PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

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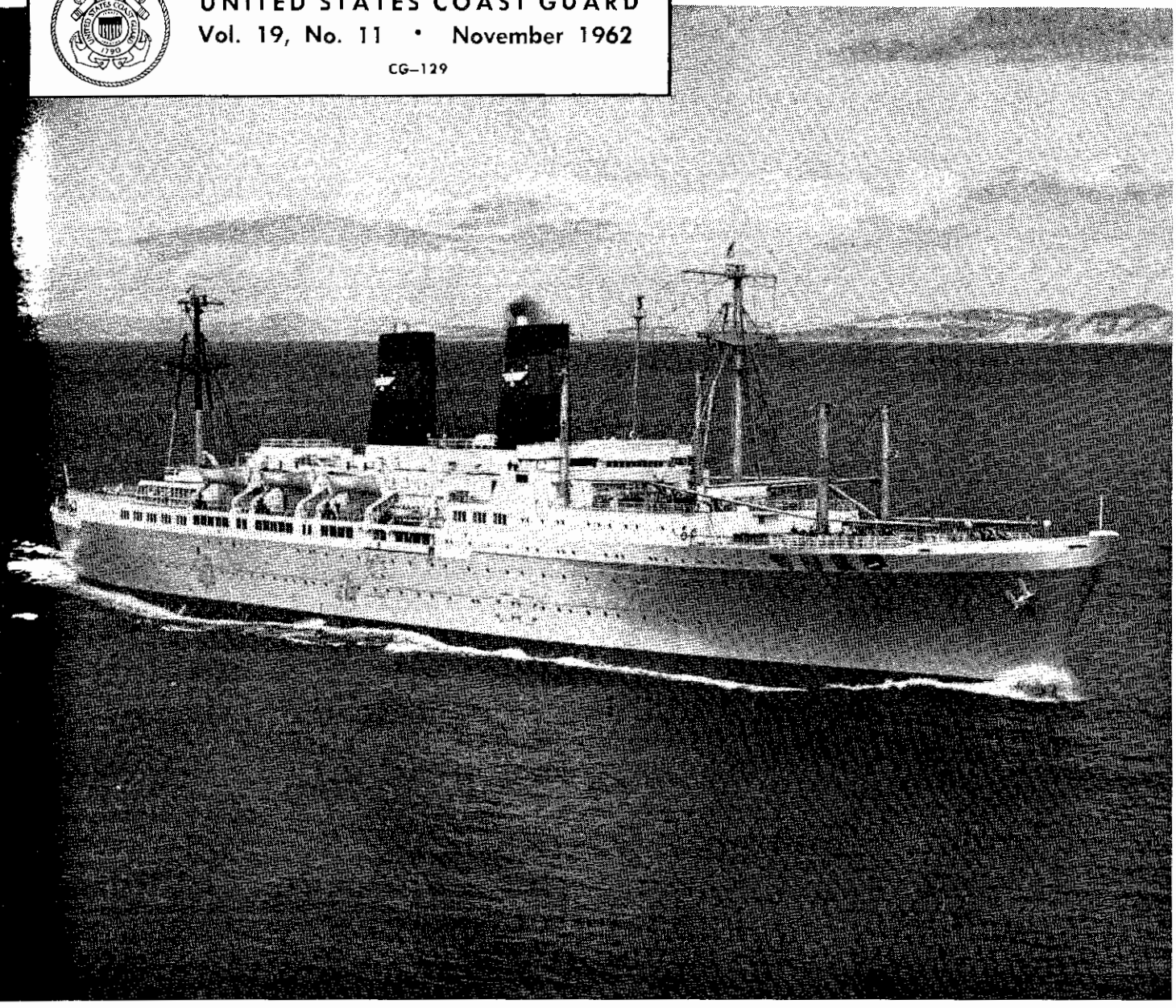

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THIS COPY FOR NOT LESS THAN 20 READERS—PASS IT ALONG

SAFE OPERATING AWARD

REPRESENTATIVES from United States Lines, Waterman Steamship, and States Marine Lines are shown receiving National Safety Council awards for the safest 1961 operating records in the "Passenger-Cargo" category. The awards are based on the lowest personnel accident frequency ratio per 1 million man-hours worked. The awards were presented by RADM R. M. Ross, Commander Third Coast Guard District. Winners in the Tanker Division, not shown here, were Tidewater, Socony, and Texaco Oil Cos.

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List 141M
List 111

DUAL AWARD

ABLE SEAMAN Romero M. Jalomo is shown receiving the American Petroleum Institute's Meritorious Safety Award and a Letter of Commendation from the Commander, Eleventh Coast Guard District. From left to right are Captain Lloyd L. Stoltz, Chief, Merchant Marine Safety Division, Eleventh Coast Guard District; Able Seaman Romero M. Jalomo of the M/S *Chevron*; and Mr. T. P. O'Neil, Vice President, California Shipping Company.

m
P15
27 March 1962.

MR. ROMERO M. JALOMO,
Able Seaman, Motor Vessel *Chevron*,
c/o Standard Oil Company of California,
P.O. Box 910,
San Pedro, Calif.

DEAR MR. JALOMO:

It is my pleasure to commend you on the quick positive action which you took to rescue James Casey from probable drowning as described below:

> On 11th of June 1961, while you were serving as Able Seaman; the M/S *Chevron* was answering a distress call from the F/V *Aloha*. During the rescue of the crew of the *Aloha* by the motor lifeboat from the *Chevron* in command of Chief Mate, H. Parnell, you observed James Casey, an 80-year-old man in the water having difficulty staying afloat. With little thought for personal safety you dove into the water from the lifeboat and swam to the man's side where you continued to assist the man, keeping his face above water, until such time as Mr. Casey could be taken aboard the motor launch.

This quick action on your part was in the finest tradition of the sea and reflects credit on you as an able seaman of the U.S. Merchant Marine. A copy of this commendation will be made a part of your official record in the files at the U.S. Coast Guard Headquarters, Washington, D.C.

Sincerely yours,

N. W. SPROW,
Rear Admiral, U.S. Coast Guard,
Commander, Eleventh Coast Guard District.

RADAR DATA COMPUTER

The Coast Guard recently completed an operational evaluation of an experimental prototype radar data computer. This equipment was built for the Maritime Commission by the Goodyear Aircraft Corp. While the computer does not relieve the ship's watch officer of any of his responsibilities, one of the objectives of the experimental project is to assist in the reduction of ship collisions.

The computer, which was temporarily installed on one of the Coast Guard's major cutters for the evaluation, is an adjunct to and exchanges signals with the ship's surface-search radar and requires input from the gyrocompass system and pitometer log.

The visual presentation appears somewhat similar to a radarscope. As many as 10 targets can be tracked at any one time, each target being assigned automatically by the unit to 1 of 10 digital computers. Target acquisition is accomplished either by the unit itself or by a portable hand-held light gun attached to the system by an extension cord. The movement on the visual presentation can be shown either as true or relative motion.

The following information can be obtained from the computer either by numerical readout or by plotting manually from the visual presentation on the scope: (1) Target bearing; (2) target range; (3) range at closest point of approach; (4) time at closest point of approach. Two additional items of information—namely, target speed and course—can also be obtained by numerical readout or directly from the scope by means of a simple manual "scale-and-protractor" device. Any desired distance setting for closest point of approach can be cranked into the unit by the officer of the watch so that if any target which is being tracked is computed to pass inside the "CPA" distance, an alarm indicates this fact and such action as may be required by the Rules of the Road can be instigated. The target causing the alarm is indicated by a predicted course line displayed on the scope, in addition to being shown on the readout of CPA range.

The computer has been removed from the cutter and is now installed on board the SS *Constitution* of the American Export Lines for further evaluation by the merchant marine.

AN ARCHWAY OF CASUALTY EXPERIENCE

By Commander Carol L. Mason, USCG
Chief, Casualty Review Branch, Headquarters

"WE ARE PART of all that we have met, yet all experience forms an archway where through gleams the untraveled world which fades forever and forever as we move."

Translated into modern slogans, this fragment of the epic poem "Ulysses" reads "Experience is our best teacher." I am impelled to add at this point that it does NOT mean "Rush out and deliberately involve yourself in a casualty so that we may broaden our experience."

The Coast Guard has one prime justification for its participation in the field of casualty investigation and review—to assist in preventing similar casualties from recurring. Progress toward this objective requires—even demands—cooperation and active participation on the part of all people connected with the maritime field. Most of us, at one time or another, have probably experienced a moment of indecision or foreboding when our sixth sense warned us that we were on the verge of playing an active part in an accident about to happen. This premonition arose from our own personal "Archway of Casualty Experience."

If our merchant marine is to reap full benefit from the vast amount of past casualty experience that has been accumulated at such a high cost of personal and material damage, more than just a sixth sense is needed. While Coast Guard casualty investigations may frequently reveal the need for amendments or additions to governing regulations, it is the part played by industry itself which tends to govern tomorrow's casualty statistics. For example, there being no manner in which we may stop the progress of time, the factor of aging is ever present. Thus, the task of combating attendant deterioration and the invisible breakdown of molecular structure, commonly referred to as metal fatigue, becomes a matter of progressively increasing concern. The architect, though guided by a multitude of requirements, is relying heavily upon standardized strength factors contained in the new materials to be used. Although stress requirements on new construction contain ample reserves well above minimum needs, it is this same reserve that suffers a progressive reduction through the passage of time. Our "Archway of Casualty Experience" lends credence to the need for continued top-level supervision if we are to slow down the progress of deterioration. In essence, wherein the progress of time is everlasting and its rate cannot be altered, the progress of deterioration is subject to control.

Industry has long recognized the value of progressive maintenance. Unfortunately, perhaps due in part to the press of urgent business commitments, a vessel's scheduled maintenance program is ofttimes altered, deferred, or upon occasion completely ignored. While not immediately apparent, such practice can, and in all probability will, advance the rate of deterioration; or, at the very least, incur unnecessary expense. First, it can be expected that Coast Guard inspectors will be obliged to place greater demands upon such a vessel during annual or biennial inspection periods. The possible resultant costs, delays, and frustrations need not be enlarged upon in this discussion. Sufficient to say, it is industry and industry alone that will bear this burden. Secondly, it can be expected

This article on marine casualties is extracted from a speech delivered by Commander Mason before the Marine Section of the National Safety Council during the 1962 National Safety Congress in Chicago, Ill.—ED.

that the inevitable makeshift repairs which seem to follow every endeavor to cut corners may contribute to a greater "Archway of Casualty Experience."

On the subject of cooperation, it continues to be essential that the preparation and prompt submission of casualty reports receive top-level supervision. It must be borne in mind that past experience is of value only when all of the pertinent facts are known. It is unfortunate that, upon occasion, possibly again due to the press of other business, the person in charge of a vessel involved in a casualty will delegate the task of preparing the required written report to a person totally unfamiliar with the significant factors involved. How many times have the submission of these reports been characterized as "redtape" and thus been given merely cursory attention, when actually the reports should form the basis for an accurate analysis of the facts. So as to lend a better understanding to the significance and value of certain form reports, let us briefly discuss Form CG–2692, entitled "Report of Vessel Casualty or Accident," as to when its submission is required and a thumbnail sketch of its use and ultimate disposition.

First, as noted under 46 CFR 136.05–1, the *owner, agent, master* or *person in charge* of a vessel involved in a marine casualty shall give *notice* as soon as possible to the nearest marine inspection office of the Coast Guard whenever the casualty results in any of the following:

a. Physical damage to property in excess of $1,500.

b. Material damage affecting the seaworthiness or efficiency of the vessel.

c. Stranding or grounding.

d. Loss of life.

e. Injury causing any persons to remain incapacitated for a period in excess of 72 hours; except injury to harbor workers not resulting in death and not resulting from vessel casualty or vessel equipment casualty.

This notice may be transmitted verbally or in any other convenient manner and shall include the name and official number of the vessel involved, the owner or agent thereof, and insofar as is practicable, the nature and probable occasion of the casualty, the locality in which it occurred, the nature and extent of injury to personnel and the damage to property. In addition to this notice, the *person in charge* of a vessel shall, as soon as possible, report in person and in writing to the OCMI at the port in which the casualty occurred or nearest the port of first arrival. It is this latter instance wherein the Form CG–2692 comes into play and, as mentioned above, can only be submitted by the *person in charge* of the vessel. In most cases, this refers to the master. In other words, submission by the agent, owner, or attorney would not be in compliance with the governing regulations. Further, if submitted promptly, this report may also serve to provide the notice previously described. Thus we see that its prompt submission tends to minimize administrative handling by serving a dual function.

Upon receipt by the appropriate Marine Inspection Office, this written report is reviewed by a trained investigator to determine, among other things, the advisability and need for further investigation as to probable cause of the reported casualty. Thereafter the report will receive attention by several officers in the normal chain of command and ultimately arrive in the office of the Casualty Review Branch at Coast Guard Headquarters. It is then that the material contained therein will be used in the compilation of statistical data for ultimate release to the public. It is this data that serves to guide both industry and the Coast Guard in our mutual interests of maintaining a high standard in the field of marine safety.

Let us take this moment to review briefly the statistical data compiled over the past year for the period 1 July 1961 to 30 June 1962. I believe this information will furnish an insight as to why we must never permit ourselves to become lax in the field of merchant marine safety.

During the period mentioned, 4,208 marine casualties involving commercial vessels were reported and investigated. Of this number, six were considered major and were investigated by Marine Boards. The investigations revealed that 166 persons lost their lives due to vessel casualties, 136 persons lost their lives due to personal accidents not connected with vessel casualties, and 243 persons lost their lives due to miscellaneous causes including natural deaths, suicides, and homicides.

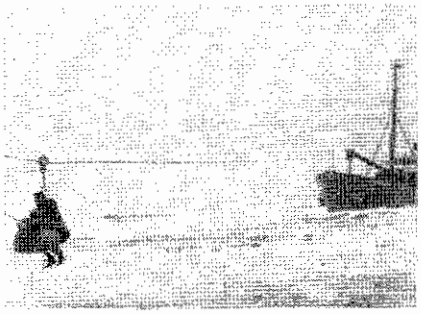
The following breakdown is intended to show the differential between the number of casualties occurring during fiscal year 1962 as compared to those occurring during fiscal year 1961 (again we are considering commercial vessels only):

	F/Y 62	*F/Y 61*
Casualties to vessels	2,250	2,013
Personal injuries not involving vessel casualty	1,579	1,343
Death aboard inspected vessels not involving vessel casualty	233	243
Death aboard uninspected vessels not involving vessel casualty	146	153
Total marine casualties	4,208	3,752

It must be borne in mind that, although these figures reflect, to some extent, an increase over last year's tabulations, this is attributed primarily to a more effective reporting system in addition to the wide publicity given to the subject of "when reports are required."

The following is considered to be particularly significant:

> There were no passenger lives lost as the result of casualties to inspected passenger vessels over 65 feet in length or their equipment. This is an enviable record for which we can all be proud. Only one passenger lost his life as a result of a casualty to an inspected passenger vessel not more than 65 feet in length.



ABOUT THE AUTHOR

Commander Mason entered the Coast Guard from the Merchant Marine in 1942. After serving on vessels in the Southwest Pacific during World War II, he was then transferred to the Atlantic coast where he was assigned as commanding officer on several vessels operating out of San Juan, P.R. In 1955 Commander Mason was assigned to Merchant Marine Safety duties. He has served as Senior Investigating Officer at the ports of Portland, Oreg., and Boston, Mass., before taking on his current responsibilities at Headquarters.

In comparing the casualties aboard U.S.-inspected commercial vessels as opposed to uninspected commercial vessels for the fiscal year 1962, we find the following:

	Inspected	*Uninspected*
Lives lost aboard other than passenger vessels as the result of vessel casualty	7	158
Lives lost on large passenger vessels	0	0
Lives lost on small passenger vessels	1	0

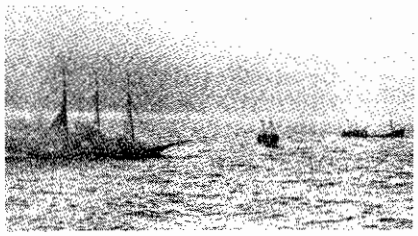
Note particularly that this shows but 8 lives lost aboard inspected vessels as compared to 158 aboard those that are uninspected.

Continuing further on the statistical breakdown for fiscal year 1962, we find:

	Inspected	*Uninspected*
Lives lost as the result of personal accidents	42	94
Lives lost as the result of natural causes, suicides, homicides, and disappearances	191	52
Vessels involved in capsizing, foundering, or sinking	27	255
Vessels involved in fire or explosions	48	137
Vessels involved in collision with other vessels	361	495
Vessels totally lost	24	223

Of the 495 uninspected vessels involved in collision, 237 of this number were tugboats. Note particularly the great number of personal accidents and vessel casualties occurring to uninspected vessels as compared to that of inspected vessels.

Although the statistical figures which I have just given you may, in themselves, appear high, it must be remembered that, for the most part, they represent remarkably low percentages, particularly in the case of inspected vessels. However, we cannot relax our vigilance, nor the cooperation between the Coast Guard and industry which is so essential in our mutual efforts to avoid all disaster. Looking back in history a little, we might say that marine inspection had its beginnings in 1838 following an appalling number of boiler casualties. With the advent of Robert Fulton's first steamboat, the *Clermont*, which made the trip from New York to Albany on August 17, 1807, a number of steamboats were built and operated, particularly on the Mississippi and Ohio Rivers. The earlier boilers were square in design and many used sea water. Although designed to operate at pressures not exceeding 30 pounds, a report to Congress in 1838 stated that over 100 boilers had exploded since the advent of steam for motive power. In fact, it was found that most passengers preferred to ride on



towed barges rather than aboard the steam vessel. During this same year of 1838, the steamboat *Moselle* blew up on the Ohio River with a loss of over 100 lives. Two months later the steamboat *Pulaski* blew up off the coast of North Carolina with a loss of 140 lives. Two days later the steamer *Washington* burned on Lake Erie with a loss of over 50 lives, and shortly thereafter the steamer *General Brown* blew up on the Mississippi with a loss of over 60 lives. The act of 1838 provided, among other things, that the masters or owners of such vessels employ a sufficient number of experienced and skilled engineers to have the hulls of their vessels inspected every 12 months and the boilers every 6 months to determine their strength and durability. However, it was the Steamboat Act of 1852 that really furnished the foundation for Steamboat-Inspection Service. It provided for the Presidential appointment of nine supervising inspectors who were to be competent and experienced in the construction and operation of merchant vessels. In addition to their inspection duties, they were required to meet annually for joint consultation and to establish rules and regulations for the uniform administration of the inspection laws.

Although many important developments followed, it was the act of January 22, 1894, that provided for the inspection of iron and steel boiler plates at the mills where they were manufactured. One significant disaster which led to a series of amendments in our inspection laws was that of the *General Slocum* which, on June 15, 1904, burned in the East River, N.Y., resulting in the loss of 957 lives, most of whom were women and children.

Returning briefly to the subject of material failure, we find that structural failures can be divided into three groups:

(a) Failures resulting from deterioration of structural parts;

(b) Failures resulting from faulty design;

(c) Failures resulting from extraordinary stresses due to collisions, groundings, storm strain, loading, etc.

Although failures resulting from the latter are ofttimes difficult to detect, timely recording in a vessel's log of all unusual events will normally assist the inspection party in locating areas of possible weakness. Also, elements of faulty design can generally be detected by careful inspection during the planning board stage. However, failure resulting from deterioration of structural parts is a condition that can only be alleviated by a planned maintenance and replacement program, and the onus for this rests entirely upon the owner/operator. There can be no relaxation of the rules if we are to continue to enhance marine safety. Even the relaxation which was seemingly necessary during the press of World War II continues to plague us from the practical standpoint of vessel operation. We still have a great number of vessels in operation today which were constructed during that period of relaxation and, if for no other reason, this alone requires the enforcement of a strict maintenance and replacement program. Our archway of casualty experience clearly demonstrates this need and has further proven that, from a standpoint of marine safety, there is no greater insurance policy than that of a sound ship.

"ODDENES v. UNIVERSE TANKSHIPS, INC."

Rigging of Lines: Unseaworthiness: Shipowner's Liability

The proceedings in this case arose out of an injury suffered by the second officer of the tanker *Petro Emperor* during the docking of the vessel in Halifax Harbor, and concerned the rigging of the vessel's stern line under the orders of the master of the vessel. At the time of the accident three tugs were setting the vessel into the dock broadside, the vessel being a "dead" ship as her propellers were not moving. The master and the pilot were on the bridge directing the docking, and the second officer was stationed at the stern in charge of the lines at the after end of the vessel, which consisted of a spring line, a breast line and a stern line. The second officer was instructed by the master that the spring line, aft, was to be put out from the main deck and the breast line put out from the poop-deck. The second officer questioned the method of rigging that he was instructed to carry out and made alternative suggestions to the master of

the vessel which would have eliminated the necessity for the complicated rigging that was entailed in carrying out the instructions of the master; these suggestions, were, however, rejected. When the vessel was some 30 ft. from the dock the spring line, rigged in accordance with the orders of the master, was made fast to the dock (which, it should be mentioned, was a "finger" dock), a bow line also having been made fast. On orders from the bridge, heaving began on these two lines; and, when the vessel was some 15 ft. from the dock, instructions were given to stop heaving on the spring line; when the vessel was about 8 ft. from the dock, orders were given to resume heaving. It was at this point that events led to the accident. While the slack of the line was being taken up, the portion of the spring line that was in the starboard poop deck passageway began to jump, and as the hawser became taut it slipped out of the open chock on the poop deck and tore away a section of the rail. At this time the second officer was standing on the poop-deck just aft of the housing, from which position he could observe both the winchman and the line itself; and, as the hawser slipped out of the chock and smashed through the ship's rail, it struck the officer with considerable force, causing the injury in respect of which compensation was sought.

It was submitted that in the first place the ship was unseaworthy because there should have been a roller rather than a rubbing bar at the forward edge of the poop-deck where the spring line hawser was led down to the main deck below; a roller, it was suggested, would have made the hawser run more smoothly as it was being heaved in and would have prevented it from jumping and slipping out of the open chock on the poop-deck when it was made taut. It was submitted also that the presence of upright pipes close to the poop-deck housing in the poop-deck starboard passageway made the ship unseaworthy, since they required that the spring line be rigged through the poop-deck chock in order to avoid abrasion of the pipes. Lastly, it was suggested that the vessel was unseaworthy because the master was not reasonably fit for his calling, since, based upon the theory of bad seamanship, his method of rigging was dangerous and unseaworthy.

As regards the first two submissions, the Court ruled that there was no merit in them, and with regard to the last the Court took the view that there was no evidence that the master was not fully competent and qualified. The question then remained whether the method of the rigging ordered by the master created a dangerous and unseaworthy condition, and the Court ruled that the manner in which the spring line was rigged created a dangerous condition to seamen working on the poop-deck and that this condition rendered the spring line, as rigged under the orders of the master, unseaworthy, and that it was this unseaworthy condition that was the proximate cause of the accident giving rise to the injury suffered by the second officer. The shipowners submitted that this unseaworthy condition was merely temporary and so transitory, and did not, therefore, give rise to any question of shipowner's liability; but the Court held that the duty of the shipowner to provide a seaworthy vessel was absolute and no less onerous in respect of an unseaworthy condition that may be only temporary. Further, the Court remarked, liability for a temporary unseaworthy condition was no different from the liability that attaches when the condition is permanent. It was found that the rigging was not reasonably fit for its intended use in heaving the vessel into the dock, since it was dangerous and likely to lead to the injury of seamen concerned with the operation, and that by creating such a condition through the orders of the master the shipowners had breached their absolute duty to furnish a seaworthy vessel and were liable in damages to the injured man.

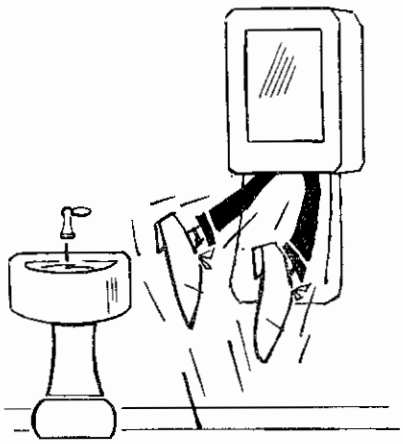
Damages were awarded in the sum of $33,100, but the Court found that the claimant was himself negligent in standing within a bight of the line, and in view of this contributory negligence the damages were reduced by 35 percent. The case came before the United States District Court and is reported in *American Maritime Cases* (1962: *A.M.C.*, 545).

TAKE CARE—NOT CHANCES

There's one sign you'll see around shore plants that isn't often seen around a ship. The sign usually reads something along these lines. "Don't oil moving machinery."

Aboard ship we know that it just isn't practical to stop all machinery when inspection, lubrication or greasing is required. Knowing this hazard exists it will be found that on newer ships much of the routine lubrication is taken care of mechanically. Even on the newest ship, however, there are still some items which require lubrication when the unit is in operation. In such cases the slogan must be "exercise care around moving machinery".

For example, what precautions are taken when the steering gear is being greased when the ship is underway? Do you advise the bridge before entering the steering flat? If the helm was suddenly put hard-over, could you be the victim of an accident? Perhaps plans had been made for an emergency turn at the precise moment you were near the quadrant. By advising the bridge, such an exercise could be delayed. The officer on watch, aware of your presence in the steering flat, would also be in a position to warn you if for any reason it became necessary to order an emergency "hard-over" helm movement. In either case an accident could possibly be prevented.



BE CAREFUL AROUND MOVING MACHINERY

There are other cases however where seamen have no excuse for not following the safety rule of stopping machinery before oiling. Winches are a good example. Never should it be necessary to oil or grease a winch or windlass that is turning. Whenever possible seamen should follow the lead of their landlubber brothers and not oil moving machinery. When it is necessary to lubricate a piece of operating equipment make sure all possible precautions are taken. If in doubt always check with an engineer or deck officer first.

Courtesy Imperial Oil Safety Bulletin

CARBON TETRACHLORIDE POISONING

If we should list the requirements of a "perfect" industrial solvent, we find it should:

1. Be able to remove oil or grease completely;
2. Should evaporate completely and leave no residual;
3. Should not be expensive;
4. Should not be a hazard in itself.

Carbon tetrachloride is perfect in all respects except the latter. It is a very serious hazard. In fact, the very characteristics which make it so valuable to industry and the home make it very dangerous to man. It evaporates completely, and mixes quickly and freely with the air in the area where it is being used. It has a marked affinity for fats and grease, and becomes quickly absorbed by fatty tissues of the body.

These tissues are primarily the brain, the liver, and fatty deposits under the skin. This, however, isn't the end of the trouble it can cause in the body. A short time after the symptoms appear referable to other parts, such as the brain or liver, there develops a symptom which is all too frequently and tragically overlooked until it has been present for several days. Namely, that the kidneys have stopped functioning.

This article is extracted from a paper prepared by Robert M. Farrier, Senior Surgeon, U.S. Public Health Service, Washington, D.C. It is a topic stressed time and again by Safety Publications. Although carbon tetrachloride is prohibited by most companies aboard ship, crew members still bring it aboard for personal use. This article, printed some years ago, is still timely. Ed.

Even counting the cases who die at once from the effects on the brain, and those who die within three or four days from acute liver failure, this kidney failure is the cause of death in about 90 percent of the fatal cases.

How does this potentially deadly liquid get from the bottle into the body? First, it can be poured in by the way of the mouth. As stupid as this statement may sound, it happens; either by accident or intent.

One case which I helplessly watched die had been given a quarter of a glass of carbon tetrachloride to drink by the ship's purser, under the mistaken idea it was paregoric. At least two cases I can recall off hand, were the results of a merchant seaman's idea of a very funy joke. He had served carbon tetrachloride as "gin" to his friends. I have never seen a man live who had swallowed over a teaspoonful of this "harmless" solvent.

Another method for carbon tetrachloride to get into the body is through the skin. This method is usually combined with the third which we will discuss in a moment but in itself, causes a rather severe skin disorder by its property of dissolving the fat out of the skin, and leaving it dry and cracked.

The third, or last method, and by far the most common, is through the lungs in the inspired air. As I mentioned before, carbon tetrachloride is not only very volatile, but mixes freely with the air. When this air is drawn into the lungs, the carbon tetrachloride diffuses across the very thin separation between the air and the blood. In fact, it diffuses as easily as the air itself.

If the concentration is very high, the carbon tetrachloride acts on the brain very much like its kindred chemical compound, chloroform. The person first becomes unconscious and then, as the dose increases, he dies an anesthetic death. If a lesser concentration is present in the air, he may become light-headed, nauseated, develop a cough, and only later, completely lose his appetite, feel ill all over, become jaundiced, and then stop putting out urine and ultimately recover or die in about two weeks.

Of course, with smaller exposures, any of the above symptoms may be present to a lesser degree, or there may be only a headache or no symptoms at all.

One of the factors affecting toxicity is illustrated by the following case history, from the records of the United States Public Health Service Hospital, Staten Island, New York:

A man had been to a ship's party, where, along with the other people present, he had a few drinks. In the course of the evening, a plate of food was spilled on him by the waiter. His wife did not drink. The next morning, the man's wife proceeded to clean the spots off his uniform with about one ounce of carbon tetrachloride.

She was in a closed room since it was winter; this room was approximately 8 by 10 by 12 feet. The man was stretched out on the couch about half way across the room from his wife. As I mentioned, the wife did not become ill, but the man died 11

This fluid is a powerful solvent and cleaner and it is sometimes used to degrease and clean electrical machinery.

The fumes of Carbon Tetrachloride are highly poisonous and inhalation of the concentrated vapor for short periods may give rise to dizziness, loss of consciousness, and even death.

Continued or repeated exposure to lesser concentrations of the vapor can also lead to chronic or delayed poisoning, affecting the kidneys, liver, and blood.

Carbon Tetrachloride fluid should therefore only be used with caution and under conditions of adequate ventilation.

days later in complete kidney failure.

For some reason, only partly understood at present, alcohol alters the liver's ability to detoxify carbon tetrachloride, so that a concentration which would not be dangerous without the exposure to alcohol, now becomes fatal.

What are these dangerous concentrations? The latest figures, accepted by various safety groups, are as follows:

1. Twenty-five parts per million carbon tetrachloride or below, are considered safe for continuous breathing up to periods of eight hours. The older concept allowed 50 parts per million, but this is now considered too high, and the Department of Labor is at present attempting to lower the safe recommended standards to 10 parts per million.

2. Five thousand parts per million may be fatal after as short an exposure as five minutes; however, this is usually the delayed type, with death a week or 10 days after.

3. Twenty-four thousand parts per million for very short periods will be fatal after a period of illness, or, if exposure is of aproximately 15 minutes, may be fatal immediately.

4. Exposures of 64,000 parts per million are fatal almost immediately.

These figures are in reference to persons who have not consumed alcohol in any form within the 24 hours of the exposure, who do not have chronic liver disease, or chronic kidney disease—in other words, a type of person best able to withstand this insult to the body. With any of the above conditions, the tolerated amounts will, of course, be proportionally reduced.

Exactly just what do these vague figures of 25 parts per million mean? Let us consider the case previously mentioned. As I said, about one ounce of carbon tetrachloride was used in a room of approximately 10 by 12 by 8 feet, or 860 cubic feet. This will give a concentration of approximately 250 parts per million, 10 times the presently accepted maximum safe concentration. In fact, to reach a concentration which would result in approximately 50 percent deaths after a four-hour exposure in an area the size of the S.S. *United States* would require only about three gallons of carbon tetrachloride. This is based on only two unlikely assumptions:

1. No one would go out on deck for longer than a half-hour;

2. No one had been drinking.

If, by chance, the passengers had been drinking, we could probably kill them off with only about two gallons. Actually, it takes only one-fourth of a teaspoonful of carbon tetrachloride, vaporized in a space 10 by 10 by 10 feet, to give a concentration of 25 parts per million, this being the maximum safe concentration to which a man can be continuously exposed.

Just what does this mean to you? Carbon tetrachloride is known to be dangerous. It is not used widely aboard ships without "proper ventilation."

Or is it? On passenger liners, stewards and stewardesses in small compartments, remove spots from passengers' clothes. Certain fire extinguishers, on smaller vessels especially, are of the carbon tetrachloride type.[1] And the last, but by far not the least, source of exposure on merchant vessels, comes from the engineers. These men have found out from many years' experience that this is a very satisfactory solvent, and fulfills their needs most excellently.

I have seen on some ships notices prohibiting the bringing aboard of carbon tetrachloride. Under such a notice was the five-gallon jerry can from which my patient, with carbon tetrachloride poisoning, had gotten enough to thin some paint, and which had resulted in his complete kidney shut down. Five gallons; almost twice the amount I have said was sufficient to make people very sick and many people very dead in a space the size of the SS *United States!*

[1] Editor's Note: Carbon tetrachloride extinguishers and others of the toxic vaporizing-liquid type such as chlorobromomethane are no longer approved and are not accepted as required fire extinguishers for marine use.

PROCLAMATION 3494

NATIONAL SAFETY COUNCIL FIFTIETH ANNIVERSARY YEAR

By the President of the United States of America

A Proclamation

WHEREAS October 1962 marks the beginning of the fiftieth anniversary observance of the founding of the National Safety Council; and

WHEREAS the Council has striven faithfully during this half century to develop and implement sound, effective programs directed toward the prevention of accidents of all kinds; and

WHEREAS there has been a notable and steady decline in the rates of accidental death and injury as a result of such national programs of the organized safety movement; and

WHEREAS this decline in accident rates demonstrates the value of nationwide safety activities as carried on under the leadership of the National Safety Council; and

WHEREAS the Council, as a guardian of the public interest, has proved its dedication to the safety and welfare of the Nation's citizens, as set forth in its Federal charter; and

WHEREAS the Congress, by Senate Joint Resolution 222, approved September 20, 1962, requested the President to issue a proclamation designating the period October 1962 through October 1963 as National Safety Council Fiftieth Anniversary Year;

NOW, THEREFORE, I, JOHN F. KENNEDY, President of the United States of America, do hereby designate the period October 1962 through October 1963 as National Safety Council Fiftieth Anniversary Year, in recognition of the role of the National Safety Council in our way of life; and I urge the Governors of the States, the Commonwealth of Puerto Rico, and other areas subject to the jurisdiction of the United States, and mayors of cities to issue similar proclamations.

I also ask the appropriate officials of the Federal, State, and local governments, as well as public and private organizations and the general public, to join in observance of this significant occasion, and to increase their efforts to reduce the number of accidents in homes, in industry, in public places, and on our streets and highways.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this twentieth day of September in the year of our Lord nineteen hundred and sixty-two, and [SEAL] of the Independence of the United States of America the one hundred and eighty-seventh.

JOHN F. KENNEDY

By the President:
DEAN RUSK,
Secretary of State.

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MARITIME SIDELIGHTS

The Navy's Military Sea Transportation Service has been awarded the Secretary of the Navy Award for Achievement in Safety for 1961. In ceremonies held recently, Vice Adm. Roy A. Gano, Commander MSTS, was presented the award by Navy Under Secretary Paul B. Fay, Jr. The award is presented annually to a Navy bureau in recognition of an outstanding safety record for the year.

⚓ ⚓ ⚓

The Pacific Far East Line's new Mariner-type cargo vessel, the *China Bear*, has sailed on her maiden voyage. The $15,000,000 ship joins her sistership, the *Philippine Bear*, in transpacific service.

⚓ ⚓ ⚓

The SS *Independence* of American Export Lines was honored recently for her role in a mercy mission conducted in the eastern Atlantic last year.

On 4 November 1961 when the *Independence* was eastbound several hundred miles south of the Azores, she received an urgent call for medical aid from the French ship, *Ile d'Arz*, which carried no doctor and had an ailing seaman in critical condition. Captain Switzer at once altered course and reached the position of the French vessel at 2145 hours. A lifeboat was lowered, under command of Staff Captain John Korista and a successful nighttime transfer of the sick man to the liner's hospital was accomplished.

Captain Switzer, Master of the *Independence*, accepted the Ship Safety Achievement Citation of Merit on behalf of his ship and crew. The citation, jointly sponsored by the American Marine Institute and the Marine Section of the National Safety Council reads: "For highly meritorious service in the field of marine safety, and in recognition of a feat by an American ship which reflects credit on the entire American Merchant Marine, the Marine Section of the National Safety Council joins with the American Merchant Marine Institute in presenting this Certificate of award. . . . This citation testifies to a feat of safety and seamanship in the highest tradition of American seafaring."

The keel of the 47,000 ton tanker *Sinclair Texas* was recently laid at Bethlehem's Sparrows Point Yard. The 736-foot vessel will be the first large bridge-aft tanker to be built in the United States.

⚓ ⚓ ⚓

Work has been started on the new Coast Guard cutter, *Reliance*, the first new large craft for the service to be constructed in nearly 20 years. The keel of the 210-foot vessel was laid at the Houston yard of Todd Shipyard Corp. The *Reliance*-class cutters are designed primarily for search-and-rescue duty. The cutter will be propelled by combination gas turbine and diesel engines with a combined rating of 5,000 horsepower. They will have a service speed of 18 knots and will be air conditioned.

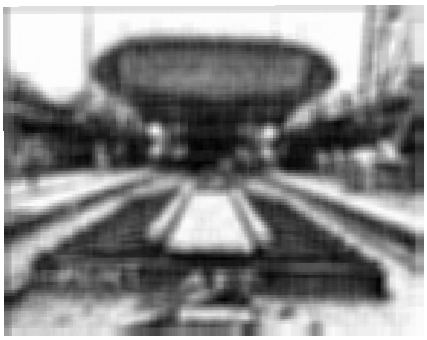
The *C. E. Dant*, a new 20-knot Mariner-class cargo vessel of advanced design, was launched recently at the National Steel & Shipbuilding Co. in San Diego for the States Steamship Co. The *C. E. Dant* was the last of six vessels which have been built in the past 2 years as part of States Steamship's $66 million replacement program. The new vessel has eight deep tanks for liquid cargo. All hatches are fitted with the newest hydraulic quick-opening-type hatch cover.

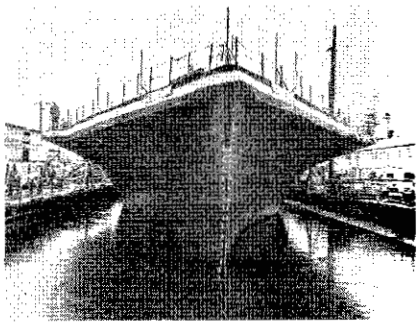
⚓ ⚓ ⚓

The cargo ship *American Mail* has been awarded American Mail Line's Safety Award for the best safety record in their fleet. This marks the second consecutive year in which this ship has been so honored.

⚓ ⚓ ⚓

NOVEL LAUNCHING SYSTEM





THE RECENTLY christened MV *Malaspina* is the first of three ferries being constructed for service on Alasko's "Inside Passage." Eventually the vessel will serve with two 3,500-ton sister ferries on the run from Prince Rupert, British Columbia, to Haines, Alaska. Each of the 18-knot vessels will have a carrying capacity of 500 passengers in addition to motor vehicle cargo. Construction is being accomplished by Puget Sound Bridge & Dry Dock Co.

The depth of water in the launching basin was less than the vessel's stern draft at desired launching trim. To solve this problem the company employed a novel type of launching believed to be the first for a vessel of this size.

A stern poppet or cradle, for support of the stern while the bow floats, was specially designed and constructed for the launching. This stern poppet fitted around the vessel's after hull and propeller shafts. It was arranged to slide on two parallel groundways attached to the dock floor. As the forward portion of the hull floated free when the tide flooded the basin, the stern was partly supported by the poppet to maintain the stern draft within the limits of the dock. At the instant of christening, a tug began towing the vessel out of the dock with the stern poppet sliding on the greased groundways. After the poppets passed off the end of the groundways just outside the dock sill, the stern support of the vessel was transferred to a crushable keel skidpad. This pad maintained the proper draft aft during final movement of the vessel's stern into deep water beyond the launching basin.

nautical queries

DECK

Q. (a) What test is required by the regulations each year where practicable in order to test the strength and efficiency of lifeboats and the gear for lowering them?

(b) Where a boat may be damaged in lowering by projecting obstructions or contact with the hull due to list, what provisions must be made to facilitate launching if the boat deck is 15 feet or more above the water when the vessel is light?

A. (a) If practicable, each lifeboat shall be lowered to near the water and then be loaded with its allowed capacity, evenly distributed throughout the length; and then lowered into the water until it is afloat, and be released from the falls. In making this test, persons or deadweight may be used. The total weight used shall be at least equal to the allowed capacity of the lifeboat considering persons to weight 165 pounds each.

(b) On vessels in ocean or coastwise service, lifeboats, when stowed on a deck more than 15 feet above the deepest sea-going draft, shall be fitted with skates or other suitable means to facilitate launching against an adverse list of up to 15 degrees. However, skates may be dispensed with if, in the opinion of the Commandant, the arrangements are such as to insure that the lifeboats can be satisfactorily launched without such skates.

Q. When a radio beacon signal and a fog signal are sent simultaneously for distance finding, it is referred to as:

(a) Synchronization
(b) Frequency modulation
(c) Range control
(d) Transmission check

A. (a) Synchronization

Q. If the sun is used to determine the index error of a sextant and the readings taken are 34'30'' off the arc and 30'30'' on the arc, the error is:

(a) 2'00'' off the arc
(b) 2'00'' on the arc
(c) 4'00'' off the arc
(d) 4'00'' on the arc
(e) 32'30'' off the arc

A. (a) 2'00'' off the arc

ENGINE

Q. Describe a constant pressure pump governor for a steam driven pump.

A. The pump governor consists mainly of a valve body containing the main valve and its piston and a controlling diaphragm and spring with connecting linkage to an auxiliary valve. The underside of the controlling diaphragm is exposed to the pump discharge pressure and the movement of the controlling diaphragm against the spring pressure is transmitted by linkage to the auxiliary valve which controls the opening of the main valve so as to admit a greater or lesser amount of steam to the driving mechanism, thereby maintaining a constant discharge pressure regardless of flow.

Q. Explain the operation of the direct-contact deaerating heater used in the closed-feed system.

A. The condensate enters the heater at the top through the tubes of a vent condenser. From the vent condenser the condensate is led to the center of the tank where it is sprayed through a bank of nozzles, upward and outward. Exhaust steam is also led to the tank and mixes with the sprayed condensate. The combined action of spraying and heating of the condensate releases the dissolved oxygen which rises to the top of the heater. The oxygen then passes through the vent condenser and out of the air vent. The heated condensate falls to the lower section of the tank and passes down to the feed pump. In the heater the condensate is heated to 230° to 240° F. with exhaust steam at 10–14 p.s.i. gage pressure.

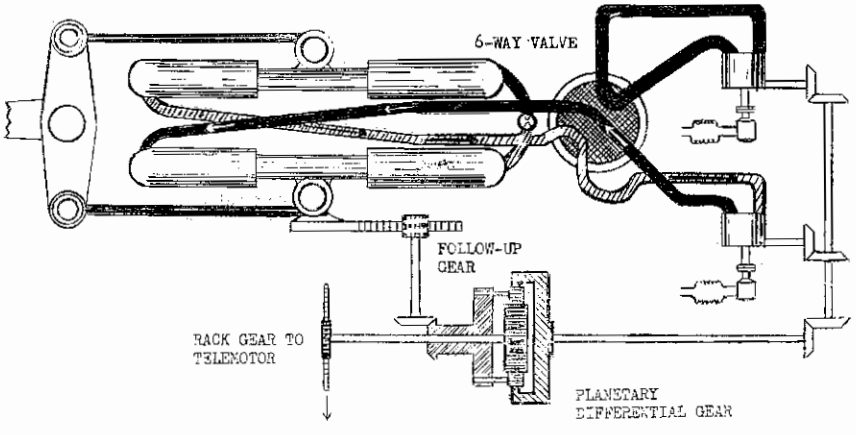
Q. What heating equipment does the condensate and feedwater normally pass through from the condenser to the boiler on a modern turbine driven vessel?

A. The heating equipment that the condensate will pass through consists of the inter, after, and gland exhauster condensers of the main or auxiliary air ejector units, and the deaerating feed heater including its vent condenser.

The feed water heating equipment may consist of a high pressure feed heater and/or an economizer.

Some vessels have a drains cooler installed between the air ejector condensers and the deaerating feed heater.

DOUBLE-RAM ELECTRO-HYDRAULIC STEERING GEAR



Q. Draw a diagrammatic sketch of a double-ram, electro-hydraulic steering gear, showing the control arrangements and the pumping units.

TREASURY DEPARTMENT

UNITED STATES COAST GUARD

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

MVI
1 May 1962

Commandant's Action on Marine Board of Investigation; sinking of barge *Arizona Sword* in tow of the tug *Sally R* on 13 January 1961, 10 miles east of Palm Beach, Florida, 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.

The inspected freight barge *Arizona Sword*, a converted C–1 type cargo vessel, sank at about 0125 EST, 13 January 1961 in the Gulf Stream about 10 miles east of Palm Beach, Florida, while in tow of the uninspected tug *Sally R* on a 200 fathom hawser. Seven members of the barge's crew are missing and presumed dead. One crew member was rescued.

The tug and tow departed Beaumont, Texas, on 6 January 1961 en route to Savannah, Georgia, with a load of 5,001 tons of sulphur in the barge. The voyage was under rough weather conditions from the time of leaving Beaumont with winds averaging force 5–6.

On 8 January the tug had to slow to permit the barge to make repairs to the outer of the three tarpaulins on number two hatch. Following repairs the tug remained at slow speed for about nine hours before resuming normal cruising speed of five knots.

The cook, who was the sole survivor, testified that he had no knowledge of any unusual occurrences until 12 January. At noon on that day the oiler mentioned to him that several inches of "unaccounted for" water had been discovered in the engineroom but had been pumped out. Shortly after supper the steering transmission system was shifted from electric to telemotor because of steering difficulties. From previous discussions with other crew members, the cook had learned that similar shifts had been made in the past because the vessel would not hold a given amount of rudder using the electric system. About 1900 the helmsman reported a loud noise forward, which resembled the banging of a loose door. The crew member that went to investigate reported the bulwarks were "flopping." To the cook, this meant that a bulwark had cracked and the broken edges were rubbing together as they had on at least one previous occasion a couple of years earlier. At about midnight on the morning of the 13th the seas began increasing in size and by 0100 the barge was taking heavy seas across the weatherdeck in the area of the hatches. The tug and tow were proceeding on a course at right angles to the swell direction and the poopdeck was shipping three to eight inches of water. A short time later while the cook was in the mess hall talking to another crew member he felt the *Arizona Sword* shiver and tremble, and heard popping and snapping, and a noise he described as being similar to scraping on glass. The vessel then took two or three hard shipping rolls, leveled off for an instant, then appeared to the cook to nose down at an angle of 30 to 40 degrees. Unable to reach a door he went out through a porthole. Once outside he found the deck and the afterhouse under or nearly under water and after being thrown about by the seas soon found himself swimming with only the lights of the tug in view.

On the *Sally R* on the night of 12 January the voyage was proceeding normally. The tow was on a northerly course and with the help of a three knot Gulf current was making about eight knots over the ground. The weather was still squally although it had moderated somewhat from the conditions encountered earlier in the voyage. At about 2000, 12 January, the master of the barge reported by radiotelephone that all was normal. At about midnight the seas again began to increase. At 0125 the tug's engine speed decreased from 300 r.p.m. to about 260 r.p.m. as though she was suddenly placed under a heavy load and from topside it appeared that the tug had momentarily stopped in the water. Looking aft it was noticed that the barge's lights were not in view. The radar also showed an absence of targets in the immediate area and further examination disclosed that the nine inch, 200 fathom nylon towing hawser had parted about three or four fathoms from the tug's stern. The tug then radioed that the *Sword* had sunk and immediately began a search for possible survivors. At 0325 a shout was heard from the water and shortly thereafter the cook was recovered. The search was joined by a Naval vessel, several merchant and Coast Guard vessels and aircraft and continued until 1830 on 13 January. Although much debris was found no other crew member or their bodies were recovered.

The Board concluded that the *Arizona Sword* sank because of a gradual loss of buoyancy in the fore part of the vessel, possibly followed by one or more hatch covers being torn away by the seas with the result that the vessel nose dived.

The Board discounted the possibility that the vessel broke up because (1) there is no record of a critical structural failure on this type of vessel; (2) when vessels have broken in two, either or both sections remained afloat for at least several hours; (3) no loud report was heard; (4) the vessel's trim apparently changed rapidly from the horizontal to an angle of 30 to 40 degrees by the head and (5) the breaking in two of the vessel would cause a decrease rather than an increase in load on the hawser.

REMARKS

Due to the lack of positive evidence any conclusion as to the principal cause of this casualty is largely speculative; however, upon review it is considered equally likely that the vessel broke in two. As the Board stated, the *Arizona Sword* was not overloaded but it is to be noted that in being converted from self-propulsion she retained her same load line. Thus machinery and superstructure weight removed aft was available as additional cargo dead weight. But in order to carry this dead weight with a satisfactory trim, it was necessary that the cargo be concentrated as far aft in the holds as possible. This resulted in the vessel carrying a concentration of loading in the middle part of her length, which caused a high sagging moment.

It is easier to associate the vibration and popping, snapping and scraping noises described by the cook with the breaking up of the vessel than to associate it with submergence of the vessel bow first.

The fact that the *Arizona Sword* had been in the sulphur trade for six or more years may also be significant. It is well established that sulphur cargoes are very corrosive insofar as ships' structures are concerned. Despite the fact that the vessel had undergone biennial inspection in November 1960 and drydock examination in December 1960 there exists the possibility that marginal or even below minimum thicknesses of the scantlings in certain areas may have gone undetected only to become an important factor when the vessel was subjected to a high sagging moment and rough sea conditions.

With respect to the Board's reasons for believing the vessel plunged, the first, that there is no record of or previous critical structural failure on this type of vessel, is not persuasive since any vessel regardless of prior history may, of course, suffer a major structural failure under the right conditions. The Board's second point that when vessels have broken in two either or both sections remained afloat for at least several hours would not apply in this case. Due to the size of the vessel, her compartmentation and the high density of the sulphur cargo she carried, she would not be expected to remain afloat for any appreciable length of time if she broke in two. The Board's third point was that no loud report was heard. A loud report is not characteristic of all massive structural failures. Although a loud report will usually emanate from a large brittle fracture, ductile fractures particularly in aged or deteriorated structures do not produce loud reports. The fourth point, that the vessel's trim apparently changed rapidly from the horizontal to 30 to 40 degrees by the head was based on the description given by the survivor and, of course, the results could have appeared the same to him had the vessel broken in two in sagging. With respect to the Board's final point that the breaking in two would cause a decrease rather than an increase in the load on the hawser, it is considered that the sinking forward section of the *Arizona Sword* could easily pull a good sized tug backward. The sinking weight of the forward section under such conditions would far exceed the maximum draw bar pull of the tug which is estimated to be 25 tons.

The conclusion that access to the forward end of the vessel would have been difficult without a catwalk is concurred with; however, the opinions that more frequent soundings would have been taken and serious leaks discovered, and that no soundings were taken for as much as four to five days are not concurred with. There is no evidence to indicate that there were serious leaks or that soundings were not, in fact, taken. It is known that when the outer of three tarpaulins on number two hatch tore that the crew went forward and repaired it, also when the banging noise was reported a man went forward and apparently found a bulwark fractured. While a catwalk or cable traveller is required between living and working spaces when the distance between houses exceeds 150 feet, the forepeak area on this vessel was neither a living nor working space that required frequenting during normal operations. A catwalk would have made inspections of the forepart of the vessel easier but it would not have aided in taking weather deck soundings. Although safer, a cable traveller would not have made trips to the forward end easier.

Based on its conclusions, the Board recommended that void spaces which cannot be readily sounded in rough weather be fitted with remote indicating sounding devices or alarms. Since there was no substantive evidence that this was a factor in the sinking of the *Arizona Sword,* such a requirement would not be justified by this case alone. In addition, it would appear that good engineering practice would dictate the desirability of routinely taking a suction from each of these spaces whenever soundings could not be taken.

This is the first casualty of this nature involving a vessel in the sulphur trade since the MV *Southern Districts* disappeared off the Carolinas in December 1954 with the loss of 23 crew members. Three months following the *Arizona Sword* disaster, on 14 April 1961, the SS *Marine Merchant,* a Liberty type freight vessel in the sulphur trade, broke amidships and subsequently went down in the Gulf of Maine, fortunately with no loss of life. That case is presently under review at this Headquarters; however, it is known that a severe sagging condition existed on the *Marine Merchant* and quite possibly this was also a factor in the loss of the MV *Southern Districts.* In view of the seriousness of this type of casualty it is considered that every possible contributing factor should be thoroughly explored. Accordingly, this case is being referred to the Merchant Marine Council with the request that a study be initiated to determine the sufficiency of present regulations as they apply to vessels carrying cargoes of a corrosive nature, taking into account also the effect of cargo density and distribution, and to make appropriate recommendations in the premises.

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

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

"SIT STILL"

The ultimate in miniaturizing is represented by the do-it-yourself so-called "sit still" developed by the Army engineers. Designed to keep a person who survives a sea disaster from dying of thirst, it derives its heat energy from the sun or the body of the individual who sits on the still.

The "sit still" consists of five sheets of plastic, aluminum, paper, and cloth, about the size of typewriter paper. Three layers are assembled with a blank plastic film on top, a piece of paper toweling or cloth, a water-repellent screen, then a sheet of aluminum foil and a cloth backing on the bottom. A sponge completes the kit.

To use it, a survivor dips the five layers of the still into the ocean, drains off excess water, and wipes the aluminum foil dry. He then puts the still together and exposes it to the sun. At night or on a cloudy day, he sits on it. Heat penetrates the packet to the layer of foil, which is cooled by the underlayer of water-soaked cloth. The cooling process condenses drops of fresh water on the foil, and the survivor mops it up with the sponge—not much, but enough to keep him alive.

Efficiency of the still can be increased to produce about a pint of water in 16 hours by adding more layers of toweling, screen, and foil, says the still's designer, Dr. Clyde S. Barnhart, an entomologist with the Army Engineers, Fort Belvoir, Va.

—*"Nine Bells"*

PERSONNEL CASUALTIES

In the tabulation of personnel accidents which resulted in death aboard commercial INSPECTED vessels, the category which accounted for the greatest number of deaths in fiscal 1962 was from natural causes, and totaled 156.

The next largest number of deaths occurred as a result of various types of slips and falls, and these totaled 33, which included 12 persons who lost their lives as the result of slips and falls involving gangways, and 9 persons who lost their lives as the result of falling into cargo holds or tanks. Deaths which occurred as a result of suicides totaled 19.

The major cause of death from personal accidents aboard UNINSPECTED commercial vessels was from falling overboard. A total of 51 deaths was accounted for in this category, of which the majority were attributable to unsafe practices or unsafe working conditions.

The next largest number of deaths on uninspected vessels occurred as the result of natural causes, and totaled 31. There were an additional 21 lives lost as the result of homicides, suicides, and disappearances.

Among the categories which account for the greatest number of nonfatal personnel accidents on inspected and uninspected vessels, resulting in incapacitation for a period in excess of 72 hours, "slips and falls" accounted for the most with a combined total of 466. Of this total, the most significant were 174 injuries involving slips and falls on ladders, and 268 injuries involving slips and falls on deck. The principal causes of these accidents were unsafe practices and poor maintenance or housekeeping which accounted for 239 cases human error, not otherwise classified which means a misstep on the part of the individual, accounted for 73 cases; weather conditions were given as the cause in 89 cases.

Some other groups of injuries were 102 cases of pinching and crushing, 122 cases of injuries involving sprains and strains, 131 cases involving cuts and punctures, and 65 cases involving machinery and tools.

Of the total number of 1,579 personal injury casualties, it is significant to note that 768 accidents, or almost 50 percent, were due to unsafe practices and poor maintenance or housekeeping. Human errors accounted for 367 accidents, and of these 83 injuries were as a result of altercations and fights.

STATISTICAL SUMMARY OF PERSONNEL INJURIES ABOARD COMMERCIAL VESSELS

1 July 1961–30 June 1962

Personnel casualties		Human							Environment					Other								
Injuries (Total)	Reported during period of—Classification	Intoxication	Physical deficiency	Unsafe movement (Running, Jumping, etc.)	Psychological (Immaturity, Insanity)	Unsafe practice	Law violation	Other human errors	Weather conditions	Poor maintenance (Housekeeping)	Inadequate lighting	Inadequate rails, guards, etc.	Other	Failure approved equipment or material	Failure unapproved equipment or material	Vessel casualty	Supervision inadequate	Life preservers insufficient	Lack of tools/equipment	Lack of protective gear	Insufficient information to classify as to cause	Miscellaneous causes
-------	Natural cause	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
-------	Homicide	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
6	Suicide (and attempts)	----	----	----	6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
-------	Disappearance	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
-------	Drowning (other than falls)	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
-------	Ashore	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
-------	Persons not members of crew	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
174	Slips and falls—ladders	12	----	3	1	96	----	28	10	9	1	----	1	----	9	----	2	----	----	----	1	----
24	Slips and falls—gangways	4	1	----	----	7	----	7	2	----	----	----	2	----	1	----	----	----	----	----	----	----
100	Slips and falls—on deck	5	----	----	----	18	----	16	34	24	----	----	----	----	3	----	----	----	----	----	----	----
168	Slips and falls—other—same level	10	----	----	1	58	----	22	43	27	1	1	2	----	1	----	----	----	----	----	1	----
10	Falls from vessel—into water	2	----	1	----	1	----	3	1	----	----	----	----	----	2	----	----	----	----	----	----	----
-------	Falls from vessel—other	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
10	Falls into hold, tank	1	----	----	----	5	----	1	----	----	----	1	2	----	----	----	----	----	----	----	----	----
102	Falls—other—different level	8	----	1	----	60	----	14	9	----	1	2	2	----	5	----	----	----	----	----	----	----
86	Struck by—falling object	1	----	----	----	44	----	24	2	2	----	----	1	----	10	----	----	----	1	----	----	----
21	Struck by—flying object	----	----	----	----	10	----	8	1	----	----	----	1	----	----	----	----	----	----	1	----	----
81	Struck by—moving object (other than vessel)	----	----	----	----	20	----	19	10	1	----	----	3	----	25	----	3	----	----	----	----	----
-------	Struck by—boat or ship	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
2	Exposure	----	----	----	----	----	----	----	1	----	----	----	1	----	----	----	----	----	----	----	----	----
3	Asphyxiation	----	----	----	----	3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
72	Struck against	1	----	1	1	37	----	19	7	2	----	----	----	----	1	----	1	----	----	----	----	----
4	Cargo handling	----	----	----	----	2	----	----	----	----	----	----	----	----	1	----	----	----	1	----	----	----
65	Machinery—tools	----	----	----	----	40	----	10	1	----	----	1	1	----	10	----	1	----	----	----	1	----
34	Burns	----	----	----	1	23	----	5	----	2	----	----	----	----	2	1	----	----	----	----	----	----
41	Scalds	----	----	----	----	24	----	4	4	----	----	----	1	----	8	----	----	----	----	----	----	----
-------	Electric shock	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
26	Lines, caught in	----	----	----	----	19	----	3	----	----	----	----	----	----	3	----	1	----	----	----	----	----
102	Pinching—crushing	3	----	----	----	57	----	16	17	----	----	----	2	----	5	----	1	----	----	1	----	----
-------	Heavy weather	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
75	Over exertion	----	----	----	----	41	----	22	2	1	----	----	6	----	2	----	----	----	----	----	1	----
122	Sprains and strains	3	----	5	----	49	----	37	12	7	1	----	1	----	2	----	1	----	----	----	1	3
131	Cuts, punctures, etc	7	----	1	----	67	----	23	12	4	----	----	----	1	8	----	3	----	----	----	4	----
3	Galley accidents	----	----	----	----	----	----	1	1	1	----	----	----	----	----	----	----	----	----	----	----	----
83	Fights	----	----	----	----	----	----	83	----	----	----	----	----	----	----	----	----	----	----	----	----	----
4	Unknown causes	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	----
30	Not otherwise classified	1	----	2	----	7	----	2	2	----	----	----	----	----	1	----	----	----	----	----	4	1
*1,579	Total	59	1	14	10	688	----	367	171	80	4	5	26	1	99	1	13	----	2	2	15	2

*Crew members 1,579.

AMENDMENTS TO REGULATIONS

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

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CGFR 62-17]

VESSEL INSPECTION REGULATIONS

Miscellaneous Amendments and Editorial Changes

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

This document is the sixth of a series regarding the regulations and actions considered at the March 12, 1962, Public Hearing and Annual Session of the Merchant Marine Council. This document contains the final actions taken with respect to the following proposals:

STATISTICAL SUMMARY OF DEATHS ABOARD INSPECTED COMMERCIAL VESSELS

1 July 1961–30 June 1962

Personnel casualties		Human							Environment					Other								
Deaths total	Reported during period of—classification	Intoxication	Physical deficiency	Unsafe movement (running, jumping, etc.)	Psychological (immaturity, insanity)	Unsafe practice	Law violation	Other human errors	Weather conditions	Poor maintenance (housekeeping)	Inadequate lighting	Inadequate rails, guards, etc.	Other	Failure approved equipment or material	Failure unapproved equipment or material	Vessel casualty	Supervision inadequate	Life preservers insufficient	Lack of tools/equipment	Lack of protective gear	Insufficient information to classify as to cause	Miscellaneous causes
156	Natural cause																					
2	Homicide																					
19	Suicide (and attempts)																					
14	Disappearance																					
2	Drowning (other than falls)							1													1	
	Ashore																					
	Persons not members of crew																					
2	Slips and falls—ladders	1																			1	
12	Slips and falls—gangways	4	1			1		1	1			1	1								1	1
3	Slips and falls—on deck			1		1															1	
	Slips and falls—other—same level																					
6	Falls from vessel—into water					2		2	1												1	
1	Falls from vessel—other					1																
9	Falls into hold, tank					3		2													3	1
	Falls—other—different level																					
3	Struck by—falling object					3																
	Struck by—flying object																					
1	Struck by—moving object (other than vessel)											1										
	Struck by—boat or ship																					
	Exposure																					
	Asphyxiation																					
	Struck against																					
1	Cargo handling					1																
	Machinery—tools																					
	Burns																					
	Scalds																					
	Electric shock																					
	Lines, caught in																					
	Pinching—crushing																					
	Heavy weather																					
	Over exertion																					
	Sprains and strains																					
	Cuts, punctures, etc.																					
	Galley accidents																					
	Fights																					
	Unknown causes																					
2	Not otherwise classified							1														1
*233	Total	5	1	1		12		7	2			2	1								8	3

*Crew members 165, passengers 47, longshoremen and shore workers 20, and others 1.

ITEM III—VESSEL OPERATIONS AND INSPECTIONS

Prevention of oil pollution (CG–249, pages 115–119).

Inspection of foreign vessels of unusual design or construction (CG–249, pages 126–129).

Vessel plan approval; ventilation and hull opening closures (CG–249, pages 130–139).

Drydocking or hauling out vessels; authorizing administrative extensions of time (CG–249, page 140).

ITEM IV—LIFESAVING AND FIRE PROTECTION

Specification for unicellular plastic ring lifebuoy (CG–249, pages 161–164).

Specifications for distress signals and shoulder gun type line-throwing appliance (CG–249, pages 165–169).

Fire protection equipment (CG–249, pages 170–173).

Portable fire extinguishers (specification only) (partial) (CG–249, pages 179–180).

ITEM V—TANK VESSELS

Fire retardant construction (CG–249, pages 183–189).

Pumproom ventilation (CG–249, pages 190–193).

ITEM VI—MARINE ENGINEERING

Materials—Maximum allowable stresses, unfired pressure vessels, valves, fittings, welding and stress relieving (CG–249, pages 198–225).

Pressure vessels, dished heads, malleable iron, piping, bilge pumps and valves (CG–249, pages 226–230).

Use of flexible hose (CG–249, pages 231–233).

Unfired pressure vessels; shop inspections and inspections on vessels (CG–249, pages 236–239).

Boiler mountings and attachments (CG–249, pages 240–241).

Those proposals in Item III regarding "Vessel operations and inspections," as revised, are approved with respect to prevention of oil pollution. The proposals designated 46 CFR 32.50–17 and 55.10–35(g) were not adopted and in lieu thereof regulations designated 46 CFR 35.01–40, 78.85–1 and 97.75–1 regarding prevention of oil pollution as operating requirements were added. In line with comments received, changes were made in the proposals designated 46 CFR 55.07–25(u), 55.10–25(n), 93.13–1 to 93.13–10, inclusive, and 167.20–35. With respect to the proposals regarding inspection of foreign vessels of unusual design or construction, the

STATISTICAL SUMMARY OF DEATHS ABOARD UNINSPECTED COMMERCIAL VESSELS

1 July 1961–30 June 1962

Personnel casualties		Human							Environment					Other								
Deaths total	Reported during period of—classification	Intoxication	Physical deficiency	Unsafe movement (running, jumping, etc.)	Psychological (immaturity, insanity)	Unsafe practice	Law violation	Other human errors	Weather conditions	Poor maintenance (housekeeping)	Inadequate lighting	Inadequate rails, guards, etc.	Other	Failure approved equipment or material	Failure unapproved equipment or material	Vessel casualty	Supervision inadequate	Life preservers insufficient	Lack of tools/equipment	Lack of protective gear	Insufficient information to classify as to cause	Miscellaneous causes
31	Natural cause																					
1	Homicide																					
4	Suicide (and attempts)																					
16	Disappearance																					
17	Drowning (other than falls)			2	1	4		5				1						1			3	
	Ashore																					
1	Persons not members of crew							1														
1	Slips and falls—ladders											1										
2	Slips and falls—gangways					1		1														
1	Slips and falls—on deck			1																		
	Slips and falls—other—same level																					
46	Falls from vessel—into water	4	1	2		10		6	7		1	5	1		1						7	1
5	Falls from vessel—other	1				3															1	
4	Falls into hold, tank			1		2					1											
2	Falls—other—different level					2																
2	Struck by—falling object					2																
	Struck by—flying object																					
4	Struck by—moving object (other than vessel)					3									1							
1	Struck by—boat or ship					1																
	Exposure																					
4	Asphyxiation	1				2															1	
1	Struck against			1																		
	Cargo handling																					
	Machinery—tools																					
	Burns																					
	Scalds																					
	Electric shock																					
3	Lines, caught in					3																
	Pinching—crushing																					
	Heavy weather																					
	Over exertion																					
	Sprains and strains																					
	Cuts, punctures, etc																					
	Galley accidents																					
	Fights																					
	Unknown causes																					
	Not otherwise classified																					
*146	Total	6	1	7	1	33		13	7		2	7	1		2			1			12	1

* Crew members 115, passengers 6, longshoremen and shore workers 21, others 4.

comments received were rejected and the proposals adopted. The procedures regarding inspection in 46 CFR Part 2 were revised to bring them up to date with present practices. In line with several comments received, changes were made in 46 CFR 72.10–25(a), 78.45–1, and 91.55–5(d) regarding vessel plan approval, ventilation and hull opening closures. In line with comments received, changes were made in 46 CFR 31.10–20(a), 71.50–1(a), 91.40–1(a), and 176.15–1(a) regarding authorizing administrative extensions of time with respect to drydocking or hauling out vessels.

Those proposals in Item IV regarding "Lifesaving and fire protection," as revised, are approved. In line with comments received, 46 CFR 160.050–2 and 160.050–3 were revised with respect to dimensions and materials for unicellular plastic ring lifebuoy. In line with comments received concerning cotton or flax line now provided with the line-throwing appliance, changes were made in 46 CFR 160.-031–4(b) and clarification included in 46 CFR 33.55–10(b), 75.45–15(b)(3), and 94.45–15(b)(3). The comments were not accepted with respect to the proposals regarding fire protection equipment, which are approved without change. The proposals regarding inspection standards for a portable fire extinguisher are still being studied and these changes will be published at a later date. With respect to specific requirements for materials in 46 CFR 162.028–3 the text was revised to reflect changes based on certain com-

CASUALTIES TO VESSELS OTHER THAN PLEASURE VESSELS

1 July 1961–30 June 1962

	Groundings	Foundering, capsizings, sinkings	Collisions with vessels	Collisions with objects other than vessels	Fires and explosions	Heavy weather damage	Material failure	Cargo damage, no damage to vessel	Undetermined or insufficient information	Casualty not otherwise classified	Total
Number of vessel casualties	518	224	425	529	176	64	245	10	9	50	2,250
Number of vessels involved	595	282	1,058	823	185	64	245	10	10	66	3,338
Number of inspected vessels involved	344	27	361	328	48	51	188	6	4	29	1,386
Number of uninspected vessels involved	251	255	697	495	137	13	57	4	6	37	1,952
Types of vessels involved—passenger:											
Vessels over 65'—inspected	10		8	20	5		9	6		2	60
Vessels not over 65'—inspected	29	11	16	14	11	2	4			2	89
Freight:											
Vessels—inspected	170	2	156	174	25	37	119		1	20	704
Barges—inspected and uninspected	32	49	140	188	2	6	4	2		7	430
Tank:											
Ships	102	5	56	40	6	10	50		3	3	269
Barges	32	9	123	80	1	2	5			1	259
Public			7		1						8
Towing:											
Inspected	1		2				1			1	5
Uninspected	72	79	237	210	24	6	11	2		8	649
Fishing (commercial)	98	90	98	37	78	1	30		5	8	445
Motorboats (commercial) not over 65' in length—uninspected	3	3	2		3						11
Foreign flag	36	2	127	33	16		4		1	7	226
Miscellaneous	10	32	86	27	13		8			7	183
Property damage: excess $1,500	214	194	475	495	146	49	172	8	7	39	1,799
Vessels totally lost:											
Inspected	6	8	1	2	6					1	24
Uninspected	31	96	24	8	54		4		4	2	223
Lives lost in vessel casualties:											
Passengers:											
Inspected						1					1
Uninspected		5			1						6
Crew members:											
Inspected					1	1	2				4
Uninspected	11	64	38		10		5		6	1	135
Longshoremen/shore workers:											
Inspected							3				3
Uninspected		2	2				2				6
Others:											
Inspected											
Uninspected		5	1	1			4				11
Injured and incapacitated over 72 hours:											
Passengers—inspected vessels				1		1					2
Passengers—uninspected vessels					1						1
Crew—inspected vessels	2	1	4		3		9	3			22
Crew—uninspected vessels	9	7	12	1	14		1				44
LS/SW [1]—inspected vessels											
LS/SW [1]—Uninspected vessels		2					1				3
Others—inspected											
Others—uninspected							2				2
Number of casualties due directly to personnel fault:											
Inspected	105	6	113	93	15		21			9	362
Uninspected	89	33	136	81	19	1				8	367

[1] Longshoremen/shore workers.

Deaths not involving casualty to vessel:

Natural causes	187
Homicide	3
Suicide	23
Disappearance and undetermined	30
Personal accidents	136

ments which were accepted. The proposal to discontinue the requirement for a safety relief on foam type extinguishers in 46 CFR 162.028–3(i) was accepted and this change was also included in amendments to 46 CFR 76.50–15(c), 95.50–15(c), and 167.45–70(a).

Those proposals in Item V regarding "Tank Vessels," as revised, are approved. With respect to fire retardant construction, 46 CFR 32.57–10(d)(6) and 32.57–10(e) were revised. With respect to pumproom ventilation, changes were made in the headnote for 46 CFR 32.60–20 and in text of § 32.60–20(c)(3) in line with comments received. The proposals concerning freeboard for tankers above 600 feet in length were adopted without change and published in a separate document.

The proposals in Item VI regarding "Marine Engineering," as revised, are adopted. In line with comments received, changes were made in 46 CFR 51.01–10(b), 51.04–1, 51.13–1, 51.24–1, 51.25–1, 51.34–1, 51.46–1, 51.49–1, 51.58–1, 51.90–1, 52.05–10, 54.03–1(c), 55.07–15, and 56.01–70(h) regarding material specifications, maximum allowable stresses, unfired pressure vessels, valves, fittings, welding and stress relieving.

Changes were made in 46 CFR 55.07–1(e), 55.07–10(c), and 55.10–25(d)(3) in line with comments received regarding pressure vessels, dished heads, malleable iron, piping, bilge pumps and valves.

The proposals regarding use of flexible hose are adopted without change. The proposals regarding boiler mountings and attachments are adopted without change and comments received were rejected. As a result of comments received, the proposals regarding vent opening closures were rejected and no change will be made in the regulations.

The regulations in these parts are being reviewed to bring them up to date pending the contemplated issuance of a revision, as of January 1, 1963, of the Code of Federal Regulations volumes containing Parts 1 to 145 and 146 to 149, respectively, of Chapter I of Title 46.

The amendments to 46 CFR Parts 2 to 181, inclusive, which were not described in the FEDERAL REGISTER of January 23, 1962 (27 F.R. 657–665), are considered to be interpretations of laws, procedures, or editorial changes, and it is hereby found that compliance with the Administrative Procedure Act (respecting notice of proposed rule-making, public rule-making procedure thereon, and effective date requirements thereon) is unnecessary with respect to such changes.

By the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Orders 120, dated July 31, 1950 (15 F.R. 6521), 167–9, dated August 3, 1954 (19 F.R. 5195), 167–14 dated November 26, 1954 (19 F.R. 8026), 167–20, dated June 18, 1956 (21 F.R. 4894), CGFR 56–28, dated July 24, 1956 (21 F.R. 5659), 167–38, dated October 26, 1959 (24 F.R. 8857), and 167–46, dated November 6, 1961 (26 F.R. 10609), the following actions are ordered:

1. The vessel inspection regulations shall be amended in accordance with the changes in this document.

2. Unless specifically specified otherwise, the regulations in this document shall become effective on and after the 90th day following the date of publication of this document in the FEDERAL REGISTER.

3. Regulations containing specific effective dates shall become effective on and after such dates.

4. The regulations in this document may be complied with on and after the date of publication of this document in the FEDERAL REGISTER in lieu of existing requirements. However, the new or revised requirements in this document shall be met by later than the effective dates specified herein.

(Federal Register of September 1[illegible] Part II)

AFFIDAVITS

The following affidavits were cepted during the period from 1[illegible] gust 1962 to 15 September 1962:

Phoenix-Rheinrohr A.G., D[illegible] dorf, Germany, PIPE & TUBING.

Westlectric Castings, Inc., [illegible] South Camfield Ave., Los Angeles Calif., CASTINGS.

Honeywell G.m.b.H., Ger[illegible] VALVES.

FUSIBLE PLUGS

The regulations prescribed in S[illegible] part 162.014, Subchapter Q, Specifications, require that manufac[illegible] submit samples from each heat fusible plugs for test prior to pl[illegible] manufactured from the heat used vessels subject to inspection by Coast Guard. A list of approved he[illegible] which have been tested and found ceptable during the period from August 1962 to 15 September 1962 as follows:

H. B. Sherman Manufacturing C[illegible] Battle Creek, Mich., HEAT NOS. 832, and 833.

EQUIPMENT APPROVE[illegible] BY THE COMMANDA[illegible]

[EDITOR'S NOTE.—Due to space l[illegible] itations, it is not possible to pub[illegible] the documents regarding appro[illegible] and terminations of approvals equipment published in the Fed[illegible] Register dated September 11, [illegible] (CGFR 62–28). Copies of these d[illegible] uments may be obtained from t[illegible] Superintendent of Documents, G[illegible] ernment Printing Office, Washing[illegible] 25, D.C.]

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

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

Distributors and/or manufacturers	Brand	AWS Class	Operating positions and electrode sizes (inches)				
			5/32 and smaller	3/16	7/32	1/4	[illegible]
Hobart Brothers Co., Troy, Ohio	335A	E6011	1	1	1	[illegible]	[illegible]
Do	14A	E6014, E7014	1	1	1	[illegible]	[illegible]

MERCHANT MARINE SAFETY PUBLICATIONS

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

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (7–1–58).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (8–1–58).
115	Marine Engineering Regulations and Material Specifications (2–1–61). F.R. 9–30–61, 9–11–62.
123	Rules and Regulations for Tank Vessels (1–2–62). F.R. 5–2–62, 9–11–62.
129	Proceedings of the Merchant Marine Council (Monthly).
169	Rules of the Road—International—Inland (5–1–59). F.R. 5–21–59, 6–6–59, 5–20–60, 9–21–60, 4–14–61, 4–25–61.
172	Rules of the Road—Great Lakes (6–1–62). F.R. 8–31–62.
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids (7–2–51).
175	Manual for Lifeboatman, Able Seamen, and Qualified Members of Engine Department (9–1–60).
176	Load Line Regulation (9–1–61). F.R. 7–27–62.
182	Specimen Examinations for Merchant Marine Engineer Licenses (12–1–59).
184	Rules of the Road—Western Rivers (6–1–62).
190	Equipment Lists (4–1–60). F.R. 6–21–60, 8–16–60, 8–25–60, 8–31–60, 9–21–60, 9–28–60, 10–25–60, 11–17–60, 12–23–60, 12–24–60, 5–2–61, 6–2–61, 6–8–61, 7–21–61, 7–27–61, 8–16–61, 8–29–61, 8–31–61, 9–8–61, 9–9–61, 10–18–61, 11–3–61, 11–18–61, 12–12–61, 2–9–62, 2–17–62, 3–15–62, 4–17–62, 4–25–62, 5–17–62, 5–25–62, 7–24–62, 8–4–62, 8–11–62, 9–11–62.
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel (6–1–62).
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (7–1–58). F.R. 3–30–60, 5–6–60, 12–8–60, 7–4–61, 5–2–62.
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Control Western Rivers Vessels (4–1–57).
227	Laws Governing Marine Inspection (7–3–50).
239	Security of Vessels and Waterfront Facilities (8–1–61). F.R. 12–12–61, 8–8–62, 8–31–62.
249	Merchant Marine Council Public Hearing Agenda (Annually).
256	Rules and Regulations for Passenger Vessels (1–2–62). F.R. 5–2–62, 9–11–62.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (3–2–59). F.R. 4–25–59, 6–18–59, 6–20–59, 7–9–59, 7–21–59, 9–5–59, 5–6–60, 5–12–60, 10–25–60, 11–5–60, 11–17–60, 12–8–60, 12–24–60, 7–4–61, 9–30–61, 10–25–61, 12–13–61, 5–2–62, 9–11–62.
259	Electrical Engineering Regulations (12–1–60). F.R. 9–30–61, 9–23–61, 5–2–62, 9–11–62.
266	Rules and Regulations for Bulk Grain Cargoes (5–1–62). F.R. 9–11–62.
268	Rules and Regulations for Manning of Vessels (9–1–60). F.R. 5–5–61, 6–28–61, 12–16–61.
269	Rules and Regulations for Nautical Schools (3–1–60). F.R. 3–30–60, 8–18–60, 11–5–60, 7–4–61, 9–30–61, 12–13–61, 5–2–62, 9–11–62.
270	Rules and Regulations for Marine Engineering Installations Contracted for Prior to July 1, 1935 (11–19–52). F.R. 12–5–53, 12–28–55, 6–20–59, 3–17–60.
293	Miscellaneous Electrical Equipment List (6–1–62).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (10–1–59). F.R. 10–25–60, 11–3–61, 4–10–62, 8–31–62.
323	Rules and Regulations for Small Passenger Vessels (Not More Than 65 Feet in Length) (6–1–61). F.R. 9–11–62.
329	Fire Fighting Manual for Tank Vessels (4–1–58).

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

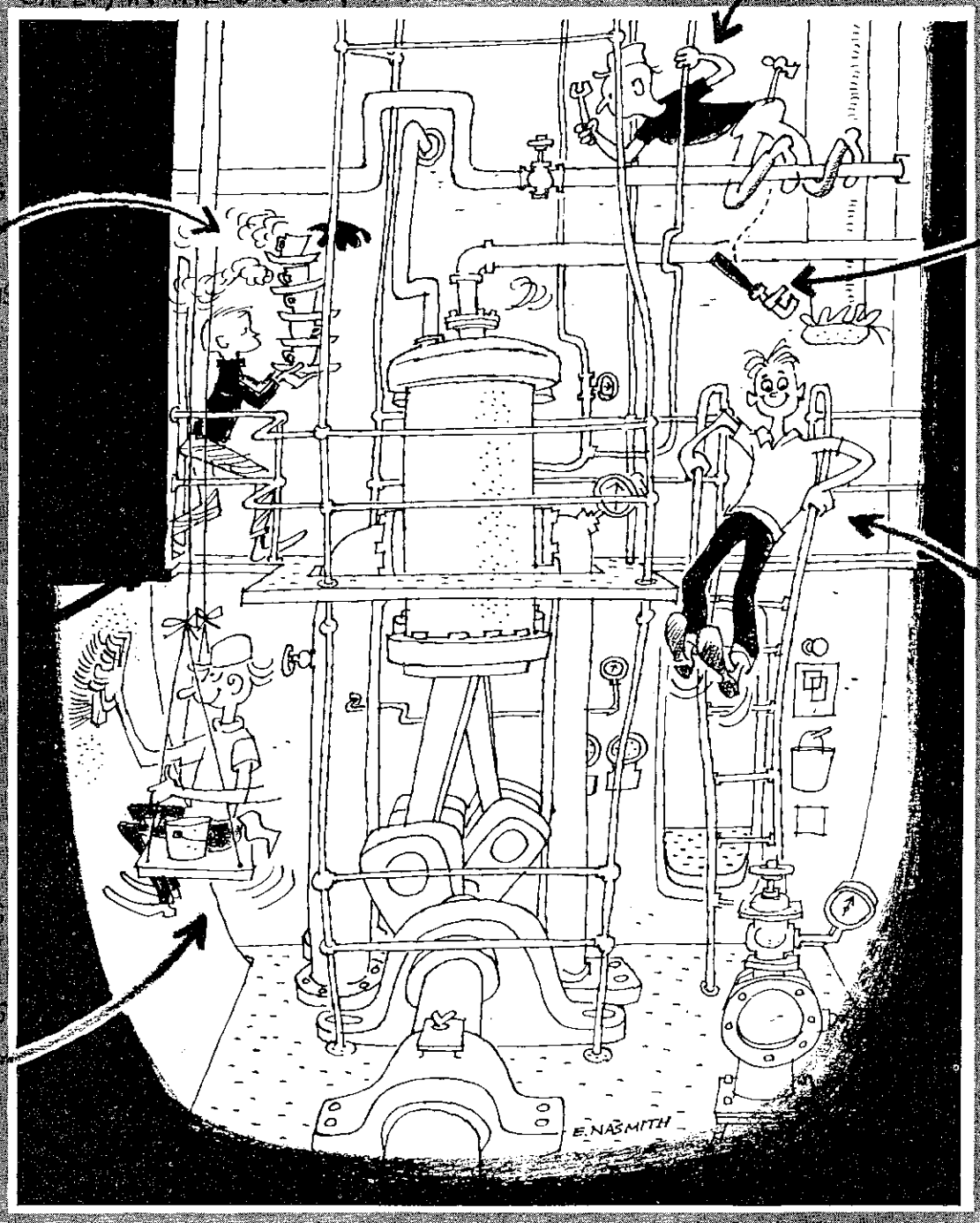
CHANGES PUBLISHED DURING SEPTEMBER 1962

The following have been modified by Federal Register:
CG–115, 123, 190, 256, 257, 259, 266, 269, and 323, Federal Register, September 11, 1962, Part II.

U.S. GOVERNMENT PRINTING OFFICE:1962

LIFELINES

SAFETY IN THE JUNGLE GYM



BE CAREFUL!