its seat and maximum holding power is being developed.

Figure 2 shows the same tube in which a leak is noted between the tube and the header. The tube is rerolled, but upon application of the "squeeze," the leak is still present. It is decided that there is leakage past the tube seat and a seal weld is in order. The seal weld is made as shown in *figure 3*. The squeeze is again applied, and it is noted that the leak has disappeared.

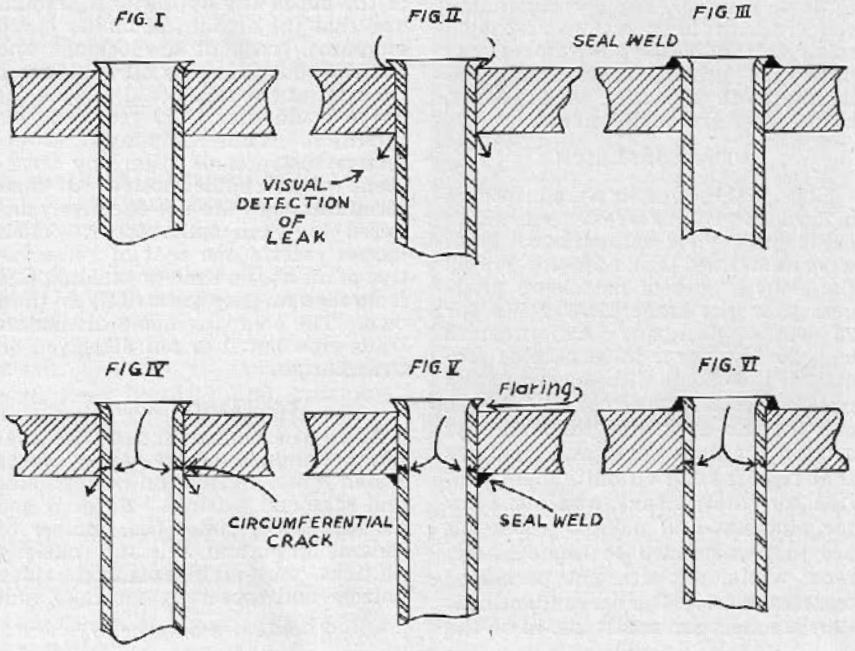
The assumption in this case was correct. The seal weld made inside the header prevented leakage past the tube seat.

Now, let's refer to *figure 4*, the case at hand. It is representative of the actual radiograph. It will be noted that the tube is split circumferentially and the path of the leak is through the tube wall and not by the tube seat. The usual procedure of rerolling the tube was unsuccessful. It was assumed that there was leakage past the tube seat and a seal weld would prevent any further leakage. The seal weld was made at the outside of the header as shown in *figure 5*.

The assumption in this case was wrong. It will be noted that the seal weld prevented any further leakage but disguised the real condition of the tube. If the seal weld had been applied inside the header, as shown in *figure 6*, the leak would still have been apparent under pressure and would have been cause for further investigation.

CASUALTY AVERTED

Casualty prevention was certainly present in this case. If the boiler had been continued in service, the tube would have failed in tension and pulled out of the header. The tube being external to the boiler would have permitted the contents of the boiler to be spilled into the engineroom and anyone in the vicinity of the boiler would most certainly have been a casualty. In fact, an accident occurring aboard a U. S. Navy ship in which casualties occurred was one in which an external downcomer tube pulled from its seat in the header and spilled the contents of the boiler into the engineroom.



The connection between the drum or header and the tube must develop sufficient holding power to resist boiler pressure without leaking. Holding power is governed by the seat design and by the amount the tube is expanded against the seat and is frequently a factor in boiler design. Ideally, the safe holding power of a seat should exceed the allowable stress in the tube itself. However, in many instances involving high pressures in large downcomer tubes, the stress in the tube exceeds the safe holding power of the seat. This points to the fact that the tube, other considerations being equal, theoretically would pull from its seat before the tube would be overstressed.

Tube joint design is controlled by the boiler manufacturer or partici-

(Continued on page 89)

FOUR SEAMEN ADRIFT IN AN INFLATABLE RAFT

An interesting account of four seamen adrift for 58 hours in an inflatable liferaft after their 52-foot fishing vessel sank, has been forwarded by a correspondent in the British Isles.

By P. R. Anderson

"THE CASUALTY occurred at approximately 11:30 p. m. Friday night, 29 March, Northeast by East of the mouth of the River Tyne when the flywheel broke loose and holed the vessel below the water level. Efforts were made to pump the ship and instructions were given for the liferaft to be brought from its forward position to amidships.

"The raft was inflated on deck (this is an unusual procedure but the vessel had a very low freeboard and it was hoped that the raft would not have to be used immediately). Food consisting of four tins of sausages and one of corned beef, blankets, eiderdowns and pillows were placed in the raft to augment the emergency pack.

"At 11:30 p. m. the decision was made to abandon ship. Two men manhandled the raft over the knee-high rail dropping it about 3 feet on the surface of the sea, the raft remaining secured to the ship by means of the painter. A line of 120 feet was secured to the stricken vessel and held at the other end by one member of the crew up until the vessel sank. When the crew were aboard, which they achieved by stepping into the raft, the painter was cut. It is worth noting that through the whole period in the raft none of the survivors got wet. Soon after midnight the *Marcia* sank stern first, and it should be noticed that no distress call could be put out since the radio was out of action.

FOUR MEN were adrift for 58 hours in this Elliott 6-man "Cutter" Inflatable Liferaft.

VESSEL SINKS

"The signaling torch was used to observe the sinking vessel and as soon as she had disappeared the floor of the liferaft was inflated. Tins of food were opened by means of the jack knife provided in the emergency pack. It is important here to note that if the new regulations are adopted, whereby a jack knife is deleted, survivors may have difficulty in opening additional provisions which they take with them abandoning ship.

"After 2 hours a vessel was sighted and six pyrotechnics were fired—unfortunately these were not sighted. Sea conditions at this time were moderate. The survivors closed the flaps at the entrances and settled down, a watch being set so that one member of the crew looked out every 15 or 20 minutes.

"Nothing else was sighted during Friday night. During daylight Saturday 2 trawlers were seen and another 2 vessels during the night. Although the remainder of the pyrotechnics were fired none were sighted. This would seem to indicate that something more must be done to provide the survivors with means of attracting attention and I would suggest the possibility of fitting some form of radiobeacon be considered.

"During Saturday the wind remained light and the sea calm, but during Sunday the wind freshened to force 5 and the sea became broken. No vessels were sighted throughout the whole of Sunday. On Sunday morning it was noticed that the arch tubes were slightly soft and the raft was, therefore, pumped up with the hand bellows for the first time. Two pumps were required for the bottom chamber and arch tube structure.

"Smoking was not allowed during the whole of the rescue operation since it was not sure whether the gas in the chambers might be dangerous, and further there was some worry about sparks falling on the fabric. It would seem a worthwhile proposition to put some instructions with regard to smoking in the liferaft since cigarettes are not likely to be a danger to a raft.

FLOOR DEFLATES

"On Monday at 6 a. m. the floor felt rather soft and together with the top chamber were pumped up again. Shortly afterwards, and for no apparent reason, the floor deflated. On a subsequent examination ashore no damage could be found which might have caused the floor to deflate. A detailed examination will have to be carried out in conjunction with the Ministry of Transport Surveyor.

"By 7 a. m. the wind had decreased to force 3, the visibility was poor, and there was a great deal of haze.

"The fishing vessel *Douglas* was sighted and pillow cases were waved without attracting any attention. The sea anchor was drawn in, and without its stabilizing influence, the raft lay beam-on to the wind. Taking advantage of this, one man stood up at each entrance to the raft and between them they held a blanket to form a sail. They estimated their drift with the blanket-sail at two knots and closed the track of the *Douglas*. They were within 200 yards before being spotted.

"On sighting the liferaft the *Douglas* rapidly closed, a line was passed, and the survivors boarded. The raft was lifted on to the deck, and the *Douglas* proceeded immediately to Berwick-on-Tweed, and the survivors landed. They were examined by a doctor here.

"The physical condition of the survivors was excellent and some of their comments are well worth noting. The captain stated that he was more comfortable sleeping in the liferaft than in his own bunk and at no time had the crew felt cold or suffered any discomfort. They were not thirsty but were getting a little hungry. Most of

the barley sugar sweets were eaten and two tins of water taken. The water being drunk more in order to gain experience than from actual need.

"The crew generally complained of boredom and it was suggested that playing cards might be included and I feel also that the inclusion of the fishing kit as detailed in the new regulations will help to provide something for the survivors to do.

"Finally it is worth noting that this occasion is the longest period at sea in an inflatable liferaft on any of the rescues from British fishing vessels, the total period being 58 hours. During this time the raft had only to be lightly topped up on two occasions which speaks most highly of the quality of the materials and workmanship."

LOW VOLTAGE IS DANGEROUS

WHEN the potentialities of low voltage shock are fully understood, it is surprising to learn how dangerous such a shock can be.

To avoid the danger, it is necessary to be aware of the hazards that are particularly dangerous around shops and work-benches where low-voltage tools and equipments are handled. Defective or improperly grounded tools are especially dangerous.

Hazards from electric shock are greater aboard ship than ashore. The man on shipboard can be said to be "living in a bathtub." The Navy provides ships with the safest possible electric equipment, but human ingenuity has not yet been able to make electrical equipment that will not shock the user when it is improperly handled.

THREE MAIN EFFECTS

There are three main effects that electric shock may have on the human body, any one of which may cause death. First aid for all three is to apply artificial respiration.

One of the three effects is paralysis of the phrenic nerves or of the nerve centers at the base of the brain. This condition causes breathing to stop. Artificial respiration should be promptly administered in an effort to restore breathing and save life.

Another main effect is the destruction of organs or the body surface by searing or burning the tissues. Although this effect is more apt to be caused by high rather than low voltage shock, nevertheless low voltage shock has been known to have the same effect, and artificial respiration should be applied at once because the extent of the thermal damage may not be known.

The third effect referred to is quivering of the heart muscle, known as ventricular fibrillation. It may result from over-stimulation by the electric current. If this result takes place, the heart fails to pump blood, often causing death. As little as a tenth ampere may cause the heart to fibrillate and the result may be fatal.

Doctors have restored life to people shocked in this manner by opening the chest cavity and jolting or massaging the heart back to rhythmic action. The treatment may be successful if it is applied within 6 minutes. Actually, the only first aid that can be applied is artificial respiration.

Low voltage can also kill or injure indirectly. For example, just a slight shock may cause a person to move suddenly and become entangled in a machine or to fall from a high place.

Because of the high penalty sometimes paid if conditions are unsafe, taking chances with electrical equipment is foolhardy.

FACTORS DETERMINING SEVERITY

Several factors that influence the severity of effects of hazards from low voltage are—

- *Type of current.* Five times more direct current than alternating current is needed to freeze a person to a wire. It is a common mistake to suppose that household alternating current is safer than direct current. Actually, the 60-cycle a second frequency on which alternating current is distributed is the more dangerous to the human body.
- *Body resistance.* The body resistance with the skin unbroken varies from 1,000 to 500,000 ohms. Dry skin has higher resistance than wet skin, so that when the skin is dry, less damage will result from electric shock. When the skin is wet, resistance is lowered. Also, breaks in the skin, such as cuts and burns, may lower the resistance to as little as 200 ohms. Skin is analogous to a sheet of insulation material, such as paper.
- *Path of the current through the body.* The greater the number of vital organs through which current passes, the greater the chance of death. For example, a charge passing from the right shoulder through the right hand will not have nearly as great an effect as a charge going from the right shoulder through the left foot. Experience has shown that about a tenth of the current going from the hand to the foot reaches the heart.
- *Amount of current (amperes) passing through the body.* The ratio of the voltage to the body resistance is the factor that influences the amount of current that can pass through the body without harmful effect.
- *Length of time the body stays in contact with the current.* If a person can instantly break free from the current, the shock may be too short duration to do much damage. However, it is easy to freeze to a low-voltage charge. When a live line is touched with the palm of the hand, the muscles tend to contract, then tighten. This reaction causes a person to freeze to the line.

The amount of current that freezes the average normal person to an object is about 12.4 milliamperes. When the hands are wet, less than 20 volts is required to cause freezing.

- *Health of the person receiving the charge.* Because the heart of a healthy person is stronger and will take more abuse, the healthy person naturally has a better chance of survival than one with a weak heart.

Unfortunately, a person cannot stand much electric current without injury. The minimum amount of sustained current that will cause him to "let go" and not be hurt is a milliampere.

Electric equipment, properly used, is not dangerous, but all who have anything to do with it—particularly aboard ship—must think of their own safety and that of their shipmates and take normal precautions to avoid hazards from electrical shock.

BuShips Journal

SS DEL MONTE WINS DELTA SAFETY AWARD

CHALKING up the best safety record in their 14-vessel fleet, Captain C. H. Brote of the SS *Del Monte* was presented the Delta Line Safety Award for 1956 in recent ceremonies held in New Orleans.

Four accidents were reported by the ship during the year, with only one falling into the "lost time" column, for an enviable low accident frequency rate of 2.54. The fleet average AFR was 8.95.

In the adjoining photograph, Mr. H. X. Kelly, President of Delta Line, is presenting an engraved plaque to Captain Brote symbolic of the excellent safety record made by officers and crew of the *Del Monte*.

An amusing aside to the presentation was noted by the ship's engineers who took umbrage to an engraving error which identified the ship as "MV *Del Monte*" instead of as a steam ship. Company officials had the error rectified and supplied a corrected plaque prior to sailing time, to a "pacified and satisfied Chief and First Assistant."

A review of the fleet recapitulation reveals a total of 246 reported accidents, of which 85 were recorded as lost-time casualties. The age group 30–39 accounted for 42 percent of the total injuries, and slips and falls headed the list of causes with 77 accidents.

Following is a portion of the accident report for the Delta fleet for 1956:

Vesse	Total accidents	Accident frequency rate	Standing
DEL AIRES	7	9.72	7
DEL ALBA	14	4.96	2
DEL CAMPO	13	16.26	13
DEL MAR	15	5.55	5
DEL MONTE	4	2.54	1
DEL MUNDO	18	12.37	10
DEL NORTE	48	11.18	9
DEL ORO	17	10.84	8
DEL RIO	12	16.36	14
DEL SANTOS	18	4.98	3
DEL SOL	24	13.61	12
DEL SUD	23	6.48	6
DEL VALLE	11	5.00	4
DEL VIENTO	22	13.55	11
Total	246		

WEATHER CLINIC

Merchant mariners are invited to take part in daily sessions of meteorological instruction at the New York Weather Bureau Office, it was announced in the *Mariners Weather Log*.

Photo Courtesy Widlitze

The classes, which run from 10 a. m. to noon, stress new instruments and how to use them, new methods of forecasting, and recommended techniques in translating radio information to shipboard weather maps.

Radio weather information is reviewed and students are shown how to make the best use of the forecasts. Further information may be obtained from the New York office, it was pointed out.

HIGHLIGHTS ON THE RULES

An interesting judicial comment on the use of lookouts was recently made in a collision case and was cited in *Bucentaur—Wilson Victory, 1955, A. M. C. 142.*

"When proceeding in fog or conditions of reduced visibility, the maintenance of 'a proper lookout' as demanded by Article 29 requires that a lookout be stationed as far forward as possible unless the weather makes another position more suitable. Although no statutory rule requires the maintenance of a lookout in the bow of a ship, many decisions in our courts have established that as the proper place for one best to observe objects on or at the surface of the water. The requirement that a lookout shall be kept as far forward as possible, especially when visibility is poor, is so strict that the presumption of contributory fault arising from its neglect is the same as that created by the violation of a statute and must be overcome, if at all, by the same kind of proof showing that it could not have contributed to the disaster."

BOATS AND LIGHTNING

G. L. Canady
Weather Bureau Office, New Orleans

Occupants of boats are not often injured or killed by lightning. However, this does happen occasionally. In connection with a squall line passage on Saturday afternoon, March 23, 1957, a series of thunderstorms moved eastward across southeastern Louisiana. At 3:30 p. m. on Lake Pontchartrain, two brothers, Magnus and Julius Falgout and two friends, Lawrence Landry and Robert Faucon, were headed towards shore in the face of the storms. They were overtaken by one of the more severe thunderstorms about a mile and a half off West End, in New Orleans. The water averages about 14 feet in this area.

There was a blinding flash and deafening report as the three occupants of the aft cabin felt "stinging" sensations, but sustained no apparent injuries. However, Magnus Falgout was struck more directly by the bolt as he stood in the open cockpit steering the fishing vessel and was killed instantly. Lightning damaged several boards on the boat and it was claimed that "fire-balls" or sparks travelled momentarily along the several sections of the boat structure.

nautical queries

Q. State "Buys Ballot's Law."

A. In the Northern Hemisphere, stand with your back to the wind and pressure will be lower on your left hand than on your right. In the Southern Hemisphere, stand with your back to the wind and the pressure will be lower on your right hand than on your left.

This is also stated in different language as follows: "In the Northern Hemisphere, when facing the wind, the observer will have the low or storm center bearing 8 to 10 points (90 to 120°) on his right, and in the Southern Hemisphere, an equivalent distance on his left."

Q. (a) What is pressure?

(b) How is atmospheric pressure expressed in meteorology; i. e., in what units is it measured?

A. (a) Pressure is force per unit area.

(b) Pressure is most commonly expressed either in terms of the length in inches of the column of mercury sustained by the force, or in terms of millibars, though dynes per square centimeter and millimeters of mercury are sometimes used.

Q. Convert 20° Centigrade (Celsius) into the temperature Fahrenheit.

A. 68° Fahrenheit.

Q. What is "latent heat"?

A. Latent heat is "the heat absorbed by a substance, without change in temperature, while passing from a liquid to a vapor state, or from a solid to a liquid, and released in the reverse change of state."

Q. What is an "isotherm"?

What period of time may be represented?

A. An isotherm is "a line on a weather chart connecting points having the same temperature."

An isotherm may be drawn to represent the temperature at any particular time or the average temperature for any specified period. Thus, there are, for instance, isotherms on daily weather charts indicating instantaneous temperatures, and on climatological charts, indicating the mean temperatures for the months of the year.

Q. On a weather map:

(a) An elongated area of high pressure extending from an eminence (or high) is called a _____.

(b) An elongated area of low pressure extending from a depression (or low) is called a _____.

A. (a) Wedge (or ridge).

(b) Trough.

Q. What is a "cloud burst"?

A. A cloud burst is a sudden and extremely heavy down pour of rain, especially one in which the water falls in a continuous stream, rather than in drops. A quantitative definition of a cloud burst makes it a rainstorm in which the rate of all is 100mm (3.94 inches) per hour. This is more than ten times the rate used by the United States Weather Bureau in defining a heavy rainfall.

Q. What is "humidity"?

A. Humidity is the state of the atmosphere with respect to water vapor content.

Q. What is "hail" and under what conditions does it occur?

A. Hail is ice balls or stones, ranging in diameter from that of medium-size raindrops to an inch or more. They may fall detached or frozen together into irregular lumpy masses. They are composed either of clear ice or of alternating clear and opaque layers. Hail often accompanies thunderstorm activity. Surface temperatures are usually above freezing when hail occurs. The size is based on the diameter in inches, of normally shaped hailstones.

Q. What is a "hygrometer"?

A. A hygrometer is an instrument which indicates either the relative humidity or in the case of the dew point hygrometer, the dew point of the air.

Q. Name three (3) causes of rain.

A. Three causes of rain are:

(1) The rising of heated air which is cooled by expansion as it rises until it reaches the dew point and rain occurs (Convective rain).

(2) The cooling of warm air in contact with cold air along frontal areas between air masses (Cyclonic rain).

(3) Cooling when horizontal motion of the air is deflected upward by rising ground or mountains (Orographic rain).

Q. Explain how you can determine whether all the cylinders of a diesel engine are receiving equal amounts of fuel.

(a) On large 2-cycle diesels.

(b) On small high-speed diesels.

A. A rough determination of the power output and fuel consumed by the individual cylinders of all engines can be made by checking the individual fuel oil settings on each cylinder and the individual exhaust and outlet cooling water temperatures. The most accurate method on large engines is to take individual indicator cards of each cylinder and determine the horsepower produced by each cylinder. A fairly accurate method on small, high-speed engines is to steady the engine at a constant speed and then secure the fuel to each cylinder, one cylinder at a time, and note the effect of each by the drop in the engine RPM. The cutting out of each cylinder should cause approximately the same loss in RPM if each cylinder is receiving the same quantity of fuel.

Q. Why is it that most diesel engines cannot be run at very low speeds?

A. In diesel engines the ignition of the fuel depends entirely upon the heat generated by quickly compressing the air in the cylinder; consequently there is a minimum speed below which the compression temperature will fall off causing misfiring.

Q. What extra precautions should be taken, with regard to the diesel main propulsion equipment, during rough weather when the vessel is pitching and rolling?

A. The engine speed should be reduced and means taken to prevent the engine from overspeeding in the event the propeller comes out of the water. The fuel and lubricating oil strainers will require closer attention and more frequent cleaning. Closer attention should be paid to the cooling water in that the sea cocks may become uncovered and the pumps airbound. All bearing should be checked more frequently as dirt may become dislodged in the lubricating oil system and be deposited at any bearing.

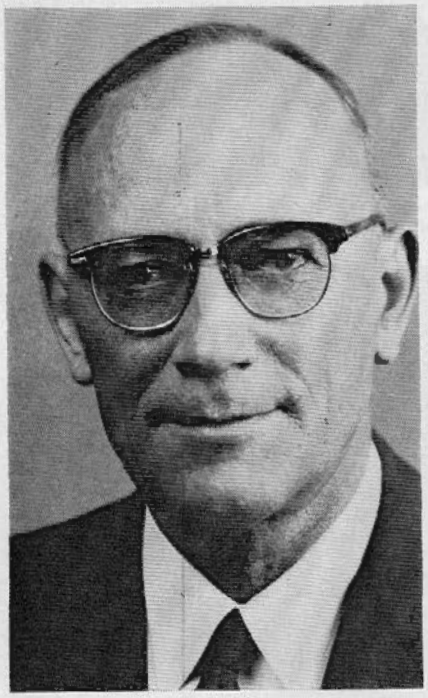
Q. What adjustment should be made to the timing of most 2-cycle diesel engines which are equipped with individual - pump - controlled, solid-injection systems when the speed is to be reduced considerably for any long period of time?

A. The injection timing should be changed to permit the beginning of injection to occur later in the compression stroke. This is to prevent ignition from occurring too early.

36-YEAR SERVICE ENDS

Thirty-six years of service with the Coast Guard, Office of Merchant Marine Safety, and its predecessor agencies was terminated on May 30th of this year by John D. (Jack) Dezendorf with his retirement from Federal service.

An outstanding authority in the law enforcement and motorboat registration field, Mr. Dezendorf was appointed as Chief, Motorboat Section, Bureau of Navigation, Department of Commerce, in November of 1921 while attending Georgetown University Law School. While serving in this capacity he was Assistant to A. J. Tyrer, Deputy Commissioner of Navigation, "father" of the 1910 Motorboat Act and the Numbering Act of June 7, 1918. He served in these capacities until transfer of the Bureau of Marine Inspection and Navigation functions to the Coast Guard in 1942. At that time Mr. Dezendorf was appointed Chief, Law



John Dezendorf

Enforcement and Motorboat Registration Section of the Merchant Vessel Inspection Division. He held this position until his retirement.

Rear Admiral H. T. Jewell, Chief, Office of Merchant Marine Safety, in recognizing the long and faithful service of this administrative officer, said: "Mr. Dezendorf has made a remarkable and continuing contribution to the efficient administration of functions dealing with law enforcement and motorboat registration."

Because of his long experience, initiative, and outstanding capacity to produce high quality work, Mr. Dezendorf has proven invaluable in the assimilation of related navigation and vessel inspection functions, particularly since water-borne activities have been at a sustained high level in both peace and war. The Coast Guard, in making public recognition of his contribution, "wishes him well and smooth sailing" in his well-earned retirement.

(Continued from page 83)

were so deep that renewals to plating and internal structural members were necessary. It was obvious that *Barge B* had received rougher handling by towboat pilots over a 20-year period than had *Barge A*.

The connection of housekeeping with material condition over the long term and the state of mind of operating personnel can be reasoned. While towboat personnel can not be expected to develop a state of pride toward tank barges that they have for their towboat, it is easy to imagine the effect a tow, composed of a dozen drab, sometimes oil-splattered barges, has on the mental attitude of a pilot about to enter a river lock or make a landing at an oil terminal. If he jostles the tow coming alongside and adds another indent to the accumulated total, his human nature will excuse it because, after all, it's just another barge, and is full of bumps anyhow. Who will notice this new one and anyway, who has ever got excited over this sort of thing before?

On the other hand, a river towboat pilot who looks out his pilothouse window and sees an orderly array of well-kept barges cannot escape being more careful in his shiphandling. If he slips and sets in a rake corner, it will be noticed and an explanation will be in order. The situation is quite analagous to the reckless abandon with which you back the venerable family sedan out the drive for the last time and the deliberate finesse with which you garage the shiny new hardtop on the return trip from your auto dealer.

While these conclusions are based on the comparisons of a highly specialized type of river craft, they can be applied to all other cases where men are concerned with the upkeep of vessels.

A good housekeeping program, vigorously prosecuted, pays off in more than safety. The sailormen from the era of wooden ships and iron men have left us a saying: "A taut ship is a happy ship"—to which we moderns can add: "—also safe and sound."

(Continued from page 84)

pating design agencies and is carefully analyzed to determine the safety. In general, the safe holding power of a seat is based upon an approximate factor of safety of two governed by initial slip of the tube resulting in leakage. The ultimate factor of safety is correspondingly higher.

TUBE JOINT LEAKS

Leakage past a tube joint, however slight it may be, leads to the deterioration of the tube seat with consequent loss of holding power. Loss of holding power leads to the danger of the tube pulling from its seat.

Slight leakage of a tube joint is not necessarily cause for alarm. However, it is cause to investigate to ascertain the trouble. The trouble should be determined before any corrective measures are taken. If the trouble cannot be confidently determined by visual inspection, radiographic examination which will give a complete picture of the tube joint should be employed. Above all, a leaky tube (split tube) must not be mistaken for a leaky joint.

If it is a split tube, the only repair acceptable is safe-ending the tube or complete renewal of the tube.

Slight leaks may be repaired in many instances by rerolling the tube, provided there is ample life left in the tube for rerolling. In this connection, it should be remembered that the process of expanding is a severe application of power and unless carefully applied can permanently injure the tube holes, after which tightness cannot be obtained under any circumstances. Generally, tubes should not be rolled more than a second time unless the previous expanding is known to have been very light. The best criterion of sufficient rolling is tightness under hydrostatic test.

At times tubes properly expanded in their seats develop leaks in service while retaining sufficient holding power. Seal welds, if carefully applied, may be accomplished without disturbing the holding power of the joint. Tubes to which seal welds are applied must be rerolled to insure that the tube has not loosened in its seat. The rolling must be very light and carefully done to avoid cracking the seal. The seal weld should always be applied from the inside.

Inspection and repair of external downcomer and riser tubes can never be considered just routine. They must he given the same considerate attention that the drums or headers are given if the calculated factor of safety is to be maintained throughout the boiler. Remember that a boiler is no better than its weakest connection.

LESSONS FROM CASUALTIES

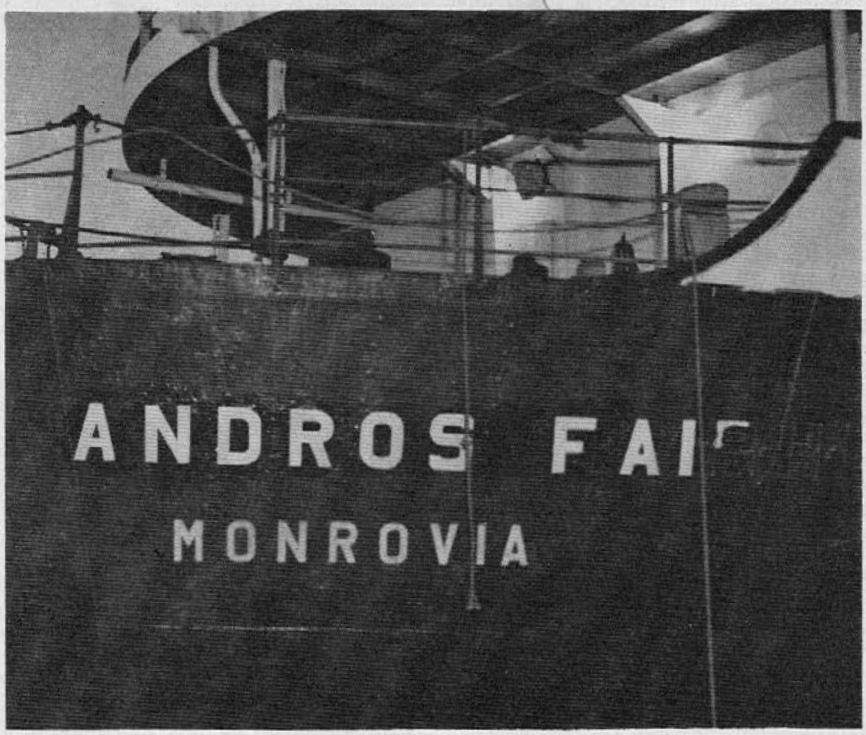
PLUNGE TO DOOM

FOR the benefit of seamen and shore workers who think life preservers and lifelines are to be scorned in some shipboard jobs because they might reflect on their professional ability, this article is dedicated.

Working over the side of a ship is dangerous. It is high, generally over the water, and like the man said, "Look out for the first step; it's a long one." Life preservers and safety gear are as necessary as the tools to do the task.

A recent case reviewed at Coast Guard Headquarters involved two shoreside painters. Assigned to paint in the new name of a Liberian-flag vessel at anchor off C. & O. Pier No. 9, Newport News, Va., these men vanished while working over the stern. They wore no life preservers, failed to secure lifelines, and none of the ship's personnel knew they were staged over the side.

The weather was foul. Strong northwesterly winds, force 8; rain and snow, rough sea; air temperature, 35° F. Shortly after the painters had been seen eating their lunch in the sanctuary of the engineroom fidley, it was necessary for the ship to drop a second anchor and use the engine to keep from dragging.



DANGLING LINES and an incomplete paint job were the mute evidence found after the disappearance of two painters working over the stern of this vessel.

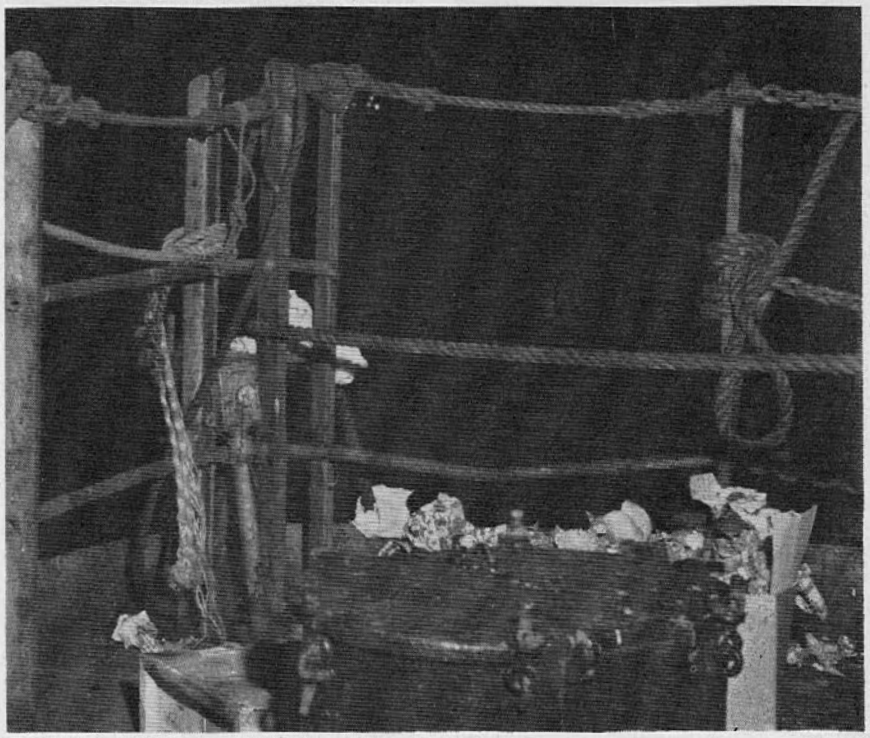
DETAILS FOLLOW

Arriving at the ship by launch, the painters unloaded their paint, brushes, staging, lines, and other material. At about 10:30 a. m. they were observed rigging the stagings and testing them by holding on to the fishplate and putting their full weight on the stage. The foreman told the men to get off the stage and rig lifelines. The men stepped to the deck and the foreman returned to shore with the understanding he would return after lunch.

The stage of 2" x 12" x 18' lumber fitted with a horn on either end was rigged with one line led through the after starboard chock and the other made fast to a section of the stern pipe railing. The stageline was 2-inch manila and subsequent tests indicated a breaking stress of 1,800 pounds.

The men painted in part of the new name of the vessel and knocked off for lunch. They were last seen about 12:45 p. m.

About 2:30 p. m. the weather moderated and the launch returned to the ship as per the verbal agreement. The stage and painters were not seen. On inquiry the foreman was told the



A GRAPHIC VIEW indicating method of securing after stageline. Note frayed rope and boxes of trash.

men had gone ashore. The foreman returned ashore and examined the truck used earlier to transport the men and supplies. The truck was undisturbed. A check of the local launch services was made, but the men had not used any of them for transportation.

Another trip to the vessel was made and a search instituted for the men. A dangling pair of lifelines and a frayed stageline over the stern were all that was found!

Search and dragging operations were carried out with negative results. To date, the bodies have not been recovered.

Both men enjoyed reputations as sober and industrious workers, but their failure to use safety equipment made this tragedy inevitable. The failure to have someone on deck in attendance and observing the work is an unsafe practice, and although not a contributing cause to the casualty, did preclude the timely assistance and detection of the accident.

The method of securing the stage and lifelines (*see figures 1 and 2*) and attempting to work in the weather conditions that prevailed disregarded the basic precautions of good seamanship.

ACCIDENTS REVIEWED

ALL shipboard injuries which incapacitate any person more than 72 hours must, by Federal regulation, be reported to the nearest Coast Guard Officer in Charge, Marine Inspection, by the master, person in charge, owner, or owner's agent.

The Coast Guard will then investigate these reported accidents to the extent deemed necessary to establish whether the accidents were caused by incompetency, misconduct, unskillfulness, willful violation of law or regulation, or by any material deficiency in the vessel. Necessary action then will be instituted to remedy the cause or causes.

The thousands of reports forwarded to Coast Guard Headquarters are, after remedial action has been taken, classified and indexed by categories and types before final filing. Most of the injuries reported regularly fall into well-established patterns, and the frequency of certain types is about the same from 1 year to the next.

Occasionally, however, the frequency rate of a certain type of accident or injury will increase, for no apparent reason. This phenomenon of a sudden increase in one type was described in the article "Hot Emissions" in the July 1956 *Proceedings*. This article dealt with unexpected burns and scalds.

UNUSUAL ACCIDENTS

In recent months several other increases in accidents-of-a-type have been noted. Not unexplainable or unexpected in nature, but unusual in that so many occurred in a short time without any apparent reasonable cause for the increase.

One category of this nature is the crushed hand or foot injury from a hatch cover, airport cover, or door falling or closing unexpectedly. These "closing door/hatch" reports arrive with monotonous regularity with a fairly uniform distribution as to crew quarters doors, weather deck doors, covers of various descriptions, and so on. Recently, however, a veritable torrent of these accidents have been reported. Heretofore harmless refrigerator doors suddenly have become vicious and dangerous.

All seamen know that reefer doors are stoutly constructed and are necessarily heavy to do their job. Once opened, they can pack a big wallop if allowed to swing free in a seaway. By any standard of safety aboard ship, there are two features with which every door should be equipped: (1) a positive latch to *secure* the door in an open position, and (2) a means of opening the door from the *inside* in event the door is accidentally closed with a man inside.

It is a safe bet that a great majority of ships reporting accidents from these doors are so fitted. It is also a safe bet that the injured man ignored or overlooked the holdback device. Result—broken bones, torn flesh, and possible crippling.

A REAL SLEEPER

Another category of injury which has jumped alarmingly is the "gangway rolled on foot" type. Here is a real sleeper. An ordinary ship's gangway, resting between the ship and the dock, the lower end mounted on a roller or two sturdy wheels, is the culprit in these cases. A little roll or surge of the ship and a howl of anguish breaks the serenity. The gangway has rolled over the nearest object—in this case a seaman's foot.

The following cases in point are all quotes from accident reports submitted to the Coast Guard:

"Seaman was standing on dock looking and reaching up, taking turns out of falls on accommodation ladder when vessel surged in swell alongside dock. Ladder moved causing roller on bottom of accommodation ladder to roll up and on seaman's foot . . . Man was coming aboard vessel; he stopped to talk at foot of gangway. He was looking aft with one foot on the gangway and one foot on the dock. Ship surged slightly aft, causing roller of gangway to come on his left foot and big toe . . . While standing there the gangway rolled over the end of his foot . . .

"Door to refrigerator slammed shut mashing fingers . . . Domestic reefer box door swung against his left foot during roll of vessel . . . Icebox door swung shut on man's shoulder . . . Door to chillbox closed on hand due to vessel's rolling . . . Man neglected to hook door in open position. A hook is installed for this purpose . . . This man injured his right hand by letting icebox door close on hand."

DIFFICULT TO PLACE

Some accidents are difficult to place as to particular type and category. Some examples of these are contained in the following quotes from actual cases:

"The chief cook threw a piece of meat from sink onto meat block in galley, and meat hook which was frozen in the meat caught his right hand and tore the flesh in the heel of the hand and little finger . . . Seaman was ringing fog signals on the ship's bell. Clapper broke where fastened to top of bell, striking his upper lip and right side of nose. Man sustained two cuts on upper lip where jagged edge of clapper struck . . . While chopping hard-boiled eggs, patient chopped one and one-half joints of little finger (left hand) completely off."

A more unusual series of accident reports turned these up:

This man sneezed so hard he dislocated his left shoulder . . . Propeller threw a log in the rudder causing the rudder to spin the steering wheel and one of the spokes struck the helmsman on the wrist . . . Seaman came aboard from ashore and to demonstrate to the mate on watch how tough he was, he struck the bulkhead twice with each fist before he could be restrained. Hand treated for sprain, later found to be fractured . . . Seaman admits getting out of bunk the wrong way and straining his back . . . Injured man claims he was approaching a door, which opened toward him, when an unidentified person opened the door from the opposite side, striking him in the head and right shoulder . . . While cleaning bulkhead in the laundry room, seaman got under the ironing board to get at bulkhead. He made an effort to get up and while doing so struck padded under surface of ironing board with lower section of his back, causing slight bruise.

To be really effective, safe practices must become habitual. Men must form the habit of doing things safely so that they do them that way automatically, *all the time*, even without thinking.

EXPLANATION!

By Captain L. M. Thayer, Jr., USCG

THE setting of this vignette is a courtroom in the United States of America, today. On the witness

stand is a ship's officer. He is reciting to a group of much interested parties, the details of what he did during the 60 minutes preceding a collision which is the subject of the hearing. He is attentive, polite. He speaks confidently, secure in his thought that *his* job was well done, in spite of the collision. He is willing—even glad—to tell this bunch of shore-side sailors, most of whom won't understand, anyway. He watches counsel evenly, and shows no resentment over the interruptions which are made now and then—to keep the inevitable record straight. He continues:

"Well, as I said, sir, it was pretty foggy when I came on watch at 10 p. m. We were blowing fog signals. Yes, sir; we were still making 15 knots and we were on course 000 true. By the time I picked up this target on the scope, it was well shut down. Sir? That was 11 p. m. I remember because I glanced at the clock just after I took the reading. At that time, she was about a point on my bow, and the range * * * sir? It was my starboard bow. Did I record the time? No, but I remember that it was just after 11 p. m. No, I didn't take a true bearing of her—she was about a point on my starboard bow, and I didn't bother to take a true bearing. I would say she was between 10 and 12° on the bow. And the range was about 10 miles.

NO RECORDINGS

"No, sir; I didn't record the bearing or the range, but I watched every few minutes. She seemed to be crowding me a little, and about 11:10 p. m. I reported to the captain. By crowding I mean that she was changing bearing toward my bow as we were getting closer. The captain came into the wheelhouse in a few minutes. Sir: I'd say it was a minute or two before the captain came in. By that time, I'd say the bearing had come over toward my bow a couple of degrees. She was crowding me again. No, I didn't check with the helmsman to see if she was on course—I could see that the bearing had come over a little.

"I told the captain what had been going on, and after looking at the target for a couple of minutes, we came left a little. Sir: We steadied on course 355—it was a change of 5° to port. The bearing opened up some after that change of course, and she was about a point and a half on my bow then.

"At 11:25 p. m. the bearing was about the same—a point and a half or so on the bow—and the range was 5.4 miles. The captain said give her some more room, so I came left again, and steadied up on 350. When we swung around, the bearing drew aft again, but she soon seemed to come back left. That target was changing fast, and she kept crowding me. In about another 10 minutes—it was 11:36 p. m. Sir: I know it was 11:36 p. m. because the captain told me to note the time because we were getting too close. At this time the range was down to a little over 3 miles: 3.1 I think it was, and she was hanging there on my bow. She was a little over a point then. No, sir; I didn't make any plot. You see, things were happening fast and you don't have time to take true bearings, exact times, and plot.

RADAR MANNED

"We changed course 10 more degrees left, and rang her down to half. Half speed is 10 knots. What did the bearing do then? Well, the bearing was now about two and a half points on the bow. But it was pretty steady again—she must have changed course on me again! Yes, sir, we could see that this target was changing fast. We watched her close. The captain or I was at the radar at all times, and we also tried to pick her up through the fog. But we didn't see her. The bearing was still a little over two points, but it was not moving very fast, so we decided to watch her real close, and if she crowded any more, we would make another change to the left, and give her plenty of room. Well, at 11:55 p. m. we swung around to 330. The range was about a mile now, and this course change put her about three and a half points on the bow—maybe a little more. After we settled on the new course, I took another look at the scope. We were still closing, but the bearing seemed to be dropping aft. I went to the bridge windows and the captain stayed near the radar. In a few minutes—I don't know exactly how long, but it was only a short time—I saw her. She must have come around again, and hard, this time. I hollered full left and the captain put the telegraph full astern; but we hit her on the port quarter. She must have swung clear around on me. Lights? No sir, I didn't see any lights until it was too late.

"Yes, sir, we had started to swing left, but I'd say we were on about 325 when we crashed. I didn't check it."

MANY ERRORS

This is a fictitious but not fanciful account of a deck officer who was busy "using" his radar. He was obviously trying to avert danger, but he maneuvered into a collision, almost as though he had planned it carefully.

He made many errors: he did not take or record accurate information from his radar; he made note of the fact that the bearing was changing to the left as the range closed, but concluded, in error, that he should change course to the left to avoid being crowded; and, above all other errors, he did not make a plot of his ranges and bearings as he got them.

If he had read his radar accurately, recorded the data, and made a simple plot, he would have known, by the time he "came left a little" in the first place, that the target he was observing was a vessel on course 311° true, at speed 5.6 knots; he would have known that if he made no change at all in either course or speed, the target would have passed 4 miles ahead; that the closest point of approach would have then been 1.4 miles on bearing 290° true; and, if he decided to change course, for any reason, he should have altered to his right, and not left.

The plot would have taken no longer than 10 minutes (4 minutes after the first 3 readings were taken at intervals of 3 minutes) at which time the range between vessels was still 8 miles!

Conclusion: Many collisions have occurred because ships' officers were too busy to plot; but none, of which I have knowledge, has occurred because the officers were too busy plotting.

AMPUTATION BY HAWSER

THE history of marine accidents and injuries contains many incidents of injuries or deaths inflicted by mooring lines and hawsers. Safety lessons concerning the dangers of carelessness in handling such lines are abundant. However, it would appear that this lesson needs repeating over and over again. One accident which occurred recently in a southern port will serve as a pointed reminder to all men who must handle heavy lines.

A small motor towboat, 46 feet in length, with a 165 horsepower diesel engine, was handling two loaded cargo barges in the Mississippi Delta area. The crew of this small tug consisted of the master and one deckhand. As the tug and tow approached a bend in the waterway, the master shouted back from the wheelhouse to the deckhand near the stern to slack out on the stern hawser, in order to give the tug more maneuverability to make the turn. Slacking the hawser in this manner was a regular custom for such small tows.

TUG SHOT AHEAD

As the tug slowed, the deckhand removed a few turns of the hawser from the stern towing bitt. Apparently the deckhand removed too many turns

and the tug shot ahead, with the line whipping around the bitt. In an attempt to retrieve the line, the deckhand shouted to the master to stop. Unfortunately, the master interpreted the shout to mean that the deckhand had completed slacking off and intended for him to proceed. He increased the speed of the tug to full ahead.

The deckhand tried to secure a turn and snub the towline, which was slick and wet. The line was now whipping out too fast, and all he could do was let go and try to jump clear. As the spare turns of hawser jumped off the platform where they were coiled, they whipped sideways and caught the deckhand's leg, dragging him against the bitt. His left leg was amputated just below the knee, and his hip was pulled out of joint.

The deckhand was thrown 6 to 8 feet across the deck and came to rest on the port side, lying stunned for a few seconds. As reality filtered back to his mind, his eyes were met by the sight of his left shoe and the lower part of his left leg jammed on the bitt, about 8 feet away from him. Cries for help were not heard by the master, who was continuing ahead.

TOW CUT LOOSE

The deckhand started crawling up the port side towards the pilothouse. He was discovered shortly afterward by the master. Fortunately, a small dock was nearby. The master was able to chop the tow loose and get the deckhand to the dock, where an ambulance soon arrived to transport him to a hospital. At the present time the deckhand is recovering, but will be partially crippled for the rest of his life.

Although the conditions aboard this small towboat were not conducive to safety, the lesson is equally applicable to any ship and to all men who handle lines. Certainly this man who lost part of one leg will never again have to be reminded of the terrific power which may be lying in wait to spring forth and inflict injuries when any mooring line or hawser is under heavy strain.

Injuries inflicted by such lines are usually of two types, those caused by parting of the line under terrific stress and the subsequent whipping and flailing of the broken ends, and those caused by the line taking charge, that is, running or jumping off the bitts and striking human flesh on the way. Mooring lines which have given way under powerful stresses have cut men in two. Handle heavy lines under tremendous stress as carefully as you would handle a case of dynamite with the primer caps already installed.

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, except for cost publications which may be obtained upon application to the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Date of each publication is indicated following title.

CG No.	*Title of Publication*
101	Specimen Examinations for Merchant Marine Deck Officers. 1–50
108	Rules and Regulations for Military Explosives. 5–15–54
115	Marine Engineering Regulations and Material Specifications. 3–1–56
118	Overtime Services. 8–46
123	Rules and Regulations for Tank Vessels. 10–1–56
129	Proceedings of the Merchant Marine Council. Monthly
169	Rules to Prevent Collisions of Vessels and Pilot Rules for Certain Inland Waters of the Atlantic and Pacific Coasts and of the Coast of the Gulf of Mexico. 3–1–55
172	Pilot Rules for the Great Lakes and their connecting and Tributary Waters and the St. Marys River. 1–3–55
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. 3–5–54
176	Load Line Regulations. 11–1–53
182	Specimen Examinations for Merchant Marine Engineer Licenses. 5–49
184	Pilot Rules for the Western Rivers and the Red River of the North. 1–3–55
187	Explosives or Other Dangerous Articles on Board Vessels. 7–1–54 (Cost Pub. $2.50 from GPO)
190	Equipment Lists. 3–1–56
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel. 9–15–55
200	Marine Investigation Regulations and Suspension and Revocation Proceedings. 4–13–53
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels. 6–51
227	Laws Governing Marine Inspection. 7–3–50
239	Security of Vessels and Waterfront Facilities. 6–16–52
249	Merchant Marine Council Public Hearing Agenda. Annually
256	Rules and Regulations for Passenger Vessels. 11–19–52
257	Rules and Regulations for Cargo and Miscellaneous Vessels. 6–1–55
258	Rules and Regulations for Uninspected Vessels. 7–1–55
259	Electrical Engineering Regulations. 6–1–55
266	Rules and Regulations for Bulk Grain Cargo. 2–13–53
267	Rules and Regulations for Numbering Undocumented Vessels. 1–15–53
268	Rules and Regulations for Manning of Vessels. 11–19–52
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	Motorboats. 2–1–56
293	Miscellaneous Electrical Equipment List. 4–1–54

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 $15.00 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 April 1957

The following has been modified by Federal Register:

CG 190, Federal Register April 10, 1957.

MERCHANT MARINE PERSONNEL STATISTICS

MERCHANT MARINE OFFICER LICENSES ISSUED

QUARTER ENDING 31 MARCH 1957

DECK

Grade	Original	Renewal
Master:		
Ocean	77	700
Coastwise		13
Great Lakes	42	217
B. S. & L.	5	3
Rivers	4	19
Radio officer licenses issued	25	124
Chief mate:		
Ocean	42	98
Coastwise	1	
Mate:		
Great Lakes	18	60
B. S. & L.		
Rivers	8	8
Second mate:		
Ocean	46	129
Coastwise		
Third mate:		
Ocean	47	148
Coastwise		
Pilots:		
Great Lakes	92	151
B. S. & L.	190	117
Rivers	30	17
Master: Uninspected Vessels	12	4
Mate: Uninspected Vessels	7	23
Total	646	1,831
Grand total	2,477	

ENGINEER

Grade	Original	Renewal
STEAM		
Chief Engineer:		
Unlimited	107	935
Limited	20	190
First Assistant Engineer:		
Unlimited	103	322
Limited		
Second Assistant Engineer:		
Unlimited	107	348
Limited		
Third Assistant Engineer:		
Unlimited	178	293
Limited	1	
MOTOR		
Chief Engineer:		
Unlimited	12	92
Limited	33	143
MOTOR—continued		
First Assistant Engineer:		
Unlimited	1	
Limited	3	
Second Assistant Engineer:		
Unlimited		
Limited		
Third Assistant Engineer:		
Unlimited		
Limited		
Chief Engineer: Uninspected Vessels	5	14
Assistant Engineer: Uninspected Vessels	7	14
Total	577	2,351
Grand total	2,928	

WAIVER OF MANNING REQUIREMENTS

(1 January through 31 March 1957)

Waivers	Atlantic coast	Gulf coast	Pacific coast	Great lakes	Total
Deck officers substituted for higher ratings					
Engineer officers substituted for higher ratings	2	2	1	1	6
O. S. for A. B.		4	1	2	7
Wiper or coalpassers for QMED	4	1	1		6
Total Waivers	6	7	3	3	19
Number of vessels	5	6	3	2	16

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 3,624 cases during the first quarter of 1957. From this number, hearings before Examiners resulted involving 48 officers and 264 unlicensed men. In the case of officers, no licenses were revoked, 2 were suspended without probation, 15 were suspended with probation granted, 7 cases were dismissed after hearing, and 4 hearings were closed with admonition. Of the unlicensed personnel, 28 documents were revoked, 31 were suspended without probation, 95 were suspended with probation granted, 29 hearings were closed with admonition, and 11 cases were dismissed after hearing. 17 Licenses and 245 documents were voluntarily surrendered.

ORIGINAL SEAMEN'S DOCUMENTS ISSUED

Type of document	Atlantic coast	Gulf coast	Pacific coast	Great Lakes and rivers	Total
Staff officer	47	11	19	2	79
Continuous discharge book.		40			40
Merchant mariner's documents.	1,485	684	901	866	3,936
AB any waters unlimited.	91	23	40	18	172
AB any waters, 12 months.	42	10	21	23	96
AB Great Lakes, 18 months.	2			9	11
AB tugs and towboats, any waters.					
AB bays and sounds					
AB seagoing barges					
Lifeboatman	32	6	67	2	107
QMED	79	16	28	71	194
Radio operators	2	2	1		5
Certificate of service	1,471	709	881	812	3,873
Tankerman	20	27	6	84	137
Total	3,271	1,528	1,964	1,887	8,650

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

APPENDIX

EQUIPMENT APPROVED BY THE COMMANDANT

[EDITOR'S NOTE.—Due to space limitations, it is not possible to publish the documents regarding approvals and terminations of approvals of equipment published in the Federal Register dated April 10, 1957 (CGFR 57–14)–(CGFR 57–15). Copies of these documents may be obtained from the Superintendent of Documents, Washington 25, D. C.]

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 1 March to 31 March 1957, inclusive, for use on board vessels in accordance with the provisions of Part 147 of the regulations governing "Explosives or Other Dangerous Articles on Board Vessels" are as follows:

CERTIFIED

Penetone Co., Tenafly, N. J., Certificate No. 299, dated 22 March 1957, FORMULA 781.

Penetone Co., Tenafly, N. J., Certificate No. 300, dated 22 March 1957, PENESOLVE #902.

CANCELED

Standard Oil Co., 910 S. Michigan Ave., Chicago 80, Ill., Certificate No. 124, dated 1 March 1957, STANDARD LIQUID WAX.

Standard Oil Co., 910 S. Michigan Ave., Chicago 80, Ill., Certificate No. 125, dated 1 March 1957, STANDARD LIQUID GLOSS.

Dunham Chemical Co., 840 N. Michigan Ave., Chicago 11, Ill., Certificate No. 129, dated 1 March 1957, 128–D.

F. Carten, 326 58th St., Brooklyn, N. Y., Certificate No. 172, dated 1 March 1957, ACTIVE FOAM SHAMPOO AND STAIN REMOVER.

Midland Laboratories, Dubuque, Iowa, Certificate No. 174, dated 1 March 1957, MIDLAND MILL-O-CIDE FORMULA P–5.

Alken-Murray Corp., 131 E. 23d St., New York 10, N. Y., Certificate No. 184, dated 1 March 1957, ALKEN CERTIFIED EVENFLO.

Rego Chemical Co., Box 142, Maspeth, N. Y., Certificate No. 193, dated 1 March 1957, REGO CONCENTRATE (RC CLEANER CONCENTRATE).

Rego Chemical Co., Box 142, Maspeth, N. Y., Certificate No. 194, dated 1 March 1957, REGO SLUDGE DISPERSANT B (RC FUEL OIL CONDITIONER).

Maxfal Chemical Co., 439 3d Ave., Brooklyn 15, N. Y., Certificate No. 210, dated 1 March 1957, FUSOL NO. 4.

Wash-O-Way Inc., 66–68 Dey St., New York 7, N. Y., Certificate No. 232, dated 1 March 1957, RUST-O-WAY.

Wash-O-Way Inc., 66–68 Dey St., New York 7, N. Y., Certificate No. 237, dated 1 March 1957, WASH-O-WAY #2.

Wash-O-Way Inc., 66–68 Dey St., New York 7, N. Y., Certificate No. 238, dated 1 March 1957, WASH-O-WAY #3.

Standard Oil Co., 910 S. Michigan Ave., Chicago 80, Ill., Certificate No. 261, dated 1 March 1957, STANDARD INSECT SPRAY WITH DDT.

Standard Oil Co., 910 S. Michigan Ave., Chicago 80, Ill., Certificate No. 265, dated 1 March 1957, STANDARD AEROSOL INSECT KILLER.

Ro-Ed Sales Co., 209 King St., Brooklyn 31, N. Y., Certificate No. 288, dated 1 March 1957, RO-ED FUEL OIL SLUDGE SOLVENT.

Currier Co., 710 73d Ave., Oakland 4, Calif., Certificate No. 321, dated 1 March 1957, COLDKLEEN.

Valjer Corp., 264 Eastland Ave., Pelham, N. Y., Certificate No. 369, dated 1 March 1957, SLUDGE SOLVENT #60 WITH CAT-ION.

AFFIDAVITS

The following affidavits were accepted during the period from 15 February 1957 to 15 April 1957:

Union Machine Works, 534 Second St., Oakland 7, Calif., FITTINGS.

Standard Steel Works Division, Baldwin-Lima-Hamilton Corp., Burnham, Pa., FLANGES AND FORGINGS.

New England Valve Corp., 47 Lagrange St., Worcester, Mass.. VALVES.

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by customs ports for the quarter ended March 31, 1957. Generally speaking, undocumented vessels are those machinery-propelled vessels of less than 5 net tons engaged in trade which by reason of tonnage are exempt from documentation. They also include all other vessels propelled in whole or in part by machinery which have not been issued marine documents by the customs, owned in the United States and found on the navigable waters thereof.

Coast Guard District	Customs Port	Total
1 (Boston)	(4) Boston	15,969
	(1) Portland, Maine	9,425
	(2) St. Albans	944
	(5) Providence	4,807
	Total	31,145
2 (St. Louis)	(45) St. Louis	11,037
	(12) Pittsburgh	2,384
	(34) Pembina	132
	(35) Minneapolis	2,656
	(40) Indianapolis	5,621
	(42) Louisville	3,007
	(43) Memphis (part)	5,884
	(46) Omaha	364
	(47) Denver	33
	Total	31,118
3 (New York)	(10) New York	49,576
	(6) Bridgeport	9,601
	(11) Philadelphia	20,684
	Total	79,861
5 (Norfolk)	(14) Norfolk	16,446
	(13) Baltimore	23,414
	(15) Wilmington, N. C	8,287
	Total	48,147
7 (Miami)	(18) Tampa (part)	26,382
	(16) Charleston	1,557
	(17) Savannah	2,434
	(49) San Juan	471
	(51) St. Thomas	126
	Total	30,970
8 (New Orleans)	(20) New Orleans	21,698
	(18) Tampa (part)	560
	(19) Mobile	8,369
	(21) Port Arthur	4,591
	(22) Galveston	9,726
	(23) Laredo	1,660
	(24) El Paso	22
	(43) Memphis (part)	65
	Total	46,691
9 (Cleveland)	(41) Cleveland	10,233
	(7) Ogdensburg	2,668
	(8) Rochester	5,808
	(9) Buffalo	4,154
	(36) Duluth	2,579
	(37) Milwaukee	3,947
	(38) Detroit	22,266
	(39) Chicago	8,828
	Total	60,483
11 (Long Beach)	(27) Los Angeles	13,386
	(25) San Diego	2,406
	(26) Nogales	151
	Total	15,943
12 (San Francisco)	(28) San Francisco	15,102
13 (Seattle)	(30) Seattle	20,997
	(29) Portland, Oregon	8,667
	(33) Great Falls	628
	Total	30,292
14 (Honolulu)	(32) Honolulu	3,738
17 (Juneau)	(31) Juneau	8,060
	Grand total	401,550

U. S. GOVERNMENT PRINTING OFFICE: 1957


SCOTT CORP.
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KEEP CLEAR
OF TURNING
PROPELLER