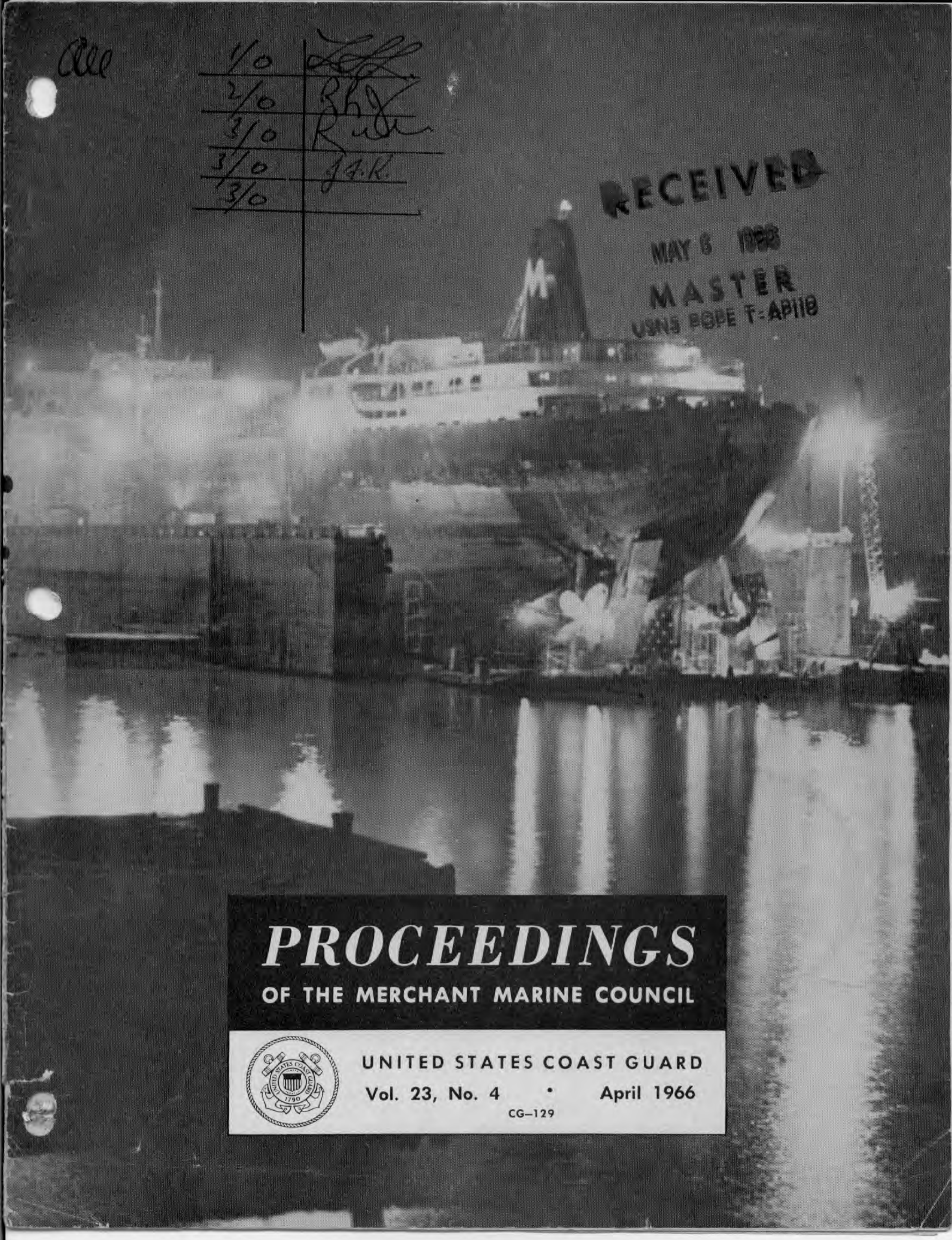

PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

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PROCEEDINGS

OF THE

MERCHANT MARINE COUNCIL

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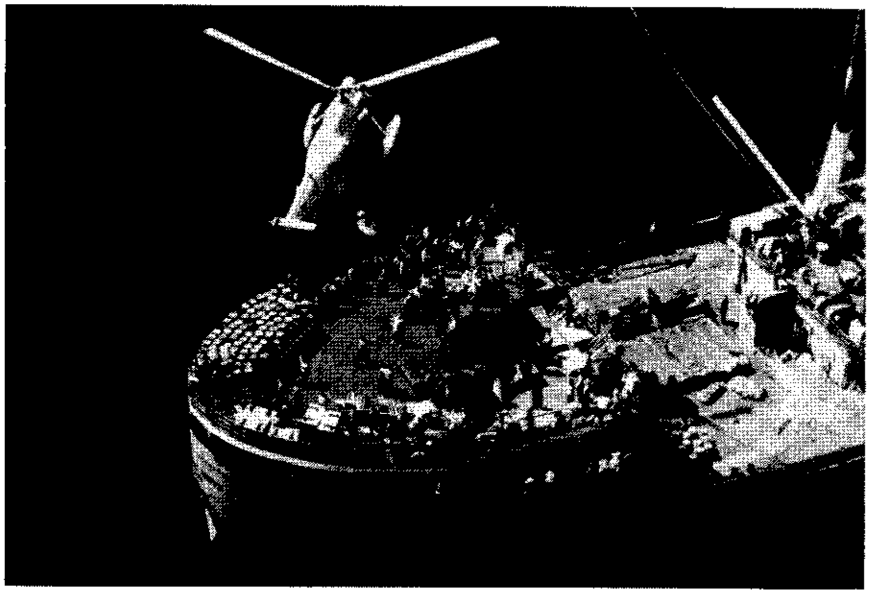
IN THIS ISSUE . . .

Tanker safety is reviewed in a sweeping article by an official of the Socony Mobil Oil Co. beginning page 68.

Masters of merchant vessels are given guidance in the proper methods of preparing for emergency helicopter evacuation by one of the Coast Guard's most decorated command pilots beginning page 72.



A U.S. Air Force pilot, who parachuted from a disabled plane 20,000 feet into the Atlantic Ocean, stands in his underwear on the stern of the Russian fishing vessel Johannes Ware *which rescued him. A U.S. Coast Guard HH-52-A flying boat helicopter from Coast Guard Air Station, Salem, Mass., lowers a basket to pick up the 29-year-old American airman and return him to Otis Air Force Base near Plymouth, Mass. After being notified of the pilot's*

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Tanker Safety in an era of change

John T. Knepper

Safety innovations in the tanker industry? An official of the Socony Mobil Oil Co. touched all bases in answering this question for the Marine Section of the National Safety Council at its annual congress last fall.

THAT WE ARE living in an era of change is obvious to us all. The extent of these changes and speed with which they take place, is often difficult for us to grasp. Some values which have gone unquestioned for generations are now viewed with skepticism—or have been destroyed entirely. The accepted practice of yesterday is questioned today. In short, the sacred cow of today may be the dead duck of tomorrow.

Our own tanker industry has not been exempted from this upheaval. If we have any doubt of that, let's recall that within the memory of most of us the average tanker was something under 10,000 deadweight tons with a speed of about 9½ knots. Not long ago a contract was signed for construction of a 170,800 tonner. Perhaps some can remember the last of the commercial sailing vessels. Today nuclear propulsion is no longer a novelty and the hover-craft and hydrofoil are a reality. The giant submarine tanker could even be commonplace in the not too distant future.

Changes never come easily in the marine field. With good reason, we are one of the most conservative of industries. While poor planning, bad judgment, or corner cutting in a shoreside business can be expensive, it is seldom catastrophic, as it may be when a ship at sea is involved. The elements seldom give us a chance to make more than one mistake. Change simply for the sake of change under circumstances where safety may be compromised is entirely out of place.

Whether we like it or not, we are being forced to make radical changes in our practices and in our thinking to keep abreast of the times and meet the demands placed upon us by present-day conditions—particularly the keen competition in the tanker industry. These changes have brought with them new problems and hazards.

First I'd like to review some of the changes which have caused us to revise, or at least to reconsider, some of our long-standing practices.

The first and most spectacular is the tremendous increase in size of tankers which has taken place in the last 20 years and particularly in the last 5 years and which, incidentally, shows little sign of having run its course. As the basket gets bigger and the number of eggs in it increases the problem of protecting it from harm grows greater.

Another change which has stimulated our thinking on tanker safety is the increasing number and variety of products we are called upon to carry in our ships. The rapid development of the petrochemical industry has brought us into an entirely new field and presents safety problems of an entirely different nature. Liquefied gases under great extremes of temperature or pressure will pose still different problems. We have not yet become involved in the carriage of liquefied gases but we may soon be called upon to do so.

The escalation of labor costs and stiff competition within the industry has made it essential to keep manpower to a minimum, and to reduce the amount of work to be done by the ship's crews wherever possible. This is being done by the use of labor-saving devices, equipment and materials requiring less maintenance, and automatic controls for certain shipboard functions. All these have presented new problems involving safety of life and property.

With a whole new set of problems to be solved, it soon became obvious that merely continuing on in the same old way would not do; simply adding more of the same was not the answer. Fortunately the climate which induced the changes in the first place produced some of the answers. In other words we had to learn to "think big" in safety too.

Let's now look at some of the actual developments in safety which have directly or indirectly come about because of recent changes in tanker design and operations.

One of the first things coming to mind in this regard is the elimination of the midship house and relocation of all crew quarters to the after part of the ship. While this was originally conceived of as a cost reduction measure, it has had a strong secondary value as a safety feature.

A great deal of work has been done in recent years in the field of fire protection and firefighting. One of the most noteworthy advances was the revision of the U.S. Coast Guard's firefighting regulations, which was done in collaboration with industry.

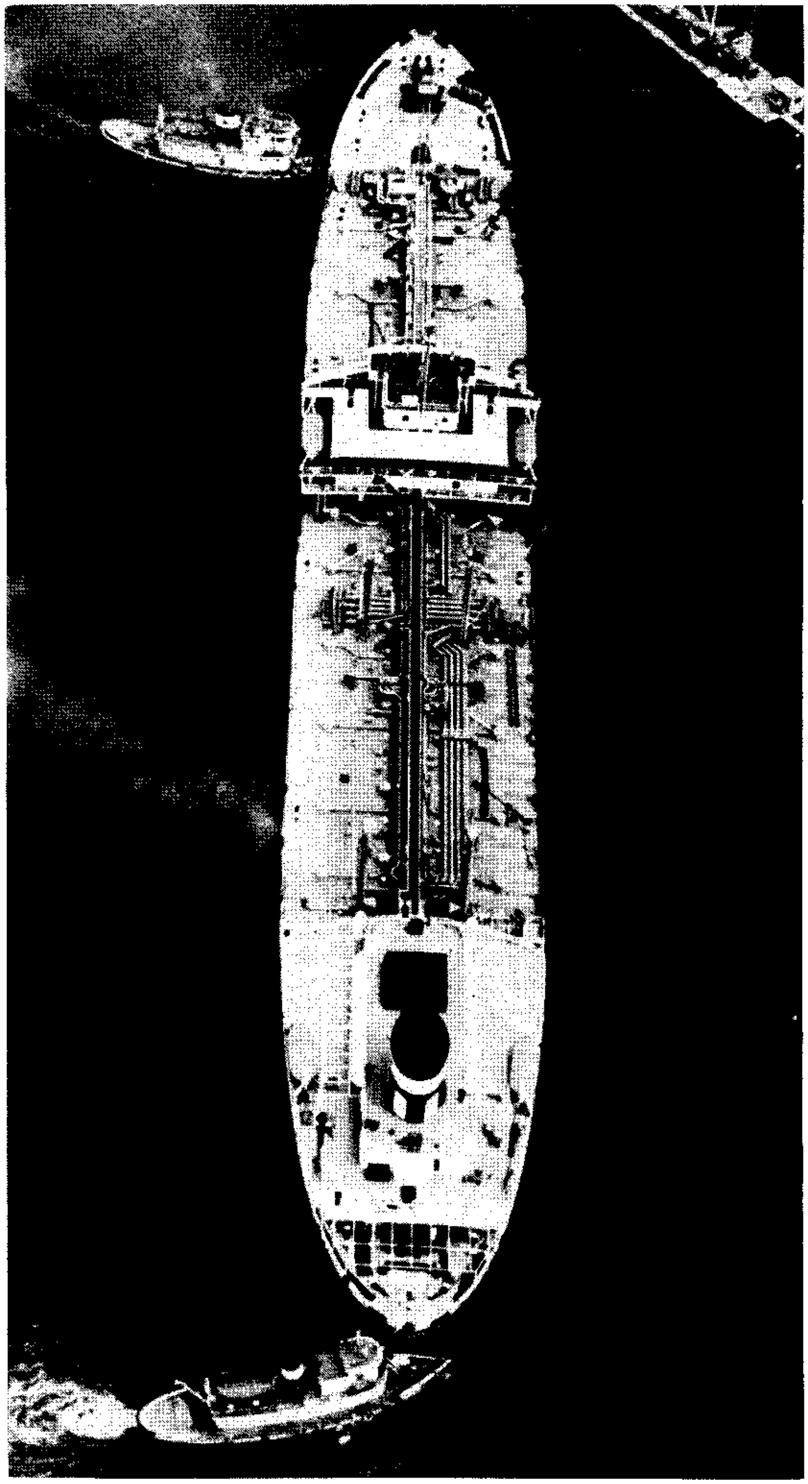
Fire protection for petroleum carriers in the past gave evidence of hand-me-downs from cargo ship practices and like most hand-me-downs, it didn't fit too well. The steam smothering system and the straight-stream hose nozzle may have been fine on the general cargo ship but they are of little use on a gasoline fire on board a tanker. The revised regulations have permitted adoption of some of the concepts of smothering and cooling developed by the petroleum industry to shipboard use.

In our own new vessels we have made substantial improvements in firefighting protection and installations. Steam smothering has been eliminated entirely and waterfog and foam systems substituted. The waterfog system consists of a separate piping system in the cargo tank hatches, served by its own fire pump. Foam installations vary from ship to ship; some having fixed systems, others portable. Our newest vessels are also fitted with foam monitors.

While we have standardized on 3 percent foam on our crude and product carriers, we have retained 6 percent foam on one vessel which is in the chemical trade. It is our feeling that the greater body and cohesion of the 6 percent foam makes it more effective on chemical fires and is worth the sacrifice in volume.

The increased size of vessels has brought up a number of other problems requiring solution. An example of these is the length of firehoses. As you know, the standard length has traditionally been 50 feet, which has always been satisfactory in vessels of moderate size. With ship's beams exceeding 100 feet, it now becomes impossible to reach over the side with one length, and for this reason we have adopted 75-ft. lengths on our large new vessels.

The matter of personnel has required some thought, and departures from principles of long standing have been made. For example, the crew of a 95,000-deadweight-ton vessel is roughly the same size as that of a 35,000 tonner. With a much larger number of fire stations on the former it is obviously impossible to follow the customary practice of assigning men to each fire station, as there just aren't enough to go around. We therefore adopted the "emergency squad" concept to concentrate men and apparatus at the scene of the fire. This makes a good deal more sense than the "shotgun" approach where manpower and equipment are scattered about the ship, some perhaps being 1,000 feet from the scene of action.



Courtesy Red Star Towing

Warping an Atlantic tanker to the dock.

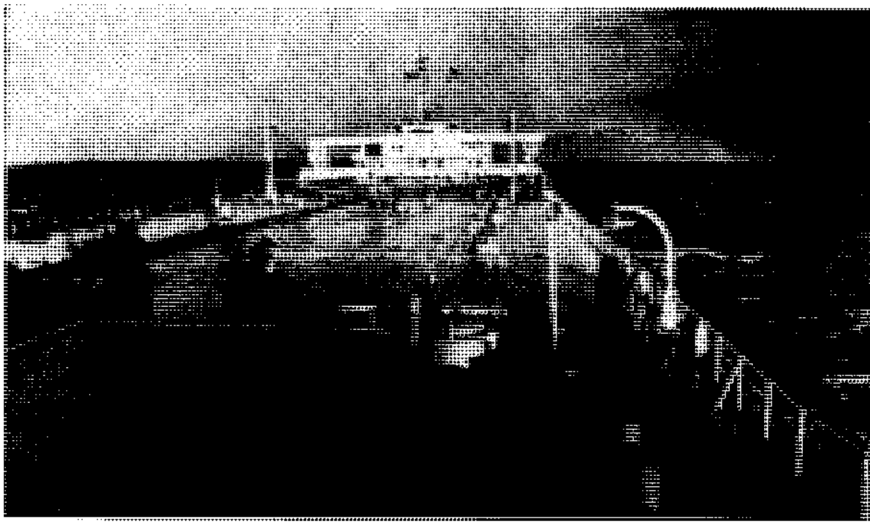
We think we have thoroughly refuted the notion held by some that there is safety in mere numbers of people. In fact, we feel that as a general rule—a few well-trained people with good equipment make a most efficient kind of safety unit. We also feel that a well-trained man with poor equipment will have fewer accidents than a poorly trained one with good equipment.

It is our firm belief then, that the training of personnel is by far the most important element in our safety program. It is not enough to provide the most modern up-to-date firefighting gear in the world. We have to teach our ship's people how to use it and use it effectively. This involves more than the usual perfunctory fire and boat drill held once a week in fine weather, it means actually using the equipment on a fire, seeing what it will do.

We have made it a practice to have every man in our fleet attend firefighting school before joining his vessel, and take a refresher course periodically. For our U.S. fleet, this training is given by the plant fire department at our Beaumont, Tex., refinery. Our foreign-flag fleet personnel receive training in schools which we have been instrumental in establishing in London, Hamburg, Freetown, Bombay, and Karachi. Most of these have been set up with assistance and collaboration from local fire brigades, using their training grounds and equipment and our instructors. The course at the overseas schools averages 2 days except for the one in Hamburg which runs for 1 week. Both officers and unlicensed personnel are expected to take this training. In this training the personnel gain confidence and experience in what can be done with the equipment in putting out actual fires.

While there have been and will continue to be accidents so long as we have the human element with us, well-trained men with good equipment is the best route to our goal of the fewest possible accidents. We must provide both good men and safe equipment.

While I cannot go into great detail regarding the many minor innovations in firefighting equipment and techniques I would, however, like to mention some of them, most of which are refinements of existing materials or practices. We are, for instance, adopting some improvements in hose couplings and connectors to permit easier and faster hooking up of hoses. This involves use of 45° swivel connection fire hydrants, and snap



A Texaco tanker sans the familiar catwalk. It has been replaced by a patented underdeck tunnel which is designed to protect both seaman and equipment against heavy seas and rough weather.

couplings between hose and hydrants. Fire extinguishers are being standardized throughout the fleet. Dry chemical of a type compatible with foam is being used in all locations except electrical flats and radio rooms, where CO_2 is employed. All vessels are supplied with a minimum of eight applicators, and 90 percent of all hose nozzles are of the all-purpose type. Two-and-one-half-inch hoses are used throughout in our large new vessels, because of the need for volume of water or fog. Plastic foam cans are to be used in place of metal containers to beat the rusting problem which has plagued us all for so long.

I'd like to mention very briefly here a couple of new developments in which we are interested. I believe you'll be hearing a good deal about them in the future, although they are presently in the development stage. I refer first to subsurface application of foam. Our research and development and safety people in Paulsboro are doing a good deal of work with this. If and when they succeed in overcoming their remaining problems, it might very well have an application to tankers by permitting foam to be introduced into the cargo tanks directly through the pipelines.

Another interesting development is the use of high-expansion foam for inerting and displacing vapors from cargo tanks as well as for firefighting. While not new, high-expansion foam has never received the attention we feel it merits. Our marketing people have adopted it as the principal means of fire protection in a new 500-ft. automated warehouse and information developed in this connection has led us to believe that it may possibly have an application as an inerting or gas-freeing medium in cargo tanks.

Before leaving the subject of inerting, I might mention here that we have installed flue gas systems on two of our vessels, but not the most recent group. We do not believe routine gas-freeing contributes measurably to safety, but rather the contrary.

While we have some rapid strides in firefighting and fire protection, we have taken a somewhat more conservative course with regard to new developments in lifesaving equipment. We refer chiefly here to plastic lifeboats and inflatable liferafts.

Boats constructed of glass fiber and synthetic resins have been the subject of much controversy. We have used them in a few of our newer vessels, but until such time as fire-retardant resins have been further developed and are available we intend to remain with metal boats. The matter is being followed with interest, however.

As for inflatable liferafts, these undoubtedly would be useful under certain conditions, but they do not in our estimation have the all-around utility of a lifeboat. They are, of course, now required by the U.S. Coast Guard, although not by SOLAS.

Among the other developments in the field of lifesaving equipment, are adoption of the diesel-powered boat

The supertanker Mobil Oil.

where motor or mechanically operated boats are required. We are replacing all gasoline and hand-propelled boats. To provide better access to boat decks on the bridge-aft vessels, we have provided additional vertical type ladders. Survival kits have been updated and lifeboats have been provided with radar reflectors to assist search and rescue teams looking for them. Resuscitator/respirator units have been standard equipment on our vessels for some time.

The hazard of collision is of the greatest concern to us, as it is to every tanker operator. The skills required by the present-day tanker mariner with respect to navigation and ship operation have become more critical than ever with the increase in size and complexity of the large tanker. We recognize that a single failure of action or equipment in these vessels could be catastrophic. Collisions and strandings are to be avoided at all costs. To do this requires a high order of seamanship on the part of our personnel and the best equipment available. We are in the process of installing a second radar set on all our large vessels. All are equipped with Decca Navigators or Loran. Each of the large vessels is being supplied with walkie-talkie sets to be used in docking and undocking. They may also be used for communication between company ships in the near vicinity. We are experimenting with closed-circuit television as an aid to lookout-keeping.

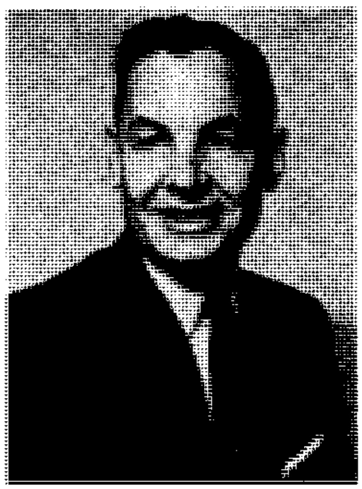
The safety of the ship's crews has also received a great deal of attention in design of new ships. In noting a few of the improvements built into new construction, we might start with gratings and ladders. These are perennial sources of injury to personnel and we have devoted a considerable amount of research to treads on gratings and the location of the ladders themselves. We have made progress in this area, and feel we have come up with some answers that will result in fewer slips and falls. Tank repairs, particularly those in underdeck areas have become more and more difficult to carry out as the depth in tanks is increased. The old wooden ladder is long gone, and in tanks 60 feet deep a light metal ladder is no longer suitable. We feel we may have a partial solution by ballasting the tank and using an inflatable raft for the men to work from—not an original idea with us, of course.

In our new vessels, vent intakes have been relocated forward of the stack to avoid flue gases being discharged into quarters. Air winches have been provided for forepeak storerooms. Hydraulically operated cargo valves have been provided in the large vessels and the newest will also have automated cargo control rooms. On these ships, back strain from turning large hand cargo valves will be a thing of the past. We also feel there is less hazard in one man handling a large mooring wire on a good self-tensioning winch than three or four sailors taking a heavy hawser or a wire to a winch drum to heave the vessel alongside.

Another feature which has resulted in increased safety although not designed with it in mind, is the air conditioning of quarters. This has been particularly effective with regard to the midship house. There are now no open ports or doors by which fumes can enter during loading and ballasting. With air-conditioned quarters, doors are of the vapor lock type, and ports are kept closed at all times.

All our new vessels are constructed to standards laid down by the classification societies and the British Ministry of Transport, the German SBG, or the U.S. Coast Guard, whichever may be higher. We feel we are fortunate in being able to select the best features of each, which is resulting in ships which are, on the whole, unsurpassed in safety anywhere in the world. ⚓

The Proceedings is indebted to the Marine Section of the National Safety Council for this and other articles that have appeared in the past and that will be carried in the future. We are pleased to give them this broader readership in the interest of marine safety.



John T. Knepper is a Kings Point graduate and former Chief Engineer in the Socony Mobil fleet. He is presently manager of employee relations in Socony Mobil's marine transportation department.

Helicopter Operations With Merchant Vessels

Cmdr. G. F. Thometz, Jr., USCG

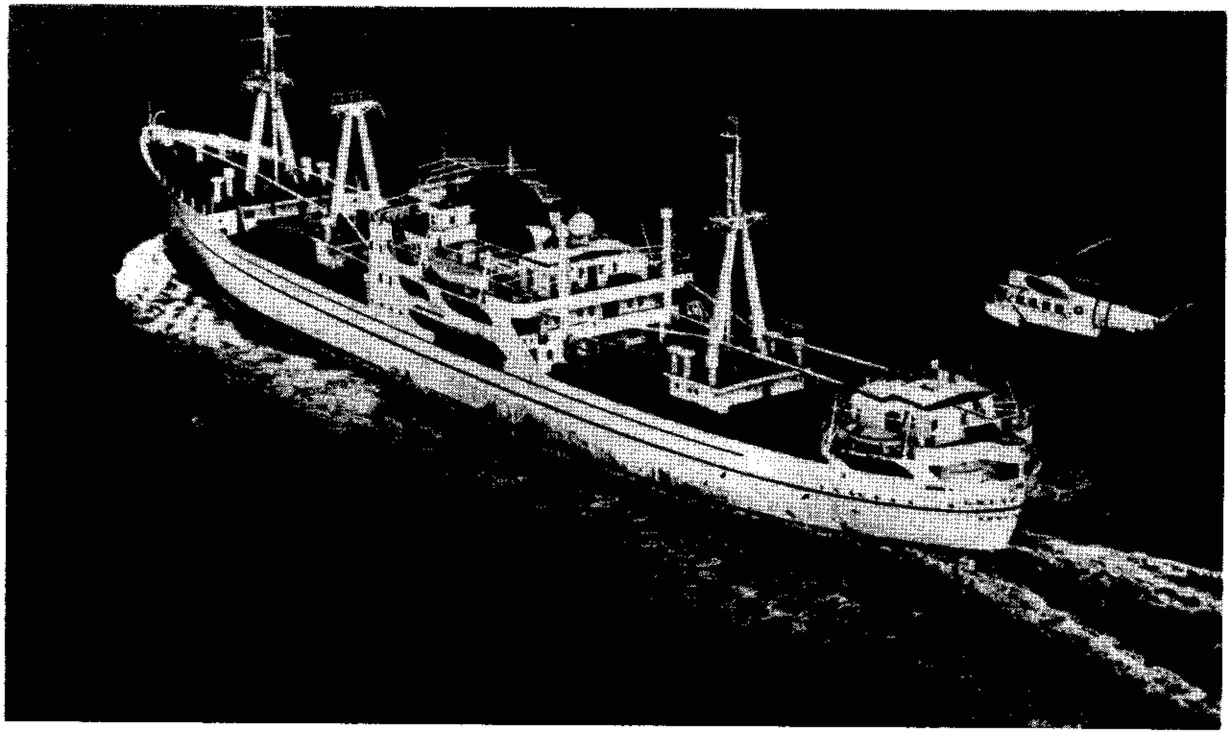
RECENTLY A MERCHANT vessel, approximately 120 miles offshore, reported a crewmember suffering from a heart attack. A Coast Guard helicopter was dispatched to evacuate the man to a hospital. During this mission, there were no effective voice communications between the helicopter and the vessel. The Coast Guard fixed-wing aircraft, escorting the helicopter, was also unable to communicate with the vessel. When the helicopter arrived on scene, the patient had already been placed in a small boat clear of the vessel. The captain of the merchant vessel, in an effort to expedite the evacuation, had assumed this to be the best method for the helicopter to hoist the patient. The patient had also been placed in one of the vessel's stretchers, not rigged for single point hookup and hoisting. As a result, this rescue mission was complicated and required excessive time to complete. It was first necessary to lower a stretcher from the helicopter and transfer the patient into the stretcher rigged for hoisting. The maneuvering of the helicopter over the small boat for hoisting required greater caution, and time, and presented a more difficult hoist platform for the pilot due to the boat being dead in the water and being blown around by the helicopter downwash. The mission was successfully accomplished; however, had communications been possible with the vessel, or had the captain had information available to him concerning the capabilities of the helicopter, the mission could have been accomplished with greater ease and speed.

This article is written with the intent of providing merchant vessels with some of the Coast Guard helicopter capabilities and requirements for medical evacuations at sea. Although we cannot hope to cover every possibility, the information will be extremely valuable to every master of a merchant vessel.

Commander Thometz, a native of Twin Falls, Idaho is commanding officer of the Coast Guard Air Station at New Orleans, La. He is a graduate of the U.S. Coast Guard Academy, and the U.S. Navy's Fixed Wing and Helicopter Flight Training Schools. He has previously served at Coast Guard air stations in San Diego and San Francisco, Calif.; Sangley Point, Philippines; Barbers Point, Hawaii, and at Port Angeles, Wash. He has been awarded the Distinguished Flying Cross and the Coast Guard Commendation Medal, as well as several Letters of Commendation from the Commandant, U.S. Coast Guard.

In any evacuation at sea, the primary controlling factor is distance. The Sikorsky HH–52A amphibious turbine-powered helicopter is currently used by the Coast Guard. Under no wind conditions, its maximum radius of action from its base or refueling point is 185 miles out, 10 minutes hovering, and return to its departure point. This radius will be decreased by wind, weather conditions, and added weight factors. Only under the most favorable conditions would such a range be attempted. It is obvious if a merchant vessel is 300 miles at sea and requests a helicopter evacuation, it will be necessary for him to divert from his course and head for the nearest position at which a rendezvous can be made with the helicopter. Normally, the Coast Guard Rescue Coordination Center controlling the mission will request the vessel to divert and head for a certain position or port. The sooner the captain acknowledges by message to the Coast Guard that he will divert and gives his estimated time of arrival at such a position, the sooner the helicopter flight can be planned and launched. If the vessel is already within range of the helicopter, it is still necessary for him to divert in the direction of the helicopter's departure point to expedite the removal of the patient. Future plans of the Coast Guard include multiengine helicopters and will result in greater range capabilities.

The second important factor in the evacuation is communications. As pointed out in the first part of this article, communications between the vessel and the helicopter or escort would have provided the needed information and coordination between ship and aircraft. Normally, voice communications between ship and aircraft on such missions are conducted on the international distress frequency, 2182 kcs. By using this frequency the aircraft is able not only to talk to the vessel, but also to use the frequency for homing, utilizing the aircraft automatic direction finder. The helicopter can transmit and receive voice on any high frequency between 2,000 kcs. and 30,000 kcs. if necessary. The ADF can receive and home on any frequency within the 100 kcs. to 3,000 kcs. range. Normally, when the helicopter is dispatched for an offshore evacuation, a fixed-wing aircraft is also dispatched to serve as escort, a navigation aid, and communication relay unit for the helicopter. This fixed-wing aircraft will attempt to locate and fix the position of the vessel in order to guide the helicopter to the scene. Therefore, it will not be unusual for a fixed-wing aircraft to be circling the vessel and communicating with it before the helicopter arrives. Frequently this aircraft can communicate with the vessel when the helicopter cannot, therefore, information can be relayed to the helicopter through the escort.



A U.S. Coast Guard gas turbine powered HH-55A "flying boat" helicopter lowers a basket to the stern of the Danish ship GRETESCOU *to pick up a 15-year-old boy suffering severe reactions to a vaccine shot. The pickup was made 130 miles out in the Gulf from New Orleans, where the helicopter is based.*

When the vessel is limited to CW transmission on 500 kcs., communication between ship and aircraft, in the past, has been difficult to impossible. The helicopter has no CW capability and the fixed-wing escort has very limited CW capability. Past experience in cases like this has indicated the need to pass all communications through the Coast Guard Primary Radio Station that the vessel has originally contacted relative to the distress. It must be realized that there is considerable delay in CW communications and it is difficult to coordinate any last minute operations with this mode of communications.

Whatever the means of communication are, the vessel should provide as accurate a position as possible, time of position, course, speed, weather and sea conditions, wind direction and velocity. Also the medical information on the patient should include whether he is ambulatory or not. Coast Guard helicopters do not normally carry a stretcher, therefore if one is needed this information should be given prior to dispatching the helicopter so one can be placed aboard.

After the helicopter has departed its base, the vessel will be advised its estimated time of arrival (ETA) as soon as possible. The vessel should stand a continuous radio guard on 2182 kcs. or any other frequency specified if 2182 is not available. It is most probable that initial communications will be established with the fixed-wing escort and later with the helicopter as it gets closer. Frequent transmissions may be requested from the ship for homing purposes.

Prior to the arrival of the helicopter, with or without ship-to-aircraft communications, the captain can make certain preparations for the helicopter hoist. The HH-52A can

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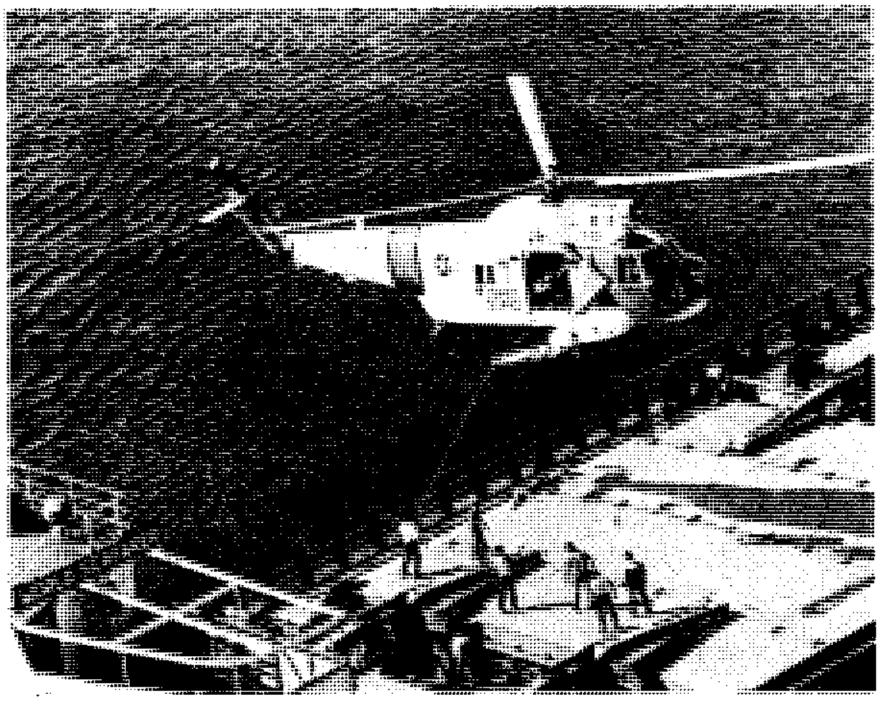


A Greek seaman, paralyzed from the waist down, was airlifted by a Coast Guard helicopter out of Dinner Key Coast Guard Air Station, from the deck of the ore carrier SS WORLD SEAFARER *about 40 miles east of San Salvadore in the Bahama Islands.*

The helicopter brought the stricken seaman to San Salvadore where a waiting Coast Guard amphibious plane flew the man to Miami, Fla.

hoist from a maximum height of 90 feet above the deck, however, the higher the hoist, the more difficult and dangerous it is. A horizontal distance of 50 feet in all directions from the helicopter body to any obstruction is a minimum safe clearance. Most merchant vessels will have a clear area from which the hoist can be made. This is usually on the fantail. The more space available, the easier and less hazardous is the hoist. If an awning covers the fantail and can be removed, this should be done. Be sure it is tied up securely along with any other items that may be blown about by the rotor downwash of the helicopter. On ships with booms extending aft near the fantail, these should be raised as near as possible to the vertical alongside the king posts. This reduces the chances of the rotors striking the booms or cables. Aft flagstaffs should be taken down. Any antenna wires or cables extending to the stern should be removed if possible. Any reduction of obstructions on the stern will enable the pilot to make a lower and an easier hoist. Many tankers and ore or grain vessels have areas amidships from which very low hoists can be made. This will normally be the most desirable area for the pilot because of the absence of obstructions. Except for unusual circumstances the hoist will be made from the port side of these vessels since the helicopter hoist and hatch are on the starboard side.

Shortly before the helicopter is due to arrive the patient should be brought up from below if possible and placed under cover near the area where he will be hoisted. If the patient's condition and weather conditions permit him to be brought out on deck, do not place him in the hoist area, but to one side. Remember to wrap any blankets securely around him so the rotor downwash does not blow them away.

As the helicopter arrives on scene, the captain should change course into the wind or preferably with the wind about 20° on the port bow. It is not necessary to reduce speed or stop, but rather preferable to the pilot for the ship to maintain normal speed. The helicopter can make the hoist with better control and less power if it is moving forward 10 to 15 knots. Final instructions for the hoist will be given by the pilot after looking over the ship and its obstructions. If no communications between ship and aircraft exist, the ship's captain should be alert and prepared to assist in the hoist from any position the pilot may choose. It is possible that the pilot will not choose to make the hoist from the position preselected, but will lower the basket or stretcher to another section of the vessel that appears more safe to him. The helicopter is equipped with a rescue basket for patients able to sit in it. If a stretcher is required, the helicopter will carry its own stretcher specially equipped with a hoisting bridle. Since the stretcher is suspended from a single hook, it is difficult to quickly adapt a ship's stretcher to this type of level suspension.

As the helicopter lowers the basket or stretcher, it must be remembered that the aircraft, during its flight, has built up a static electricity charge. The pilot will instruct the ship not to touch the basket or stretcher until it has touched the deck and grounded. If a member of the ship's crew reaches up to take hold of it, he will most certainly get a shock. It is not a dangerous charge, but surprising and uncomfortable. Let the basket or stretcher touch the deck before handling it. The helicopter may lower a trail line if a high hoist is involved or if it is necessary to place the basket or stretcher in a confined space. Deck personnel should guide the basket or stretcher to the deck with this line. The line will not carry the static charge or shock deck personnel.

If a basket is lowered, have a man hold it steady while the patient gets in. The patient should be instructed not to hold on to the sides of the basket, because of the possibility of injuring his fingers if it hits the side of the helicopter as it is being hoisted aboard. When the patient is aboard the basket, he should signal ready for hoist by nodding his head. Deck personnel signal the hoist operator in

(Continued from page 67)

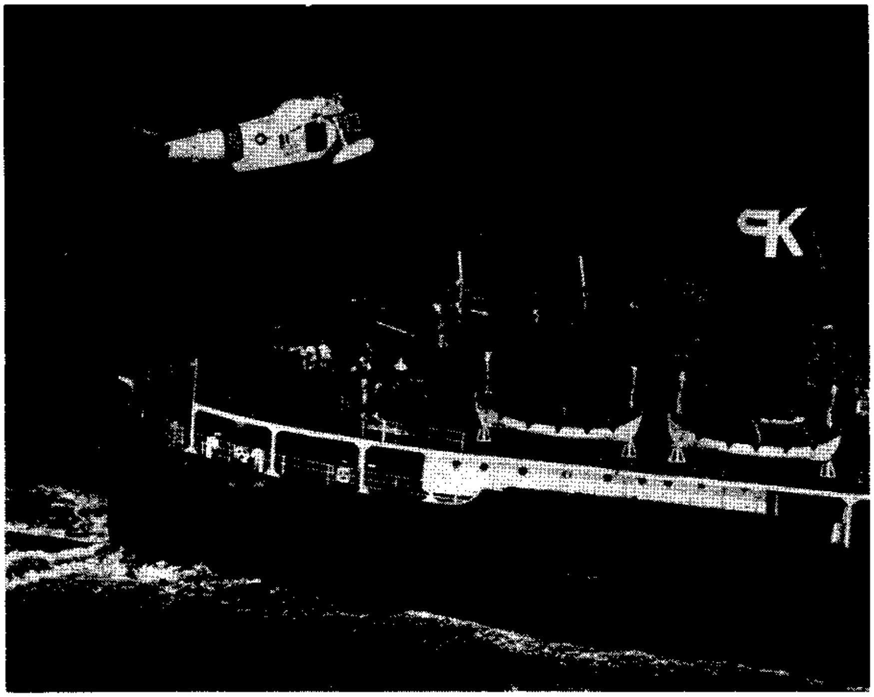
plunge into the ocean, the Russian vessel sent a motor launch to pick up the airman from an inflated rubber raft three-quarters of a mile away. On board the vessel, a Russian doctor treated his cut on the chin and bruises about the eyes. The Russians were commended by the Coast Guard Commander, Eastern Area for their quick response to this distress.

the helicopter by indicating thumbs up. It may be necessary to steady the basket as it is lifted off the deck in order for it to clear a rail or other low obstruction. Do not stand under the hoist.

If a stretcher is lowered, there are two possibilities. One, the patient may be readily available and can be immediately placed in the stretcher without unhooking it from the hoist. Two, it may be necessary to take the stretcher below decks to put the patient aboard. If this is the case, the stretcher must be unhooked from the hoist cable and the cable let go for the helicopter to bring it in. *Do not* try to take the stretcher away from the hoist point without unhooking it. As an example of what not to do, the crew of a small cabin cruiser tried to take a stretcher, still hooked to the hoist cable, into the cabin to put the patient aboard. They almost caused the helicopter to crash. Another vessel unhooked the stretcher and hooked the cable to the deck rail, causing a serious problem for the pilot and dangerously jeopardizing the safety of the helicopter and the entire mission. If it is necessary to unhook the stretcher, the pilot will probably retrieve the cable, then pull off away from the ship until he sees the patient aboard the stretcher and ready to be hoisted. He will then return to hoist position, lower the cable, wait for the hookup, and then make the hoist. Again, steady the stretcher to minimize the swinging and turning. Some units may provide steadying lines, however, extreme caution must be used to keep these from becoming tangled in any deck rigging or rails.

Once the patient is aboard the helicopter, and it has cleared away from the ship, the captain can sit back, breathe a sigh of relief, and "leave the driving to us." If he has followed the procedures outlined he has contributed greatly to the success of the mission, and can rest assured the patient will be delivered rapidly to medical authorities.

Some additional factors can be added for night operations. Night operations of a helicopter over water present additional problems of visibility and depth perception. Because of the inability of the pilot to judge his height above the water at night, he will probably make an instrument approach to the vessel. Lighting of the vessel and the hoist area is necessary, however, it is important not to shine any lights into the cockpit of the aircraft or to have any deck lighting pointing up toward the helicopter. This will tend to blind the pilot and dangerously disorient him. If a searchlight is used to help the pilot locate the ship, shine it vertically in the air and secure it once the helicopter has arrived in the area. Any boom lights used to light up the deck area should be directed down on the deck so as not to interfere with the pilot's vision.



A Coast Guard helicopter hoist lifts an ailing crewmember from the SS TRANSORIENT *150 miles out in the Gulf.*

If voice communications are established with the helicopter, escort aircraft, or both, the pilot will normally pass the needed information to the vessel.

The captain can anticipate the needs of the helicopter by following the information contained here. If no communications are available between pilot and ship, then these instructions are even more important to the captain so he will know how to assist in the evacuation. No mention has been made of using a small boat to transfer the patient. Although this procedure has successfully been used, it is the exception rather than the rule. It is best not to place the patient in a small boat unless specifically requested by the pilot. The hoist can normally be made from the deck of the vessel 99 percent of the time, especially with large seagoing vessels. If a small boat is used it should be only under relatively calm sea conditions. The boat should be underway during the hoist in order to maintain steerageway and keep from floundering around in the rotor wash of the helicopter. Always head into the wind or with the wind on the port bow.

In conclusion, every medical evacuation at sea by helicopter is different and frequently presents different problems. Operations at night and under poor weather conditions require the utmost caution and capability of the pilot. The information we have presented here will be a benefit, we hope, to both the Coast Guard and you, the merchant vessel captain.

The checkoff list appearing on the following page is so located in the Proceedings *to facilitate tearing out for display use without too greatly disturbing the remainder of the magazine.*

CHECKOFF LIST FOR HELICOPTOR EVACUATION

REMEMBER:

As master, each member of your crew is your responsibility and although the Coast Guard, the doctors, and other agencies may assist you, he is your man.

Helicopter evacuation is a hazardous operation to the patient *and* the plane crew, and should *only* be attempted in a matter of life or death. Provide the doctor with all the information you can concerning the patient so that an intelligent evaluation can be made concerning the need for evacuation.

Today's helicopters can only proceed between 100 and 150 miles offshore for a pickup, and then only if weather conditions permit; so, if an evacuation is necessary, you must be prepared to proceed within this range.

WHEN REQUESTING HELICOPTER ASSISTANCE:

a. Give accurate position, time, speed, course, weather conditions, sea conditions, wind direction and velocity. Type of vessel, voice and CW frequency.

b. If not already provided, give *complete* medical information including whether or not the patient is ambulatory. Refer to the chapter "Medical Advice by Radio" in the U.S. Government text, "The Ship's Medicine Chest and First Aid at Sea" for detailed instructions.

c. If you are beyond helicopter range, advise your diversion intentions so that a rendezvous point may be selected.

d. If there are any changes in any items, advise immediately. Should the patient expire prior to arrival of the helicopter, be sure to advise. Remember the flight crew are risking their lives attempting to help you.

PREPARATIONS PRIOR TO ARRIVAL OF THE HELICOPTER:

a. Provide continuous radio guard on 2182 kcs, or specified *voice* frequency if possible. The helicopter normally cannot operate CW.

b. Select and clear most suitable hoist area—preferably aft with a minimum of 50 feet radius. This must include the securing of loose gear awnings, antenna wire, trice up of running rigging and booms—if hoist is aft—lower flag staff.

c. If hoist is at night, light pickup areas as well as possible—be sure you *do not shine any lights* on the helicopter so the pilot is not blinded. If there are obstructions in the vicinity, put *a* light on them so the pilot will be aware of their position.

d. Point searchlights vertically for aid in locating ship and secure when helicopter is on scene.

e. Be sure and advise location of pickup area *before* the helicopter arrives so that he may adjust for and make his approach to aft, amidships or forward as required.

f. Remember there will be a high noise level under the helicopter so that voice communication is almost impossible. Arrange a set of hand signals among the crew who will assist.

HOIST OPERATIONS:

a. If possible have the patient moved to a position as close to the hoist area as his condition permits—TIME IS IMPORTANT.

b. Normally, if a litter is required, it will be necessary to move the patient to the special litter which will be lowered by the helicopter. Be prepared to do this as quickly as possible. Be sure patient is strapped in, face up with lifejacket if his condition permits.

c. Be sure patient is tagged to indicate what medication, if any, was administered and when.

d. Have patient's medical record and necessary papers in envelope or package ready for transfer *with* the patient.

e. Again, if the patient's condition permits, be sure he is wearing a lifejacket.

f. Change course to permit the ship to ride as easily as possible with the wind on the bow, preferably on the port bow. Try to choose a course to keep stack gases clear of the hoist area.

g. Reduce speed to ease ship's motion but maintain steerageway.

h. If you do not have radio contact with the helicopter, when you are in all respects ready for the hoist, signal the helicopter in with a "come on" with hand or at night by flashlight signals.

i. *Allow basket or stretcher to touch deck prior to handling to avoid static shock.*

j. If a trail line is dropped by the helicopter, guide basket or stretcher to deck with line; keep line clear at all times. Line will not cause shock.

k. Place patient in basket sitting with hands clear of sides or in the litter as described above. Signal helicopter hoist operator when ready for hoist. Patient signals by nodding head if he is able. Deck personnel give thumbs up.

l. If necessary to take litter away from hoist point, unhook hoist cable and keep free for helicopter to haul in. *DO NOT SECURE CABLE TO VESSEL OR ATTEMPT TO MOVE STRETCHER WITHOUT UNHOOKING.*

m. When patient is strapped in stretcher, signal helicopter to lower cable hookup, and signal hoist operator when ready for hoist. Steady stretcher from swinging or turning.

n. If trail line is attached to basket or stretcher, use to steady. Keep feet clear of line.

SAVE THIS CHECK LIST—THE INFORMATION IS ESSENTIAL. ⚓

MARITIME SIDELIGHTS

COAST GUARD COMMENDS RUSSIANS FOR RESCUE

Admiral Edwin J. Roland, Commandant of the U.S. Coast Guard has expressed his appreciation to the Russian Ambassador for the alert action on the part of the masters and crews of the Soviet vessels *Zelenogorsk* and *MVA 429* in rescuing two American fishermen and saving their damaged boat. The American fishermen were involved in a casualty off New England in January.

TOWING SIGNALS FOR DRACONES

The British Board of Trade in a Notice to Mariners (2156(T)) draws attention to the development of towed flexible oil barges (dracones). These barges, the notice warns, consist of a sausage-shaped envelope of strong woven nylon fabric coated with synthetic rubber. Since they float by reason of the buoyancy of their cargo, usually oil and petroleum products, they are almost entirely submerged. A typical tow would be 200 ft. long on a 100 fathom towline.

From: Journal of the Honourable Company of Master Mariners

MERCHANT FLEET UP

There were 972 vessels of 1,000 gross tons and over in the active ocean-going U.S. merchant fleet on December 1, 1965, 8 more than the number active on November 1, according to the Merchant Marine Data Sheet released by the Maritime Administration.

There were 70 Government and 902 private ships in active service. These figures do not include private ships temporarily inactive, nor do they include 24 vessels in custody of Defense, Interior, Coast Guard and Panama Canal Co.

Treasury Secretary Henry H. Fowler pins the Distinguished Service Medal on Admiral Edwin J. Roland, Commandant of the U.S. Coast Guard. The Nation's highest award for exceptionally meritorious achievement to a member of the Armed Forces was awarded to Admiral Roland for the notable advances that the Coast Guard has made as an Armed Force and a humanitarian agency under his leadership since 1962.

Admiral Roland was cited for his direction of the swift response of the Coast Guard last summer to urgent requirements for patrol craft for assisting in coastal surveillance work at South Vietnam, and his skillful guidance in the Service's handling of the Cuban Exodus operations in the Straits of Florida last fall.

Falling Men and Falling Objects

Holds and hatches pose one of the greatest shipboard threats to crewmembers and shoreworkers. It is necessary that extreme caution be exercised while preparing hatches for work and during cargo operations as the following incidents which claimed lives would indicate.

The Chief Officer of a vessel was supervising the securing of the ship for sea, and it was necessary to remove a tent which had been rigged over a hatch to permit the discharge of cargo in the rain. The tent was secured at the bottom of the hatch coaming, and it was fitted with a ring at its center which was held by a cargo hook and runner from the port forward boom.

In order to remove the canvas, one man was stationed on the promenade deck in order to make fast a line attached to the ring so that the tent would not fall into the hold when the runner was slacked. The runner was then slacked, with the boom spotted in such a manner that the hook was about 4 feet inboard and 4 feet aft of the forward port hatch coaming. In order to remove the canvas, it was necessary to remove the tent ring from the cargo hook.

At this time, the Chief Officer said that someone would have to step on the canvas to unhook the ring, stating that the canvas was strong enough to support the weight of a thousand pounds. He proceeded to stand on the coaming and test the canvas with one foot after which he stepped on the tent and unhooked the ring. Upon turning around to return to the deck, the canvas beneath his feet tore with a loud ripping sound. The Chief Officer plunged to his death through the hole, landing in the lower hold 35 feet below.

The Chief Officer could have probably prevented his own death if he had thought ahead while rigging the tent so that no one would have to get on the canvas in order to unhook the ring when taking it down.

An additional casualty which cost the life of the person in charge involved a Bos'n who was supervising the deck force in preparing the hatches for unloading upon arrival in port. All of the cargo booms were topped up and the runners crossed when the crew, with the exception of two men who were sent below to remove hatch boards from the upper and lower 'tween decks, commenced to uncover number three hatch.

The runners at the after and forward set of gear which served number three hatch were slacked off, and the forward runners were shackled together in preparation for removing the pontoons. The after runners were left laying slack on the after end of the hatch. The strongbacks, hatch wedges, and tarpaulins were removed, and five of the seven pontoons were also removed and placed on deck without incident. The Bos'n was standing on the after one of the two remaining pontoons. The forward set of cargo runners was then secured to the remaining forward pontoon, and the Bos'n gave the winch operator the order to "go ahead easy." As the pontoon slid forward, the cargo hook of the after gear which was laying on the pontoons dropped between them and fell into the hold carrying the slack of the cargo runner with it.

The runner struck the Bos'n in the legs and knocked him into the hold between the two remaining pontoons. Although he made an effort to grab the edge of the pontoon, the victim fell through the recently opened 'tween decks to the lower hold sustaining fatal injuries.

This tragedy could have been prevented in either of two ways. First of all, the Bos'n should have been standing on deck, NOT on the after pontoon; and secondly, care should have been taken to remove the slack from the runners not being used.

A longshoreman was recently killed while loading grain in an American port. The victim and a fellow worker were loading grain in the number three lower hold using a mechanized feeder which could be controlled (raised or lowered) by one man using a remote electrical control box. Three hatch boards had been removed allowing just enough space for the feeder to be lowered into the hold. A spoon which could be raised or lowered by a hydraulic jack was attached to the feeder in order to enable the men to shoot grain into the corners of the hold.

Prior to the casualty, the longshoremen had gone to the corner of the hold to see if the grain was falling correctly. They noticed that the grain was not reaching the desired area and decided that the spoon would have to be jacked up. Both returned to the feeder, and the victim commenced to jack up the spoon. His companion then returned to the corner of the hold to watch the flow of grain since their vision was obscured by grain dust. Shortly thereafter, the victim used the remote control to raise the feeder itself. The feeder rose and fouled the fourth beam of the lower hold. The beam dislodged and fell striking the longshoreman a fatal blow.

The investigation revealed that this casualty could have been prevented if the longshoremen had removed a sufficient number of boards to provide adequate visibility and if they had made sure that the remaining beams were locked in place so that they could not have been dislodged.

Another life was lost in a similar manner while longshoremen were engaged in removing a conveyor used to discharge bananas from the hold. After the cargo had been discharged from number two shelter and 'tween deck through the side port, the center section of plugs (insulated hatch covers used to maintain a constant temperature) was removed at deck level in order to facilitate removal of the conveyor. The work commenced, and the conveyor caught under the insulated hatch beam on the forward side of the opening dislodging the five plugs of that section. The plugs fell about 14 feet to the shelter deck below, and one or more struck a longshoreman inflicting fatal injuries.

It was subsequently determined that the conveyor was slightly longer than the opening through which it was being raised. Had the person in charge ascertained the length of the conveyor and removed an additional section of plugs, this casualty would not have occurred.

. . . . . and more

Stopper failures cause deaths

The deck crews of cargo vessels raise, lower, and shift the positions of cargo booms dozens of times during a voyage. Every detail of the operation, if not already so, soon becomes thoroughly familiar to each seaman involved. Unless the hazards which are always present in such operations are constantly borne in mind, this familiarity can lead to carelessness and accidents resulting in serious injury or death.

Let's look at two examples.

The deck gang was securing gear on a C3 freight vessel. Prior to shifting the wire topping lift to the winch for lowering the boom, a chain stopper was secured to the same padeye as the deck fairlead block. This chain stopper was led upward alongside the block and secured around the topping lift wire with three half hitches and three back turns. The man who passed the stopper held the end in place with his hand. Another seaman slacked the wire on the cleat until the stopper held the strain. He then removed the remaining turns from the cleat and attempted to turn the block for a fairlead to the gypsyhead. The block swivel was stuck, so the man holding the stopper kicked it around. The jar from the kick caused the wire to surge through the stopper and the boom began to fall. The man holding the stopper had his foot caught in a bight of the wire. Result: ONE FOOT AMPUTATED.

Aboard a C3 in another part of the world, a similar accident occurred. In this case the stopper was improperly applied and the turns immediately removed from the gypsyhead. The wire surged through the stopper; a foot was caught in a bight, and ANOTHER AMPUTATION RESULTED.

The following safety mishap is best explained by an excerpt from the Coast Guard report: ". . . the deck crew was engaged in securing No. 3 starboard after boom for sea. This boom had been topped up to the desired angle (aprox. 45°) by use of the topping lift wire rove through a snatch block shackled to the deck near the foot of the king post, and thence to the drum of No. 3 starboard after winch. When the time came to 'stop off' the topping lift wire and secure it to the cleat on the adjacent bulkhead, a chain stopper was applied, using three half hitches and four round turns. When the stopper had the weight of the boom, the wire was slacked off from the winch and two seamen attempted to open the snatch block. Difficulty was encountered in removing the locking pin, and at that moment the wire commenced to slip through the chain stopper. At this time an ordinary seaman was standing between the winches, where he had been taking in the slack of the schooner guy rigged between the heads of the two afterbooms at No. 3 hatch. The excess rope was lying about his feet. As the wire continued to slip through the stopper, it quickly gathered momentum until the boom was virtually falling free. The bos'n shouted a warning and all crewmembers in the vicinity took cover, with the exception of the ordinary seaman. As the boom fell, it caused the schooner guy to overhaul, bringing the portion of the rope which had been lying on deck upward with great force. The ordinary seaman's right leg became fouled in the schooner guy rope and he was therewith lifted bodily to the head of No. 3 port boom and held there by the weight of No. 3 starboard boom until such time as all the schooner guy rope had rove through the block at the head of No. 3 port boom, whereupon he was released by the rope and fell to the deck, landing on the side of his head, which caused injuries resulting in his death."

The lessons from casualties recently and presently appearing in the Proceedings *are written by Lt(jg) Hollis Thomas Fisher, USCGR, of the Casualty Review Branch.*

LESSONS AND MORALS

What caused these accidents? how did they happen? how can similar accidents be prevented in the future? The contributing causes for these accidents are: CARELESSNESS OF ACTION AND POOR SUPERVISION, involving failure to insure that everything is in order, all gear properly lined up and all personnel alert to the hazards before the crucial act of temporarily shifting the topping lift load from a cleat or gypsyhead to a stopper. In securing or raising cargo gear, unless constant care is exercised, topping lift wires, runners, and guy lines become spread all over the deck and hatch area. Unless these are properly laid out, someone is bound to get hurt. Before raising or lowering a boom, the topping lift wire should be faked out on deck, clear for running. The chain stopper should have a manila pigtail, and after the half hitches are passed, the end should be tied off to the wire and all hands stand clear of the fairlead block and the faked-out wire. Slack the wire slowly until the stopper firmly takes the strain, then quickly transfer the wire to the cleat or gypsyhead.

The bos'n or person in charge should carefully observe each detail of the operation and issue the necessary instructions, advice, or warnings to insure the safety of his gang. Regardless of supervision and housekeeping, the great majority of accidents in the U.S. merchant marine involve carelessness by the injured person. Nothing can take the place of individual caution and responsibility for one's own "skin." If a man is constantly aware of the hazards involved in cargo gear handling, painful, permanent, and fatal injuries can be eliminated. ⚓

Provide for Greatest Possible Safety

MORE FATAL FALLS

The reports read: "It is concluded that Mr. A died as the result of head injuries sustained when he accidentally fell into No. 4 lower hold," and "Mr. X died as a result of a fractured skull and brain hemorrhage subsequent to a fall aboard his ship." Reports of this nature could be cut down considerably if the persons involved would be more careful in their movements in and around holds, hatches, and tanks. Unfortunately, those persons from whom we learn such lessons are not around to benefit from them. ⚓

Caught by a Boarding Sea

A tanker was meeting wind and sea, Force 6, full on the port bow and the main deck was awash. When the first assistant received the chief engineer's order to transfer bunkers to the F.O. settling tanks, he phoned the bridge to ask for a course alteration which would bring the after main deck onto the lee side. The master obliged, replying "Wait until I confirm that the decks are safe to walk on." The Chief fireman and the wiper were summoned to stand by for orders. The ship was soon in a full swing to the starboard. The master was looking aft to reckon the safest course to steer when the fireman, unordered and unattended, jumped on the main aft deck and started twisting valves. The master's warnings were not heard because of the wind and distance, although the shouts aroused the bos'n and the chief mate. A huge wave caught the fireman on the portside near the F.O. tanks and threw him on top of the catwalk. The master, the two watch seamen, the bos'n, and the chief mate ran aft from the bridge to rescue the man.

Examination in the ship's hospital disclosed a large and deep wound in the scalp, large contusions of the right shoulder and right thigh, and a number of minor bruises. He was bleeding profusely from the scalp. Medical advice was requested from the Coast Guard and from the SS *Queen Mary*. The patient's head was disinfected with hydrogen peroxide and heavily bandaged. He was later hospitalized ashore and subsequently recovered.

By observing the simple safety maxim of familiarizing oneself with the immediate situation before committing oneself to action, an injury could have been prevented. Had the fireman awaited supervisory instruction, he would have saved himself serious hurt.

Courtesy Safety Bulletin, California Shipping Co.

Wire Rope Lubrication

Lubricating compounds play an important role in assuring that a wire rope will give satisfactory service in the field. The wire rope manufacturer must take two important steps to provide for the proper lubrication of a wire rope. First, the individual wires are drawn, then each is thoroughly coated with lubricant and helically laid into a strand. Next, the strands are helically closed around a core, either fiber plastic, or an independent wire rope core. High carbon wire is by its nature subject to immediate corrosion, so it is important that the entire surface of each individual wire is thoroughly coated with lubricant. The finish operation in ropemaking is called closing, since here the strands are closed around the core. Here also lubricant is again applied hot and coats the entire strand and fills the voids between the strands.

In the majority of cases, *wire ropes are not sufficiently lubricated during manufacturing to last for the entire life of the rope.* Field lubrication is therefore recommended in service. There is a variety of compounds acceptable for field application. Local oil and grease manufacturers and distributors should be contacted for their recommendation. Many users of wire rope do not realize the importance of lubrication. If it were possible to trace directly all rope failures due to lack of suitable lubricant the figures would be astounding. Not only would many failures be charged to lack of lubrication, but shutdowns and accidents also.

The user usually asks, "How could the lack of lubrication cause all the troubles charged against it?" If the user would only consider that in a 6 x 25 filler wire there are 150 wires plus a hemp core, the necessity for lubrication would be more evident. There are usually four wire sizes in the standard 6 x 25 filler wire construction. Each wire must be free to work in order that it may absorb its proportionate share of the shock received from the load and transmit it throughout the length of the rope.

EDITOR'S NOTE: The use of the proper lubricant for wire rope cannot be overemphasized. Black oil or other poor substitutes may contain high sulfur content or other corrosive agents which will hasten the deterioration of the wire. The more recently developed rope lubricants will preclude permeation by water under most adverse conditions.

From "Transactions of the Institute of Marine Engineers" as written by R. O. Kasten in Lubrication Engineering.

PMA on . . . . . .

Standing clear

When letting go the anchor, men should move aft of the windlass to avoid flying particles of rust or dried mud. Another reason is to avoid the remote but possible occasion of the parting of the anchor chain.

Tripping hazards

Regarding the tripping hazard presented by hoses on deck when taking fresh water: the condition can be improved by the use of a piece of canvas painted with high-visibility yellow, crossed with red stripes which is placed over the water hose when it is stretched across the deck. Be sure to disconnect this hose when finished.

The flame safety lamp

Why aren't flame safety lamps used more often aboard ship? They are carried by all, yet used by few. Each voyage presents conditions where the lamp should be used, particularly when entering deep tanks or double bottoms. These tanks are always a potential danger to the men entering them—unless the men know what they are doing.

When used correctly, the flame safety lamp will indicate both lack of oxygen and an explosive mixture inside a compartment. It stands to reason therefore that the lamp should be used in any long sealed compartments or tanks and any which have carried oxygen-consuming or gas-producing cargoes.

Courtesy Pacific Maritime Association

nautical queries

DECK

Q. What precautions must be taken in order to insure the accuracy of a bearing taken on a magnetic compass? On a pelorus?

A. Magnetic compass.—Correct the bearing for the deviation of the compass on that ship's head and for the variation of the locality.

Pelorus.—Be sure pelorus is set to exact ship's heading or else be sure that ship is steady on course and figure relative bearing from ship's head. Correct for deviation for ship's head and the variation of the locality.

Q. Name some of the factors you would consider in selecting a good anchorage site.

A. Adequate protection against storms, bottom characteristics for good holding ground, depth of water and sufficient sea room to veer chain or get underway if necessary.

Q. Does the duration of twilight vary with latitude? If so, explain why.

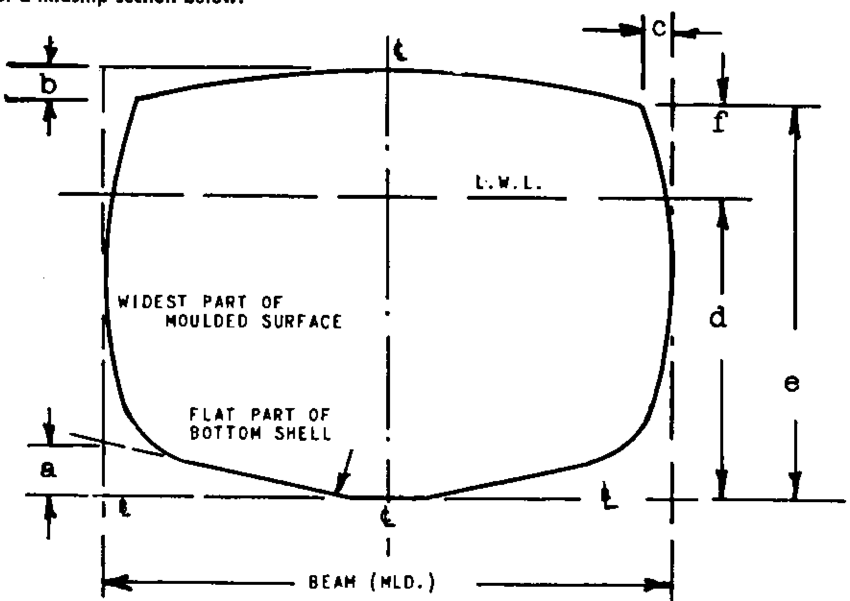
A. The duration of twilight varies considerably with latitude. Near the equator the sun rises and sets almost vertically, while at higher latitudes its path is slanted with respect to the horizon and a much longer time is needed for the sun to travel a given number of degrees vertically from the horizon (Duttons, 10th edition).

Q. If a star has a south declination of 40°, what is the northernmost latitude at which the star may be seen at lower transit, neglecting small corrections such as that for refraction, height, etc.?

A. 50° South.

SHIP CONSTRUCTION

Q. Name the terms and measurements indicated by the letters a to f on the sketch of a midship section below.



A. (a) Deadrise.
(b) Camber.
(c) Tumble home.
(d) Moulded draft.
(e) Moulded depth.
(f) Freeboard.

ENGINE

Q. (a) What is meant by "pressure stage?"

(b) What is a "velocity stage?"

A. (a) A pressure stage may be defined as any combination of a nozzle (or set of nozzles) with one or more rows of blades, in which a single pressure drop occurs between the inlet to the nozzle and the exit from the last row of blades.

(b) A velocity stage is one in which the speed at which steam flows while going through one set of vanes is reduced without reduction of pressure.

Q. What are the three principal reasons for the greater efficiency of the steam turbine when compared with the reciprocating engine?

A. 1. Its adaptability for using superheated steam.

2. The construction and operating features which permit the use of a higher degree of vacuum.

3. Its lower frictional losses.

Q. (a) Why isn't it necessary to have dummy pistons on impulse turbines?

(b) What purpose does the dummy piston serve on reaction turbines?

A. 1. Dummy pistons are not necessary on impulse turbines due to the fact that the pressure on both sides of the moving wheels is the same and hence there is no axial thrust transmitted to the shaft.

2. The purpose of the dummy piston is to produce a thrust toward the high pressure end counter-balancing the thrust in the opposite direction caused by the pressure drop in the turbine through the reaction blading.

Q. What is an attemperator and what is its purpose in connection with superheated steam?

A. The attemporator is a device for reducing the temperature of a fluid passing therethrough to any desired value. Its purpose in connection with superheated steam is to maintain a constant temperature of the steam at the outlet side of the superheater.

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

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

AMENDMENTS TO REGULATIONS

The *Proceedings* does not normally reprint Federal Register material in toto because of space limitations. Rather, as a public service, mention is made on this page of those Federal Register items published during the month that have a direct effect on merchant marine safety. Then, should one wish to read the regulation in its official presentation, he must purchase the applicable Federal Register from the Superintendent of Documents. Always give the date of the Federal Register when ordering. This date can be found in the *Proceedings* coverage of the item. See instructions in publications panel inside back cover.

TITLE 33 CHANGES

GULF COAST INLAND WATERS BOUNDARIES

The descriptions of the boundary lines from Mississippi Passes, La., to Sabine Pass, Tex., and from Galveston, Tex., to Brazos River, Tex. have been amended so that reference points will be identified by aids to navigation as listed in the Coast Guard's Light List.

These amendments appear in the Federal Register of February 5, 1966.

APPROVED EQUIPMENT

COMMANDANT ISSUES EQUIPMENT APPROVALS; TERMINATES OTHERS

By Commandant's action of January 20, 1966, Coast Guard approval was granted to certain items of lifesaving, firefighting, and other equipment and materials. Included were approvals for buoyant apparatus, gas masks, water lights, emergency drinking water, lifeboat disengaging apparatus, lifeboat hand propelling gear, motor propelled lifeboat, buoyant vests, buoyant cushions, ring life buoy, inflatable liferaft, work vests, fire protective systems, heating boilers, relief valves, backfire flame arresters, pressure vacuum relief valves, safety relief valves, boiler water level indicator, auxiliary boilers, semiportable dry chemical fire extinguishers, structural insulations, and incombustible materials.

Those interested in these approvals should consult the Federal Register of January 27, 1966, for detailed itemization and identification.

By Commandant's action of January 25 and 28, 1966 approvals were terminated on various items of lifesaving and miscellaneous equipment, installations, and materials used on merchant vessels subject to Coast Guard inspection and certain motorboats and other pleasure crafts.

On January 28 and February 3, 1966 the Commandant announced certain approvals in these same areas.

Those interested in these equipment list changes must consult the Federal Registers of February 2, 5, and 10, 1966.

STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from February 1, 1966, through February 28, 1966, inclusive, for use on board vessels in accordance with the provisions of Part 147 of the regulations governing "Explosives or Other Dangerous Articles on Board Vessels" are as follows:

CERTIFIED

DuBois Chemicals, Broadway at Seventh Street, Cincinnati, Ohio, 45202:

Certificate No. 281, dated February 8, 1966, SPREX AC.

Certificate No. 291, dated February 8, 1966, TRANSIT KLEEN.

Certificate No. 304, dated February 8, 1966, DYNA SPREX.

Certificate No. 407, dated February 8, 1966, ACTEX.

Certificate No. 637, dated February 8, 1966, C1102–B.

Certificate No. 638, dated February 8, 1966, FLOW.

Dunn Chemical Co., 571 Seventh Street, San Francisco, Calif., Certificate No. 487, dated February 14, 1966, DUNALL L.O.C./B.T.C.

Crosbie-Bamert, Inc., 1717 Fourth Street, Berkeley, Calif., 94710, Certificate No. 639, dated February 8, 1966, HYDRO-PURGE #16.

The Perolin Co., Inc., 350 Fifth Avenue, New York, N.Y., Certificate No. 640, dated February 15, 1966, PEROLIN FUEL OIL TREATMENT NO. 687–SD.

Hemisphere Marine Chemicals Co., Inc., 8–10 Bridge Street, New York, N.Y., 10004, Certificate No. 641, dated February 23, 1966, HEMCO NO. 2.

United States Rubber Co., 1230 Avenue of the Americas, New York, N.Y., 10020, Certificate No. 642, dated February 25, 1966, HYDRAZINE (Solutions).

AFFIDAVITS

The following affidavits were accepted during the period from December 15, 1965, to February 15, 1966:

Jones and Laughlin Steel Corp., 3 Gateway Center, Pittsburgh, Pa., 15330, PIPE AND TUBING.[1]

Hammond Valve Corp., 1844 Summer Street, Hammond, Ind., 46320, VALVES.[1]

Weldbend Tubular Products Co., 3601 West 53d Street, Chicago, Ill., 60632, FITTINGS AND FLANGES.[1]

Hays Manufacturing Co., 801 West 12th Street, Erie, Pa., 16512, VALVES.

Warren Automatic Controls Corp., Route 24, Broadway, N.J., 08808, VALVES.

Uddeholm Steel Corp., 721 Union Boulevard, Totowa, N.J., 07512, PIPE AND TUBING.[2]

Crawford Fitting Co., 29500 Solon Road, Solon, Ohio, 44139, FITTINGS.[3]

Continental Manufacturing Co., 4545 Alpine Avenue, Cincinnati, Ohio, 45242, VALVES.[3]

AerValco Engineering Corp., 4939 North Earle Street, Rosemead, Calif., VALVES.

Stainless Products Co., P.O. Box 33266, Houston, Tex., 77033, FITTINGS.

Parker Galion, Inc., 523 Primrose Street, Galion, Ohio, 44833, FITTINGS.

U.S. Steel Corp., 525 William Penn Place, Pittsburgh, Pa., PIPE AND TUBING.

American Cast Iron Pipe Co., P.O. Box 2603, Birmingham, Ala., 35202, PIPE AND TUBING, FITTINGS AND FLANGES.

National Tube Division, U.S. Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa., PIPE AND TUBING.[4]

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[1] Omitted from the August 3, 1964 edition of CG–190.

[2] New address and name.

[3] New address.

[4] Delete listing from the August 3, 1964 edition of CG–190.

MERCHANT MARINE SAFETY PUBLICATIONS

The following publications of marine safety rules and regulations may be obtained from the nearest marine inspection office of the U.S. Coast Guard. Because changes to the rules and regulations are made from time to time, these publications, between revisions, must be kept current by the individual consulting the latest applicable Federal Register. (Official changes to all Federal rules and regulations are published in the Federal Register, printed daily except Sunday, Monday, and days following holidays.) The date of each Coast Guard publication in the table below is indicated in parentheses following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

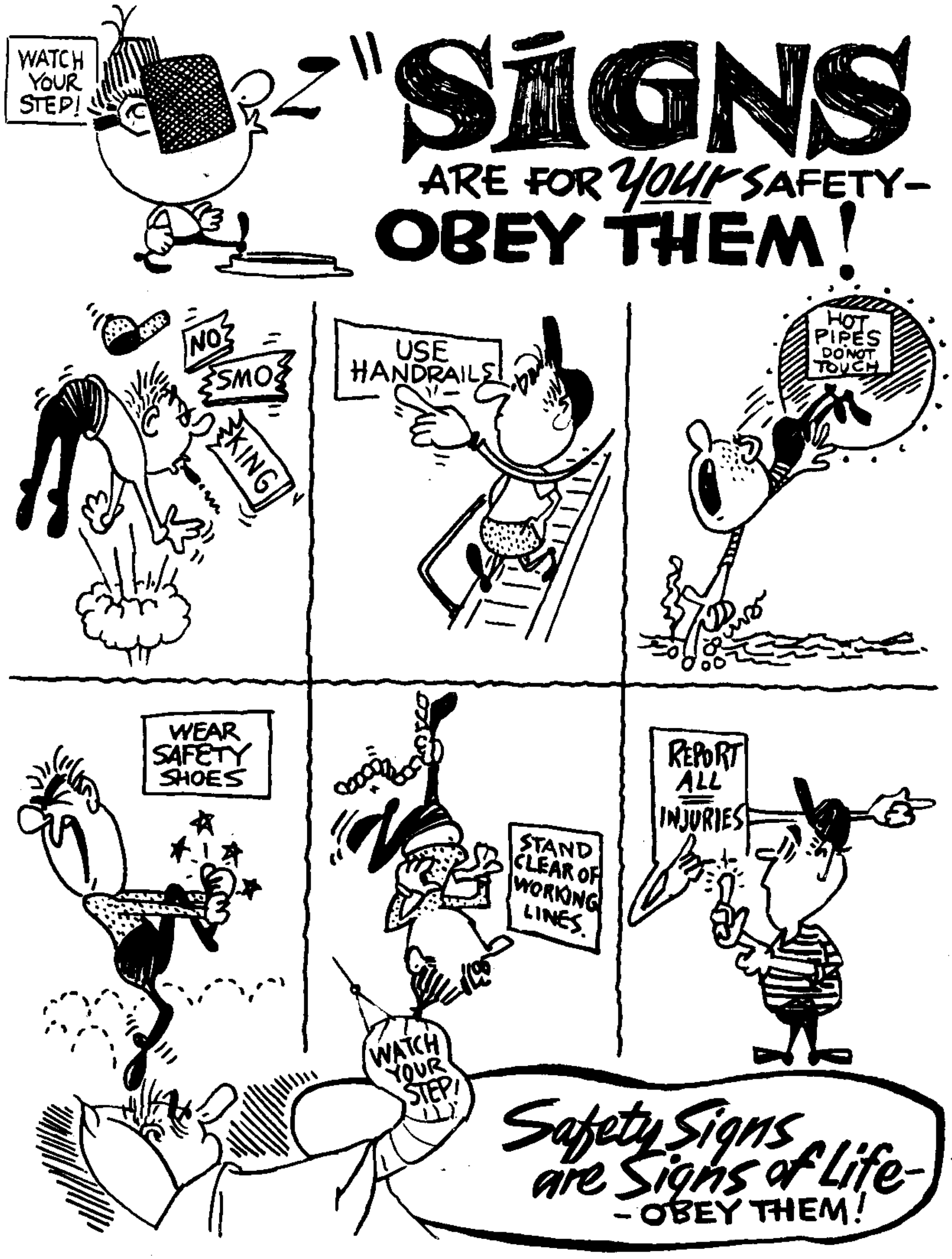
The Federal Register may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. Subscription rate is $1.50 per month or $15 per year, payable in advance. Individual copies may be purchased so long as they are available. The charge for individual copies of the Federal Register varies in proportion to the size of the issue but will be 15 cents unless otherwise noted in the table of changes below. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated January 1, 1965 are now available from the Superintendent of Documents, price $2.75.

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (7–1–63).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (8–1–62).
115	Marine Engineering Regulations and Material Specifications (9–1–64). F.R. 2–13–65, 8–18–65, 9–8–65.
123	Rules and Regulations for Tank Vessels (4–1–64). F.R. 5–16–64, 6–5–64, 3–9–65, 9–8–65.
129	Proceedings of the Merchant Marine Council (Monthly).
169	Rules of the Road—International—Inland (9–1–65). F.R. 12–8–65, 12–22–65, 2–5–66.
172	Rules of the Road—Great Lakes (6–1–62). F.R. 8–31–62, 5–11–63, 5–23–63, 5–29–63, 10–2–63, 10–15–63, 4–30–64, 11–5–64, 5–8–65, 7–3–65, 12–22–65.
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids (3–2–64).
175	Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (3–1–65).
176	Load Line Regulations (7–1–63). F.R. 4–14–64, 10–27–64, 9–8–65.
182	Specimen Examinations for Merchant Marine Engineer Licenses (7–1–63).
184	Rules of the Road—Western Rivers (6–1–62). F.R. 1–18–63, 5–23–63, 5–29–63, 9–25–63, 10–2–63, 10–15–63, 11–5–64, 5–8–65, 7–3–65, 12–8–65, 12–22–65, 2–5–66.
190	Equipment lists (8–3–64). F.R. 10–21–64, 10–27–64, 3–2–65, 3–26–65, 4–24–65, 5–26–65, 7–10–65, 8–4–65, 10–22–65, 10–27–65, 1–27–66, 2–2–66, 2–5–66, 2–10–66.
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel (2–1–65). F.R. 2–13–65, 8–21–65.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (10–1–63). F.R. 11–5–64, 5–18–65.
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels (4–1–57).
227	Laws Governing Marine Inspection (3–1–65).
239	Security of Vessels and Waterfront Facilities (7–1–64). F.R. 6–3–65, 7–10–65, 10–9–65, 10–13–65.
249	Merchant Marine Council Public Hearing Agenda (Annually).
256	Rules and Regulations for Passenger Vessels (4–1–64). F.R. 6–5–64, 8–21–65, 9–8–65.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (9–1–64). F.R. 2–13–65, 3–9–65, 8–21–65, 9–8–65.
258	Rules and Regulations for Uninspected Vessels (1–2–64). F.R. 6–5–64, 6–6–64, 9–1–64, 5–12–65, 8–18–65, 9–8–65.
259	Electrical Engineering Regulations (7–1–64). F.R. 2–13–65, 9–8–65.
266	Rules and Regulations for Bulk Grain Cargoes (7–1–64).
268	Rules and Regulations for Manning of Vessels (2–1–63). F.R. 2–13–65, 8–21–65.
269	Rules and Regulations for Nautical Schools (5–1–63). F.R. 10–2–63, 6–5–64, 8–21–65, 9–8–65.
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, 9–8–65.
293	Miscellaneous Electrical Equipment List (6–1–64).
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, 4–24–63, 10–27–64.
323	Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (1–3–66).
329	Fire Fighting Manual for Tank Vessels (4–1–58).

CHANGES PUBLISHED DURING FEBRUARY 1966

The following have been modified by Federal Registers:
CG–190, Federal Registers, February 2, 5 and 10, 1966.
CG–169 and CG–184, Federal Register February 5, 1966.

U.S. GOVERNMENT PRINTING OFFICE: 1966



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