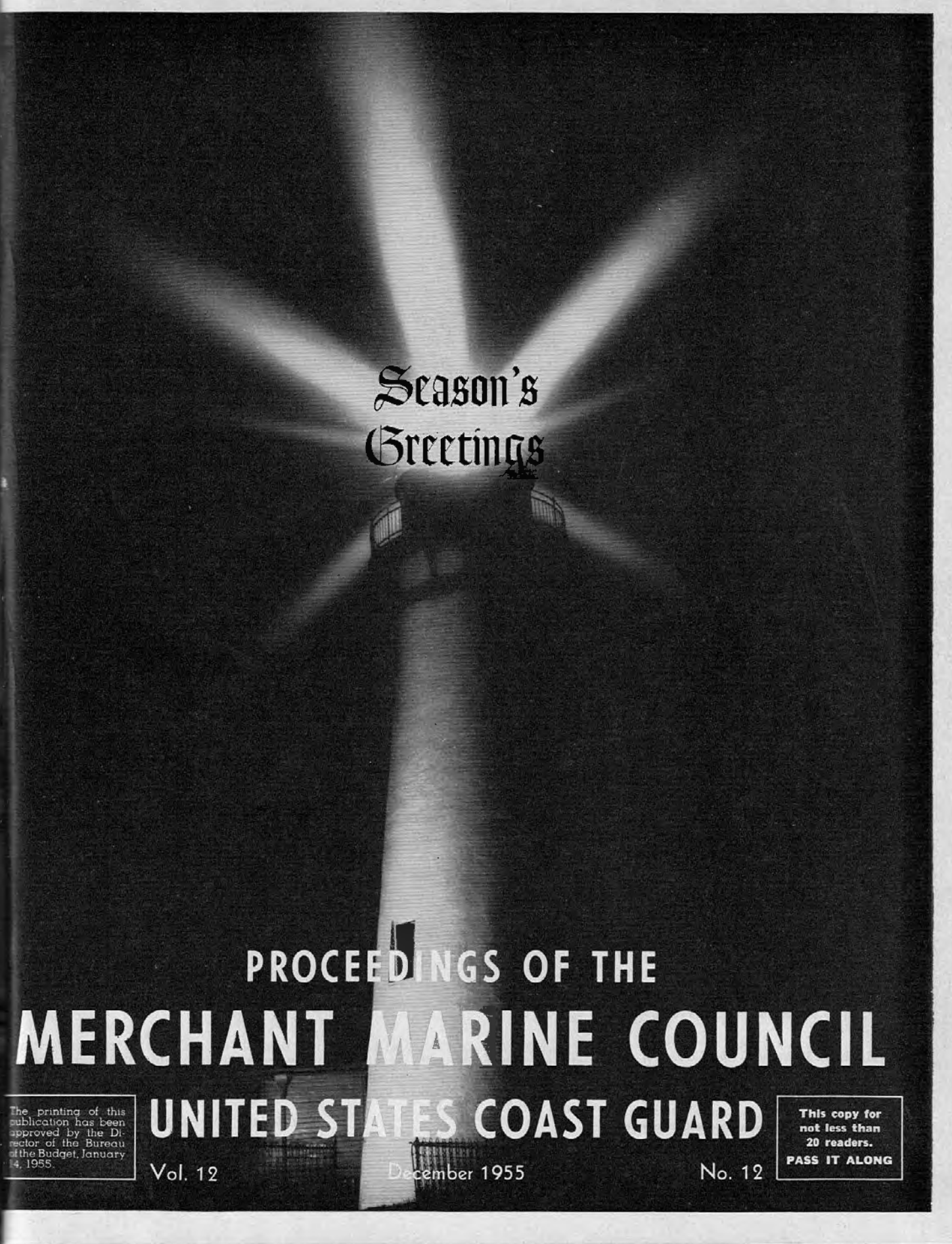

PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL
UNITED STATES COAST GUARD

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Vol. 12 December 1955 No. 12

Proceedings of the

MERCHANT MARINE COUNCIL

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The Merchant Marine Council of the United States Coast Guard

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FRONT COVER

Amelia Island Light. The lighthous shown in this unusual nighttime photograph is located on Amelia Island at the mouth of the St. Marys River at Fernandina, Florida. It is a white conical structure built in 1839. The light is 107 feet above water and is visible for 16 miles. U. S. Coast Guard official photo.

DISTRIBUTION (SDL 61)

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The American Merchant Marine is extremely important to the agricultural segment of our economy. Annually we export approximately two-fifths of our wheat crop, more than a quarter of all the cotton and tobacco, and one-half of our rice crop. Over the last ten years $1 out of every $8 of our farmers' income was realized by the export of their produce overseas. * * *

—Congressman John F. Shelley.

"In every war, the American Merchant Marine has played a vital though sometimes unpublicized role. The war in Korea was the most recent example. Merchant ships carried more than 80 percent of all the cargoes to support that action. I think figures such as these are eloquent proof of why we need a strong merchant marine."

—Navy Secretary Charles S. Thomas

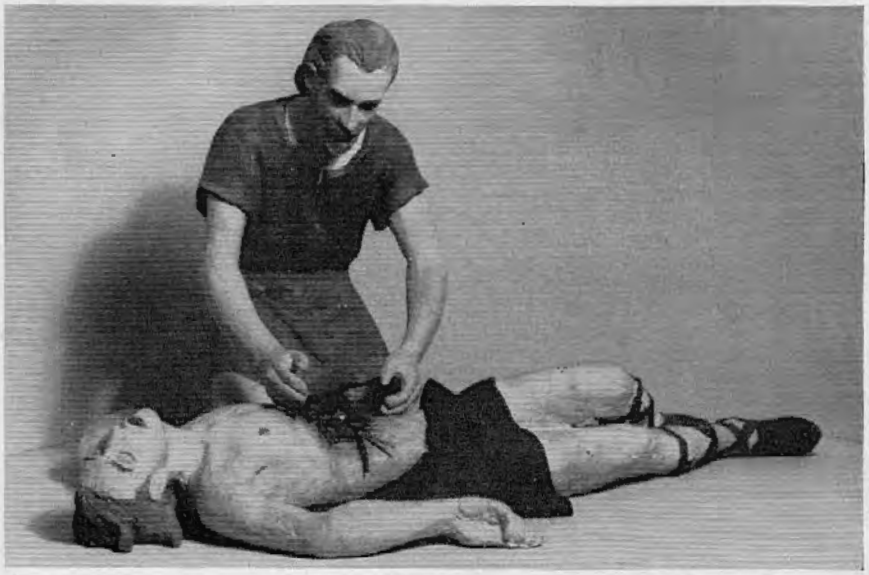
"We should commence at the earliest possible date a construction program of new merchant ships which will revive our lagging shipbuilding industry, retain its skilled craftsmen and designers, and which will replace with modern vessels the large group of Victory and Liberty ships which become obsolete in mass between 1962–65."

—Navy Secretary Charles S. Thomas

ARTIFICIAL RESPIRATION

Since earliest history, man has attempted to bring back to life those companions who have drowned. Presumably, the first attempts were directed toward appeasing the evil spirits. History records a more practical, but futile, attempt at resuscitation during the middle ages. This could be called the *Heat Method* as the theory behind it was to restore heat to the cold body. This method utilized the application of warm ashes, hot water, and the burning of dried animal excreta to the abdomen of the patient.

The next method was used in the 16th century and was called the *Bellows Method*. Paracelsus, the famous Swiss alchemist and physician (1493–1541) was the first to use this method in which a fireside bellows forced air into the lungs of apparently dead persons. Adaptations of this method were used throughout Europe for over 300 years, but the results are unknown.



HEAT METHOD—Early Ages. Warmth and heat—warm ashes, hot water, burning of dried animal excreta—applied to patient's abdomen.

BELLOWS METHOD—1530. Paracelsus was first to use fireside bellows to introduce air into lungs of apparently dead persons. Adaptations of this were used throughout Europe for 300 years.

Another early method of resuscitation which is probably better known to present day seafarers is the *Barrel Method*. This method was used prior to 1767 and is still occasionally used. The barrel's movement forward releases the pressure on the victim's chest and allows for inspiration. The movement of the barrel backwards causes the body's weight to compress the chest, which, in turn, induces expiration.

The first early method used that was similar to the modern day methods was introduced by a French physician, Dr. Francois LeRoy, in 1829 and was known as the *LeRoy Method*. Pressure was applied to the chest and abdomen to deflate the lungs, and removal of this pressure caused inspiration of air.

In our modern civilization, there are many things that can cause asphixia (to stop breathing) besides drowning, such as electric shock. Therefore, to properly understand and use artificial respiration, a person should be familiar with the causes of asphixia, symptoms, and treatment.

ASPHYXIA

When breathing stops for any reason a condition results which is known as asphyxia.

The physiological causes of asphyxia may include lack of stimula-

tion of the respiratory center in the brain, paralysis of the respiratory center, and inability of the blood to absorb oxygen from the lungs or to effect the normal exchange of gases in the body tissues.

When it is due to physical causes, it may be spoken of as suffocation. In asphyxia resulting from physical causes, the lungs are deprived of air because of stoppage of the air passages mechanically. Such causes may include water in the air passages, as in drowning; foreign body in the air passages; tumor in the air passages; swelling of the mucous membrane in the nose and throat, following inhalation of live steam or an irritating gas; constriction around the neck, compressing the windpipe; and the lack of oxygen from any cause. The most frequent causes of stopping of breathing are drowning, electrical shock, and gas poisoning. Asphyxia may be present also in victims of shock or collapse, of extreme exposure to heat or cold, and chemical poisoning. Whatever the cause of asphyxia, death will result unless breathing is started quickly. A few seconds' delay in starting artificial respiration may lead to fatal result.

Figure 1.

SYMPTOMS OF ASPHYXIA

The symptoms by which the necessity for artificial respiration may be recognized are: Cyanosis (blueness of the skin and membrane), suspension of breathing, or shallow breathing in some cases of poisoning.

TREATMENT OF ASPHYXIA

The first thing to do in treatment is to remove the cause of the asphyxia or to remove the patient from the cause. Then administer artificial respiration. Later treat as for shock. In some cases artificial respiration can be administered while the patient is being removed from the cause to more suitable surroundings. The treatment for shock can often be started while artificial respiration is being administered.

The patient's mouth should be cleared of any obstruction, such as chewing gum, tobacco, false teeth, or mucous, so that there is no interference with the entrance into and escape of air from the lungs.

Artificial respiration should be started immediately. Every moment of delay is serious. It should be continued at least 4 hours without interruption, until normal breathing is established or until the patient is pronounced dead by a medical officer.

Not infrequently the patient, after a temporary recovery of respiration, stops breathing again. The patient must be watched and if natural breathing stops, artificial respiration should be resumed at once. Perform artificial respiration gently and at the proper rate. Roughness may injure the patient.

Every precaution must be taken to prevent further injury to the patient. In the application of pressure, injury to the skin, ribs, and internal organs must be avoided.

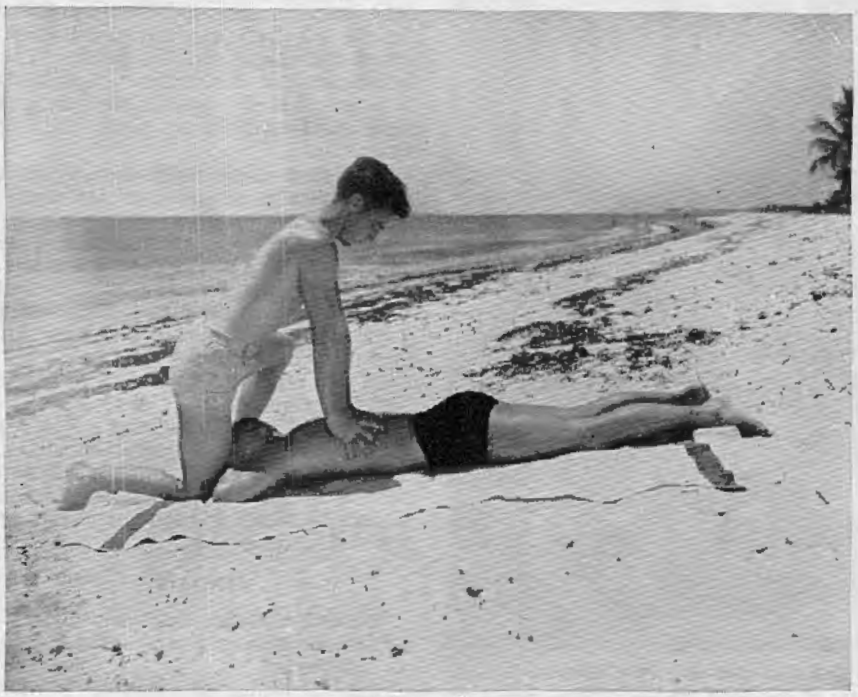


Figure 2.

GENERAL PRINCIPLES

Time is of prime importance. Seconds count. Do not take time to move the victim to a more satisfactory place; begin at once. Do not delay resuscitation to loosen clothes, warm the victim, or apply stimulants. These are secondary to the main purpose of getting air into the victim's lungs.

Begin artificial respiration and continue it rhythmically and without interruption until spontaneous breathing starts or the victim is pronounced dead by a medical officer.

As soon as the victim is breathing by himself, or when additional help is available, see that the clothing is loosened (or removed, if wet) and that the patient is kept warm, but do not interrupt the rhythmic artificial respiration to accomplish these measures.

If the victim begins to breathe on his own, adjust your timing to assist him. Do not fight his attempts to breathe. Synchronize your efforts with his.

Do not wait for a mechanical resuscitator; but when one is available, use it as an inhalator. The important advantages of good mechanical resuscitators are that they are not fatiguing, and can furnish 100 percent oxygen. Because a resuscitator need only be applied to the patient's face, it can be used when physical manipulation of the body is impossible or would be harmful, as during surgical procedures, in patients with extensive burns, broken vertebras, ribs, and arms, for victims trapped under debris of excavations, or under overturned vehicles, and during transportation of the victim. Furthermore, some resuscitators signal when the airway is obstructed and provide an aspirator.

Figure 3.

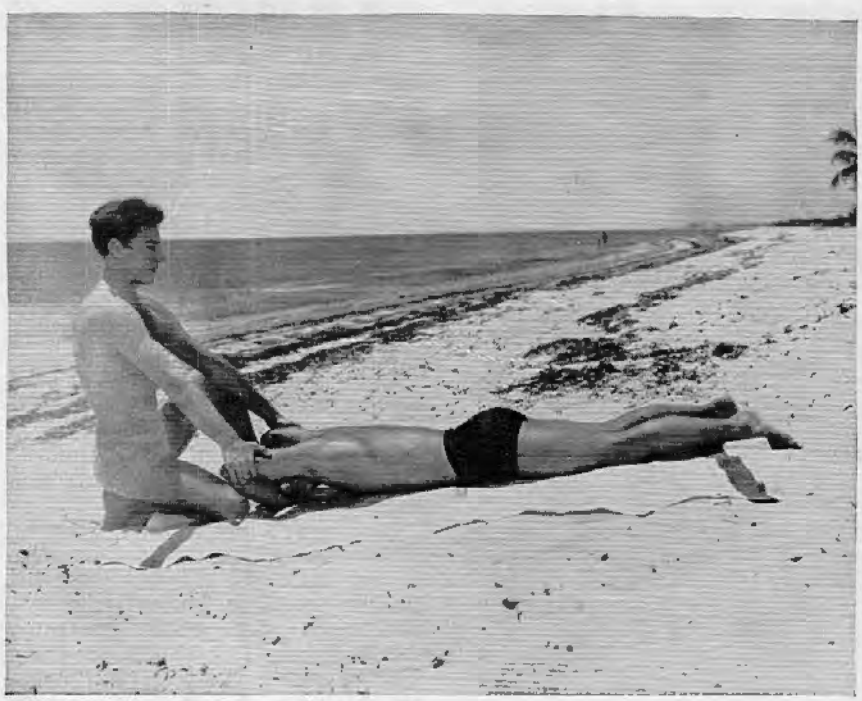


Figure 4.

Remember, it is all-important that artificial respiration, when needed, be started quickly. There should be a slight inclination of the body in such a way that the fluid drains better from the respiratory passages. The head of the subject should be extended, not flexed forward, and the chin should not sag lest obstruction of the respiratory passages occur. A check should be made to ascertain that the tongue or foreign objects are not obstructing the passages. These aspects can be cared for when placing the subject into position or shortly thereafter, between cycles. A smooth rhythm in performing artificial respiration is desirable, but split-second timing is not essential. Shock should receive adequate attention, and the subject should remain recumbent after resuscitation until seen by a physician or until recovery seems assured.

MODERN METHODS

There are now two methods of artificial respiration which are considered to be superior to any used before. They are the *Holger Nielson,* arm-lift method (preferred), *Figures 1–4;* and the *Emerson,* hip-lift method, *Figures 5–8.*

These improved methods have been adopted by the U. S. Coast Guard, National Safety Council, United States Public Health Service, and the American Red Cross.

Figure 1: Time is of prime importance, begin at once: Getting air into the victim's lungs is the immediate necessity.

Place the victim in the face-down position. Bend both his elbows and place one of his hands on the other. Turn his face to one side and place it on his hands. Quickly clear the victim's mouth of any obstruction, and bring his tongue forward.

Kneel at his head, on either knee, facing him. Place the knee close to his head. Place your other foot near his elbow. If it is more comfortable, kneel on both knees, one on either side of the victim's head. Place your hands on his midback, just below the shoulder blades. Fingers should be spread downward and outward, with thumb-tips about touching.

Figure 2: Rock forward until your arms are about vertical and allow the weight of the upper part of your body to exert slow, steady, even pressure on your hands until firm resistance is met. This compresses the chest, forces air out of the lungs. Your elbows should be kept straight and the pressure exerted almost directly downward. Do not exert sudden or excess pressure, or place your hands high on the back or on the shoulder blades.

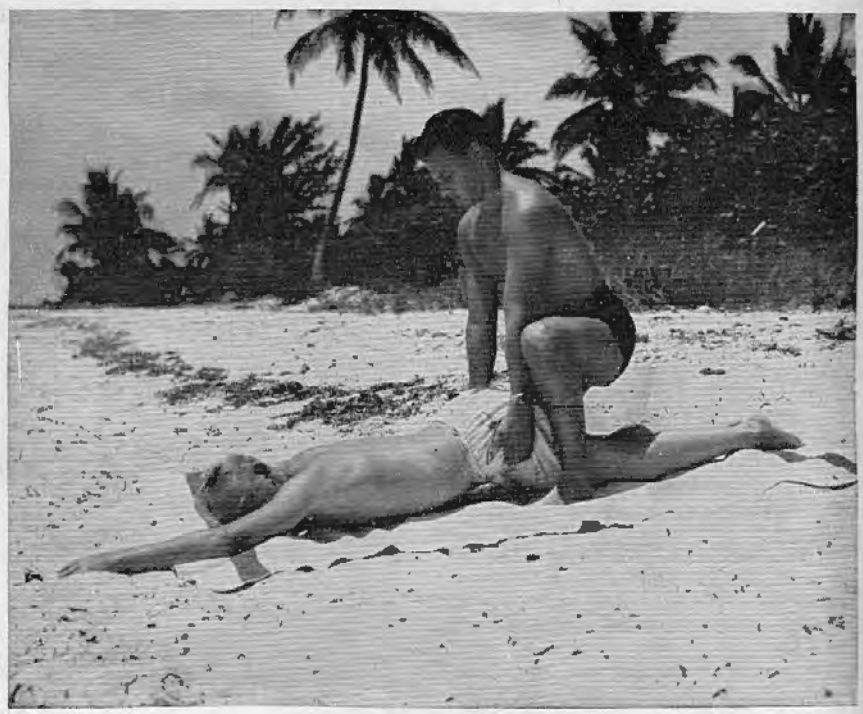


Figure 5.

Figure 3: Release the pressure quickly. This is done by "peeling" your hands from the back without giving any extra push with the release.

Now rock backward and allow your hands to come to rest on the victim's arms and just above his elbows. Although he may be grasped anywhere along the arms, the position just above the elbows is generally best.

Figure 4: Continue rocking backward, drawing the victim's arms upward and toward you. When doing this, do not bend your elbows; keep your arms straight and as you rock backward, the arms will be drawn upward and toward you. Put enough lift on the arms to feel resistance and tension at the shoulders. The arm-lift pulls on the chest muscles, arches the back and relieves the weight on the chest; air is thus sucked into the lungs.

Lower the victim's arms. You have now finished one full cycle.

Repeat this cycle approximately 12 times per minute, to the rhythm of: (1) rock forward, (2) press, (3) rock backward, (4) stretch.

Maintain a slow, easy rhythm, rocking forward on the back-pressure phase, backward on the arm-lift phase. Continue without interruption until spontaneous breathing starts or the victim is pronounced dead by a medical officer. If the victim begins to breathe, adjust your timing to assist him.

Figure 6.

BACK-PRESSURE, HIP-LIFT METHOD

Figure 5: Place the victim in the face-down position with his elbows bent. Turn his face to one side and rest it on the back of one hand. Allow his other arm to extend alongside and beyond his head. Quickly clear the victim's mouth of any obstruction, and bring his tongue forward.

Kneel on either knee at the level of the hips. Straddle the victim and place your foot on the ground near the opposite hip. Your heel should be directly opposite the kneeling knee.

Place your hands on his midback just below the shoulder blades. Your fingers should be spread downward and outward, with thumb-tips about touching.

Figure 6: Rock forward and allow the weight of the upper part of your body to exert slow, steady, even pressure downward on your hands until firm resistance is met. This compresses the chest, forces air out of the lungs. Your elbows should be kept straight and the pressure exerted almost directly downward. Do not exert sudden or excess pressure, or place your hands high on the back or on the shoulder blades. Release the pressure quickly. This is done by "peeling" your hands from the back without giving any extra push with the release.

Figure 7: Now rock backward and allow your hands to come to rest on the victim's hips, well below his waist. Do not grasp the waist. Just slip your fingers under the hip bones.

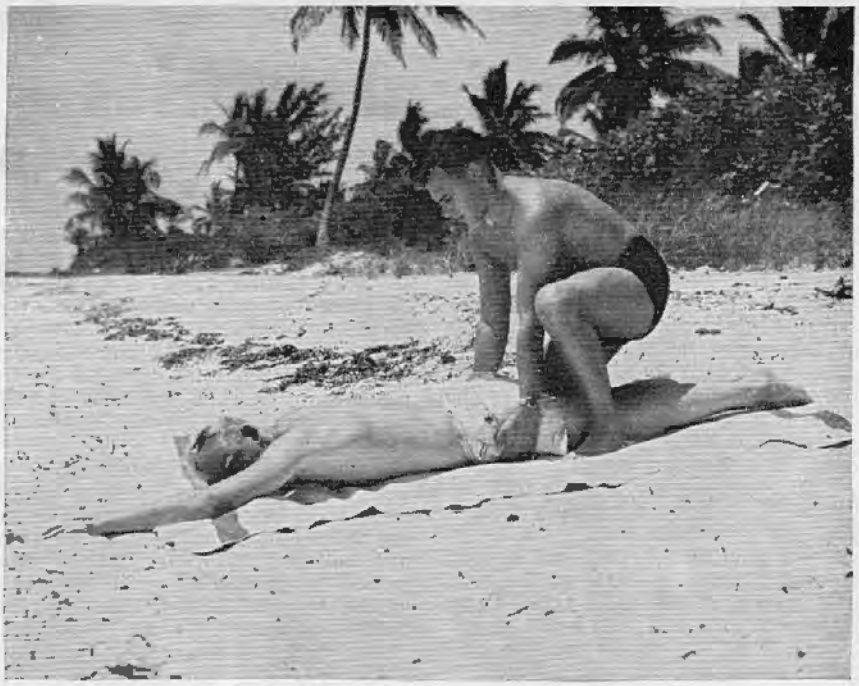


Figure 7.

Figure 8.

Figure 8: Lift the hips four to six inches. This allows the abdomen to sag downward. The diaphragm descends and air is sucked into the lungs. Do not bend your elbows; keep your arms straight as you lift. In this way you do the work of lifting with your shoulders and back instead of with your arms.

Lower the victim's hips. You have now finished one full cycle.

Repeat this cycle approximately 12 times per minute, to the rhythm of: (1) rock forward, (2) press, (3) rock backward, (4) lift.

Maintain a slow, easy rhythm, rocking forward on the back-pressure phase, backward on the hip-lift phase.

The back-pressure, hip-lift method is preferable in cases where there have been injuries to the upper chest, neck, shoulder or arms. Although fully as effective as the back-pressure, arm-lift method, it is somewhat harder on the operator.

EDITOR'S NOTE:

To further acquaint the public with the latest methods of artificial respiration, the Coast Guard has prepared a 16-mm. motion picture film. This film runs for 10 minutes and is titled "Artificial Respiration." It can be obtained on a loan basis, at no charge, by any public group. A request for the use of this film should be addressed to the Commander of the nearest Coast Guard District or the Commandant (CPI), U. S. Coast Guard, Washington 25, D. C.

nautical queries

Q. How is the required number and weight of anchors for a vessel determined?

A. The weight and number of anchors required for a vessel is determined from the equipment tonnage of the vessel, its type, and route in accordance with the "Rules for Building and Classing Steel Vessels" of the American Bureau of Shipping.

Q. How would you get your chain cable on a mooring buoy?

A. First, *secure* the anchor by taking it aboard or hanging it over the bow. Then, *unshackle* the cable, reeve a good line through the ring of the buoy, bring it back to the ship and bend it to the cable about three links above the end, and heave it out.

Q. Why are steam turbine impulse blades heavier and stronger in construction than reaction blades?

A. The pressures and temperatures of the steam in the reaction end of the turbine are comparatively low; hence lighter material may be used. Also the impact velocity of the steam in the impulse turbine will be higher than in the reaction turbine, hence blades must be heavier for the impulse turbine.

⚓ ⚓ ⚓

SAFE PASSAGE

A new motion picture film called, "Safe Passage" is now available for use by marine associations, shipping lines, and others.

A recent study has determined that accidents involving radar-equipped ships fall into four major categories as follows: (1) radar not turned on; (2) radar not properly adjusted; (3) improper action by operating personnel; and (4) "radar hypnosis." Detailed information covering these causes is presented in this twenty-minute motion picture.

This film was prepared by Raytheon Manufacturing Company of Waltham, Massachusetts. Prints of the film for free showing to interested groups will be distributed by Raytheon's public relations department as a public service.

This film is an important graphic supplement to the education and experience of all mariners who are, or who may be, shipmates with radar.

Q. What means are taken to inform passengers of their emergency station?

A. A printed notice is required to be posted in each passenger's stateroom containing this information.

Q. In the event of any collision with a lightship, buoy, or other aid to navigation, what is the duty of the person in charge of the colliding vessel?

A. Whenever a vessel collides with a lightship, buoy, or other aid to navigation under the jurisdiction of the Coast Guard, or is connected with any collision, it is the duty of the person in charge of such vessel to report the accident to the nearest Officer in Charge, Marine Inspection.

Q. What is freeboard?

A. Distance measured vertically downward, amidships, from upper edge of deck line to water line. The freeboard assigned is the distance measured vertically downward at the side of the vessel amidships from the upper edge of the deck line to the upper edge of the load line.

Q. What is the purpose of the fresh water line on the load line markings?

A. The fresh water line indicates the line to which a ship can be loaded in perfectly fresh water so that she will float on the corresponding salt water line when she reaches the sea, at her summer load line.

Q. What is the deck line on ocean and coastwise vessels?

A. The deck line is a horizontal line twelve (12) inches in length and one (1) inch in breadth. It is to be marked amidships on each side of the vessel, and its upper edge is to pass through the point where the continuation outward of the upper surface of the freeboard deck intersects the outer surface of the shell. Where the deck is partly sheathed amidships, the upper edge of the deck line is to pass through the point where the continuation outward of the upper surface of the actual sheathing at amidships intersects the outer surface of the shell.

Q. Explain how to haul down a topmast studding sail.

A. Man well the deck sheet and down haul, ease off the halliards, and haul the yard close out to the tack block; then ease away the tack and haul down upon the deck-sheet and down haul.

⚓ TRADITIONS OF THE SEA

The roll of American seafarers who have performed their duties in accordance with the highest traditions of the sea is never completed.

The Captain, officers and crew of the SS *Steel Advocate* were recently added to this honored list. The following men particularly distinguished themselves by manning a lifeboat.

Richard L. Rausch, Chief mate; Thomas J. Hodkiewicz, Second mate; Douglas E. Claussen, Boatswain; Iverson C. Hester, Deck maintenance; Fred E. Umholtz, A. B.; Conrad M. Nielsen, First asst. engineer; John E. Crowder, Second asst. engineer; Peter Lampros, Jr. Third asst. engineer; George E. Maslarov, Licensed Jr. engineer; Charles E. Ray, Chief electrician; and Albert L. Clouse, Second electrician.

On October 31, 1955, the Commandant of the U. S. Coast Guard commended the crew as follows:

> The United States Coast Guard is pleased to commend you, Captain Toepel, and the officers and crew of the SS *Steel Advocate* for your outstanding accomplishment in locating and rescuing the survivors of the Flying Tiger aircraft No. 433.
>
> Having been alerted that this aircraft was down in the North Pacific Ocean, you headed at top speed for the area, 350 miles away.
>
> On arrival in the search area at 12:45 p. m. September 24, you maintained a never-ceasing search of the surrounding waters. After more than 24 hours of constant searching, your vessel sighted wreckage and five men in the water. Whereupon a lifeboat was lowered and the five men, three of them dead, were picked up and taken aboard your vessel.
>
> The frequent celestial observations, together with the thorough manner in which the vessel was conned on various search patterns, and the professional manner in which your crew performed, is worthy of the highest praise and is in keeping with the finest traditions of the U. S. Merchant Marine. ⚓

MARINE SECTION, NATIONAL SAFETY COUNCIL

The National Safety Council held its 43d National Annual Safety Congress and Exposition at Chicago, Illinois, during the period October 17–21, 1955. The Marine Section program was attended by marine and Government officials from all parts of the country.

After the welcoming and opening remarks by the general chairman, Mr. Harry X. Kelly, President, Delta Line, the meeting commenced with the ship operator's session. This was followed by the Coast Guard session and a joint luncheon with the Propeller Club of Chicago.

The Coast Guard session was opened by Rear Adm. Halert C. Shepheard, USCG, Chief, Office of Merchant Marine Safety, Coast Guard Headquarters. The Admiral gave comments on the progress of marine safety during the past year. Speakers at the Coast Guard session in addition to Admiral Shepheard were: Comdr. Paul E. Savonis, USCG, Merchant Vessel Inspection Division, Coast Guard Headquarters, who spoke on "Lessons Learned From Recent Merchant Marine Casualties"; Lt. Comdr. Joseph W. Finnegan, USCG, Merchant Vessel Inspection Division, Coast Guard Headquarters, who spoke on "The Coast Guard's Program for Elimination of Unsafe Practices Aboard Ship"; and Senior Surgeon Robert M. Farrier, USPHS, who spoke on "The Dangers Inherent in the Use of Carbon Tetrachloride."

In addition to the Coast Guard officers, Mr. Francis T. Greene, President, American Merchant Marine Institute, graciously spoke about the one hundred sixty-fifth anniversary of the founding of the United States Coast Guard.

Space limitations do not permit an extensive treatment of the various addresses made before the Marine Section as a whole, consequently, only a few extracts and summations follow:

Capt. Harry R. Iehle, Director of Safety, Farrell Lines, in his paper titled "The Relationship of Fit Seamen to Accident Prevention," stated that the time had come when realistic health standards for merchant seafarers should be drawn up and that "mental, moral, and physical misfits have no place in the American Merchant Marine."

Rear Adm. C. L. Austin, USN, (Ret.), Assistant Vice President, Isthmian Steamship Company, stated that, in his opinion, the accident frequency rate in the shipping industry could be appreciably reduced if the industry would establish an intensive training program and make attendance mandatory for all ship officers—"the period of training need not be lengthy, one or two full days sufficing."

Mr. G. H. Chapman, Vice President, Upper Mississippi Towing Corporation, in his speech on accident prevention on river vessels commented that the lack of complete industry-wide accident reports was an obstacle to reducing the number of accidents.

"It seems that we must immediately arrange for a central clearing house to which pertinent facts regarding each accident may be given," Chapman's paper asserted.

Other talks given at the ship operator's session included one by Mr. L. C. Matia, Secretary, the Wilson Transit Co., on "Accident Prevention on Great Lakes Vessels." Mr. C. M. Lynch, Manager, Safety and Training, Sinclair Refining Co., spoke on "Accident Prevention Through a New Approach to Gas-Freeing of Tankships," and Capt. Donald L. Steele, General Operating Manager, Federal Barge Lines, spoke on "Efficiency and Safety on Inland Waterways."

Three awards for outstanding papers read at the previous meeting were presented to: Warren Lindsay of United States Lines; John M. Dempsey of States Marine Corporation; and M. C. Dupree of Ashland Oil and Refining Company.

At the annual business meeting, Mr. John D. Rogers, Vice President, Esso Shipping Co., and Capt. Jones F. Devlin, Jr., General Manager, United States Lines, were named General Chairman and Executive General Chairman, respectively, of the Marine Section, National Safety Council.

The attendance at each session was at capacity, and the papers were timely, interesting and thought-provoking. All delegates agreed that this was possibly the best convention held in recent years.

HIGHLIGHTS ON THE RULES

In all Admiralty cases concerning collision in fog, the question of "moderate speed" is an important consideration. A restatement of the moderate speed rule recently made by Circuit Judge, Learned Hand, contained the seldom discussed aspects of steerageway and speed over the ground versus speed through the water. See *Anglo-Saxon Petroleum Co. Ltd. v. U. S.* 1955 AMC 1438.

This collision involved two tankers, the British SS *Goldshell* and the SS *White Plains*. It occurred on the morning of December 10, 1942, in New York harbor in a dense fog. The *Goldshell* was inbound and the *White Plains* outbound. There was a knot and a half ebb tide.

The vessels came together at an angle, with the *White Plains* showing her green light to the *Goldshell* and the *Goldshell* showing her red light to the *White Plains*. Both vessels were proceeding under various ahead bells.

When the *Goldshell* heard the *White Plains'* whistle signal ahead, she stopped her engines, and when she saw the *White Plains'* green light, *she put them half-speed astern*. She followed with full speed astern *shortly* before the vessels came together.

The *White Plains* did nothing until she saw the *Goldshell's* red light when she backed full speed astern. Her pilot did not hear the *Goldshell's* fog signals.

The Judge held each vessel to be at fault for maintaining speed in excess of "moderate speed". He commented, "Although Article 16 only requires a vessel in a fog to go at a moderate speed, as everybody knows, the courts have imposed a gloss upon this that 'moderate speed is that at which, if the other vessel also does her duty, the vessel will be able to stop her way before they collide.' "

He also found that the *Goldshell* was at fault for keeping her engines at half astern after the *White Plains'* green light was sighted.

The *Goldshell's* owners moved for a rehearing, and claimed that their vessel was moving only as fast as was necessary to keep steerageway. Concerning the delay in putting the engines full astern, the pilot gave as excuse that when he saw the green light, he could not "determine the vessel's approximate course"; and that "at the speed we were going the ebb tide half-speed would certainly stop the ship, that is, over the bottom."

The Judge commented on the need for steerageway speed as follows: "Though we are to accept this as true, it would not be an excuse for exceeding 'moderate speed'—the command is imperative. At any rate, we have so often held that inability to keep steerageway is not an excuse, that we shall adhere to that interpretation, until the Supreme Court corrects our mistake, if it is one."

Concerning the reasoning that the vessel's speed over the bottom was stopped, the Judge stated "since there was a tide of a knot and a half, this meant that the ship's speed through the water—which is all that counts—would still have been at least a knot and a half when, as reckoned, he would meet the *White Plains*. * * * Apparently he was under that error, so common among seamen, that the speed over the bottom is relevant between two vessels moving on the same tide."

HYDROGRAPHIC OFFICE

One hundred and twenty-five years ago this month, an institution was founded that now occupies a most important and respected position in American seafaring history, past, present and future—the U. S. Navy Hydrographic Office.

Without access to the charts, sailing directions, and other publications prepared by the Hydrographic Office, the ships of the American Merchant Marine would hesitate to sail beyond the confines of our harbors. Such is not the case, however—our ships sail the seven seas with every means at hand for safe navigation.

This was not the situation prior to 1830. In those early days of the Republic a merchant vessel had to obtain navigational instruments and charts, often unreliable, from foreign sources.

The U. S. Navy experienced the same trouble and also wished to sever reliance on the British Admiralty for navigational information. Accordingly, on December 6, 1830, the Secretary of the Navy, the Hon. John Branch, ordered that a Depot of Charts and Instruments be established in Washington, D. C. Thus was born the service which today is known as the U. S. Navy Hydrographic Office.

A Lieutenant Louis M. Goldsborough, USN, was appointed to be the Officer in Charge. He immediately set about collecting theodolites, chronometers, telescopes, nautical books and charts that were scattered throughout the various Navy yards and transported them to Washington. Here they were systematically arranged, marked, and put in condition for use. Plans were also made to commence the printing of charts. A letter to the Secretary of the Navy characterized the situation thus:

"Almost every chart in use is of European origin, and many of the most valuable are calculated from meridians to which our service is not accustomed, and they are accompanied by sailing directions, in foreign tongues not generally known in the Navy."

To secure information necessary for such charts, Congress authorized the Navy, in 1836, to undertake an extensive survey expedition, called the United States Exploring Expedition. A Lieutenant Charles Wilkes, who had succeeded Lieutenant Goldsborough, was ordered to command the expedition.

The survey, which lasted four years, commenced in 1837. The exploring fleet consisted of the ships-of-war *Vincennes, Peacock,* and *Porpoise,* and several auxiliary vessels. The expedition was directed to "determine the existence of doubtful dangers reported on the track of the United States trade, to make astronomical observations for locating shoals, islands, reefs, etc.; to instruct the natives of the islands visited in agriculture and horticulture, and to encourage them to increase their output." The field of operations covered the coast of Brazil, thence to Madeira, Patagonia, the Antarctic Continent (Wilkes Land) up through the Pacific Islands, Sulu Sea, Philippines, Japan, China, Fiji Islands, Hawaiian Islands, Samoan Islands, Alaska, Strait of Juan de Fuca, and the Columbia River.

From this expedition were to come 87 engraved charts which have continued to serve as the basis of charts of these areas issued by all the maritime nations.

Perhaps the greatest single influence that molded the Hydrographic Office during this early period and firmly established its character was the work of Matthew Fontaine Maury, who assumed charge of the Depot in 1842.

Upon taking charge of the Depot Maury took steps to organize an extensive system of collecting information from the logs of men-of-war and merchant vessels. In his own words—"By putting down on a chart the tracks of many vessels on the same voyage, but at different times, in different years, and during all seasons, and by projecting along each track the winds and currents daily encountered, it was plain that navigation hereafter, by consulting this chart, would have for their guide the results of the combined experience of all whose tracks were thus pointed out." This was the birth of the Pilot Chart, which to this day carries the inscription: "Founded on the researches made in the early part of the nineteenth century by Matthew Fontaine Maury, while serving as a lieutenant in the United States Navy."

These new charts were received enthusiastically by the masters of the clipper ship of that era who found their voyages shortened and their profits increased by following the tracks prescribed by Maury. The average passage from New York to California was reduced from 180 days to about 133 days. It has been estimated that the annual savings to American shipowners amounted to over two million dollars a year. During Maury's regime the office produced eight volumes of Sailing Directions, Track Charts, Trade Wind Charts, Pilot Charts, Whale Charts, Thermal Charts, and Storm and Rain Charts. He also is credited with laying out the first steamer lanes across the North Atlantic.

Maury's place in history is epitomized by the inscription on the Virginia State monument which reads: "Matthew Fontaine Maury—Pathfinder of the Seas—The Genius who first snatched from the ocean and atmosphere the secret of their laws—Every mariner for countless ages as he takes his chart to shape his course across the sea will think of thee."

It was in 1866 that Congress passed the act which defined the mission of the Hydrographic Office as it is known today:

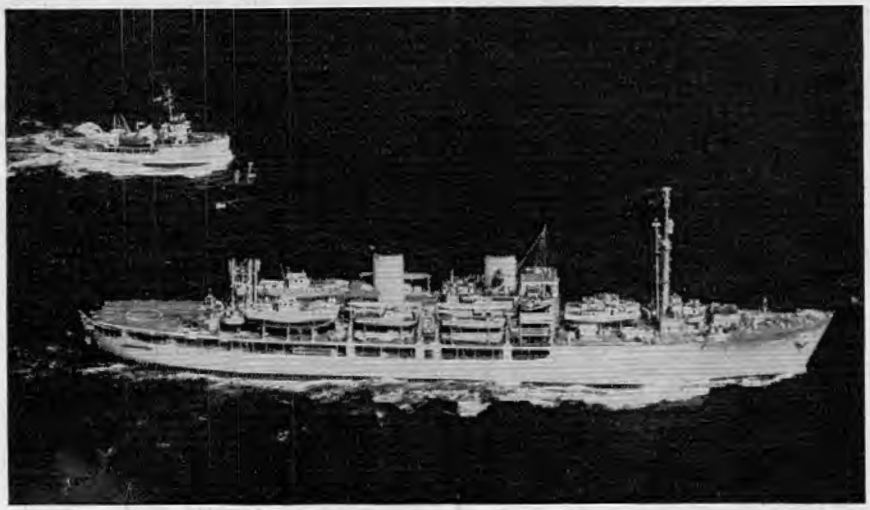


Figure 1. The USS *Maury* (AGS–16) and a small survey vessel return from a hydrographic survey of the Persian Gulf.

"There shall be a Hydrographic Office attached to the Bureau of Navigation in the Navy Department, for the improvement of the means for navigating safely the vessels of the Navy and of the mercantile marine, by providing, under the authority of the Secretary of the Navy, accurate and cheap nautical charts, sailing directions, navigators, and manuals of instructions for the use of all vessels of the United States, and for the benefit and use of navigators generally." (R. S. 431)

As a result of this Act, which also authorized the purchase of plates and copyrights of existing charts and publications, the Office acquired the copyright of the now familiar *American Practical Navigator* (Bowditch)—the navigator's bible.

Three years later, in 1869, two important programs were inaugurated which have continued to this day—the weekly "Notice to Mariners"—the establishment of authorized sales agents in the major seaports.

Since its inception, the main interest of the Office has been in the field of hydrography. Maury had encouraged the fields of marine meteorology and oceanography, but in 1904, by an Act of Congress, marine meteorology became a function of the U. S. Weather Bureau.

Since World War II, the field of oceanography has received increased attention. It was demonstrated during the War that a basic knowledge of the ocean is indispensable in modern warfare.

In 1946 the Secretary of the Navy directed that a Division of Oceanography be created within the Hydrographic Office. The Office now has two vessels used solely for oceanographic research, the USS *San Pablo* and the USS *Rehoboth*. These vessels are 310 feet long, displace 2,750 tons and are equipped with the latest electronic devices. A most unique feat performed by these vessels recently was the anchoring in 2,000 fathoms of water and the taking of underwater photography in 3,400 fathoms. The cruises of these vessels are slowly but surely unlocking the secrets of the vast unknown depths of the ocean.

While it is often said that the sea is ever changeless, the shore lines, shoals and lights thereon continually change. So, in addition to the scientific research carried on by the Hydrographic Office, the routine but important work never ceases—the maintenance of current Light Lists, Radio Navigational Aids, Sailing Directions—and their correction. This is the work that the merchant mariner sees and uses daily to insure the safe navigation of his vessel.

The Office has advanced a long way since 1830. It has expanded into an organization today consisting of 28 officers and 1400 civilians, with 13 branch offices in the major seaports and a seagoing fleet of eight vessels. Two of these are the oceanographic vessels previously mentioned. The remaining units are survey vessels. Two of these are the largest and best equipped survey vessels in the world, the USS *Maury* (AGS–16) and her sister ship, the USS *Tanner* (AGS–15). (*See Figure 1.*)

Another indication of the scope of work is the current inventory of over 10,500,000 charts and 1,000,000 publications ready for issue.

The U. S. Navy Hydrographic Office should celebrate its one hundred twenty-fifth anniversary proudly. On this anniversary it is equally evident that the American Merchant Marine owes a salute to this organization and all seafarers can well repeat the inscription on Matthew Fontaine Maury's monument—*Every mariner for countless ages as he takes his chart to shape his course across the sea will think of thee.*

Lieutenant Matthew Fontaine Maury, USN, whose many notable contributions to seafaring earned him the title "The Pathfinder of the Seas."

LESSONS FROM CASUALTIES

A HAZARD OF THE DIESEL ERA

By J. Mack Gamble

The need for distinctive whistles for diesel river boats was well pointed up last week by the meeting, on the upper Ohio, of two large towboats, each with a large tow. A diesel locomotive on shore was also involved. The upbound boat blew two whistles as a passing signal. Unfortunately the locomotive sounded one blast of its horn at the same time. To the pilot of the downbound boat it appeared that the vessel he was meeting had given a one-whistle passing signal which seemed to be an impossibility under existing conditions. Consequently, in accord with the pilot rules, he sounded four blasts of his boat's whistle. To add further confusion the locomotive then blew four whistles, perhaps a signal to a flagman or brakeman. The northbound boat's pilot had observed the railroad competition by this time and was at a loss to know whether he had heard a four-whistle signal from the locomotive or from the boat he was meeting. Just what would have happened without the aid of radio is hard to determine but the two pilots got their signals straightened up as a result of ship-to-ship conversation and further difficulties were avoided. However, rivermen pointed out that such a mix-up could easily have more serious consequences and that there are still many towboats on the river that do not have radio equipment. The increasing prevalence of locomotives, buses, trucks and even passenger automobiles equipped with horns that sound much like those of river boats has made the problem a vital one.

A classic story is of the lock crew who opened a lock gate ready to pass a towboat which it thought had whistled for admission only to find the whistle signal was from a railroad train on the opposite shore. In another case, the pilot of a boat in a lock, unable to see the lock gate ahead of him because of high barges, came ahead on his boat in response to what he thought was an audio signal from the lockman. As it turned out the whistle was on a vehicle on a near-by highway and some quick stopping had to be done to avoid a crash with the gate which was not yet fully recessed.

—Courtesy The Waterways Journal, August 13, 1955

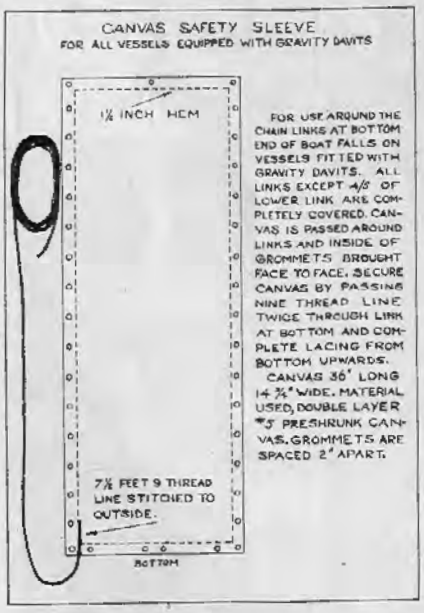


Figure 1. **Pattern for canvas safety sleeve that can be used on vessels equipped with gravity davits.**

PRESERVED FINGERS

Many improvements in methods of performing certain tasks come about when one or more persons become annoyed at the shortcomings of the current method in use. Such was the case in 1944 when Captain James Brummelen of the SS *Ocean Telegraph*, in desperation, covered the chain links attached to the lower blocks of his lifeboats' falls with a canvas sleeve. This was done to insure the maintenance of five fingered hands on each of his seamen.

It readily can be seen how hands might be injured when a lifeboat is raised in a rough seaway. When the boat is under the falls, the seamen in the bow and stern attempt to hook the lowest chain link to the releasing hook. In performing this task their attention is, of necessity, divided; specifically, they have to maintain their balance in the tossing boat, keep their head clear of the swinging block and hook the bottom link onto the releasing mechanism. All this while their movements are hampered by bulky life preservers.

During the course of two previous voyages, there were three hand maiming accidents while retrieving lifeboats from the water. The injuries were the direct result of having fingers pinched and crushed between the chain links.

Figure 2. **Hooking on lifeboat without using canvas sleeve to cover links.**

In order to prevent further accidents of this nature, the master devised a simple, easily constructed canvas sleeve, as follows:

A rectangular shaped piece of canvas, 3 feet long by 15 inches wide, is cut and sewn with a 1½ inch hem; grommets are inserted 2 inches apart the length of the canvas on either side and two grommets are placed at the top and the bottom. (*See Figure 1.*)

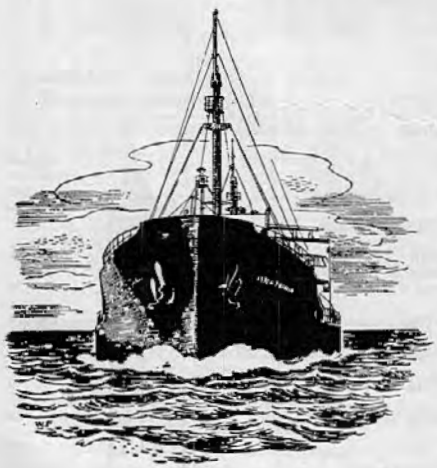
To install, the canvas is passed around all the links, except for four-fifths of the lowest link—the inner side of the grommets are brought face to face and secured by passing a nine-thread line through the link at the bottom and then by lacing upwards.

The sleeve is not normally attached at sea unless a boat has been launched. It can be attached in port whenever there is a boat drill.

Figures 2 and *3* show the method of hooking on when the sleeve is in place.

Figure 3. **View of canvas sleeve when attached and in use.**

Ten years have gone by and Captain Brummelen has insisted on this simple contrivance on every ship he has commanded. In addition, the Isthmian Steamship Company has recommended to its fleet by Safety Instruction that this sleeve be used on all vessels equipped with gravity-type davits.



MERCHANT MARINE PERSONNEL STATISTICS

MERCHANT MARINE OFFICER LICENSES ISSUED

QUARTER ENDING 30 SEPTEMBER 1955

DECK

Grade	Original	Renewal
Master:		
Ocean	56	470
Coastwise	3	16
Great Lakes	----	33
B. S. & L.	13	118
Rivers	4	26
Radio officer licenses issued	18	72
Chief mate:		
Ocean	45	137
Coastwise	----	2
Mate:		
Great Lakes	----	----
B. S. & L.	----	1
Rivers	16	27
Second mate:		
Ocean	42	119
Coastwise	----	3
Third mate:		
Ocean	109	118
Coastwise	----	2
Pilots:		
Great Lakes	7	15
B. S. & L.	129	50
Rivers	83	32
Master: Uninspected vessels	5	21
Mate: Uninspected vessels	4	7
Total	534	1,269
Grand total	1,803	

ENGINEER

Grade	Original	Renewal
STEAM		
Chief engineer:		
Unlimited	51	692
Limited	10	115
First assistant engineer:		
Unlimited	47	270
Limited	1	11
Second assistant engineer:		
Unlimited	43	338
Limited	2	14
Third assistant engineer:		
Unlimited	142	368
Limited	7	6
MOTOR		
Chief engineer:		
Unlimited	28	88
Limited	17	79
First assistant engineer:		
Unlimited	9	22
Limited	4	5
Second assistant engineer:		
Unlimited	3	3
Limited	1	3
Third assistant engineer:		
Unlimited	120	23
Limited	8	4
Chief engineer: Uninspected vessels	4	7
Assistant engineer: Uninspected vessels	1	8
Total	498	2,056
Grand total	2,554	

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 3,360 cases during the third quarter of 1955. From this number, hearings before Examiners resulted involving 54 officers and 262 unlicensed men. In the case of officers, no licenses were revoked, 5 were suspended without probation, 13 were suspended with probation granted, 4 licenses were voluntarily surrendered, 5 cases were dismissed after hearing and 2 hearings were closed with admonition. Of the unlicensed personnel, 30 documents were revoked, 24 were suspended without probation, 148 were suspended with probation granted, 73 documents were voluntarily surrendered, 14 hearings were closed with admonition, and 23 cases were dismissed after hearings.

ORIGINAL SEAMEN'S DOCUMENTS ISSUED

QUARTER ENDING 30 SEPTEMBER 1955

Type of document	Atlantic coast	Gulf coast [1]	Pacific coast	Great Lakes and rivers	Total
Staff officer	39	7	20	6	72
Continuous discharge book	214	15	1	----	230
Merchant mariner's documents	1,314	469	613	2,093	4,489
AB any waters unlimited	111	44	65	31	251
AB any waters, 12 months	38	6	16	166	226
AB Great Lakes, 18 months	----	----	4	44	48
AB tugs and towboats, any waters	1	1	1	----	3
AB bays and sounds [1]	----	----	----	----	0
AB seagoing barges	----	----	----	----	0
Lifeboatman	287	8	142	9	446
QMED	317	47	35	125	524
Radio operators	1	3	4	1	9
Certificate of service	1,299	483	606	2,003	4,391
Tankerman	16	52	4	89	161

[1] 12 months, vessels 500 gross tons or under, not carrying passengers.

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

WAIVER OF MANNING REQUIREMENTS

Waivers	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Total
Deck officers substituted for higher ratings	----	----	----	4	4
Engineer officers substituted for higher ratings	----	----	----	17	17
OS for AB	2	----	----	----	2
Wiper or coalpassers for QMED	2	----	----	----	2
Total waivers	4	----	----	23	27
Number of vessels	3	----	----	14	17

NOTE.—In addition, individual waivers were granted to permit the employment of 9 able seamen holding certificates for "any waters—12 months" in excess of the 25 percent authorized by statute.

APPENDIX

EQUIPMENT APPROVED BY THE COMMANDANT

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 30 September 1955 to 28 October 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

Kelite Corp., P. O. Box Terminal Annex Los Angeles 54, Calif., Certificate No. 229, dated 5 October 1955. KESONIC–C.

AFFIDAVIT

The following affidavit was accepted during the period from 16 September 1955 to 15 October 1955:

McInnes Steel Company, Corry, Pa., FORGINGS.

CONVENTIONS

The Government of the United Kingdom has advised this country, that:

Acting as the depository nation, it has received notification from the Government of the French Republic that the International Convention for the Safety of Life at Sea, 1948, had been extended to include Tunisia, Morocco and French Overseas Territories. These extensions took effect on April 22, and May 31, 1955, respectively; that:

It has received notification of denunciation of the International Convention for the Safety of Life at Sea, 1929, from the Government of Chile on July 5, 1955. In accordance with Article 66 of the Convention, the Chilean denunciation will take effect on July 5, 1956; and that:

It has received notification of accession to the International Load Line Convention, 1930, from the Governments of Venezuela, Turkey, and Czechoslovakia, those accessions to take effect on March 30, August 20 and September 18, 1955, respectively.

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by customs ports for the quarter ending 30 September 1955. Generally speaking, undocumented vessels are those machinery-propelled vessels of less than 5 net tons engaged in trade which by reason of tonnage are exempt from documentation. They also include all other vessels propelled in whole or in part by machinery which have not been issued marine documents by the customs, owned in the United States and found on the navigable waters thereof.

COAST GUARD DISTRICT	Customs Port	Total
1 (Boston)	(4) Boston	14,273
	(1) Portland, Maine	8,906
	(2) St. Albans	929
	(5) Providence	4,288
	Total	28,396
2 (St. Louis)	(45) St. Louis	10,108
	(12) Pittsburgh	2,101
	(34) Pembina	97
	(35) Minneapolis	2,244
	(40) Indianapolis	4,650
	(42) Louisville	2,608
	(43) Memphis (part)	5,158
	(46) Omaha (part)	318
	(47) Denver	24
	Total	27,398
3 (New York)	(10) New York	44,441
	(6) Bridgeport	8,611
	(11) Philadelphia	18,995
	Total	72,047
5 (Norfolk)	(14) Norfolk	16,130
	(13) Baltimore	23,553
	(15) Wilmington, N. C	7,734
	Total	47,417
7 (Miami)	(18) Tampa (part)	23,705
	(16) Charleston	1,524
	(17) Savannah	2,797
	(49) San Juan	422
	(51) St. Thomas	101
	Total	28,849
8 (New Orleans)	(20) New Orleans	20,732
	(18) Tampa (part)	566
	(19) Mobile	7,780
	(21) Port Arthur	4,385
	(22) Galveston	8,580
	(23) Laredo	1,439
	(24) El Paso	18
	(43) Memphis (part)	65
	Total	43,565
9 (Cleveland)	(41) Cleveland	8,160
	(7) Ogdensburg	2,655
	(8) Rochester	5,051
	(9) Buffalo	3,794
	(36) Duluth	2,505
	(37) Milwaukee	3,532
	(38) Detroit	18,714
	(39) Chicago	6,878
	Total	51,289
11 (Long Beach)	(27) Los Angeles	11,308
	(25) San Diego	2,125
	(26) Nogales	123
	Total	13,556
12 (San Francisco)	(28) San Francisco	13,345
	Total	13,345
13 (Seattle)	(30) Seattle	19,285
	(29) Portland, Oregon	8,752
	(33) Great Falls	536
	Total	28,573
14 (Honolulu)	(32) Honolulu	3,190
	Total	3,190
17 (Juneau)	(31) Juneau	7,652
	Total	7,652
	Grand total	364,977

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The Merchant Marine Council gratefully acknowledges the many helpful ideas and constructive suggestions that have been received from the readers of the "Proceedings" during the past year and takes this opportunity to wish each and every member of the American Merchant Marine a most joyous and peaceful Christmas and successful New Year.

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