PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

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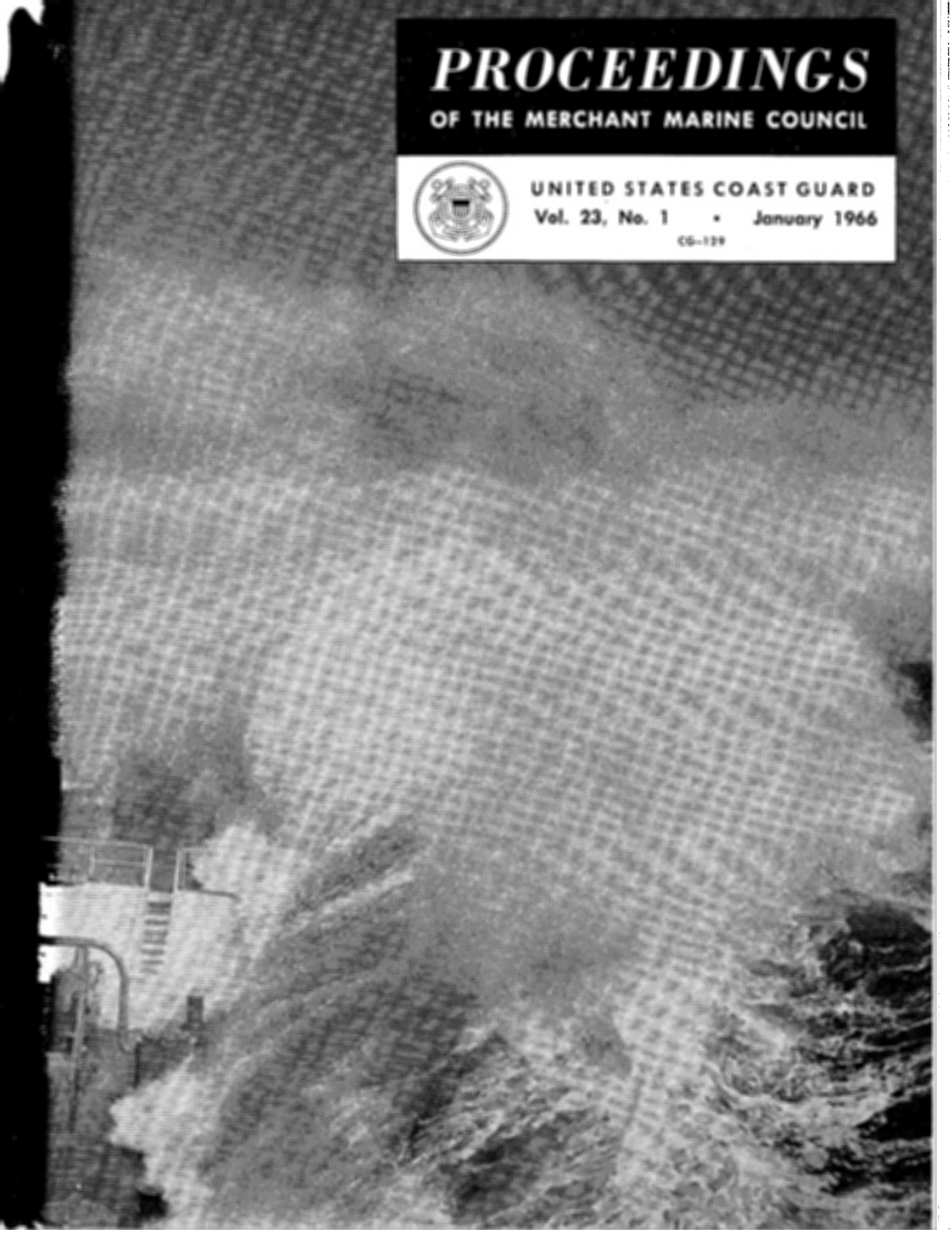

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OF THE

MERCHANT MARINE COUNCIL

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Lieutenant A. J. Arnett, USCG, *Editor*

T. A. DeNardo, *Assistant Editor*

IN THIS ISSUE . . .

Some advice for making passage in heavy weather is given, beginning page 4.

The Seamen's Church Institute of New York and its training school are visited, beginning page 8.

Another paper from last May's New York SAR Seminar is presented on page 10.

RETIREMENT CEREMONIES AT THE NATIONAL SAFETY COUNCIL MARINE SECTION

CAPT. GEORGE H. E. BUXTON (left) retiring General Chairman of the Marine Section, National Safety Council, receiving a mounted ship's clock as a token of appreciation. Presentation was made by RADM I. J. Stephens, USCG, Commander, Third Coast Guard District and Eastern Area (center). At right is Bruno J. Augenti, Chairman of the Awards Committee.

Incoming General Chairman is Wainwright Dawson, Safety Engineer of Bethlehem Steel Corp.

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

CONTENTS

COVERS

Front: The tanker WESTERN SUN plows into heavy seas. *Courtesy Sun Oil Co.*

Inside Front Cover: The Coast Guard Cutter *Humbolt* takes her ocean station and finds it rather rough going. She will spend some 3 weeks on her lonely, wallowing vigil.

Back: Safety poster *Courtesy Mobile Oil Co.*

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A: a b c d e w(2); f g h i j k l m n o p q r s t u v(1)
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D: i(5); a b c d e f h k l m r u v w(1)
E: None
F: None
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Common sense advice to the less experienced on conducting a vessel through rough weather passage was the order of the day not too-long-ago at a meeting of The Honorable Company of Master Mariners in London. The advice is universal and most apropos this winter season. It is our pleasure to pass it along to an even wider audience.

Ship Management In Heavy Weather

Captain G. Lindsey

THE INDULGENCE of senior shipmasters is craved in placing before less experienced members of the profession the following considerations concerning deep sea ship management in heavy weather. The ordinary practice of seamanship should cover everything stated, but it will be agreed that the ever increasing repair yard costs makes the school of experience an extravagant method of instruction which much be supplemented in every way possible. For there can be little doubt but that a considerable amount of weather damage sustained in way of hatches, ground tackle, rudders, and setting down of decks, etc., apart from the more serious strains through pounding, racing, and laboring, could be reduced with a better appreciation of the problems involved, especially in regard to engine speed and steering in adverse sea conditions. There may be some who consider that it is sufficient to enter port with varying degrees of damage, relying on suitable log book entries to absolve the ship from blame in the matter, but such recourse can bring little satisfaction either to the master, the owners, or underwriters involved.

Having for some 20 years commanded passenger and cargo liners, general traders, bulk carriers, and tankers the writer has gained a fairly wide experience in this matter. It is of course well known that no two ships are exactly alike, even sister ships vary in their behaviour at sea, and lines and engine power make so much difference. In the low powered bluff bowed ore carrier, damage in heavy weather by excessive speed is not perhaps so likely, for engine revolutions will at least to some extent automatically drop when driving against head winds and seas, and nursing such ships may then consist of little more than keeping the most comfortable course compatible with the direction it is intended should be made good. But in every trade faster ships are now the order of the day, the 10 to 12 knotter being rapidly linked with the past. And it would appear that it is just when the vessel's capacity exceeds this low minimum that the trouble begins, for damage by excessive speed can so easily be sustained unless a constant weather eye is lifted and timely action taken.

In passenger liners and other vessels where the maintaining of timed schedules is essential it may be found necessary at times to continue at speeds which would otherwise be undesirable, and in any case such ships are generally strengthened for the purpose. But in the great majority of general traders, bulk carriers, tankers, and tramps, the master will surely best serve his owner's interests by carefully nursing his ship through heavy seas, reducing speed as necessary to insure that damage is kept to an absolute minimum. By "reducing speed" is not meant just a token adjustment to comply with the "reduced speed for heavy weather" entry in the log book, but a realistic reduction to suit the circumstances. It will often be found that a reduction of perhaps up to a quarter of the maximum revolutions will ease the strain considerably with little loss of speed in the prevailing conditions. Greater reductions should however be accepted without hesitation if conditions so warrant, the resultant saving in fuel, apart from any other factor compensating to a considerable extent for mileage losses. Many vessels employed on charter work will have speed clauses in their agreements with which their masters will be anxious to comply, but even here every advantage should be taken of fine weather to maintain satisfactory overall speeds, easing engine revolutions when occasion demands. To assess and allow properly for the changing situation requires the master's constant attention and it need hardly be stated that when speed is reduced the keenest watch must be kept for any improvement in conditions which can justify increased revolutions. The operative word is "nursing" (to tend, foster, and preserve) calling for unfailing vigilance, in shepherding the vessel through heavy weather.

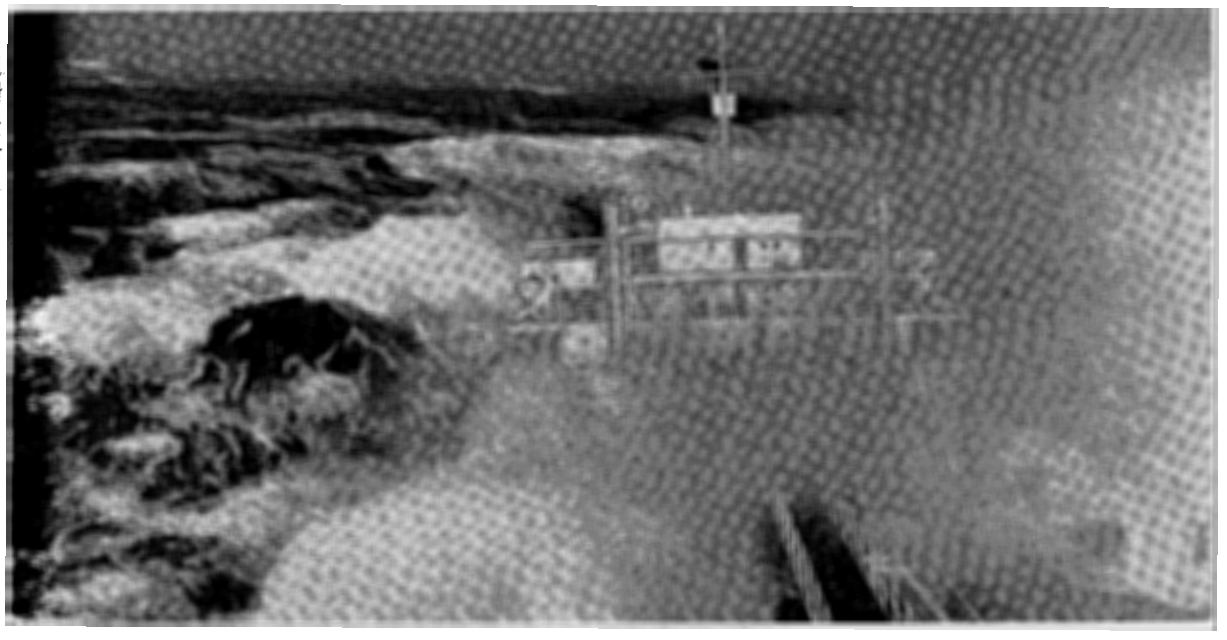
As already stated to achieve satisfactory overall speeds it is manifestly necessary to take every possible advantage of fine weather conditions. Draught, trim, and condition of ship's bottom are the factors governing speed in fine weather, the master having a varying amount of control over the former two. In the loaded condition most vessels get along best on a more or less even keel, they should never be trimmed much by the stern, and some vessels will even make better speed when trimmed a little by the head than too much otherwise. When light, the propeller should of course be sufficiently deep in the water to get a good "grip," possibly just completely submerged, whilst the draught forward should be as light as can be without allowing pounding to take place. Those keen enough will carefully study the "slip" figure from passage to passage, for by so doing a fair idea may be obtained of speed efficiency in relation to weather, engine revolutions, and condition of ship's bottom. True slip incidentally is the difference between distance by engine (pitch × revs), and the *cor-*

log distance. In other words difference between the distance would be covered through the if there were no frictional losses, that actually covered through the *by the effort of the engine.* To distance by observation for pitch culations is erroneous, for such dis- could be almost anything de- ing on current, tide, etc. But the of the log, which must be care- ascertained over known dis- es and conditions, must always be lied to make the pitch calculations any real value. Generally speak- a vessel with a clean bottom uld in fine weather suffer a slip of more than 6 percent. It follows slip must be positive, and a "neg- e slip" can only be described as malous.

Apart from speed control in nursing vessel, it will be appreciated that essive pitching, lurching, and roll- can often be eased by compara- ly small alterations of course. To vent isochronism a vessel's period pitch or roll (in itself dependent weight distribution, draught, etc.) st be kept out of step with the wave le, and it is obviously here that ll alterations of course or speed sometimes be so beneficial. Pos- ly only after a period of trial and ror, but well worth the effort just e same.

Stability, another factor affecting ship's behaviour at sea, is one over ich the master today has decreas- ing control. When loading general traders, the rotation of discharging ports, part cargo problems, etc., have often to be given prior consideration to the niceties of the GM calculation, and in the light condition such ves- sels, even with ballasted deep tanks, will always be stiff. But where ship's personnel do have control over the loading distribution efforts to obtain suitable metacentric heights will pay dividends. A tender ship is always preferable to one with excessive right- ing moment, the writer having served for many years in ships carrying full citrus cargoes with large quantities on deck, where the GM is unavoid- ably reduced to an almost minus fig- ure. Whilst this makes for heavy slow rolling such ships are neverthe- less comfortable and do not suffer any straining. On the other hand in tankers and bulk ore carriers the met- acentric height is more or less fixed, whether in the light or loaded condi- tion, and is always high. In this con- nection mention should be made of the advantages to be gained from some bulk carriers, wing tanks en- abling these compartments, with their comparatively high center of gravity, to be used in preference to the DB's. Again in tankers slack tanks should be avoided where possible, apart from other reasons, to decrease metacen- tric height.

Draught and trim, especially in the ballast condition, and trim particu- larly as apart from actual draught, must be carefully arranged and ad- justed, for suitable trim can do much to alleviate the strains of pounding and engine racing. Here the master can do quite a lot depending on the type of vessel. Ideally it might be said that the draught when ballasted should be sufficient just to submerge the propeller and forward enough to prevent any pounding being felt in rough seas. Whilst it is appreciated that such disposition cannot often be completely achieved in general trad- ers, there would appear to be no rea- son why tankers and bulk carriers cannot at all times be satisfactorily ballasted in this respect. Tankers must approach their loading berths with minimum ballast to assist quick turn around, but draught and trim in such vessels is easily adjustable at sea, and no effort should be spared in so doing at any time to suit varying weather conditions. For whilst on the one hand there is no point in trapesing cargoes of water around the oceans, neither should the ship be allowed to suffer through insufficient, or incorrectly distributed, steadying weight. In really fine weather condi- tions, such as are experienced a good deal in many tanker trades, the writer has found that the effort of reducing the quantity of ballast to an absolute minimum has been rewarded by quite exceptional speed averages. The whole matter of ballasting forms an important factor in ship nursing, and whilst many smaller vessels get



Courtesy Texaco

Towering waves temporarily submerge the catwalk connecting the midship house with the aft quarters of this Texaco tanker. On the latest tankers in the Texaco fleet, the catwalk has been replaced with a patented underdeck tunnel, which protects both seamen and equipment from rough seas.

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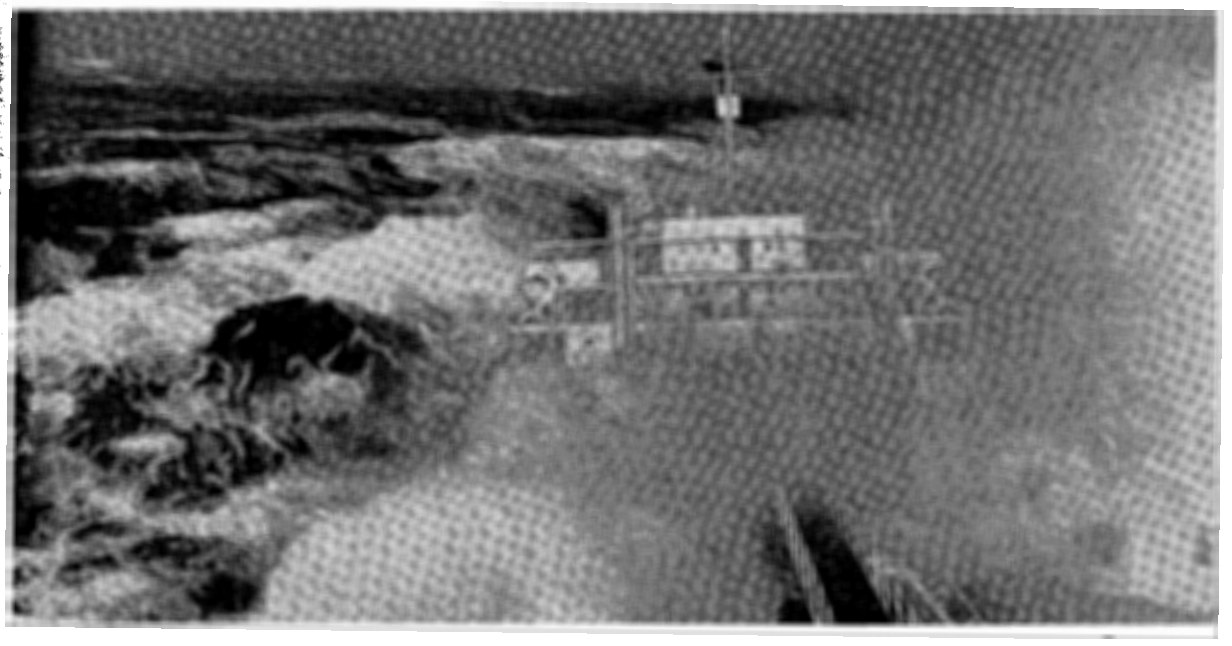


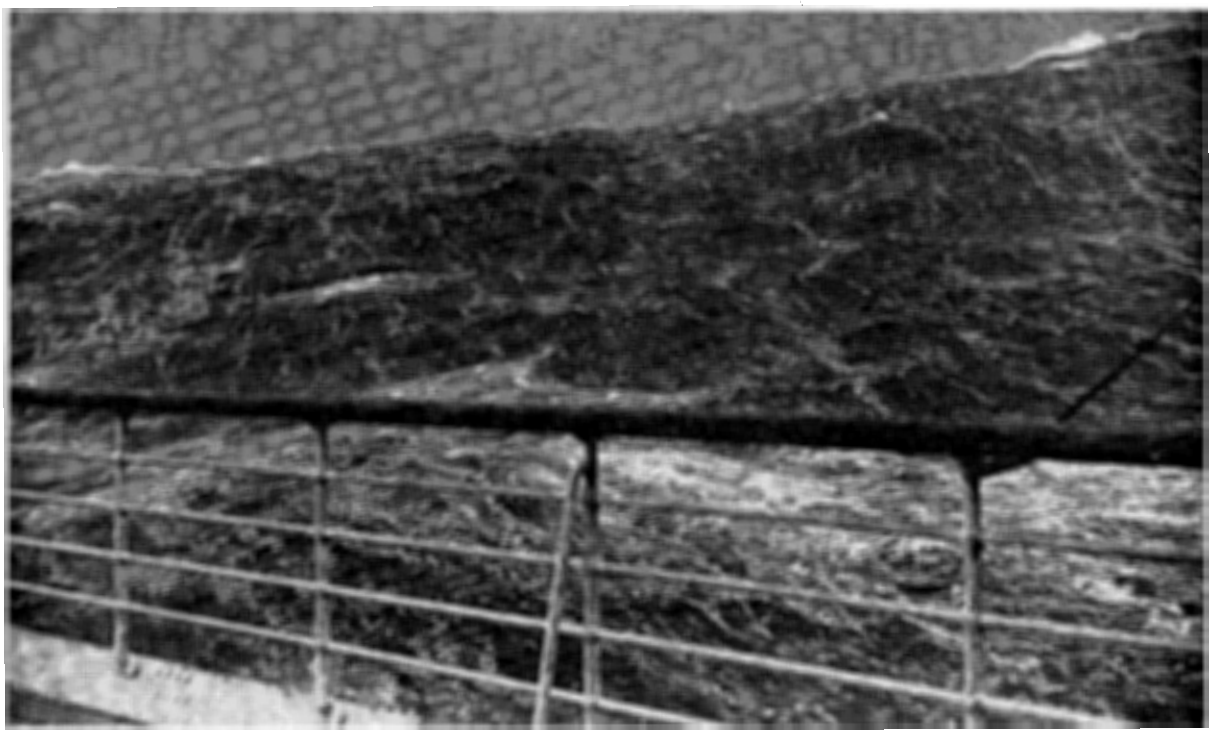
Courtesy Texaco

Towering waves temporarily submerge the catwalk connecting the midship house with the aft quarters of this Texaco tanker. On the latest tankers in the Texaco fleet, the catwalk has been replaced with a patented underdeck tunnel, which protects both seamen and equipment from rough seas.

around perfectly well without permanent ballast arrangements of any kind, other than their DB tanks, masters should surely take every advantage of such facilities as are placed at their disposal.

The increasing popularity of the bridge aft design, in the construction of all types of vessel, has highlighted another problem in ship management at sea, that of vibration. Excessive vibration is the cause of much damage on board ship, and although not directly connected with heavy weather this trouble can be much accentuated by it. In the bridge aft vessel the navigational instruments are particularly vulnerable to damage by vibration, for it would be difficult to imagine a more unsatisfactory position than high up on a ship's bridge placed almost directly over the stern area, for the siting of this delicate equipment. Yet there, of course, it has to be, and even so it is still common practice to bolt radar sets, gyro compasses, etc., directly to decks and bulkheads without any form of cushioning whatsoever. As a result equipment in this type of vessel often needs servicing, and whilst the problem of vibration is now the subject of serious study in ship design, this point might well be given more immediate consideration, and attention. Action by the master to lessen vibration would seem to be confined to avoiding critical speeds and racing of the main engines, but alterations to trim and ballast, often quite limited, can sometimes help in this direction. The more distressing vibrational disturbances on board ship originate around the propeller cavity, and generally decrease with deeper draft. Vibration is, of course, another problem devolving from isochronism, and apart from basic ship design, the positioning of mechanical auxiliaries, layout of piping, method of securing, etc., have all to be considered in attempts to abate this nuisance.

To prevent unnecessary wear and tear on the rudder, its carrier, engine, and bearings, in heavy seaways, the helmsman should be warned against the practice of applying continual and excessive helm in the fruitless task of keeping the vessel exactly on her course. The aim must always be to find and carry the right amount of helm to keep the vessel reasonably close to the direction intended, thereby relieving the rudder of the intolerable strain of constant movement. Automatic steering gear, with rudder angle adjustment and yaw controls, is now rapidly becoming standard equipment. But these controls must be properly understood and adjusted to suit varying weather conditions. The right amount of adjustment can perhaps best be ascertained by studying the rudder indicator, and whilst in rough weather greater yaw must be permitted, the rudder angle adjustment will also need some increase to prevent "hunting." Makers of automatic steering equipment boldly refer to their equipment as "Brains Units," but their admittedly clever devices have yet to be "taught" to carry helm, and until this can be achieved an experienced helmsman will best nurse the vessel through really adverse sea conditions. That experienced helmsmen are difficult to find these days is appreciated, but they can be taught. Here it might be mentioned that on altering course at any time when proceeding at full speed it is obviously undesirable to put the helm "hard over" unless the alteration of course desired is urgent.



Susceptibility to deck weather damage must be linked to a considerable degree with freeboard, the loaded tanker and deadweight ore carrier being particularly vulnerable in this respect. A few years ago due chiefly to the multiplicity of watertight compartments, new rules were introduced allowing deeper loading in this type of vessel, the minimum freeboard being reduced by some 18 inches in the case of a 15,000-ton deadweight ore carrier commanded by the writer at that time. With such little freeboard the decks of this vessel were continually awash even in moderate weather, heavy seas being constantly shipped and, due to the open bulwarks, as quickly thrown off again. The ves-

rolled with a period of not more than 6 seconds, so that no water remained on board for long, and experience showed that this deeper loading did not lessen the safety factor provided that the vessel was properly nursed as occasion demanded. In such vessels, with long open sweeps of deck, great care must be taken to prevent heavy seas landing on board with gathering momentum, carrying away fittings, etc. Deckhouse bulkheads, apron plating, etc. are particularly vulnerable in this type of ship, and the breakwaters sometimes provided are most helpful. Masters of vessels whose employment includes the carriage of fragile deck cargoes soon appreciate the need to avoid shipping heavy water and do not hesitate to heave to completely when occasion demands, for it is the accepted thing to deliver such cargoes damage-free. Admittedly these vessels, mostly of the shelter deck type have high freeboards, and with care and attention can normally be kept reasonably dry. Here it might be suggested that masters employed by companies operating ships of various design and speed should bear in mind the very different propensities of the vessels to which they may be appointed.

Every experienced seaman will know that it is essential for anchors to be hove absolutely tight home and properly secured when proceeding to sea to prevent anchor flukes, shipside plating in way of same, and hawse and spurling pipes sustaining fractures and other damage through movement at sea. Frequent inspection of ground tackle should be carried out in heavy weather to insure that all is well in this respect. Flooded forecastle spaces causing considerable store damage result from failure to place weather boards in position and tonnage openings in shelter deck vessels are especially vulnerable. Need it be mentioned that ports especially in the lower accommodation must be the subject of regular overhaul both as to packing and greasing of lug screws, whilst timely warning before alteration of course into a beam sea sent down particularly to the galleys and pantries can avoid personnel accidents involving heavy claims. All common practice of seamen of course, but sometimes overlooked.

There is talk these days of the crewless vessel ploughing the oceans by remote control when the electronic device will take the place of seamanship and the shipmaster's profession lost in the mist of antiquity but until that time does come along surely it is necessary that a ship shall be properly chaperoned, and there can be no greater satisfaction to a shipmaster than to bring his ship safely into port, damage free, after a successful voyage. ⚓

Swedish freighter Orion *labors in heavy seas 430 miles northwest of Achill Head, Ireland, after radioing an urgent message on October 13, 1965, that she had three cracks in her decks. The U.S. Coast Guard Cutter* Northwind *stood by the freighter and her 30 crewmen for more than 12 hours until the seas abated.*

Four days later the Orion *again radioed for assistance when she was in heavy seas 680 miles northeast of Cape Race, Newfoundland. The Cutter* Northwind, *a 269-foot icebreaker, again stood by the freighter and escorted it to the safety of the sheltered waters of the Gulf of St. Lawrence. The freighter was en route Toledo, Ohio, from Leppaluoto, Finland, with a cargo of wood pulp.*

The tankship California Standard *negotiating the not-too-placid San Francisco Bar.* *Courtesy Standard Oil Co. of California*

Seamen's Church Institute

THE MERCHANT MARINE SCHOOL of the Seamen's Church Institute of New York has operated consistently under the guidance of a highly competent and qualified staff licensed by the University of the State of New York since 1916.

For almost a half century it has taught navigation, marine engineering, and related subjects to young men intent on making a career in the Merchant Marine.

During times of emergency the school greatly enlarged its facilities, training thousands, enabling them to secure licenses as mates and engineers for ships vital to sea communications. During times of peace with jobs at a premium and the demand for skills constantly rising, seamen rely on the school to help them climb the ladder to advancement and success.

Courses are offered for original and raise of grade in deck and engine departments for U.S. Coast Guard licenses. They include courses for Third Mate through Master, Ocean Unlimited and Third Assistant Engineer through Chief Engineer, Steam and Diesel; and refresher courses for renewal of license.

Instruction to unlicensed seamen for endorsements as Lifeboatman, A. B., Electrician, Reefer, Oiler, Fireman, Watertender, and Pumpman are also offered. Special features of the course include arrangements that can be made for shipboard study 6 months before the student is eligible to sit for exams. He can thus reduce the amount of time spent in actual school attendance. The student may set his own pace. The school is open all year and length of course depends on the student's ability. If he has any difficulty he will be tutored. Classes are small and the student receives individual attention. Scholarships are available and reduced tuition rates make it possible for more seamen to attend. The school was established in 1914 cooperatively with the Y.M.C.A and became autonomous in 1918. It is located at 25 South Street, New York, N.Y., 10004.

At the request of the Navy, the Marine School trained over 5,000 men in emergency seamanship during World War I. The Marine School instituted the first radio medical service to ships without doctors in 1921. Parts of Marine School are located in a "flying bridge" designed exactly like ship's bridge, the "highest in the world—13 stories above the ground."

A poster in the Seamen's Church Institute lobby promoting the school shouts "Your future in a pushbutton world?" The message points up the opportunity for specialized training in navigation and engineering in SCI's 49-year-old teaching center.

If there is an element of threat in the message, it is on purpose. Technological advances in the industry presage that unskilled seamen in the near future might as well pack up and go home. Automation isn't coming; it's here. The school has enjoyed a top reputation in the industry since its establishment. Last year the board of managers implemented newer teaching methods and programs to keep pace with the technical progress of the industry it serves. To meet increased enrollment, the school was forced to add additional faculty.

"Education at any level is expensive, but educate we must," affirmed Chaplain Joseph D. Huntley, Director of the Department of Education who revealed that the school consistently operates at a painful deficit of nearly a thousand dollars a month. "We have to keep the tuition low to aid seamen who have nowhere else to go, and without training will desert the industry," he said. "What can we do? We have a deficit and our problem is to give the best possible education with the resources we have."

The full-time faculty now consists of three (all of whom came up from the ranks), and a registrar for 177 students. An annual check for $2,500 from the Rudder Club allows some scholarship help to promising seamen. Small occasional donations to the scholarship fund come from other organizations.

In addition to the modest tuition charged by the school, it attracts students because of other features. They are: (1) Intensive, accelerated preparation for licensing exams through a fully accredited school; (2) informal, small classroom situations and tutorial help with special problems; (3) coordinated self-helps through the school's technical library and the 8,000-volume Conrad Library; (4) SCI's proximity to the Coa Guard examination center, and rad school at 45 Broadway; (5) availa bility of printed study material maile from the school to active seamen prepare in advance of class attend ance; (6) teaching machines that c be taken to the ship for supplement help in math and physics; (7) thoughtful faculty of experienced se men who anticipate bad study habi and make remedial suggestions, an (8) living and study accommodation

For students in residence, SCI se aside a hotel area accessible to th school, and completely modernized early this year. The entire classroo and school administrative area wa modernized in 1962–63.

The Seamen's Church Institute o New York is the world's largest shor center for merchant seamen of a nations, races, and creeds. The Rev erend John M. Mulligan is Director

Established by the Protestant Episcopal Church, the Institute is a nonsectarian operation, serving men o all nations according to their individual needs. A tribute to the service the Institute has performed during the past century and 30 years is it growth from a floating chapel in 184 to the 13-story building at 25 South Street known to merchant seamen the world around.

Sixty percent of the Institute's financial support comes from merchant seamen themselves, through their purchase of lodgings, meals, and other services. About one-third of its annual budget is met through endowment income and the gifts of individuals, church groups, and foundations. These contributions help provide the personal services and special facilities which make 25 South Street a complete and friendly neighborhood for men of the seven seas.

Chaplaincy

Institute chaplains serve the spiritual needs of seamen, conducting services at the Institute's chapel and also at the U.S. Public Health Hospital at Staten Island. A resident chaplain is provided at the Staten Island hospital, which treats many of the seafaring profession's sick and injured. In addition, the Institute's chaplains provide a broad counseling service available to all seamen at all times when personal problems arise.

Hotel Service

Private rooms at the Institute's headquarters at 25 South Street can accommodate 759 seamen nightly. About one-quarter million lodgings are booked by seamen each year. In the dining room and cafeteria nearly a million reasonably priced meals are served each year. Other hotel facilities include laundry, tailor, and barber shops.

Post Office

A U.S. Government post office within the building does a first-class mailing business equivalent to that of a city of 30,000 people, annually handling over half a million pieces of mail for seamen in ways designed especially to meet their particular needs. Twenty-five South Street is the permanent mailing address for thousands of seamen.

Recreational Facilities

The Institute maintains a social program for active American and foreign seamen. An "International Seamen's Club" opened in 1958 provides a colorful setting for regularly scheduled social events which include dancing and entertainment.

Ship Visiting

The Institute is represented on board ships arriving in the port by two types of service: *Ship Service*—Representatives from the Institute go aboard ships at the payoff and safeguard seamen's earnings through the sale of traveler's checks and the establishment of bank accounts. Representatives also distribute New York guide maps, magazines, and books from the Conrad Library. *International Ship Visiting*—Representatives of the Institute visit ships of all nations in the port to extend invitations to crewmen to visit 25 South Street or use the Port Newark Station facilities. They also distribute foreign language newspapers and magazines, take the men on tours of New York—in general, they make newcomers to our shores feel welcome. Seminarians are assigned to this program during summer months as part of their training.

Women's Council

The Women's Council of the Seamen's Church Institute coordinates the efforts of 1,500 women throughout the United States who knit garments to be placed in more than 8,500 Christmas boxes. These packages are placed aboard ships which will be on the high seas on Christmas Day, and are distributed to seamen in hospitals or at the Institute.

Alcoholics Assistance Bureau

The first established among the seamen's agencies to tackle the problem of alcoholism, the Bureau has instituted an effective program of individual and group therapy. Alcoholics receive not only counsel, but medical care and material aid when the need warrants. The Bureau carries on its work in cooperation with Alcoholics Anonymous and the alcoholic rehabilitation facilities of the city of New York.

Missing Seamen Bureau

A seaman's work takes him to every port in the world, and sometimes he loses contact with his hometown, his friends, and relatives. Often mail will follow a seaman for months before catching up with him, if it catches him at all. The seaman is "lost" and sometimes circumstances at home make it imperative that he be found. The Institute's Missing Seamen Bureau is equipped to aid in the search.

Credit Bureau

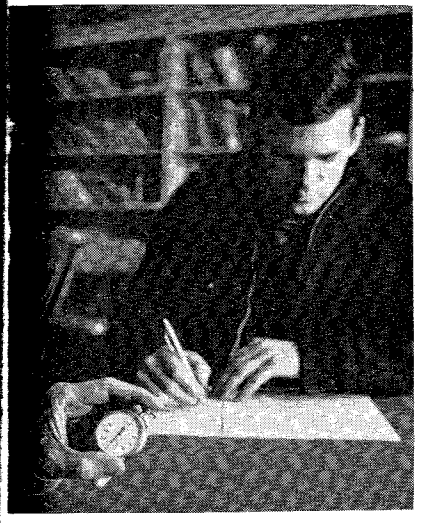
The lack of permanent shore contacts makes it difficult for seamen to establish credit rating as readily as the average landsman. For this reason, the Institute maintains a special Credit Bureau from which seamen can obtain interest-free loans.

Employment Bureau

The crews of most all ships today are secured through the union hiring halls, so the Institute's Employment Bureau specializes in finding temporary employment ashore for seamen who are having difficulty getting a ship. This employment will last anywhere from a few months to a few days.

Clinics

Medical and dental clinics are available to seamen at the Institute. Guests of the Institute are charged only to cover medication and supplies. Other seamen pay a service charge of 50 cents. ⚓



A seaman receives aptitude test at the SCI Marine School.

SCI Photos

The engineering instructor answers the questions of a student in the Marine School of the Seamen's Church Institute of New York.

CIRM=Aid

IT IS NOW WELL-KNOWN that "International Radio-Medical Center" (CIRM) gives free medical assistance at sea, by radio, to seamen in all parts of the ocean. During its 30 years of activity, the Center has saved many thousands of human lives.

Radio-medical communications, in Italian, English and French, are assured by two radiotelegraph stations:

IAR (Roma-Radio), the station belonging to the Ministry of Posts and Communications, linked with the CIRM by teleprinter.

IRM (the private CIRM station)

Ships in distant parts of the ocean, according to the hour and their position, may make contact with the CIRM, either directly or through other ships (that act as links), with the above radio stations or with one of the other Italian coastal radio stations that are linked with Rome by teleprinter.

The message must bear the indication "Medrad" in order to have exemption from charge and absolute precedence after the SOS.

Most of the medical requests transmitted to the CIRM come from ships in distant parts of the ocean; very few come from the Mediterranean.

CIRM SERVICES

The radio-medical services assured by the CIRM are as follows:

Radio-first-aid: for very urgent first-aid and accident cases on board

Radio Consulting-Room: for receiving medical information regarding patients under treatment

Radio-Consultations by appointment

Consultations between doctor and surgeon or specialist

Transfer of patient onto other ships

Removal of sick or injured man from the ship by aircraft or ship for transport to hospital (in the Mediterranean and other parts of the ocean)

Circular call to all ships (for transmission of messages)

By means of these services, the CIRM assures a real and complete medical assistance organization, placing at the disposal of the seaman, in case of need, a group of able doctors, surgeons and specialists, ready to give their wholehearted and disinterested assistance. Every sick or injured seaman has his own medical card at the CIRM headquarters, containing all his particulars.

In view of its aims, the Center has obtained for its services the collaboration of the aircraft of the Italian Air Rescue Command, and of fast vessels belonging to the Navy and the Excise Authorities when seriously sick or injured seamen, aboard ships at sea in the Mediterranean, need to be removed and urgently transported to hospital.

The CIRM also receives the support of the helicopters of the Excise Authorities and the Fire Service.

If the ship requesting assistance is in the Mediterranean but outside the jurisdiction of the Italian Air Rescue Service, the Commands of the foreign Air Rescue Services in the Mediterranean (American, English, French, Spanish, Egyptian and Greek) are informed and requested to collaborate in the case.

Certain foreign Air Rescue Services, such as the Dutch, Norwegian and French Atlantic Service, have granted the Organization, within the area of their jurisdiction, all the collaboration necessary in cases where seriously sick or injured seamen aboard ships of all nationalities have to be removed, transferred or transported to hospital.

The CIRM lends assistance not only in the Mediterranean but also to seamen aboard ships in all parts of the world.

Through the support of Italian and foreign Governments and Organizations, the CIRM is connected by teleprinter with numerous coastal radio stations.

In the North Atlantic and in the Pacific, the U.S. Coast Guard has granted free transit for messages through all its coastal stations and thus these radio-medical messages reach Rome in a short time by Press Wireless teleprinter lines.

As regards the medical service, ships are therefore assured of a continuous link with the CIRM.

In the North Atlantic, when a ship is not far from the coast, the CIRM assistance and rescue services are supplemented by the magnifice work of collaboration of the res vessels of the U.S. Coast Guard, wh never fails to respond when the CI issues an appeal for assistance. the other hand, when a ship is in ocean, the CIRM confines itself transferring the sick or injured man onto another vessel provided medical services.

In the latter case, AMVER (A lantic Merchant Vessel Report S tem), in the space of a few minu provides the CIRM with the names all ships, carrying a doctor on bo that are sailing in the vicinity of t ship requesting assistance.

It is the opinion of the CIRM th the removal of a sick or injured se man from a ship, by means of an a craft or another ship, should be d cided by a medical Organization by a doctor.

With regard to this matter, it m be remembered that it is one thi when the request is made by the ca tain, who may attach too much im portance to a simple case, and qui another thing when the request com from a medical Organization that h kept the seaman under treatment an is fully acquainted with his conditio

The CIRM informs the rescue aircraft through the ship itself. In fact, the CIRM, which maintains continuous contact with the ship by shortwave radio, requests the ship's captain to transmit a CIRM message direct to the foreign Air Rescue Command on a frequency of 500 kc s. The message is forwarded through the nearest coastal radio station and is drafted as follows:

SAR . . . FM CIRM ROME
ITALIAN SHIP . . . HAS ON BOARD SERIOUSLY INJURED (ILL) MAN URGENTLY NEEDING HOSPITAL TREATMENT STOP PLEASE SEND RESCUE PLANE OR FAST SHIP TO TAKE OFF PATIENT AND GET HIM TO HOSPITAL STOP SHIPS POSITION . . . COURSE . . . SPEED . . . BOUND FOR . . . SAILING FROM . . . STOP WEATHER CONDITIONS SEA . . . WIND . . . STOP. PSE QSO 500 kc/s . . . (NAME . . .
CIRM

Thus, in the space of a few minutes the foreign Air Rescue Service has

(*Continued on page 18*)

Universal Connection

The International Convention for the Safety of Life at Sea, 1960, requires a universal coupling for connecting the fire mains of a merchant vessel either ship to ship, or ship to shore. The arrangement specified is a pair of flanged and threaded fittings, one "International Shore Connection (Ship)" provided on each vessel with female threads corresponding to the vessel's hydrants and firehose, the other "International Shore Connection (Shore)" provided by the local shoreside firefighting forces with female threads to match the local threads. The flanged faces can be gasketed and bolted together quickly, and thus enable emergency water for firefighting to be pumped aboard. It was agreed that all merchant vessels of 1,000 gross tons and over on an international voyage would be required to carry at least one International Shore Connection (Ship). It was further recommended that the signatory Governments request port or other appropriate local authorities to provide the shoreside counterpart, International Shore Connection (Shore).

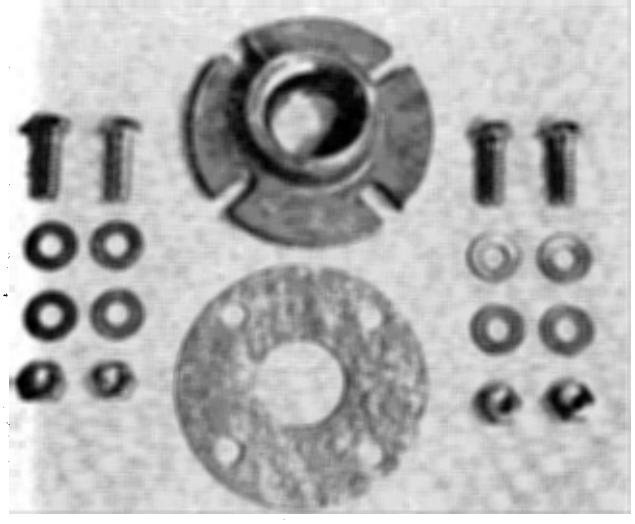
The United States is signatory to this agreement and its effective date was 26 May 1965. The U.S. Coast Guard is responsible for its implementation with respect to merchant vessels of the United States. The appropriate Coast Guard vessel regulations were amended effective 26 May 1965, to require all merchant vessels of 1,000 gross tons and over on an international voyage to be equipped with an International Shore Connection (Ship). Many vessels both foreign and domestic are now so equipped.

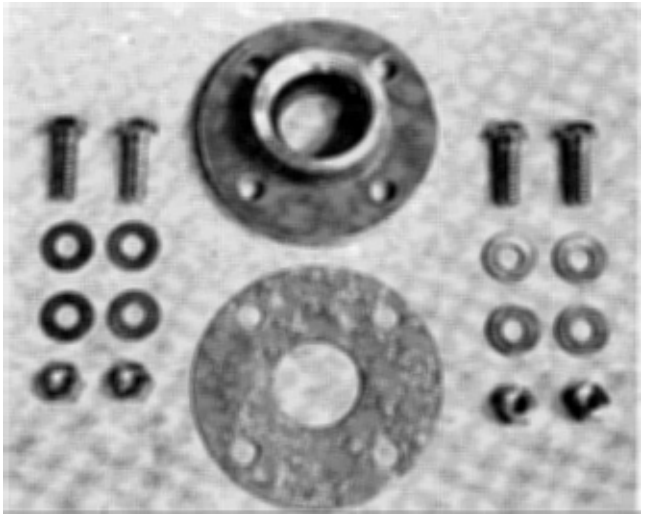
These new vessel regulations will only partially fulfill the intent of the agreement, however, in that they will provide only for merchant vessel to merchant vessel connection. If the fittings are to be completely effective, the shoreside counterpart, International Shore Connection (Shore), must be available at the docking facilities and fire departments of port areas where vessels of this size can be expected. It is expected that the appropriate Coast Guard and Navy vessels and shore facilities will be equipped with these fittings at an early date.

The National Fire Protection Association, International Association of Fire Chiefs, American Association of Port Authorities, and the International Association of Ports and Harbors, have been requested by the Coast Guard to encourage local authorities of seaports, particularly the fire service, to equip themselves with the "International Shore Connection (Shore)" so that they will be prepared to utilize this advance in ship fire protection when the need arises.

All concerned with vessel or port fire protection are encouraged to update their firefighting facilities by including the International Shore Connection (Ship) or (Shore), whichever is appropriate, with their present equipment.

Should any questions arise concerning these connections, inquiries may be addressed to Commandant (MMT-3), U.S. Coast Guard, Washington, D.C., 20226. Copies of specification Subpart 162.034, International Shore Connections (Ship) are available upon request. ⚓





Courtesy National Foam System, Inc., West Chester, Pa.

Ship Connection *Shore Connection*

Do you play Russian Roulette?

Casualty reports frequently state the cause of death or injury to be "the hazards of the job." This sort of attitude automatically places everyone in the marine industry in a massive game of Russian roulette. The odds are in favor of survival, but who knows? Careful analysis, however, usually indicates that inadequate supervision or uncertainty of conditions are the real causes, NOT "the hazards of the job." Although time is of the essence, it is often the case that the time saved by proceeding with repairs and maintenance without proper supervision or under uncertain safety conditions results in either injury, loss of life, or a greater loss of time than originally anticipated. The following cases are representative of these problems which face everyone in the industry.

While an American cargo vessel was moored in a foreign port, eight men were turned to by the boatswain to paint out the tank tops in number three lower 'tween deck. The after section of hatch boards was removed, and the cargo ventilation-dehumidification system was put into operation to ventilate the area. Natural ventilation was minimal due to light variable airs. The crewmembers commenced work and proceeded without incident for about 20 minutes, using a paint which had been used many times before for the same purposes, when there was a sudden explosion and flash fire. One crewmember died as the result of burns which covered 90 percent of his body. The fire was extinguished quickly using portable extinguishers and a firehose with a fog spray applicator.

The investigation revealed that the fire started in the vicinity of the decedent and spread over the entire painted area and to each paint pot. The paint had a flashpoint below the temperature of the hold which was approximately 100 degrees and the ventilation was limited. Two cigar butts were found, although the hold had been thoroughly cleaned prior to the painting.

While the direct cause of the explosion and fire was not determined, it could probably have been prevented if some of several precautions had been taken: (1) Increased natural ventilation to lower the temperature and to reduce paint vapors by removing all of the hatch boards; (2) recognition by personnel that the cargo ventilating-dehumidifying system was probably not sufficient for such purposes; (3) recognition of the need for adhering to the NO SMOKING rule in cargo holds; and (4) provisions for adequate supervision at all times.

Another similar fire and explosion recently occurred on board a small foreign tank vessel in an American port, and two workers were killed. The vessel was undergoing repairs, and the victims were in the process of cleaning tanks prior to the loading of grain. A gas chemist's certificate had been issued that the tanks were safe for men, but not safe from fire.

The men entered a tank with their equipment which consisted of a chemical tank cleaning solvent and a number of portable cargo lighting fixtures of the open globe variety. A blower was located on the deck adjacent to the tank opening; however, it was not placed in operation. The work progressed smoothly, and there was no indication that anything was wrong until the explosion shook the vessel.

The subsequent investigation, however, revealed that the bulbs in all the fixtures were broken while the cords remained intact and showed no defects. It was, therefore, concluded that some of the cleaning solvent probably came in contact with one of the light bulbs causing it to break and trigger the explosion. Lack of approved explosion proof portable lighting fixtures and inadequate ventilation again took its toll.

A third casualty in which lack of supervision and uncertainty as to the vessel's condition played a major role involved a tank barge which was undergoing survey in an American yard. The vessel is fitted with port and starboard skegs which extend from the after end of the barge to a bulkhead which separates them from the cargo compartments. Since the vessel's last cargo was gasoline, she was gas freed prior to entering a drydock so that a survey for sale could be made. During this survey, gas was noted to be dripping from the starboard skeg. Further inspection disclosed a crack in the plating between a cargo tank and the skeg. When the threaded plugs at the after end of the skeg were found to be frozen, holes were drilled with an air powered drill while a stream of water was played on the drill to reduce the possibility of sparking. Approximately 10 gallons of gasoline poured from the holes. The work shift was changed, and additional holes were drilled from which 25 to 30 gallons of gas poured. When the gas had drained, water and air were applied alternately at each hole in order to clean and ventilate them.

Since there appeared to be no odor of gasoline, the victim, who had previously been warned "to be very cautious," passed the flame of a burning torch over the floor of the drydock and in the vicinity of the skeg. No fire or explosion ensued, and it was considered safe to begin hot work. No gas chemist was called, and no explosimeter was utilized although one was available. Work began, and two holes were closed by inserting a bolt and then welding it. At the third hole, the decedent was holding the bolt in place and stooping with his head very close to the skeg. The welder struck his arc, and there was an immediate explosion. The plating was blown outward and struck the victim on the side of the head. He died instantly.

The fact that a flame was used to test the area for gases is glaring evidence that the procedures and work habits were saturated with poor judgment and lack of supervision.

A second barge casualty of interest involved a cargo barge which was undergoing repairs which included replacing the weather deck plating and painting of the vessel's double bottoms. Work was progressing well on the day of the casualty. Welders were fitting up new plating above the number one port double bottoms. Painters were simultaneously painting the number one port double bottoms.

When the painting was completed, one of the painters began to move the equipment and noticed that the welders were about to resume welding in the newly fitted plate. The painter attempted to stop the welder, but as soon as the arc was struck, an explosion occurred followed by a fire. Ten men were injured and the barge suffered extensive structural damage.

Safety Aloft

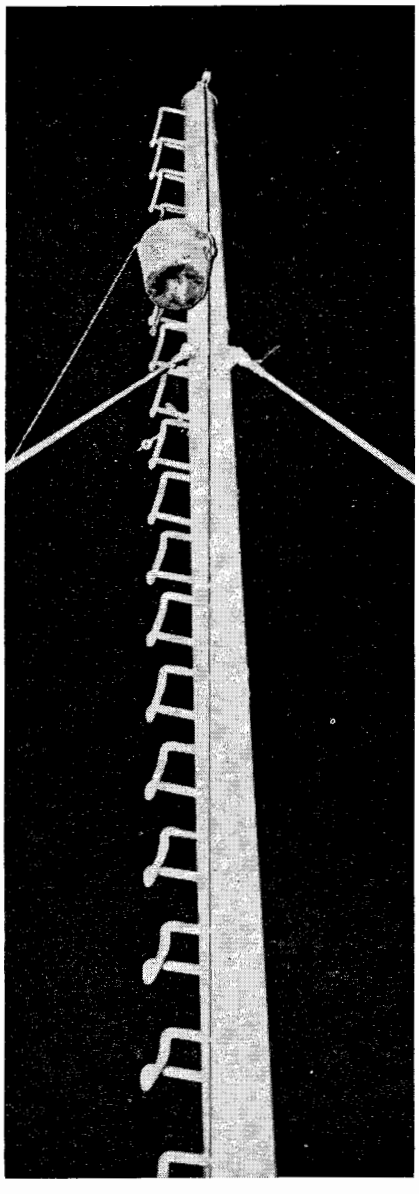
Two lives were carelessly wasted on board American-flag vessels as the result of improper use of equipment by the deceased seamen. In one instance a seaman did not properly employ a safety device which was part of his equipment, and in the second instance, the seaman carelessly used equipment which could only be considered relatively safe, at best.

In the first case, two men were sent aloft to overhaul cargo gear on the afterport king post of No. 3 hatch. Both men wore safety belts and ascended the king post. On their arrival at the top, they proceeded to make themselves secure.

The safety belt which the victim was wearing was a typical lineman's belt made of heavy canvas with a sliding buckle. The tongue has projecting rivets which, when passed through both parts of the buckle, hold the belt fast. The belt also has a safety device consisting of two rings, one of which is attached to the buckle side and the other to the tongue side of the belt. They are provided so that one may reeve a safety line from one to the other either to or around any secure object. This particular seaman's belt had the safety line spliced to one ring. In order to make himself fast, the victim secured the line to the king post with a single clove hitch and failed to also make it fast to the second safety ring on the other side of the belt. As soon as the seaman put his weight on the belt, the belt opened and he crashed to the deck.

The belt was found hanging from the manila line which was only made fast to one side of it. Further investigation showed the belt to be in good condition and without any defect. It is apparent that the buckle was not completely secured, thus opening and permitting the seaman to fall to his death. If the safety line had been properly made fast to both sides of the belt, this seaman would probably be alive today.

In the second case, the victim went aloft to paint the antenna mast which rises 30 feet above the superstructure. There are rungs of bar stock which rise to the top on the starboard side of the mast. These rungs are U-shaped in order that one's foot will not slip off the sides. The antenna insulator on the mast was in good order and no radio transmissions were made prior to or at the time of the casualty.



Bucket remains attached to mast where victim was painting.

The seaman ascended the mast, equipped with a paint pot and brush in a bucket with marlin to lash the bucket to the ladder rungs. The victim used a bos'n chair made up of a sturdy board with manila bridle shackled to an open hook. The hook had a 3-inch throat and there was no swivel or provision for mousing the hook.

It was common practice aboard the ship for anyone using this type of rig to go to the top of the mast and work down, moving the hook on the bos'n chair from rung to rung as he descended. The work had proceeded without incident. At the time of the casualty, the victim had painted down to the seventh rung on the afterside of the mast and the third rung on the forward side of the mast, and the paintpot had been secured to the forward side of the fifth rung. Alerted by a scream and a thud, workmen proceeded to the scene and found the victim lying on the deck at the foot of the mast with the freshly dipped paintbrush still in his hand and the bos'n chair around his body.

From the evidence available after the accident, it was determined that the bos'n chair was in sound condition and had not failed. Since the seaman's paintbrush had recently been filled with paint and was still in his hand, there is little possibility that he was moving from rung to rung, as he would probably have kept both hands free. It appears that the victim had carelessly hooked the chair to the side of one of the U-shaped rungs from which the hook could easily slip. The only relatively safe area of the rung on which the chair could be hooked was the lower part of the U or tread.

The proper procedure for such a job would have been to use a bos'n chair suspended from a block and tackle at the top of the mast and tended by a second man on deck. Alternatively, a hooking device with a safety tongue or locking latch in lieu of the open hook that was used should have been utilized. Use of these simple protective devices and safe procedures might have prevented his untimely death. ⚓

Low Water

A T–2 tanker was proceeding at half speed into Pearl Harbor channel one morning last year when the master ordered full ahead because difficulty was being experienced in holding the ship on the range. Subsequently, he noticed the revolution indicator showed fewer turns than proper for the speed ordered. Shortly after that, the chief engineer called the bridge to advise of feed water trouble and that he might have to soon shut down the propulsion plant. Steerageway was almost lost.

A few minutes later the boiler fires were secured because the water had dropped out of sight in the gage glasses. The engine was stopped and the rudder was put hard left. Both anchors were let go, with less than two shots of chain running out, but, still, the ship grounded on a reef on the west side of Pearl Harbor entrance channel.

The engineroom regained water to the boilers by starting the auxiliary feed pump and discharging through the auxiliary feed line. (Actually, the auxiliary feed pump could have been lined up to provide feed water to the boiler through the auxiliary feed line at the time the feed water difficulty was first noticed instead of waiting until after the casualty had occurred and the plant killed.)

In investigating the cause of the casualty the second assistant engineer, tracing the main feed line, discovered that the oiler had mistakenly closed the valve to the water inlet side of the second stage heater. The second assistant reopened this valve and normal feed was restored. Fires were relighted and in about half an hour the ship was backed off the reef and into deep water.

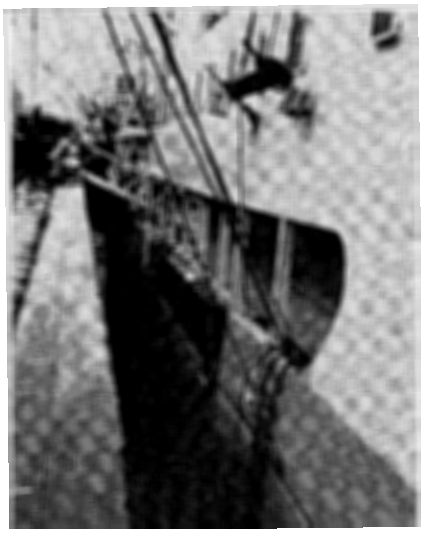
Investigation indicated that the ship grounded as a result of lost main engine power which in turn was caused by carelessness in closing the wrong valve, thereby securing the water to the second stage heater and cutting off feed water to the boiler.

Over 99 percent of all casualties are caused by human failure—not mechanical difficulties. Unfortunately, all too frequently when someone opens or closes the wrong valve, he has absent mindedly done so. ⚓

Fall kills Seaman

A foreign seaman died recently after falling from a stage on which he was working while his vessel was moored in an American port.

The deceased and a deckboy were on a stage painting the deckhouse. The stage had been properly rigged by the victim and was located on the starboard side of the vessel's midship's house on a level with the cabin—a distance of approximately 35 feet from the waterline. Below the stage, between the vessel and the dock, fenderlogs or camels extended the length of the vessel. These were secured to the pile-supporting structure of the dock. There was no net rigged below the stage, nor were the men wearing safety belts or lines.



Victim fell from stage onto camel below dock level.

During the course of painting, the victim stood up, put his hands on the side of the vessel, and attempted to step around the deckboy who was sitting on the after end of the stage. At this point, the stage tilted inboard, and both men fell. The victim fell between ship and dock, landing on a camel at the waterline. The deckboy, however, caught and held onto a guyline, enabling him to pull himself back on board the vessel.

The victim was removed and taken to the hospital where he was pronounced dead on arrival.

Contributor: NO LIFE LINE OR SAFETY BELT ⚓

Another Drowning

A deckhand from a river towboat went aboard a hopper type barge at night to cast off the mooring lines so it might be delivered to a dredge for loading. The deck of the barge was covered with mud and a steady rainfall created a slick surface. After casting off the lines, the deckhand started walking back to the towboat along the outer edge of the barge. The towboat master had in the meantime trained his searchlight aft to see if all was clear for backing, leaving the barge in comparative darkness. When the light was turned back on the barge the deckhand was not in sight.

The master, searching the water with his light, soon spotted the deckhand and was able to drop a line on his hand, but he failed to grasp the line and disappeared beneath the water. The deckhand reportedly was in good physical condition, but it was known that he could not swim. He was wearing neither a lifejacket nor a work vest. The towboat was properly outfitted with lifesaving equipment, but crewmembers were not required to wear lifejackets or work vests while working on barges. Attempts to find the body were unsuccessful. ⚓

Mate felled

A mate aboard a freight vessel received fatal injuries when he carelessly stood in the bight of a mooring cable during mooring operations. The deceased, handling the cable alone, apparently stepped into the bight when he moved to crack the winch's steam supply valve to prevent it from freezing. The winch had been inadvertently left engaged. The mate was pulled over the drum three times before it could be stopped.

Operating a winch alone and without checking the position of the operating controls is extremely hazardous, but to do so while standing in the bight of a cable is to invite disaster. ⚓

MARITIME SIDELIGHTS

CANADIAN-U.S. SAR COVERAGE REORGANIZED

A significant change affecting Canadian/United States policies in the field of Search and Rescue became effective 1 November 1965. Responsibility for Search and Rescue in the Canadian Atlantic Maritime SAR Region previously had been shared. Coordination of air search and rescue incidents was the responsibility of the Royal Canadian Air Force, while responsibility for surface search and rescue incidents was vested in the U.S. Coast Guard. In accordance with a recent agreement between the Royal Canadian Air Force and the U.S. Coast Guard, the R.C.A.F. will now coordinate all search and rescue incidents in and over the Canadian Atlantic maritime regions. This area includes Canadian internal waters and those waters enclosed by: the United States-Canadian Border, thence south to 43.00N 67.00W to 43.00N 65.00W to 45.00N 58.00W to 46.00N 51.00W to 45.00N 50.00W to 45.00N 30.00W to 59.00N 30.00W to 59.00N 50.00W to 65.30N 58.39W to 64.00N 63.00W, thence west to the Canadian coast. This agreement reaffirms the longstanding spirit of cooperation between the two nations in this field by stating: "The Royal Canadian Air Force and the U.S. Coast Guard will provide for mutual cooperation, coordination, and support of Search and Rescue operations for which either nation is responsible." A call for help will be promptly relayed to the appropriate coordinating activity. ⚓

MOORING SAFETY REPORT RELEASED

The Maritime Administration is engaged in a study to further reduce ship damage and personnel accidents in one of the more dangerous areas of normal operating—mooring.

A recent study revealed that more than 22 percent of ship damage, amounting to almost $300,000 in 1 year alone, was attributed to striking docks while berthing. Another 4 percent was found to be due to surging as the tides ebbed and flowed.

To reduce this damage, Maritime, through its Office of Research and Development, contracted to conduct an investigation of present mooring techniques and what can be done to better them.

The report—the first comprehensive undertaking of its kind—notes that mooring is presently accomplished by an oceangoing vessel by manually passing mooring lines to the dock and then pulling itself into the berth with winches or capstans while using the main propeller as needed.

On Great Lakes ships, on the other hand, mooring winches with drum-stored wire rope are used to do the same job. This method costs only about half as much as the method used by oceangoing ships.

The Great Lakes ships' method, the report concludes, saves time and provides greater safety and control.

The present mooring system used by oceangoing vessels can best be improved by the introduction of mooring winches, bow and stern thrusters, automatic linespoolers, remote-controlled television, quick-release mechanisms, and improved mooring lines, the report recommends.

Two of these recommendations are already being put into practice by a large number of operators who have included them in the specifications for new ships to be built with Maritime Administration construction-differential subsidies. The two are: Bow thrusters, which provide control for the ship's sideways movements; and constant-tension mooring winches, which automatically adjust the tension in the mooring lines as the tide rises and falls, or as otherwise required. ⚓

MSTS SHIP RECEIVES SEA RESCUE AWARD

The distinguished Sea Rescue Award Pennant has been awarded to the MSTS cargo ship USNS *Crain* (T–AK 244) for its action in the rescue of the USNS *Suamico* off the coast of Newfoundland on September 12, 1964.

The civilian manned *Crain,* under the command of Capt. Normand T. Aubert, had sped to the aid of the disabled *Suamico* when, in heavy seas, the tanker lay dead in the water. Ice had ripped a hole in her hull, she was taking on water, and her main generator had burned out. The *Crain* towed her for 27 hours to the safety of Stephenville harbor.

The distinguished Sea Rescue Award is presented annually by the American Merchant Marine Institute and the Marine Section, National Safety Council, for exemplary feats of rescue at sea. ⚓

SEA RESCUE Award Pennant presented to the USNS CRAIN is displayed by (left to right): CAPT. N. E. Chalmers, USN, Chief of Staff to COMSTSLANT; Mr. R. Cort, Director, Civilian Training Division at COMSTSLANT; and RADM R. T. Whitaker, USN, Commander, MSTS Atlantic Area.

CG COMMISSIONS FOR OFFICERS OF THE MERCHANT MARINE

A professional career as a regular commissioned officer in the U.S. Coast Guard is available to personnel of the U.S. Merchant Marine who have served at least 4 years on board vessels of the United States in a licensed officer capacity.

Applicants who are selected for appointment will have an opportunity to continue working with the maritime industry while devoting a large portion of their time to shore duty in the field of merchant marine safety.

Licensed officers of the U.S. Merchant Marine may qualify for commissions in the U.S. Coast Guard as lieutenant, junior grade, or lieutenant according to the age, license, and experience of the applicant.

KINGS POINT, FORT SCHUYLER GRADS COMMISSIONED

Twenty-one graduates of the U.S. Merchant Marine Academy at Kings Point, N.Y., and the New York State Merchant Marine Academy at Fort Schuyler, were commissioned as ensigns, U.S. Coast Guard Reserve, upon graduation from their respective schools during the summer of 1965.

Seventeen chose assignments in the field of merchant marine safety, three flight training, and one a general assignment.

This direct commission program for Kings Point and Fort Schuyler graduates began in 1964. The program will be available to the other State maritime academies commencing with the graduating class of 1966. ⚓

ROLAND H. BOUGHTON accepts a direct commission as an ensign in the U.S. Coast Guard Reserve from Rear Admiral Irvin J. Stephens, USCG, Commander, Third Coast Guard District. Ceremonies followed Boughton's graduation from the U.S. Merchant Marine Academy, Kings Point, N.Y., in August 1965.

After a 5-week officer indoctrination course at the Coast Guard Reserve Training Center, Yorktown, Va., Boughton reported to the Coast Guard Merchant Marine Inspection Office, Philadelphia, Pa., for assignment to duty.

Officers commissioned through this program will be assigned primarily within the field of merchant marine safety. Assignments may involve one or more of these areas: Inspection and regulation of vessels and equipment; regulation and protection of the rights of maritime personnel; supervision of safety standards; investigation of personnel and casualties; liaison with the maritime industry.

Information on this direct commission program may be obtained at the local marine inspection office or by writing Commandant (PTP-2), U.S. Coast Guard, Washington, D.C., 20226. ⚓

PMA RECOMMENDS WINTER PRECAUTIONS

The advent of wintry weather suggests at this time a few precautions which should be familiar.

One: With firelines drained to prevent freezing, make sure all of the officers as well as relief officers are aware which valves are shut and which are open.

Two: Keep passageways, decks, and gangways free of snow and ice at all times. The old standby remedies of sand and rock salt are always available but there are now products such as fast-acting chemical pellets which melt ice even at zero degrees.

Three: Remember that in very cold weather, steel is especially susceptible to fracturing. It is important to avoid any sudden impact on shackles, goosenecks, chain slings, etc.

Four: All deck valves should be double checked, first for condition and then for tightness while pressure is on the lines. This, of course, will prevent ice on the deck and in the valves, should dripping occur.

Courtesy Pacific Maritime Association ⚓

FAILURE OF ALUMINUM GANGWAYS

Ships of many flags now ply the trade routes of the world with aluminum gangways as part of their equipment. From time to time, structural failures have occurred on these normally excellent gangways, usually at the point where the supporting bridles are attached to the side members of the gangway. Galvanic corrosion, resulting from the contact of two dissimilar metals is the principal cause of structural failure. For example, attaching bridles to carbon steel-lifting pads without insulating material or using inadequate insulating material between the pads and the aluminum side members results in severe aluminum corrosion. As might be expected, this corrosion is more pronounced in marine locations.

Because of the likelihood of such occurrences, aluminum gangways should be carefully inspected, paying particular attention to the points mentioned. Do not overlook the possibility of wastage at the point where the gangway is attached to the turntable. Any sign of corrosion should be pointed out to the vessel's master, and corrective steps should be taken.

Maritime Safety Digest ⚓

nautical queries

DECK

Q. What is zenith distance?

A. Zenith distance is the angular distance from the zenith; the arc of a vertical circle between the zenith and a point on the celestial sphere, measured from the zenith through 90°, for bodies above the horizon. This is the same as COALTITUDE with reference to the celestial horizon.

Q. What is compass error?

A. Compass error is the angle by which a compass direction differs from the true direction; the algebraic sum of variation and deviation; the angle between the true meridian and the axis of the compass card, expressed in degrees east or west to indicate the direction of compass north with respect to true north.

Q. What is leeway?

A. Leeway is the leeward motion of a vessel due to wind. It may be expressed as distance, speed, or angular difference between course steered and course through the water.

Q. A bilge keel is fitted to a ship in order to:

(a) Afford a smooth flow of water aft to the propeller.

(b) Increase the vessel resistance to lateral motion.

(c) Reduce rolling in a seaway.

(d) Provide a symmetrical cross-sectional waterplane fore and aft.

(e) Reduce pitching.

A. (c) Reduce rolling in a seaway.

Q. "Barratry" refers to:

(a) A seaman's claim for wages.

(b) A four-masted vessel square rigged on the foremast.

(c) An unlawful or grossly negligent act by seamen in violation of their duty.

(d) An instrument for determining atmospheric pressure.

(e) A tropical game fish.

A. (c) An unlawful or grossly negligent act by seamen in violation of their duty.

Q. Reducing the radar gain can:

(a) Bring out distant objects.

(b) Increase static.

(c) Increase sea return.

(d) Reduce contrast.

(e) Bring out objects through sea return.

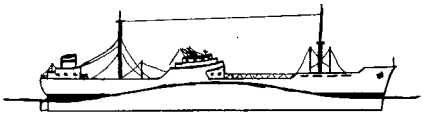
A. (e) Bring out objects through sea return.

SHIP CONSTRUCTION

Q. (a) To what type bending moment is the vessel illustrated being subjected?

(b) What type stress is put on the deck and sheer strake?

(c) What type stress is put on the bottom?



A. (a) A "hogging" stress where the center is receiving more buoyant support than the ends.

(b) The deck and sheer strake are in tension.

(c) The bottom is in compression.

ENGINE

Q. Explain how the single-element thermal-hydraulic feed water regulator controls the water level of the boiler.

A. The control element (generator) of the thermal-hydraulic regulator consists of a jacketed tube connected to the steam drum above and below the water level. The jacket, which is filled with water, is connected to the diaphragm or bellows of the feed water regulating valve. The presence of water and steam (from the steam drum) in the inner tube causes a certain amount of the water in the jacket to flash into steam and creates a pressure within the jacket. A drop in water level in the steam drum exposes a larger portion of the inner tube to steam, increases the amount of steam formed in the jacket, and, therefore, increases the pressure within the jacket and on the diaphragm. The movement of the diaphragm created by this increase in pressure opens the feed water regulating valve wider by forcing the valve stem down against a spring. When the water level in the steam drum rises, the pressure in the jacket decreases, and the spring forces the valve to partially close.

Q. Name six sources of feedwater loss which may occur aboard ship.

A. 1. Leaking blow valves.

2. Leaking safety valves.

3. Loss to atmosphere by blowing of ship's whistle.

4. Leaks in piping or joints of external feed line.

5. Leaks through rod packings or drains of machinery.

6. Overflow from inspection tanks.

7. Overflow of filter box.

8. Overflow of atmospheric drains tanks.

Q. If the low-pressure turbine of a cross-compound turbine unit became damaged at sea to such an extent as to make it inoperative how would you manage by emergency means to make port?

A. In order to operate the h.p. turbine independently, I would secure the ahead and astern throttle, disengage coupling to L.P. pinion. Blank off receiver pipe to L.P. engine. Install temporary piping exhaust from receiver to main condenser. Remove steam piping between throttle valve manifold and astern element of the L.P. turbine, and blank off both exposed flanges. Operation is now possible in the ahead direction only.

Q. Explain how to refit a carbon packing ring if there is excessive steam leakage.

A. If excessive steam leakage occurs at full speeds and loads the carbon clearances are too large and the inner diameter must be decreased. The carbon packing should be taken apart and some carbon filed off, with a very smooth file, on one surface per joint. Do not remove large quantities of graphite. At the most, approximately 0.001 in. per joint should be removed. The packing should be cleaned before replacing and care taken to replace each segment in accordance with the numbers stamped in the ends.

Q. What care should be given the main turbines if they are to be idle for an indefinite period?

A. More damage is done to machinery when idle than at any other time. This is due to corrosion, as a result of moisture in the interior. Care should be taken to see that the interior of all turbines are thoroughly dried out and that there are no pockets for the collection of water. The air pump or air ejector should be run a few minutes every day with suction to casing and drains open. Throttle drain valves should be kept open while a turbine is secured. The rotor should be jacked 1¼ turns daily with lubrication system in operation.

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

ALBANY, N.Y., NEW CAPTAIN OF THE PORT

A Captain of the Port office has been established at Albany, N.Y., by action of the Commandant published in the Federal Register of October 9, 1965.

APPROVED EQUIPMENT

COMMANDANT ISSUES EQUIPMENT APPROVALS; TERMINATES OTHERS

Approvals have been granted on various items of lifesaving and miscellaneous equipment, installations, and materials used on merchant vessels subject to Coast Guard inspections and on certain motorboats and other pleasure craft. At the same time the Commandant terminated Coast Guard approvals for certain lifesaving equipment and structural insulations.

Those interested in these equipment list changes must consult the Federal Registers of October 22 and 27, 1965 for detailed itemization.

AFFIDAVITS

The following affidavits were accepted during the period from August 15, 1965, to September 15, 1965:

G. W. Dahl Co., Inc., 86 Tupelo St., Bristol, R.I., 02809, VALVES.

Amot Controls Corp., First St. and Nevin Ave., Richmond, Calif., VALVES.

Hack Valve Co., P.O. Box 4761, Tucson, Ariz., 85719, VALVES.[1]

Kilbourn Engineering Co., Inc., 9226 W. Flagg Ave., Milwaukee 18, Wis., BOLTING.

[1] Model 45 only.

STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from November 1 through November 30, 1965, 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

Bergen Oil Co., P.O. Box 371, Boston, Mass., Certificate No. 635, dated November 10, 1965, BERGEN ELECTRICAL CLEANER.

Wyandotte Chemicals Corp., Wyandotte, Mich., 48193, Certificate No. 636, dated November 10, 1965, WYANDOTTE PHOS-IT.

CIRM

(*Continued from page 10*)

full information regarding the ship requesting assistance, the seriousness of the seaman's condition, the position of the ship and the weather conditions.

If the message comes directly from the ship's captain and is not clearly drafted, precious time will be lost, to the disadvantage of the patient.

On the other hand, the CIRM, in the Atlantic, with the highly efficient collaboration of the great rescue organization of the U.S. Coast Guard and of the extremely useful AMVER service, succeeds in bringing help to seamen in the shortest possible time.

The CIRM is a nonprofitmaking organization of a philanthropic nature, recognized and financed only by Italy, which carries out its beneficent activities on an international scale on behalf of seamen of all nationalities. In fact, 60 percent of the requests received come from foreign ships, fr all parts of the ocean.

It may be said that radio-medi assistance on behalf of seamen abo ships of all nationalities represent really useful and rational medi service.

In order to complete its services the Atlantic, the CIRM would need obtain:

Free transit for messages sent b tween the CIRM and ships of all n tionalities, also through the radio st tions in Canada, which now beco part of the AMVER organizati These messages, forwarded by Can ian coastal stations to the U.S. Co Guard in New York would reach t CIRM in Rome by teleprinter.

Transit of rescue messages to a from the CIRM through the ICA network, in view of the fact that t messages concern the assistance human lives at sea.

Regular information from the U. Coast Guard concerning sick or i jured seamen aboard ships passi out of the area of jurisdiction of t American medical assistance servic

Collaboration of the aircraft a ships belonging to the SAR servic of all countries bordering on the A lantic. In case of need, the CIR could inform these authorities eith directly or through the U.S. Co Guard.

The CIRM hopes to be able to e tend and develop its air-sea medic services still further in the Atlanti area, with the support and collabora tion of the air rescue services of th maritime countries, in order to pr vide greater assurance for the a sistance and rescue of human liv at sea.

Extracted from a paper presente by Prof. G. Guida, President CIR Rome to the North Atlantic Searc and Rescue Seminar in New York i May, 1965.

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

The following are additions to the list of electrodes which are acceptable t the U.S. Coast Guard for use in welded fabrications.

COMBUSTION ENGINEERING, CHATTANOOGA DIVISION, CHATTANOOGA, TENN.

Brand	AWS class	Operating positions and electrode sizes (inches)				
		5/32	3/16	7/32	1/4	5/16
CE 7018	7018	1				
CE 7018 A1	7018 A1	1				
CE 8018 B2	8018 B2	1	2			
CE 9018 B3	9018 B3	1	2			

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.

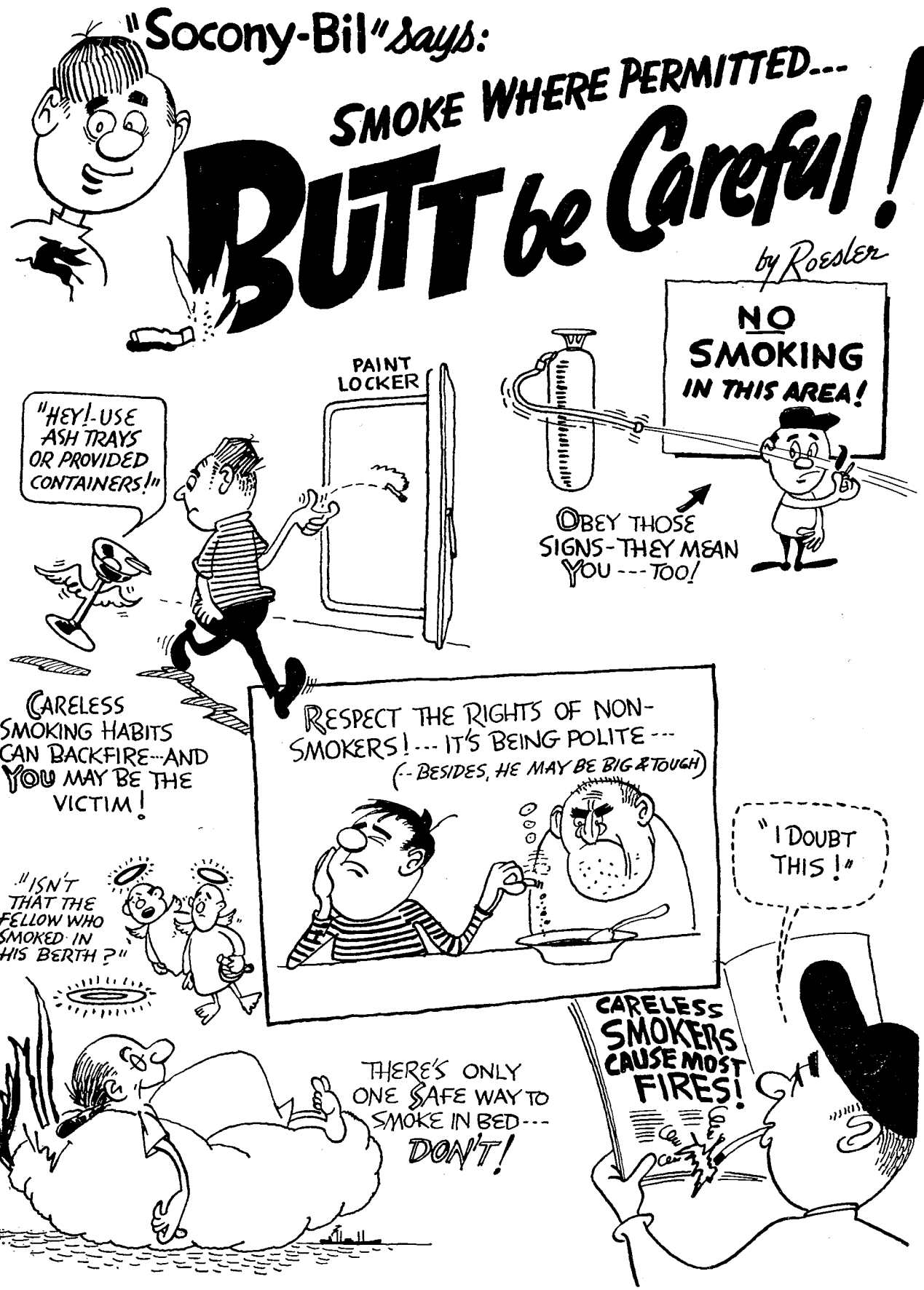
The Federal Register may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. Subscription rate is $1.50 per month or $15 per year, payable in advance. Individual copies may be purchased so long as they are available. The charge for individual copies 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).
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.
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.
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.
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) (2–3–64). F.R. 6–5–64, 6–6–64, 8–18–65, 8–21–65, 9–8–65.
329	Fire Fighting Manual for Tank Vessels (4–1–58).

CHANGES PUBLISHED DURING NOVEMBER 1965

The following have been modified by Federal Register:
None.

U.S. GOVERNMENT PRINTING OFFICE:1965


"Socony-Bil" Says:
SMOKE WHERE PERMITTED---
BUTT be Careful!
by Roesler
NO SMOKING IN THIS AREA!
PAINT LOCKER
"HEY! - USE ASH TRAYS OR PROVIDED CONTAINERS!"
OBEY THOSE SIGNS - THEY MEAN YOU --- TOO!
CARELESS SMOKING HABITS CAN BACKFIRE--AND YOU MAY BE THE VICTIM!
RESPECT THE RIGHTS OF NON-SMOKERS! --- IT'S BEING POLITE ---
(- BESIDES, HE MAY BE BIG & TOUGH)
"I DOUBT THIS!"
"ISN'T THAT THE FELLOW WHO SMOKED IN HIS BERTH?"
CARELESS SMOKERS CAUSE MOST FIRES!
THERE'S ONLY ONE SAFE WAY TO SMOKE IN BED --- DON'T!