

PROCEEDINGS OF THE MERCHANT MARINE COUNCIL

UNITED STATES



COAST GUARD

The printing of this publication has been approved by the Director of the Bureau of the Budget, January 14, 1955.

This copy for
not less than
20 readers.
PASS IT ALONG

CG 129

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MERCHANT MARINE COUNCIL

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and three Marine Inspection Officers are
designated as members by the Commandant.

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FRONT COVER

A Standard Oil tanker passing under the Golden Gate bridge. This photograph courtesy of THE LAMP, Standard Oil Company (N.J.)

BACK COVER

The SS *Fort Clatsop*, Standard Oil Company tanker, approaches oil dock off Richmond, California

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PROCLAMATION 3106

FIRE PREVENTION WEEK 1955
BY THE PRESIDENT OF THE UNITED STATES OF AMERICA
A PROCLAMATION

WHEREAS thousands of lives and hundreds of millions of dollars in property are lost each year through fires; and

WHEREAS, as a result of these destructive fires, immeasurable losses are caused in employment, production, and other economic activities; and

WHEREAS fire prevention programs have proved effective in communities throughout the Nation:

NOW, THEREFORE, I, DWIGHT D. EISENHOWER, President of the United States of America, do hereby designate the week beginning October 9, 1955, as Fire Prevention Week.

I call upon the citizens of all communities in the land to organize effective programs for reducing the needless waste caused by preventable fires, and I urge State and local governments, the American National Red Cross, the National Fire Waste Council, the Chamber of Commerce of the United States, and business, labor, and farm organizations, as well as schools, civic groups, and public information agencies, actively to observe Fire Prevention Week. I also direct the appropriate agencies of the Federal Government to assist in this national effort to reduce the loss of life and property resulting from fires.

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

DONE at the City of Washington this second day of August in the year of our Lord nineteen hundred and fifty-five, and of the Independence [SEAL] of the United States of America the one hundred and eightieth.

DWIGHT D. EISENHOWER

By the President:
JOHN FOSTER DULLES,
Secretary of State

THE BURNING OF THE NORONIC

SIX years have now passed since that mournful day in September 1949 when the news of the fiery end of the Canadian steamship *Noronic* in Toronto with a ghastly toll of 118 deaths appalled the citizens of Canada and the United States from coast to coast. Millions of words have been printed; thousands of questions have been asked, but many still remain unanswered on the details of this terrible marine disaster. Why did 118 passengers lose their lives when the ship was tied to the dock? How did the fire start, and how did it spread so rapidly? With so many passengers dead, how does one explain the lack of any deaths in the crew? Why were all the tragic consequences of the fire breaking out while in port apparently totally unforeseen and unprepared for?

While some of these answers may never be forthcoming—many are revealed by the Canadian Government's official court of investigation. The conclusions and reasoning presented here are based principally upon that court's formal report. The dramatic lessons scorched upon the conscience of North America by that dreadful September catastrophe six years ago are still vivid in the minds of all seafarers and are as valuable today as they were then.

The flaming destruction of the *Noronic* took place in Canadian waters on September 17, 1949, and the investigation with its sorrowful revelations and condemnatory findings was, officially, a problem of the Canadian Government. Yet, from almost any other viewpoint, this tragedy was deeply imbedded in the heart and soul of the United States, for every one of the 118 passengers, except one, who lost their lives was a citizen of this country.

The *Noronic* was a steel-hulled vessel built at Port Arthur, Ontario in 1913. She was powered by five Scotch boilers and a steam reciprocating engine. She was of 6,905 gross tons, 362 feet in length, and had passenger accommodations on three decks for 650 passengers. She was certificated to carry a crew of not more than 200. The three passenger decks were constructed almost entirely of combustible materials with large amounts of combustible furnishings and decorations.

During the summer season, the *Noronic* made weekly cruises on the Great Lakes between Windsor, Ontario and Duluth, Minnesota. The season normally ended on Labor Day

but, in 1949 a special post-season cruise had been arranged and the ship was to have sailed from Windsor eastward as far as Prescott on the St. Lawrence River, and then return to Windsor; the cruise to take about one week. Departure was made on September 14 and the following day was spent in Cleveland, Ohio, where additional passengers were embarked. The *Noronic* sailed from Cleveland the evening of September 15, and arrived in Toronto Harbor about 6 p. m. on the 16th of September, to remain for the night. During the summer sailing season, no nights were spent in port with passengers on board—the night of September 16th–17th was the first night in the 1949 season that this was done.

PASSENGER EXIT

After the ship was moored, the majority of the 524 passengers and a large percentage of the 171 crew members went ashore to enjoy the city. The night was clear and cool with a fresh southwesterly breeze of about 12 miles per hour blowing in from the lake on the ship's port quarter. Although four sideports on the starboard side of "E" deck were open and could be used to pass between the ship and the dock, the only means of ingress or egress, so far as the passengers were concerned or knew, was the gangway amidships on "E" deck. This meant that the route for passengers leaving the vessel from their quarters on the various decks led, ultimately, down a central stairway to an open area on "E" deck and thence to the gangway. *Since the gangway had been rigged to "C" deck in other ports, many of the passengers were not well acquainted with the exit route which existed on the night of the fire.*

The *Noronic* was not equipped with bulkheads which could in any sense be construed as "fire resistant." She was not equipped with fire-stop or draft-stop doors in the open corridors, which extended the length of all passenger decks, in the open walls, which extended vertically between the forward lounges on decks A, B, and C, or in the open stairwells amidships connecting A, B, C, D, and E decks. The material with which the superstructure, bulkheads, panelling, and doors were constructed was principally wood, coated with paint or varnish. As a general practice, the door to each passenger cabin was fitted with a louvered metal grill to aid ventilation. Of course, this also aided the spread of fire.

ALARM SYSTEM

There was no automatic fire detection system or fire extinguishing system installed on the *Noronic*. The fire alarm system consisted of two independent parts, neither automatic. In various locations throughout the ship were located alarm switches which were activated manually by the breaking of a glass pane over the switch. The activation of any one of these switches rang bells in three locations in the officers' quarters forward on "A" deck, on the port side of "D" deck outside the Steward's office, and in the engineroom at "E" deck. However, at only the first two of these bells were there indicators showing the station at which the alarm had been activated.

The second part of the alarm was a system of Klaxon horns located at various points throughout the ship by which all persons could be warned of fire. The system was controlled by a manually-operated master switch in the pilothouse. It was the duty of the officer on watch, upon hearing the bell ring in the officers' quarters, to proceed to the scene indicated as the point where the alarm was given, investigate the fire or cause for alarm, and decide whether it was serious enough for him, upon returning to the pilothouse, to sound the Klaxon alarm horns. Obviously this system was subject to uncertainties and delays of a very serious nature even after someone had given positive notice that there was a fire.

FIRE FIGHTING EQUIPMENT

The *Noronic* was not equipped with a sprinkler system. With reference to fire hydrants and their water supply, the *Noronic* was well equipped with at least 52 fire hydrant stations and ample hose. However, at the time of the fire, no fire pumps were in operation, such pressure as existed at the fire mains coming from the sanitary pump which was on the line and which could not possibly supply more than a few fire hydrants with adequate flow. The vessel was fitted with three fire pumps which were to be placed in operation after the alarm reached the engineroom. Although the Canadian regulations required that pumps should not be fitted in the same space, these three were in fact "fitted in the same space" and, during the course of the fire ultimately failed after the engineering personnel were

forced by smoke and flame to leave the machinery spaces.

As for fire extinguishers, the *Noronic* had 37 2½-gallon soda-acid, 10 1-quart pyrene, and 3 2½-gallon foam. She was in full compliance with the requirements of the regulations in this respect but the main deficiency seems to have been that very few of the crew had ever seen the portable extinguishers used or were familiar with their use.

FIRE PATROL

For a fire patrol of the vessel, there were two members of the crew called "Special Officers." Each stood watch and watch, 6 hours on and 6 hours off. Each carried a time clock which was to be punched with keys located at various patrol stations throughout the ship "on the hour." These rounds required about 15 minutes to complete, so that in the ordinary course of events, no effective fire patrol existed for 45 minutes out of every hour. When the ship was in port, these "Special Officers" were expected to maintain a post at the gang plank to keep a surveillance against unruly or disorderly persons coming aboard. Consequently there was quite obviously no fire patrol at all for 45 minutes out of each hour at night in port.

Apparently the Chief Steward was apprehensive about fire on board, as he had privately arranged for the bellboys on duty at night to patrol the ship. They were to report to him any fire they might discover. Neither the Captain nor the First Mate appeared to have had any knowledge of this private arrangement.

DRILLS AND ORGANIZATION

In compliance with the regulations, the *Noronic* conducted fire drills and a lifeboat drill for the crew once a week. During the season the usual practice was to hold these drills, every Tuesday at about 10 a. m. when the ship was usually moored in Duluth. These drills were carried out perfunctorily and with little check to see that all hands took part. During the fire drills hoses were frequently discharged from hydrants outside the cabins but seldom or never from inside hydrants. Apparently passengers never took part in these drills, nor were there any provisions for the crew to assist or instruct the passengers in the event of emergencies. Such organization as existed for emergency action for the crew pertained to situations with the full crew on board. There was no plan for organization of the small portion of the

crew which would remain on board if the vessel stayed in port overnight.

The general organization and state of preparedness for emergencies were sadly lacking. Each crew member, upon signing on, was given a card which contained his crew number, the number of the fire hydrant to which he was to report, and the number of his lifeboat. These cards also described the signals to be given on the main whistle or Klaxon horn system for fire alarm and for abandon ship stations. In practice, entirely different signals were given for fire drill and boat drill so that each crew member had to deduce for himself what an emergency signal meant when it was sounded.

The crew number on each of these "muster cards" referred to a number for each crew member posted on an over-all "muster list" or chart, copies of which were posted in three places on the ship for inspection and study by the crew. These charts had remained unchanged for at least five years. The master apparently had no knowledge that the charts even existed. Apart from the location of his fire hydrant and his lifeboat, no written instructions were given the individual crew member as to his duties during emergencies, his alternate duties in case he was unable to get to or use his emergency station, or any duties at all regarding the passengers.

Posted instructions for passengers consisted only of a small card hung in each room which gave the number of the lifeboat to which the occupants of the room should go for abandoning ship. With reference to fire, the instructions were:

FIRE: This steamer is equipped with modern fire prevention apparatus, in addition to which the steamer is patrolled day and night by experienced watchmen for the protection of the passengers. In case of fire promptly notify any member of the crew.

The sense of security engendered by a reading of this card was not in any degree justified by the actual state of emergency organization or preparedness.

PERSONS ON BOARD

Members of the crew actually on duty on the *Noronic* at the time the fire started, about 1:30 A. M., were as follows: Four deck crew including the Second Mate, seven engineers in the machinery spaces, and four bellboys, or a total of 15, from a crew of 171. Of the remainder of the crew who might have remained aboard, or who might already have returned from shore leave, it was impossible to ascertain how many were on hand to help fight the fire, as no positive check was maintained at the gang-



Toronto Star

Figure 1. The SS *Noronic*, a flaming inferno, lights up the entire Toronto Harbor area.

way. Although no check was made of the coming and going of the 524 passengers, the evidence indicated that by far the greatest part of them were aboard asleep at the time the fire started.

The Master had returned to the ship shortly after 1:25 a. m. He was just fitting the key into the lock of his room when a wheelsman came running up with the news that there was a fire on "C" deck. It seems that one of the passengers had noticed a haze in the after part of the starboard corridor on "C" deck. He traced this haze, which proved to be smoke, to the door of a linen locker. This was a room used for storage of linens, towels, soap, brushes, trash, etc. Evidence was later adduced that passengers had observed maids smoking cigarettes in that linen closet at least twice during the voyage before reaching Toronto. After the fire, the remains of a whisky bottle, measuring glass, and bottle opener were found in the rubbish in this compartment.

ATTEMPT TO EXTINGUISH

The passenger found the door of the linen locker locked. He could hear what he described as "a rustle and small crackling." He ran forward crying out that the vessel was on fire. About amidships he met the head bellboy and the two ran back to the locker. The bellboy tried the door, then ran back amidships and down the stairs to the steward's office on "D" deck for the keys. He did not call the steward, but returned up to "C" deck. Before opening the door of the locker, he ran past it and out to the lounge for a pyrene fire extinguisher. When the door was finally opened, the bellboy discharged the extinguisher into the room. It was soon apparent that the fire extinguisher was not effective as the flames began to come out into the corridor.

Then they ran back and pulled down the hose from the nearest fire station. The passenger testified that he opened the valve fully *but no water came out of the hose*. Since there was some pressure on the fire mains from the sanitary pump, this failure to get water may have been due to the passenger's unfamiliarity with the operation of the valve or a kink introduced into the hose in the haste of pulling it from the rack to the fire. By this time flames were on the overhead and creeping up and down the corridor in both directions. This passenger then left the scene, aroused his family and left the ship.

The bellboy, meanwhile, had left the passenger with the hose and had run forward to the midships lounge where he broke the glass in a fire

alarm box. He then ran to the gangway on "E" deck where he found the wheelsman on watch and told him of the fire. The bellboy's estimate of the time which elapsed between the moment he met the passenger and the time he turned in the fire alarm was "about 5 minutes." While this estimate may be wide of the truth, it is obvious that much crucial time was lost before any alarm was made, such failure reflecting the general state of unreadiness and lack of training prevalent on the ship.

ALARM SOUNDED

The gangway watch, upon hearing of the fire, ran up to the officers' quarters where he located the First Mate and shouted: "There is a fire on 'C' deck!" The Mate, who by this time could smell smoke, ran out of his room, saw heavy smoke coming forward from the starboard side of the ship, ran to the wheelhouse and sounded the Klaxon horn alarm system. He then pulled the lever which electrically operated the main ship's whistle, intending to give the signal for fire alarm. Unfortunately, the whistle control stuck and the ship's whistle sounded continuously throughout the fire.

The action then taken by the First Mate was further illustrative of the lack of organization and training for emergencies. The Mate ran aft on "A" deck as far as possible before he was stopped by flames, meanwhile banging on passenger windows and shouting "Fire! Fire!" but without any noticeable response. He then

descended to "C" deck, gathered such passengers as could be seen and assisted them off the bow by means of a rope, leaving the ship himself soon thereafter by means of a firetruck ladder. The actions of the Second Mate, who came running out of his quarters upon hearing the alarm bell, were approximately the same as those of the First Mate, i. e., a few moments running hither and yon, knocking and kicking on doors, a momentary attempt to use a hose, and finally going over the side by means of a line.

Neither Mate made any attempt to organize crew members into a fire-fighting crew, or organize an evacuation plan for passengers. However, their shortcomings in the jaws of disaster cannot be too severely criticized in view of the complete lack of planning and foresightedness before the catastrophe.

To return to the actions of the Master, as soon as he received word of the fire, he ran aft and down to "C" deck where he observed smoke in the lounge. About this time he heard the Klaxon alarm sound and realized there was a real fire at hand. He then ran through the corridor shouting "Fire!", and out to the starboard outside passageway where he shouted to people on the dock to send for the city fire department. He then ran aft, led a fire hose in through an after door, and played water on the fire in the vicinity of the linen locker. At this time he was alone, the passenger and bellboy who had first attempted to fight the fire having departed. In a moment or two, the Master turned



Toronto Fire Department

Figure 2. Firemen continue to pour tons of water into the still burning Noronic.

over this hose to two crew members who appeared on the scene. He then made a rapid trip forward as far as the social hall and back aft again on the outside port passageway, attempting to rouse passengers by rapping on their windows, again without noticeable response.

For the next few minutes the Master ran forward and aft making a few attempts to use a hose which he found already led out and using a nozzle to smash some of the passengers' windows. Finally, he was forced to leave the ship by means of the crew gangway. Aside from turning over his hose at the linen locker to two seamen, the master had made no attempt to organize or lead his crew in fighting the fire, but had acted purely as a seaman or individual attempting to do what he could to resist the overwhelming disaster which was engulfing his ship.

Probably no one will ever know how many of the 524 passengers were actually aboard the *Noronic* when the fire began, but all available evidence would indicate that the majority of them were aboard and most of these were probably asleep. Under these circumstances, it is nothing short of a miracle that 408 passengers survived, since the elapsed time from the initial discovery of the fire at 1:30 a. m., until the last moment when humans

could still be alive at the bow or stern of the flaming pyre at 1:45 a. m., was only 15 minutes.

As testified by the Canadian court of investigation's technical fire expert, most of the passengers who died were undoubtedly overcome in their rooms by carbon monoxide gas before flames actually reached them. Studies of fires involving the rapid envelopment of buildings such as hotels, barracks, sanatoriums, hospitals, etc., where persons asleep receive no early warning, indicate that many victims are initially overcome by the blast of extremely hot air which strikes them when they frantically throw open a door or window and, gasping, inhale the searing air without thinking. Although most of the bodies of the deceased passengers were found in their staterooms, there were a few bodies recovered from the water near where the *Noronic* lay. Escape from the flaming hell of the ship had not resulted in final safety for these.

PASSENGER TESTIMONY

Considering the complete lack of any plan for the systematic arousing and evacuation of sleeping passengers and the lack of the crew required to effectuate such a plan, the survival of so many of the passengers was indeed miraculous. Of the passengers who later testified at the in-

vestigation, none had heard the Klaxon alarm, possibly because it was drowned out by the continuous sounding of the ship's whistle. In addition, no passenger believed that he had been awakened by the ship's whistle, although its blast was loud and clear and heard by many other persons. With the 12 mile breeze from the southwest sweeping the fire forward and upward through the open corridors and open wells, it is clear that this fire roared through the vessel structure with such terrifying speed and power that all other sounds and thoughts were swept from the consciousness of those in its path.

By 1:45 a. m., the *Noronic* was a brilliant torch, the wheelhouse and hurricane deck almost invisible in the white heat. It is to be hoped that anyone still aboard at that time had died quickly, as further rescue was unthinkable. Amidst the indescribable pandemonium of the scene—the screams and moans of the burned, the shouts and running of would-be rescuers, the wailing of sirens, the myriad flowing streams of white uniforms, stretchers, and ambulances—transcending all, the roaring, crackling, searing, overpowering blaze shattered the darkness with infernal fury. For two more hours, Toronto Fire Department pumps poured lake water into the hot channel ship before the fire could be considered under control. Slowly the *Noronic* listed to port and settled by the stern to the shallow bottom of the harbor. It was not until 6:00 a. m. that the first fireman could venture aboard the steaming hull to begin the grisly work of recovering and identifying the dead. Simultaneously, like the shock waves from an explosion, the horror and dismay spread across the headlines of the world.

When the final grim reckoning was complete, it developed that not a single member of the ship's complement had been lost. This was undoubtedly due to two principle factors. In dashing about in the initial stages of fire excitement and confusion, the few crew members on duty had rushed through the crew quarters giving alarm. Some also took time to arouse shipmates. The other large factor in the crew's favor was their familiarity with the layout of the vessel and possible avenues of escape. While the cold comparison of the facts that there was no loss of life among the crew and a large loss of life among the passengers, leads automatically to a conclusion of poor or dishonorable fulfillment of duty by the crew, such a condemning conclusion should be well tempered by consideration of the circumstantial factors involved. There was the lack of prior organiza-



Toronto Fire Department

Figure 3. Dining salon SS *Noronic* after fire gutted ship.

tion spelling out duty toward passengers; the rapid advancement of the fire which discouraged efforts to evacuate passengers; the over-riding human compulsion to save one's own life; and the overwhelming fear of being burned by fire to which no mortal is immune.

OFFICIAL REPORT

"The lack of any effective system of patrol for the purpose of fire detection and the lack of any system by which when fire was detected, the information of its presence and location could immediately be sent to some central locality, where personnel, trained in methods of dealing with fire, were available to be sent to the spot immediately, accounts, in any opinion, for the loss of life which ensued." These words in the restrained language of the Minister of Transport's Commissioner who conducted the Canadian Government's official inquiry sum up the principle failures which led to this disaster. Without fire-resistant bulkheads or materials of any kind, without fire doors or fire stops, without a water sprinkling system, the *Noronic*, once a fire had been well started, was doomed to burn like a great tinder box. Nevertheless, although conflagration was inevitable, proper organization and training with good leadership would have granted the passengers a fair chance to save their lives. Neither one of these essential ingredients was present when the cruel destiny fate had ordained for the *Noronic* finally overtook her.

COAST GUARD INSPECTION

Under the provisions of a United States statute, the *Noronic*, in carrying passengers from United States ports, was subject to inspection by U. S. Coast Guard Marine Inspectors only to the extent of ascertaining that the condition of the vessel, her boilers, and her lifesaving and fire-fighting equipment were in compliance with the conditions under which she was certified by her own government and as described upon the inspection certificate posted on board. In accordance with this statute and with international agreement, Coast Guard Inspectors had inspected the *Noronic* in United States ports on at least two occasions during the 1949 sailing season and found her to be in compliance with the Canadian Government's requirements for this vessel.

LESSONS FROM CASUALTY

The lessons of this tragic fire were not lost upon this country, nor upon Canada. Within days after the casualty a major special survey of large United States passenger vessels operating on the Great Lakes, all of

which were constructed before 1936, was undertaken by the U. S. Coast Guard. During this survey, which lasted two months, every item of fire protection and firefighting equipment, every possibility of fire origination and propagation, and every detail of patrol, detection, and firefighting organization on all of these vessels was further scrutinized. Although all of these large vessels (8 in number) were already equipped with an automatic sprinkling system, and with some form of automatic fire detection system, as a result of this major survey many additional requirements were made in the Fall of 1949. These requirements included rearrangement and extension of some of the sprinkling feeder lines, installation of additional fire stops and closures, elimination of certain openings which could aid the spread of fire, installation of additional detector stations, relocation of fire patrol routes and punch-clock stations, additional fire extinguishers, and other changes which would tend to increase and strengthen these vessels' overall fire protection. Many important changes to increase fire protection safety on Canadian ships were also made by the Canadian government within a few months of the *Noronic* disaster.

As a footnote to the history of fire protection on American vessels, with the *Noronic* tragedy in mind, the following incident is recounted. During the summer sailing season of 1950, on one of the largest and most popular American passenger ships on the Great Lakes, the Chief Engineer was alerted one night by the ringing of the sprinkling system alarm bell. After starting the fire pumps, the Chief Engineer and other officers proceeded to the zone indicated by the alarm bell

indicator which was the vicinity of a large linen locker on A deck. Upon opening the door of this locker, they discovered the sprinkler head in the center of the overhead to be flowing freely, and about 6 inches of water on the deck inside the room. Then they noticed a canvas bag used for the stowage of soiled linen standing in the center of the room with about one foot of its top burned off, but all fire extinguished. These officers later stated that the entire cost of all the sprinkling system on that ship (which was built in 1924 and was not of fire-resistant construction) had been paid off in full that night, and not one single human life endangered. One cannot help but imagine what a tremendous difference one pressurized sprinkler head in the linen locker of the *Noronic* might have made.

The lessons to be learned by all the world from the *Noronic* catastrophe are legion. While the principle blame fell on the ship's officers and crew for their inefficient and ineffective efforts after the fire began, (the Master's license was suspended outright for one year, a crushing blow in his professional career), the material factors and conditions which set up the fire should also bear a full share of the blame. In the first place the entire superstructure and practically all of its furnishings were highly combustible. In the second place such provisions as could have been made, even in a highly combustible structure, to deter or prevent the spread of fire were almost nonexistent. In the third place the physical arrangements for detecting and sounding the fire alarm were antiquated and ineffective, and the long freedom from such an emergency had induced a state of laxity and complacency in the

(Continued on page 176)



The Telegram

Figure 4. The SS *Noronic* lies smoldering at her berth.

AMERICAN BOAT AND YACHT COUNCIL PROGRESS

By E. S. Terwilliger, Secretary, ABYC

NOT quite a year and a half ago the American Boat and Yacht Council, Inc., was formally organized for the purpose of improving boating safety and, by so doing, reducing the need for imposing detailed regulations on the boating field by the Federal and/or state governments. A natural corollary is the probability that should governmental regulation become necessary, the Council's findings would provide the base for the drafting of such regulation if it is related to the physical features of boats and their equipment.

Prior to the formation of this Council, the Motorboat Act of April 25, 1940 was the last legislative step taken in respect to motorboating safety. This Act, however, fell far short of accomplishing its purpose,

which was to provide the legal basis for a comprehensive set of safety regulations for the motorboating public. Unfortunately, this Act provides the Coast Guard with the statutory authority only to promulgate regulations governing fire extinguishers, lifesaving appliances, flame arresters, etc., and makes no provision concerning the construction or seaworthiness of hulls.

The goal of the Council is the development of an advisory code of recommended practices and engineering standards for improving and promoting the design, construction, equipage and maintenance of small craft with reference to their safety—for voluntary adherence. By adherence to such a code, the boating industry will be equipped with the

means of giving evidence to the public that its products, when used as intended, will perform with safety.

ORGANIZATION

As organized, the Council is basically a technical society devoted exclusively to the many problems of small vessel design, construction and outfitting as they may relate to boat safety. The prime functions of the Council are the support and direction of its technical committees, plus making the findings of those committees available to all interested in the form of the aforementioned code of recommended practices or engineering standards.

The technical committees are appointed and guided by a technical board. These committees are manned by the best scientific and practical minds available and specialize in the following fields: hull, materials, machinery, equipment, electrical, and operations. Each committee deals with its specialty. Combined, it is expected that every phase of boat building will be covered.

While membership in the Council is open to all individuals interested, service on its technical committees requires appropriate qualifications. Under its constitution the Council cannot concern itself with matters related to trade or politics. It is organized solely for the study of technical matters related to the basic safety of boats and the resolution of those matters into practical recommendations or standards.

The Council is now at work—behind it is the complete establishment of its executive department, the manning of administrative committees, and most important, the formation of its Technical Board. It is that Board which, as the agent of the Council's Board of Directors, has overall responsibility for the furthering of the Council's objective. The accompanying Chart (See Figure 1) outlines the ABYC's Technical Organization under the Technical Board.

COMMITTEE REPORTS

Immediately upon its formation, the Technical Board tentatively adopted a set of rules which were later supplemented by the establishment of a procedure for the uniform processing of technical committee reports. That procedure is as follows: (See Figure 2)

ASSIGNMENT OF A PROJECT

1. A suggested project may originate anywhere in the boating realm, i. e., government agencies, various industry di-

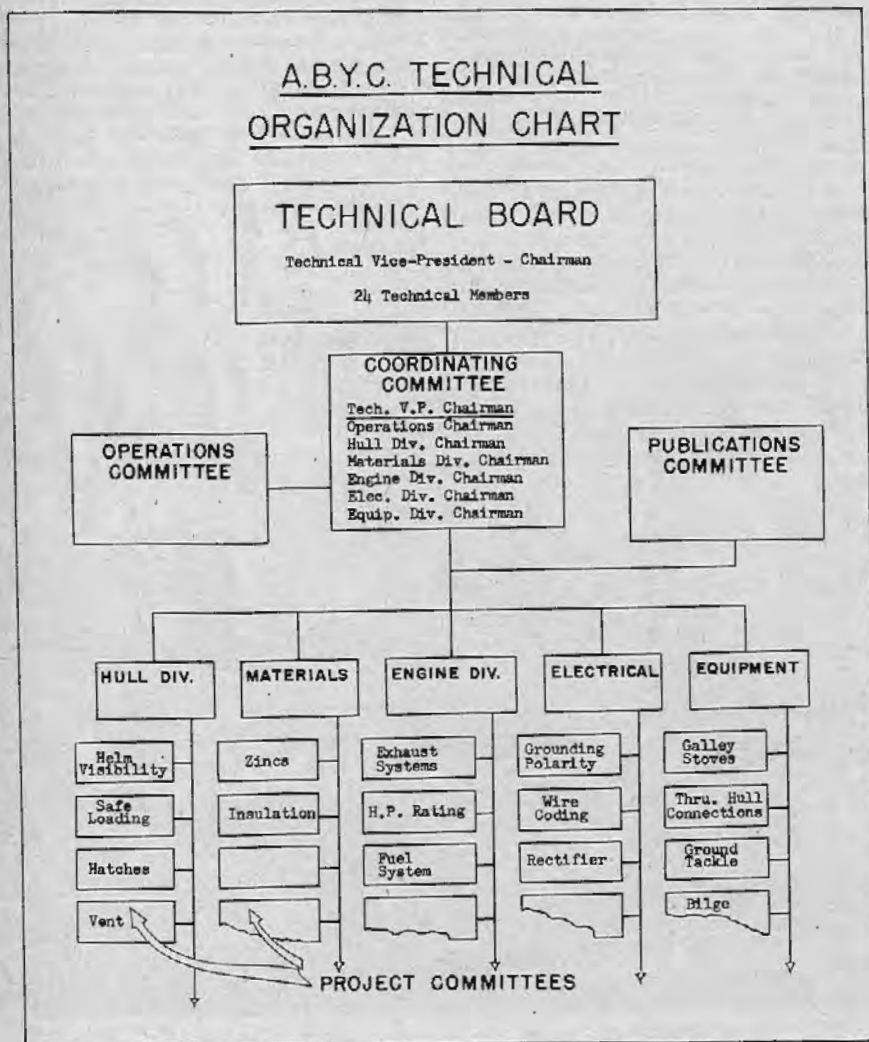


Figure 1.

visions, the boating public, and the Council's own membership.

2. A suggested project must be submitted to the Technical Board for consideration as to its appropriateness within the Council's objective, and if accepted (majority vote), it is assigned to one of the Division Chairmen—hull, materials, machinery, electrical, equipment or operation.

3. The Division Chairman has the duty of suggesting for Technical Board approval a specific Project Committee for the development of the project.

DEVELOPMENT OF A PROJECT

1. Development of subject by Project Committee into a REPORT which shall include as much discussion as is deemed necessary to support the conclusions. These conclusions to be stated as recommended practices and/or engineering standards.

2. Submission of REPORT to the Division Chairman with a record of the Project Committee's vote on the conclusions. This ballot must reveal at least a two-thirds majority and negative votes must be supported by written explanation.

3. The Division Chairman shall forward the REPORT to the Secretary with his endorsement and/or comment.

4. The Secretary shall refer the REPORT to the Publications Committee for editorial comment. Any suggested changes are to be discussed with the Division Chairman concerned for clearance.

5. The Secretary shall refer the REPORT to the six Division Chairmen who, under the chairmanship of the Technical Vice-President, will constitute the Technical Board Coordinating Committee. This committee is empowered to authorize distribution of the REPORT by the Secretary as "tentative" ABYC recom-

mended practices and/or engineering standards. If a majority agreement cannot be reached by the Coordinating Committee, the REPORT shall be referred at this stage to the Technical Board. All actions of the Coordinating Committee are subject to the approval of the Technical Board.

6. Distribution by the Secretary of the "tentative" ABYC recommended practices and/or engineering standards to the entire membership of the Council, to NAEEM (National Association of Engine and Boat Manufacturers) mailing list, and to the OBC (Outboard Boating Club of America, Inc.), etc.

7. Any comment that is received concerning the "tentative" recommended practices shall be referred to the Project Committee concerned via the Division Chairman for any necessary reconsideration.

8. For adoption of conclusions by the Technical Board, the ballot must result in a favorable majority of at least three-fourths of the Board's members.

9. The conclusions are published as ABYC recommended practices and/or engineering standards.

In establishing the aforementioned procedure for handling proposals, the Technical Board was careful to assure that any advisory code adopted would reflect common purpose, common understanding, and common consent. Hence, the procedure recognizes the right of every element concerned, whether designer, boat builder, boat dealer, equipment manufacturer, service yard operator, boat owner, or government, to participate in deciding what the code should include.

It has been shown that a subject for Council study may be suggested by anyone interested in boating, whether his interest be commercial, private, or governmental. The Technical Board considers all suggestions and when a subject is accepted as appropriate, it is assigned to the Chairman of one of the Technical Divisions. From that point on the development of the subject is in the hands of a Project Technical Committee within the particular Technical Division. The Project Committee is the task force whose job it is to thoroughly consider every possible phase of its subject and prepare a REPORT that proposes pertinent recommended practices and/or engineering standards together with the controlling reasons for supporting the proposals. A REPORT submitted by the Project Committee to its Division Chairman must have the backing of the substantial majority of its members. It is then editorially reviewed by the Publications Committee for agreement with the Council's established form for reports, and, when in order, referred to the Coordinating Committee where any interrelation of the

(Continued on page 176)

FLOW CHART FOR PROCESSING REPORTS

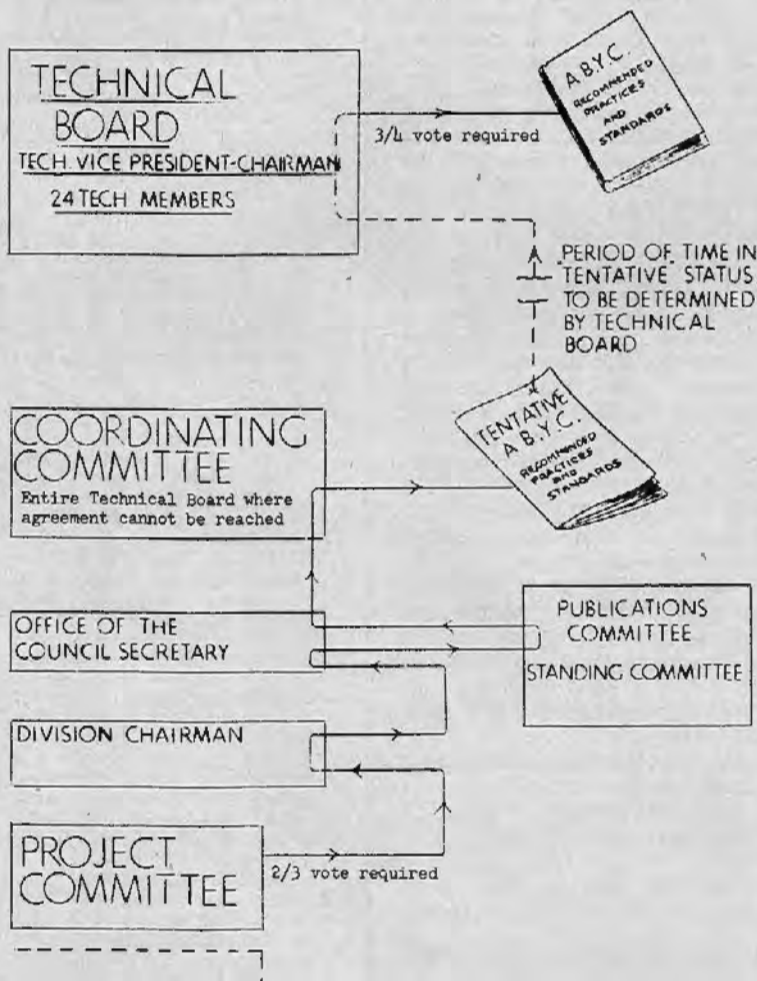


Figure 2



nautical queries

Q. (a) For what period is a deratization certificate or deratization exemption certificate issued?

(b) What conditions must exist for a deratization exemption certificate to be issued?

A. (a) Deratization and deratization exemption certificates are valid for six months.

(b) Deratization exemption certificates are issued if inspection reveals that rodents are kept under control.

Q. What particular care should be exerted when procuring the following for shipboard consumption:

a) Milk

b) Shellfish

A. a) All milk obtained from shore sources in the United States, or in nearby foreign countries, should be pasteurized. Moreover, the sources of supply should be approved by the Surgeon General. Milk for table use should not be procured in large bulk containers from which it is subsequently transferred to pitchers and glasses by dippers or by pouring. Milk, buttermilk, and milk beverages should be served in or from the original containers received from the distributor, or from a bulk container, equipped with a dispensing device so designed, constructed, installed, and maintained as to prevent contamination or spoilage of the contents. The original containers preferably should be of a size designed for the use of the individual consumer.

b) Shellfish that have been taken from contaminated waters, or that have been handled in an insanitary manner, are capable of transmitting a number of intestinal diseases. Therefore, raw shellfish purchased for use aboard vessels should be obtained only from dealers whose names appear on the current list of certified shellfish shippers issued by the Public Health Service. Shucked raw shellfish should be purchased in the containers into which they were packed at the shucking plant and should be kept in the vegetable cooler or thaw room of the meat box until used. Such containers should be marked with the name of the plant, the abbreviation of the state in which the shellfish were packed, the certificate number of the shipper, and the date of packing. The latter may be recorded in code.

—*Handbook on Sanitation of Vessels in Operation*

Q. Explain how cargo oil tanks are mechanically cleaned and gas freed. What precautions should be taken during this operation?

A. To gas free a tank it is necessary to heat the tank atmosphere sufficiently to facilitate rapid ventilation. It is also necessary either to heat the metal sufficiently to evaporate the adhering oil, or wash away all such free oil and pump it out. As soon as the oil has been evaporated or washed and pumped away, the vapors can be removed by natural or forced ventilation while the tank atmosphere is warmer than that of the outside air. The vessel should be trimmed slightly to facilitate complete stripping. Gas freeing and washing is accomplished mechanically by a washing machine in approximately 1½ hours per tank. The washing machine consists of a mechanically rotated nozzle device attached to the end of a hose inserted through a hole cut centrally in the deck. The nozzles turn slowly causing the streams of water, at about 175 p. s. i. and 180° F., to be directed at all surfaces. During this operation no smoking shall be permitted and all precautions must be taken to avoid sparks on deck. The hose used should be grounded. The water, oil, and sludge can be pumped overboard only if the ship is a safe distance from coastal waters. Before anyone is permitted to enter the tanks without a fresh air hose mask the space should be tested for oil vapors and certified as being gas free.

Q. What are the probable causes of unusually low head pressures on the refrigeration system?

A. Unusually low head pressures may be caused by the following:

(a) Too much or too cold condensing water.

(b) Liquid refrigerant flooding back from the evaporator.

(c) Leaky discharge valves.

(d) Insufficient charge of refrigerant.

Q. Explain how to fill, when lying-to with the fore-topsail to the mast.

A. Brail up the mizzen, hoist the jib and fore-topmast staysail, shiver the main and mizzen topsails, and when the ship has fallen off 20° to 30°, fill the fore-topsail and stand on.

TRADITIONS OF THE SEA

The roll of American Seafarers who have performed their duties in an outstanding and meritorious manner in accordance with the highest traditions of the sea is long but never completed.

One of the names which has a distinguished place on this roll is that of Captain Morgan A. Maxey, now in command of the SS *Pan Georgia*. In December 1943, his ship, the SS *Cedar Mills*, was being escorted by the French destroyer *Le Triomphant* across the sub-ridden Bay of Bengal to Calcutta.

On 17 May 1944, the President of the United States conferred the Merchant Marine Distinguished Service Medal on Captain Morgan A. Maxey, in accordance with the following citation:

Escorted by a French destroyer, his tanker and the destroyer were caught in a violent cyclone, and became widely separated. The destroyer, running out of fuel and unable to maneuver, was in a sinking position with a 45° list when the tanker picked up her distress call. Agalust mountainous seas and a force 12 wind she fought through to the other ship's assistance. Too rough to launch lifeboats, preparations were first made to take off the 250 French sailors by life line. After distributing oil on the weather side of the stricken ship to still the seas breaking over her decks, the wind providentially decreased to a force 8 and Captain Maxey decided to attempt the rescue with lifeboats. Two boats were launched, but when they approached the destroyer, her heavy roll in the towering seas prevented them from closing in and her men were forced to jump into the sea whence they were hauled into the boat. In two days about half of the men had been rescued, when the seas moderated to a degree which held hope that the destroyer might also be saved. A tow line was rigged and the tanker proceeded to tow the man-o-war until, five days later, rendezvous was made with a British man-o-war which relieved the tanker of her tow.

Captain Maxey's fine leadership; his indomitable will to win over all obstacles; and his outstanding exhibition of seamanship, are in keeping with the highest traditions of the United States Merchant Marine.



SIDE LIGHTS ON THE RULES

This article, the 22nd in the *Side Lights on the Rules* series, will complete the comparison of the International Rules with the local rules applicable to Inland Waters, the Western Rivers, and the Great Lakes.

Aside from specific provisions of the type discussed in previous articles, each set of rules contains two general provisions.

One of these, the "Rule of Special Circumstances," authorizes the mariner to depart from the applicable specific provisions to avoid *immediate danger*.

The other, the "Rule of Good Seamanship" requires the mariner to do more than what the applicable specific provisions require, *whenever necessary*.

For the high seas, the two general provisions are set forth in Rules 27 and 29, International Rules:

Rule 27. In obeying and construing these Rules due regard shall be had to all dangers of navigation and collision, and to any special circumstances, including the limitations of the craft involved, which may render a departure from the above Rules necessary in order to avoid immediate danger.

Rule 29. Nothing in these Rules shall exonerate any vessel, or the owner, master or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper look-out, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

Arts. 27 and 29, Inland Rules, are essentially the same:

Art. 27. In obeying and construing these rules due regard shall be had to all dangers of navigation and collision, and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

Art. 29. Nothing in these rules shall exonerate any vessel, or the owner or master or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

So are Rules Numbered 25 and 26, Western Rivers Rules:

Rule Numbered 25. In obeying and construing these rules due regard shall be had to all dangers of navigation and

collision and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger. When such departure becomes necessary neither vessel shall have the right-of-way and both shall navigate with caution until danger of collision is over.

Rule Numbered 26. Nothing in these rules shall exonerate any vessel, or the owner or master or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper look-out, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

IT IS SUGGESTED THE READER REFER TO CG-169, "RULES TO PREVENT COLLISIONS OF VESSELS AND PILOT RULES FOR CERTAIN INLAND WATERS OF THE ATLANTIC AND PACIFIC COASTS AND OF THE COAST OF THE GULF OF MEXICO;" CG-172, "PILOT RULES FOR THE GREAT LAKES AND THEIR CONNECTING AND TRIBUTARY WATERS AND THE ST. MARYS RIVER;" AND CG-184, "PILOT RULES FOR THE WESTERN RIVERS AND THE RED RIVER OF THE NORTH;" WHICH CONTAIN THE LOCAL RULES TO PREVENT COLLISIONS BETWEEN VESSELS ON THE LOCAL WATERS OF THE UNITED STATES. REFERENCES TO RULES AND ARTICLES THROUGHOUT THIS SERIES MAY BE FOUND THEREIN.

And, Rules 27 and 28, Great Lakes Rules:

Rule 27. In obeying and construing these rules due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

Rule 28. Nothing in these rules shall exonerate any vessel, or the owner or master or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of a neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

Unlike the specific provisions contained in the other rules, this is an instance when there is practical uniformity, with the differences primarily differences in terminology.

It must be noted, however, that departure from the rules is authorized only to the *extent necessary* to avoid

immediate danger; and the requirement to do more than the specific provisions require is held to mean "any action which a careful and prudent mariner would take."



HIGHLIGHTS ON THE RULES

The rules of the road contain two general rules which are familiar to all navigators. These are—the "Rule of Special Circumstances" and the "Rule of Good Seamanship". These are set forth in Rules 27 and 29, respectively, of the International Rules of the Road.

There is now a third general guide that can be added to this group and while it is not included in the International Rules of the Road it does have particular significance to the navigator—the "Rule of Proper Sea Manners". This guide was first propounded in the Chief of Naval Operation's instructions to merchantmen in time of emergency and war. These instructions were originally promulgated in the JANAP series that were issued to masters but they have now been incorporated in the latest 1955 edition of H. O. 205 *Radio Navigation Aids*. This guide can also be found in the 12th edition of *Knight's Seamanship*, differing somewhat in wording, but with the same meaning.

The instruction as contained in H. O. 205 is as follows:

The attention of masters is called to the danger to all concerned which is caused by a single vessel approaching a formation of warships or merchant vessels in convoy so closely as to involve risk of collision, or attempting to pass ahead of, or through such a formation or convoy. Masters are therefore warned that single vessels should adopt early measures to keep out of the way of a formation or convoy.

Ship navigators should be aware of the import of this guide since it is probable that in the future any Admiralty Judge who is called upon to render a decision in a collision case involving these circumstances, will take cognizance of it irrespective of the statutory standing.

NORONIC

(Continued from page 171)

ship's officers and management toward this poor arrangement which, otherwise, might not have been tolerated. In the fourth place the organizational arrangements for the entire crew to deal with ordinarily anticipated emergencies were poor and incomplete. Although the vessel normally did not spend any night in port with passengers on board, the failure to create an effective organizational arrangement which would at least keep a sizable portion of the crew on hand to deal with an emergency was inexcusable and (to many ship's officers) beyond belief. As to the effectiveness of the fire patrol system used on the *Noronic*, no further comment is necessary.

That no such terrifying disaster as occurred on the *Noronic* could occur on any U. S. passenger vessel constructed since 1936 is almost positive. Since that date, construction has been required by the Coast Guard to be highly fire-resistant. Fire protection through fire-resistant construction by which protection is permanently built-in is now required by U. S. marine safety regulations, in place of the older standard of protection through sprinkler systems by which protection is subject to the vagaries of shipboard maintenance and human vigilance. The use of incombustible materials wherever possible for structure, fittings, and furnishings, with an extensive system of fire-resistant bulkheads, fire doors, and fire stops throughout passageways, vertical openings, and other pathways of fire, is now rigidly required on all new passenger vessels with the result that safety on U. S. passenger ships is unsurpassed in the world.

The blazing end of the *Noronic* imprinted a dreadful entry in the history of shipping in North America.

But in the mind of every ship's officer who has read or will read the story of the *Noronic*, the stark necessity of being prepared for the unexpected emergency, the terrible consequences which can result from a lack of thorough organization and drill of the crew, the nightmare of finding ship's emergency gear inoperable when it is desperately needed; these memories will live and will bear fruit. The horror and suffering of those who died in the holocaust can never be atoned, but the vital lessons for preparedness, organization, and training bequeathed to all mariners by this disaster will long remain as the most fitting testimonial to those whose lives were sacrificed.



A. B. Y. C. PROGRESS

(Continued from page 173)

subject of the REPORT with the other Divisions can be considered. When a REPORT is released by the Coordinating Committee it is in a "tentative" status—ready for wide distribution for the purpose of securing maximum review and comment by all interested. It is important to note that no final action by the Technical Board can be taken on any proposed recommended practices or engineering standards until all comment received during the period of a REPORT'S "tentative" status is fully considered by the Division and Project Committee concerned.

Since the Council's organization on April 30, 1954, its Technical Board has accepted some thirty subjects for study. All of them are now being considered by Project Committees. This is a very appreciable accomplishment. A breakdown of these subjects is as follows:

HULL DIVISION—10 Projects.

Helm visibility; location and visibility of navigation lights; engine and fuel tank compartment ventilation; escape hatches; scuppers; marking of small craft for safe loading; hull fastenings; watertight bulkheads; stowage of lifesaving equipment; kit boats.

Progress—The Project Committees for helm visibility, navigation lights and escape hatches have developed initial reports which are currently being prepared for processing to the Coordinating Committee. A Project Committee of nineteen members has been formed to study the complex problem of marking small craft for safe loading and has made excellent headway.

MATERIALS DIVISION—5 Projects.

Standard specifications for forest products, metals and plastic products used in boat construction; use of zinc or magnesium for cathodic protection of underwater hardware; insulation; and sound proofing materials.

Progress—A report on the use of zinc or magnesium protection for underwater hardware is expected for early processing to the Coordinating Committee.

PROPULSION AND AUXILIARY,

MACHINERY DIVISION—5 Projects.

Exhaust systems; fuel systems; procedure for raising the power of marine engines; conversion of automotive engines for marine use; mounting marine engines.

Progress—The committee studying exhaust systems has reached reasonable agreement on its report which is currently being prepared for processing to the Coordinating Committee.

ELECTRICAL DIVISION—5 Projects.

Electrical grounding practices; identification system for wiring; lightning protection; circuit protection; rectifiers.

Progress—The report on electrical grounding practices is being divided into two parts, one dealing with the preferred grounding polarity and the other with bonding systems—the former is in report form under current consideration by the committee, the report on bonding systems is nearing readiness for similar consideration. An initial report on rectifiers has been considered by its committee and is currently being modified prior to processing to the Coordinating Committee.

EQUIPMENT DIVISION—5 Projects.

Liquefied Petroleum Gas Systems; through hull connections including sea cocks, strainers and water scoops; galley stoves; fire fighting equipment; ground tackle.

OPERATION DIVISION.

No specific studies have been assigned this Division since its prime function is to review and consider proposed recommendations developed by the other Council Divisions with particular relation to boat operation.

Some eight project reports, it will be noticed, are nearing submission to the Coordinating Committee which is the last step prior to their widespread release. It can be expected that this will be accomplished within the year. Many other project committees have made much progress in their particular assignments with their reports in varying stages of development.

This is a picture of real progress for an effort that is of tremendous scope and long range.

To accomplish its planned task, the Council has received important assistance from many interested organizations and individuals. It has attracted a fine roster of members and those qualifying as technical members constitute an excellent representation of men active in the commercial side of the boating realm.

The Council's objective is pointed towards as much "built-in" safety as is practical for boats and their equipment, plus supplementing recommendations relative to maintenance and operation. It can do this, but it cannot hope to eliminate human carelessness.



Courtesy Maritime Reporter

DEFENSE LINE IN THE SEA

WASHINGTON.—America's defense against a sneak atomic attack will be bolstered considerably this spring when engineers erect the first man-made "radar island" off the Atlantic coast (see fig. 1).

The prefabricated radar station is expected to be one of a vast string of bases called "Texas Towers," stretching along the coast some 1,500 miles from Norfolk to Newfoundland. They will be manned by the Air Force.

Named after the offshore rigs drilling for oil in the Gulf of Mexico, the radar towers will resemble a great row of lighthouses—keeping watch over millions of families in the eastern part of the United States.

The 6,000-ton steel platforms, equal in weight to a fair-sized merchant vessel, will be erected above the ocean at a site approximately 150 miles off the coast. The first one will be installed off Cape Cod.

Radar beams from three Buck Rogers-like domes will scan the eastern horizon for enemy planes, ships and submarines. The "Radomes" will tie in with civil defense warning systems throughout the country.

Standing above the water, the deck of the triangular-shaped platform will be 87 feet above the water level, or well above the reach of the ocean's biggest waves.

It will be supported by three huge cylindrical steel piles or caissons 10 feet in diameter and about 200 feet long. The hollow caissons will reach

down to the ocean floor 50 feet below the water's surface and they will be imbedded 48 feet below the ocean floor.

Each radar base will be entirely self-sustaining and will generate its own electric power for radar, radio, and living areas. The platforms will be large enough to house 50 to 70 men and will include sick bays, leisure facilities, maintenance rooms, and a helicopter airport for transporting men and supplies.

Rising off the deck will be three ball-shaped radar domes about the size of two-story greenhouses with planetarium-like roofs. The domes, equipped with radar-detection and communication devices, will be installed after the platform is erected above the ocean.

The triangular platform—200 feet on each side (about two-thirds the length of a football field) and 20 feet deep—will be built ashore. Work has already begun in a New England shipyard. Target date for completion is late May. The work will be done by the DeLong Corp. and the Raymond Concrete Pile Co., both of New York.

After the platform is launched it will be towed out to sea to one of the many shoal areas along the Continental Shelf where the water is 50 feet deep. En route to the site, the caissons will ride high above the deck, sticking up like lofty smokestacks.

Upon arrival at the erection site, the caissons or legs will be dropped through open wells in the platform to the ocean floor.

The Herculean task of erecting the platform from a waterborne condition to high above the waves will be accomplished by powerful air jacks.

The air jacks are barrel-like structures which are bolted to the deck and encircle the caissons. The two halves of the air jack—top and bottom—provide means to climb up the caisson, pulling the platform upward.

April 30, 1955—Navy Times.



THE "BITE" OF A LINE

Sailors are reputedly adept at handling lines—both ashore and afloat. But this adeptness does not alone prevent serious accidents. When the lines are "paying" out or being brought "taut" it often requires nimbleness and quick thinking to stay "clear." But let's not go too far afield and instead examine a few of the reports on injury cases involving handling of lines aboard ships.

1. The slack was being taken out of the aft spring line with the chief mate in charge. The boatswain started the winch and in putting the bight of the line around the fair lead got his left hand caught under the line, crushing three fingers.

2. A deckhand handling lines on a barge docking on the Mississippi River lost his leg when he got caught in the bight of a line. This accident happened at 1 o'clock in the morning and the location of the bitts to which he was securing his line was in the shadow cast by the lights on the lock and he did not notice the position of his line before it was too late.

3. From a ship came the report of the painful injuries suffered by a deckhand who tripped trying to jump over a mooring cable. Negligence? Yes. There was no urgency existing that made such haste necessary.

4. A deckhand on a Great Lakes steamer ruptured himself pulling up a long length of hawser from the fantail. Negligence? Yes, again. He should not have attempted the job alone.

These accidents are often considered the results of occupational hazards. But as accidents they are preventable. To be preventable you have to be alert and know what can happen under certain circumstances. Often the accident occurs faster than the eye can see when handling lines; that the "bite" in the "bight" of a line can be fearful indeed.

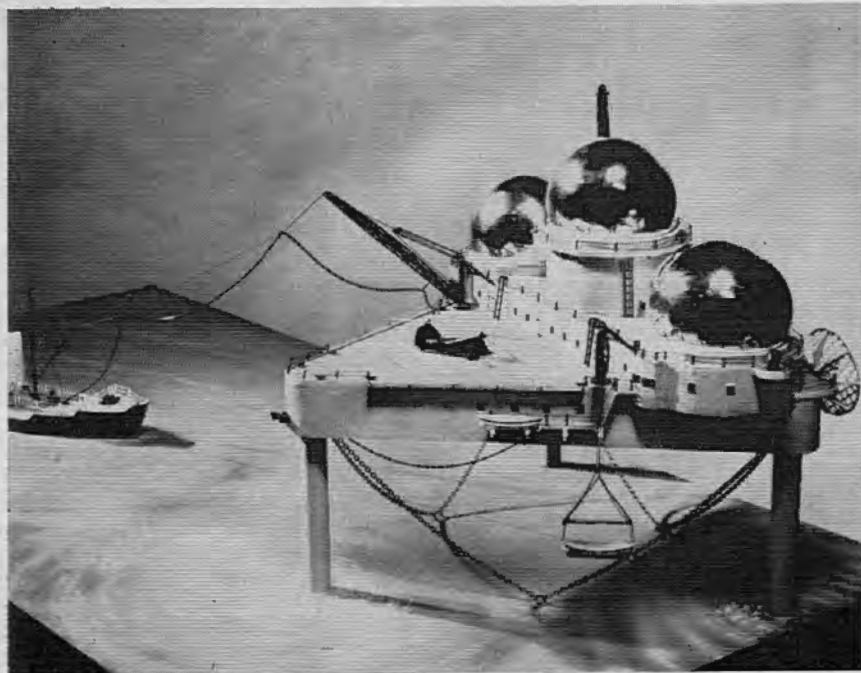


Figure 1.

AMENDMENTS TO REGULATIONS

[EDITOR'S NOTE.—The material contained herein has been condensed due to space limitations. Copies of the Federal Registers containing the material referred to may be obtained from the Superintendent of Documents, Washington 25, D. C.]

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CFR 55-23]

TANK VESSEL AND MARINE ENGINEERING REGULATIONS

A notice regarding proposed changes in the navigation and vessel inspection rules and regulations was published in the *FEDERAL REGISTER* dated February 18, 1955 (20 F. R. 1055-1057), as Items I to IX, inclusive, on the Agenda to be considered by the Merchant Marine Council, and a public hearing was held on March 22, 1955, at Washington, D. C. This document is the third of a series of documents covering the rules and regulations considered at this public hearing.

All the comments, views, and data submitted in connection with the items considered by the Merchant Marine Council at this public hearing have been very helpful to the Coast Guard and are very much appreciated. The amendments in this document are based on Items II and III in the Agenda.

The regulations governing the bulk transportation of inflammable or combustible liquids having toxic or lethal characteristics in 46 CFR Part 39 have been revised in their entirety. The revised regulations will permit the transportation in bulk quantities of class "B" poisons, having a negligible vapor pressure, in tanks built integral with the vessel's hull, with other tanks surrounding the ones in which the class "B" poison is stowed. The regulations in 46 CFR Part 39 apply when class "B" or "C" poisons are transported in bulk in vessels. The revised regulations are based on Item III in the Agenda.

The amendment to 46 CFR 52.01-7 permits the alternate use of empirical formulas in lieu of proof hydrostatic tests for determining pressure ratings of pressure vessels having cross sections other than circular. The amendment to 46 CFR 52.05-12 revises the requirements for pressure

vessels designed with a factor of safety of four so that these requirements will be similar to those of the American Bureau of Shipping and the ASME Boiler Code Rules. This amendment will require removal of weld reinforcement for vessels subject to temperatures exceeding 800 degrees F. wherever possible. The amendment to 46 CFR 52.20-15 (f) and (h) revises the requirements for reinforced openings in dished heads so that these requirements will be consistent with the ABS Rules and the ASME Boiler Code Rules. The amendment to 46 CFR 52.20-20 revises the requirements for flanged-in manhole openings in heads so that these requirements will be similar to the ABS Rules and the ASME Boiler Code Rules. These amendments are based on Item II in the Agenda.

The regulations in 46 CFR Subpart 52.25 regarding openings and reinforcements have been revised in their entirety in order to conform with new requirements in the ASME Boiler Code Rules. These requirements have been proposed by the American Bureau of Shipping. As a result of revising 46 CFR Subpart 52.25 the requirements in 46 CFR 52.22-15 have been transferred to this new subpart and an appropriate cross reference inserted. The amendment to 46 CFR 52.24-10 (1) is a cross reference to the new requirements in 46 CFR Subpart 52.25. These amendments are based on Item II in the Agenda.

The amendment to 46 CFR 52.60-20 (a) (5) adds a new requirement that superheaters are to be fitted with vents. This requirement is considered essential for the protection of the superheater when starting up. This requirement is in compliance with the ABS Rules. The amendment to 46 CFR 52.70-10 (b) changes the requirements covering studded boiler connections so that these requirements will conform to the current ASME Boiler Code Rules and ABS Rules. These amendments are based on Item II in the Agenda.

The amendment to 46 CFR 54.03-15, including Table 52.03-15 (f), will permit a tube sheet pitch less than the minimum previously required for heat exchangers. However, the manufacturer will be required to demonstrate that he can secure a tight tube connection and that damage to the tube sheet does not occur in way of the tube attachment in rolling. The amendment to 46 CFR 54.03-40 revises the requirements regarding openings and reinforcements for unfired pressure vessels in order that

these regulations will be consistent with similar requirements for openings and reinforcements in boilers prescribed by 46 CFR 52.25. These amendments are based on Item II in the Agenda.

The amendment to 46 CFR 55.10-55, regarding lubricating oil system, revises these requirements so that they will be similar to the current ABS Rules. The amendment to 46 CFR 55.10-70 (a) (3) and (g) revises the requirements regarding overboard discharges and shell connections by including recommended practices previously published in Navigation and Vessel Inspection Circular No. 6-48. The revised regulations are in compliance with ABS Rules and are intended to clarify requirements for overboard discharges where led through cargo tanks on tank vessels. These amendments are based on Item II in the Agenda.

The amendment to 46 CFR 56.01-10 revises the qualifications for welders. Welders qualified by the Bureau of Ships, Navy Department, the American Bureau of Shipping, and the U. S. Coast Guard are accepted by each other within the limits covered by the qualification test passed by the welder. In view of the revisions made in welder qualification tests by the Bureau of Ships which were concurred in by representatives of shipyards, manufacturers, the American Bureau of Shipping, and the U. S. Coast Guard, the regulations governing welder qualifications in 46 CFR 56.01-10 have been revised so as to be in agreement with those of the Bureau of Ships. The amendment to 46 CFR 56.01-70 (h) (1) will require class II pressure vessels containing liquefied compressed gases for transportation or stowage to be stress relieved if deemed necessary. This stress relieving is considered necessary in order to reduce the locked-up stresses in these pressure vessels which may result from welding and to minimize the possibility of brittle failure under adverse loading conditions. The amendment to 46 CFR 56.05-5 (c) (3), regarding nondestructive tests provides that the reinforcement shall be finished with a smooth crown having a thickness not exceeding certain specified limits. These requirements are intended to eliminate or minimize the stress concentrations inherent in a welded joint. These changes are necessary because of the elimination of the requirement for the removal of weld reinforcement on pressure vessels designed with a factor of safety of four.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Order No. 120, dated July 31, 1950 (15 F. R. 6521), and Treasury Department Order 167-14, dated November 26, 1954 (19 F. R. 8026), to promulgate regulations in accordance with the statutes cited with the regulations below, the following amendments to the regulations are prescribed and shall become effective 90 days after the date of publication of this document in the **FEDERAL REGISTER**:

Subchapter D—Tank Vessels

PART 39—INFLAMMABLE OR COMBUSTIBLE LIQUIDS HAVING LETHAL CHARACTERISTICS

Part 39 is amended to read as follows:

Subpart 39.01—General

- Sec.
39.01-1 Scope of regulations—TB/ALL.
39.01-5 Certificate of inspection—TB/ALL.

Subpart 39.05—Design, Arrangement, and Installation of Cargo Tanks

- 39.05-1 Design, construction, and arrangement—TB/ALL.
39.05-5 Markings—TB/ALL.
39.05-10 Installation—TB/ALL.

Subpart 39.10—Piping, Valves, Fittings, and Accessory Equipment

- 39.10-1 Valves and accessories—TB/ALL.
39.10-5 Piping and fittings—TB/ALL.
39.10-10 Safety relief and pressure-vacuum relief valves—TB/ALL.
39.10-15 Gaging devices—TB/ALL.

Subpart 39.15—Special Cargo Handling Requirements

- 39.15-1 Warning sign at gangway—TB/ALL.
39.15-5 Cargo discharge—TB/ALL.
39.15-10 Pump room controls—TB/ALL.

Subpart 39.20—Venting and Ventilation

- 39.20-1 Venting—TB/ALL.
39.20-5 Ventilation—TB/ALL.

Subpart 39.25—Periodic Inspections and Tests

- 39.25-1 Hydrostatic tests and inspection—TB/ALL.
39.25-5 Removal of defective tanks—TB/ALL.
39.25-10 Safety valves—TB/ALL.

(Federal Register of Friday, July 8, 1955)

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

Subchapter K—Security of Vessels

[CGFR 55-33]

PART 124—CONTROL OVER MOVEMENT OF VESSELS

Section 124.10 is amended by redesignating paragraphs (c), (d), and (e), to (d), (e), and (f), respectively, and by adding a new paragraph (c), reading as follows:

§ 124.10 *Advance notice of vessel's time of arrival to Captain of the Port.* * * *

(c) In the case of a vessel which is engaged in operations in and out of the same port, either on voyages to sea and return without having entered any other port, or on coastwise voyages within the same Coast Guard district, or from ports within the first, ninth, thirteenth or seventeenth Coast Guard Districts to adjacent Canadian ports, and where no reason exists which renders such action prejudicial to the rights and interests of the United States, the Coast Guard District Commander having jurisdiction may prescribe conditions, under which Coast Guard Captains of the Ports may consider such a vessel as being in constructive compliance with the requirements of paragraph (a) of this section without the necessity for reporting 24 hours in advance of each individual arrival.

(Federal Register of Friday, Aug. 5, 1955)

EQUIPMENT APPROVED BY THE COMMANDANT

[EDITOR'S NOTE.—Due to space limitations, it is not possible to publish the documents regarding approvals and terminations of approvals of equipment published in the Federal Register dated August 13, 1955 (CGFR 55-34)-(CGFR 55-35). Copies of these documents may be obtained from the Superintendent of Documents, Washington 25, D. C.]

United States Coast Guard

[CGFR 55-41]

STANDARD KAPOK BUOYANT CUSHIONS AND NON-STANDARD BUOYANT CUSHIONS FOR UNINSPECTED MOTORBOATS

TERMINATION OF APPROVALS

All the outstanding approvals in the 160.007 series for standard kapok buoyant cushions and all the outstanding approvals in the 160.008 series for non-standard buoyant cushions are terminated, effective October 1, 1955. These terminations of approvals are in accordance with the changes in the regulations published in the **FEDERAL REGISTER** dated December 18, 1954 (19 F. R. 8691-8708), and described as follows:

(a) All the approvals in the 160.007 series and published under the heading "Buoyant Cushions, Kapok, Standard," are terminated, effective October 1, 1955.

(b) All the approvals in the 160.008 series and published under the heading "Buoyant Cushions, Non-Standard," are terminated, effective October 1, 1955.

(c) Notwithstanding the terminations of approvals as set forth in paragraphs (a) and (b) above, buoyant cushions manufactured prior to October 1, 1955, under approvals in the 160.007 and 160.008 series may be continued in use so long as in good and serviceable condition.

(Federal Register of Friday, August 26, 1955.)

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 29 June 1955 to 29 July 1955, 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

Chemical and Materials Corp., Terre Haute, Indiana, Certificate No. 212, dated 12 July 1955, VEGO H-18.

AFFIDAVITS

The following affidavits were accepted during the period from 16 July 1955 to 15 August 1955:

Lee Brothers Foundry Co., Inc., P. O. Box 231, Anniston, Alabama, CASTINGS AND FITTINGS.

Operating and Maintenance Specialties, P. O. Box 188, Charlotte 1, N. C., FITTINGS.

Calmes Engineering Company, P. O. Box 8095, New Orleans 22, Louisiana, VALVES.

FUSIBLE PLUGS

The regulations prescribed in Subpart 162.014, Subchapter Q, Specifications, require that manufacturers submit samples from each heat of fusible plugs for test prior to plugs manufactured from the heat being used on vessels subject to inspection by the Coast Guard. A list of approved heats which have been tested and found acceptable during the period from 16 February 1955 to 15 August 1955 is as follows:

The Lunkenheimer Company, Cincinnati 14, Ohio, Heats No. 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, and 516.



