

# Season's Greetings



PROCEEDINGS OF THE  
**MERCHANT MARINE COUNCIL**  
**UNITED STATES COAST GUARD**

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

Proceedings of the

# MERCHANT MARINE COUNCIL

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Coast Guard

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### FRONT COVER

Traditional Christmas cover of Amelia Island Light flashing season's greetings to the American Merchant Marine.

### BACK COVER

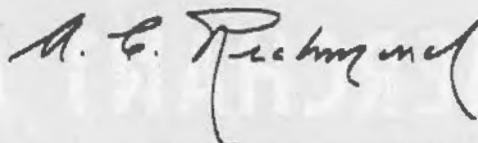
The interesting "Sea-Horse Sense" idea was developed by Robert M. Kluzek of the Pacific Maritime Association's Accident Prevention Bureau from the new stack insignia design adopted by *States Line* in their recent consolidation. The "Sea-Horse" stationery will be used by the company for all bulletin board releases dealing with accident prevention.

### DISTRIBUTION (SDL 65)

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B: e (35); c (16); f (4); h (3); g (2); remainder (1)  
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## Holiday Greetings

I am happy to preface this issue of the "Proceedings" with greetings to those who, at sea and ashore, keep the American flag flying on the trade routes of the world. Your many suggestions and ideas which help improve our publication are gratefully acknowledged. Best wishes for a joyous and peaceful Christmas and continued smooth sailing in the New Year.



Vice Admiral, U. S. Coast Guard  
*Commandant*

# "CURRENT DEVELOPMENTS IN INFLATABLE LIFERAFTS"

By Commander J. W. Naab, Jr., USCG

ON THE 29th of March of this year, the British fishing boat *Marcia* was underway off the coast of Scotland in the North Sea. Suddenly the engine flywheel flew apart, holing the vessel badly below the water line. The leaks gained steadily over the pumps, and an hour later the crew of four abandoned ship. More than fifty-eight hours later they were picked up safely. Not one man had even gotten his feet wet! This is the real story of the recent development of the inflatable liferaft.

Anything said about inflatable liferafts is a report on a recent development, because they are so new. The lifeboat as such, rather than a dual purpose boat, is only a little more than a hundred years old. The United States first required certain vessels to carry "longboats" in 1838, and Great Britain first required lifeboats on vessels carrying more than 10 passengers in 1854.

Since that time we have seen considerable improvement in ships, but there has been very little change in lifeboat design except to add buoyancy tanks or blocks and in launching details such as gravity davits, power winches and quick releasing gear.

There are a number of reasons for this, including the well-known (and in many cases desirable) conservatism of mariners. One of the most important, however, is the laws that are designed to protect the seafarer and the passengers.

## ABOUT THE AUTHOR

Presently assigned as Production Officer in the Coast Guard Yard, Curtis Bay, Maryland, Commander Naab was graduated from the Coast Guard Academy in 1937, and the Massachusetts Institute of Technology in 1944. In 1952 he was Commanding Officer of the USCGC *Yakutat* which rescued four survivors from the bow section of the SS *Fort Mercer* which broke up in the North Atlantic. From 1952 until his present assignment, he was in Coast Guard Headquarters in the Testing and Development Division. This paper was presented at the panel discussions of the Marine Section of the National Safety Council in Chicago, Illinois, October 22, 23, and 24, 1957.



Figure 1.

Once a law requiring certain types of equipment is in effect, ship owners must spend large sums to meet its requirements. Obviously, changing every few years the type of equipment demanded by the law would be an uneconomic and highly unpopular move.

World War II focused attention on lifesaving equipment as never before, because of the tremendous loss of life at sea. Figures from the British Admiralty show that more than 100,000 men of the Royal Navy lost their lives at sea. Two-thirds of these men were lost after abandoning ship safely, and half of these, or about 35,000 men, died after they had reached a lifeboat or liferaft.

Our Navy did not lose as many men in the water as the British because the larger part of our effort was in the Pacific where conditions for survival were better. But even then, when the Cruiser *Indianapolis* was sunk by a Japanese submarine, more than 900 men who safely abandoned ship in good condition died in the three days before rescue came, even though weather and water conditions were almost ideal.

## REEVALUATION NEEDED

These figures pointed up the need for a reevaluation of lifesaving gear, particularly on combatant ships.

During the war we used lifeboats, balsa rafts and so-called life nets on our combatant ships. The same

equipment was used in the Merchant Marine as well, with the addition of various miscellaneous designs of rafts. Since these were not suitable, at least for wartime conditions, what was to be substituted?

During the same period that we were suffering these frightful losses at sea, 26,000 Allied airmen were saved by the use of inflatable liferafts. There were many other cases where rubber boats were used, as in Frogman operations, Commando raids, etc. The success of inflatable craft in these instances directed the attention of the U. S. and British Navies to the possibility of using similar rafts in place of traditional wood and metal boats and floats.

## LIFEBOAT REQUIREMENTS

Over a period of years, lifeboat requirements have been set down by necessity, custom or law. The following characteristics, among others, are needed:

1. Reliability
2. Seaworthiness
3. Capability of being launched under all conditions
4. Ease of boarding
5. Resistance to damage
6. Provision for shelter for survivors
7. Capability of locomotion
8. Provision for distress signals
9. Capability of being found.

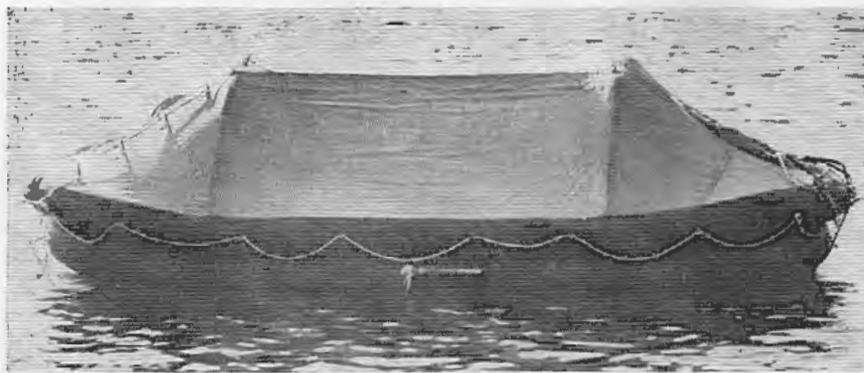


Figure 2.

It is interesting to see how well the inflatable liferaft measures up to these requirements.

First, reliability of inflatable liferafts can be improved. In recent tests by the Civil Aeronautics Authority conducted with commercial airplane rafts, 10% of the rafts failed completely, and 90% had some deficiency. This is partly due to the fact that the specifications for these rafts do not require performance tests for acceptance. In Great Britain, to be accepted, a newly designed raft for use on shipboard must survive being moored for two weeks to a buoy in the North Sea with a full load of sand bags, as well as other tests.

One of the most difficult problems has been the development of a satisfactory inflation system. All rafts at the present time use carbon dioxide gas. In most cases this is satisfactory, but in cold weather inflation may be extremely slow. Raft manufacturers and other companies and agencies have been working to develop a better system. One new system uses the jet or injector principle in which a small quantity of high pressure air is expanded through a nozzle at high velocity, entrapping large amounts of atmospheric air with it, and inflating the raft to its designed pressure of 2 psi in a matter of seconds. One obvious disadvantage is apparent. What happens if the injector is underwater when it is actuated? Several solutions to the inflation problem are being tested now, and it will eventually be solved.

#### RELIABILITY IMPROVED

Reliability is being improved by greater attention to the details of manufacture, including better cementing or vulcanizing of seams, lighter and stronger materials, and by more rigid inspection and testing at the factory.

Part of the answer to insuring reliability after manufacture is periodic inspection. The CAA requires airlines to inspect their rafts under a pre-

scribed procedure every six months, and if liferafts are to be used on ships in large numbers, some such system will be necessary, with the inspection being done by highly trained technicians.

The seaworthiness of the inflated rafts is astounding. The record voyage was made by three airmen in the Caribbean during the war who survived in a rubber raft for 139 days before rescue. Recently, the British trawler *Northern Crown* struck a rock off the coast of Iceland in a force 10 gale. Both lifeboats were smashed, but the crew were rescued after they abandoned ship in two inflatable liferafts. In another case the Icelandic trawler *Guðrun* foundered in the same area on a lee shore and the crew left the ship in their rubber boat. This boat was driven over three lava reefs, but landed safely on the ice-encrusted rocky shore. The men's feet were badly cut by the icy rocks, but the inflatable liferaft was undamaged.

In ability to launch the liferaft has no equal, because it can be rolled or carried to the most favorable spot, thrown over the side and inflated in the water. A twenty-man liferaft with all equipment weighs about 300 pounds in its stowage case, or roughly 15 pounds per man. Tests have shown that in favorable conditions one man can roll a raft of this weight over the side. Even under unfavorable conditions, three or four men can launch such a raft without difficulty. Smaller rafts of 6 and 12 man capacity weigh about 120 pounds and 200 pounds respectively. In the case of the steam trawler *St. Celestin*, which was in a collision in May 1956, the ship sunk so fast that the men did not even have time to put on their life jackets, but they did succeed in safely launching their liferafts, from which they were rescued. We are all familiar with cases where conventional lifeboats could not be launched, usually because of pronounced listing of the vessel. The *Andrea Doria's* sinking is a good example.

#### EASY TO BOARD

Liferafts are easy to board if you can jump into them, and not particularly difficult to get into from the water under good conditions after one man is in the raft to help others. However, if survivors must swim to the raft in very cold water, or if they are impeded by life jackets or clothing, or are feeble or injured, it may be difficult to get in, even with the boarding ladders provided. The recent development of a boarding ramp has eased this problem somewhat. Figure 1 shows a passenger airplane type raft equipped with these ramps under test. Getting passengers aboard rafts from large ships with 60 feet of freeboard or more is a particularly knotty problem. Here the solution appears to be ladders, or some sort of power lift such as the one recently patented by a Coast Guard officer.

It has been shown that the liferaft has good resistance to damage, as in the case of the *Guðrun*. Because of its resilience and tough fabric it can lie alongside a ship and withstand battering that would sink a rigid lifeboat. On the other hand, it is vulnerable to sharp projections. The raft is also vulnerable in stowage, with its susceptibility to deterioration because of creases due to folding, heat, oil and sunlight. However, a new development of a fiberglass re-enforced plastic case will improve stowage conditions and protect the raft against some of these hazards. Rafts are made with a number of separate buoyancy chambers, so that a puncture in one will not sink it. In addition, the low pressure in the raft makes small leaks easy to control with the hand pump, mechanical leak stoppers and temporary repair kits that are part of the raft's equipment.

#### GOOD SHELTER

The provision of shelter for survivors is one of the most important considerations, and although it may come as a surprise to you, the inflatable raft does this much better than open, rigid boats. All of the newer rafts have canopies which are automatically erected when the raft inflates. Another feature may be a manually inflated rubber mattress-type floor to insulate the bottom from the sea. Figure 2 shows the latest model U. S. Navy raft. Note the entrance, which can be closed with a draw-string. There is an identical opening on the other end. Note also the boarding ladders. A raft similar to this was tested in Newfoundland in April by having ten volunteers, wearing life jackets and miscellaneous outfits from dungarees to heavy parkas,

jump over the side of a vessel into 34° F. water and swim 25 feet to the raft. Then, without any heat except from their bodies, they stayed there for five days. The average air temperature outside the raft was about 40° F., inside the raft it dropped below 70° F. only briefly on two occasions. Similar tests were conducted during the summer in Panama with very good results.

To give it means of locomotion, the inflatable liferaft may have paddles stowed with its equipment, but even with paddles it is difficult to move a raft in any direction except down wind. However, with modern communication and airplane searches, it may be an actual advantage to remain in the vicinity of the area where the disaster occurred. If a good position was given with the distress call, and a number of rafts are in the vicinity, rescue is almost certain because their drift can be estimated. If the liferaft are propelled they are likely to be separated within a few days, and since their courses would be unpredictable, the search problem is intensified.

#### DISTRESS SIGNALS

To send out distress signals, some lifeboats are equipped with radio. Some inflatable rafts are also, although the increased weight and expense and difficulty of maintenance have discouraged their use in commercial models. With transistors and new batteries, however, a two-pound two-way radio is available. In addition, the Armed Forces have under development for aircraft use, a crash locator beacon, which in the event of a crash is ejected automatically and sounds a radio call continuously for many hours. As with boats, liferafts are equipped with pyrotechnic signals.



Figure 3.

Any other features that will help in finding the survivors are desirable. Everyone who has been to sea knows how difficult it is to see a small boat or raft from a ship in any kind of seaway. It is even more difficult from an airplane. The development of radar has eased this difficulty, but not eliminated it. Because they are

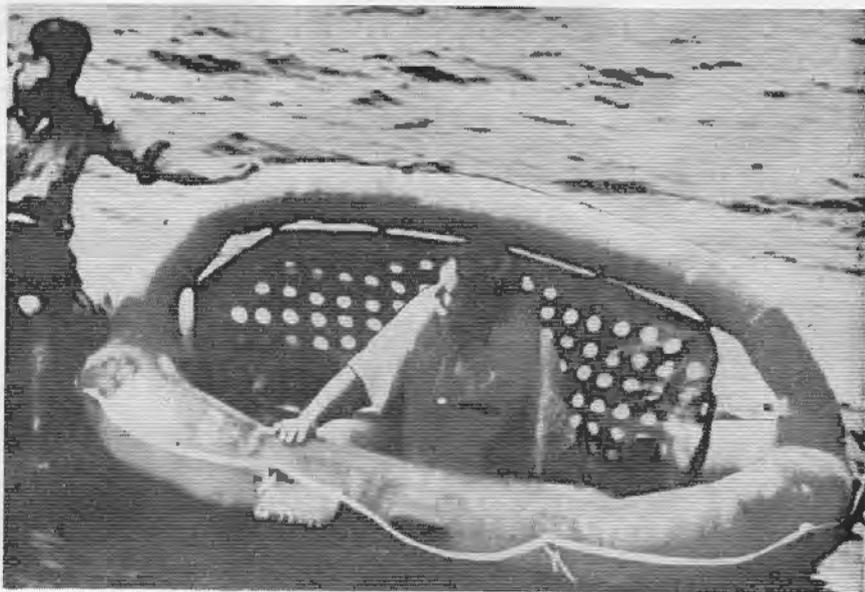


Figure 4.

larger and made of solid material, boats give better radar response than do inflatable liferafts. However, this disadvantage can be overcome by the use of a highly efficient metallized cloth, some of which is now incorporated in the canopies of the latest U. S. Navy rafts. Another new development in making rafts easy to find has been the development of fluorescent dyes. A raft with a canopy of the best of these colors can be seen three or four times as far as the conventional one.

In addition to the standard rafts for use on board ship and in aircraft there are a number of special designs which have recently been developed. One is the Arctic Shelter type, shown in Figure 3. By use of special materials, air spaces for insulation and special provisions for ventilation, this shelter can keep up to 20 people warm even under Arctic conditions. It has not yet been placed in production.

#### ONE-MAN RAFT

The Navy has developed a special one-man liferaft to rescue men who fall overboard. It is ejected from its container and inflates automatically while flying through the air. Figure 4 shows this boat. The arch above the man's head supports some of the metallized cloth radar reflector material mentioned above. There is also a light which is activated upon contact with the water.

The Air Force has developed a number of one-man rafts for pilots, and work is still going on. The direction is toward a parachute, liferaft and survival kit, all in one compact package which is ejected with the pilot.

The Coast Guard is working on a large raft (Figure 5) which can be used to take people off sinking ships or ditched aircraft, and which is rugged enough to be used as a fender and landing platform for boats coming alongside the ship with survivors in rough weather. True to Coast Guard tradition, this raft is a self-bailer. This is possible because the raft is completely reversible, with the deck between the two supporting tubes. Even with a full load of passengers, breaking seas will drain out of the raft. In calm weather, the drains, which are simply reversible sleeves of the same rubberized cloth as the raft, may be closed to keep water out.



Figure 5.

What are the prospects for increased use of inflatable liferafts? Obviously, because of weight and spare requirements, the airlines will continue to use them. For these

(Continued on page 207)

# BALANCE SOUGHT IN MARINE INSPECTOR BILLETS

SINCE enactment of Public Law 219, which provides for direct commissioning of qualified merchant marine officers in the regular Coast Guard, it has been the services aim to attain a balance whereby 50% of all officers assigned to Merchant Marine Safety duties would eventually be men with merchant marine experience and background.

Consistent with this policy, commissions have been tendered to 23 former deck and engine officers this year, who, after an indoctrination period will replace the thinning ranks of former Bureau of Marine Inspection and Navigation inspectors who rapidly are approaching retirement age.

To promote interest in this unique officer procurement program, the requirements initiated in 1949 have undergone major revision. Changes have been made relative to age and license requirements to more accurately reflect existing conditions. The important examination time has been increased from a 3-day period to a 3-month period which gives many seagoing applicants a better opportunity to arrange to take the examination between trips without loss of time or pay.

Of interest to applicants is the elimination of chemistry and physics as required subjects. Emphasis has been placed on the practical subjects, i.e., navigation, seamanship, and engineering similar to the professional questions now given for deck and engine licenses by the Coast Guard.

The main qualifications for the various ranks are as follows:

## ● LIEUTENANT (Junior Grade)

**Age**—Must not reach 32d birthday in the calendar year in which application is made.

**License**—Second Mate (unlimited)—Oceans or Coastwise; First Class Pilot (unlimited)—Great Lakes, Western Rivers, or other inland waters; or Second Assistant Engineer (5000 or more horsepower); First Assistant Engineer (2000 or more horsepower).

**Experience**—Four or more years' service aboard a vessel of the U. S. in the capacity of a licensed officer. Of this service, at least three years must have been served aboard commercial merchant vessels of the U. S. Credit for up to one year may be given for service aboard public vessels of the U. S. Service aboard public vessels, however, must meet the Coast Guard

Following is a list of former merchant marine officers commissioned under the provisions of PL-219 this year as Warrant Officers (WO), Lieutenant (junior grade) (LTJG), Lieutenant (LT), and Lieutenant Commander (LCDR):

Name	Rank	Former Employer
Richard A. Bauman	LT	United Fruit Co.
Raymond W. Bernhardt	LT	Waterman Steamship Co.
Justin J. Bonanno	LT	United States Lines
Domenic A. Calicchio	LTJG	United States Lines
John S. Cameron, Jr.	WO	Joshua Hendy Corporation
Russell P. Combs	LT	Matson Navigation Co.
Edward S. Davis, Jr.	LT	Moore-McCormack Lines
William Drew	LTJG	Socony Mobil Oil
Richard F. Eiden	WO	Standard Oil Co.
Lenard Fielding	LT	Farrell Lines
William J. Franks	LT	Matson Navigation Co.
Arthur W. Gove	LT	American Export Lines
William E. Heath	LT	Virginia Ferry Corporation
Jack A. Howell	LT	Chesapeake Bay Ferry Commission
Jerome A. Konkel	WO	American Oil Co.
William A. Mauch	WO	Michigan State Ferries
John F. O'Connor	LT	Tidewater Oil Co.
Robert C. Pittman	LT	Military Sea Transportation Service
Carl E. Rodehau	LT	United States Lines
James N. Schenck	LTJG	States Marine Lines
Stephen Varanko	LCDR	United States Lines
Kenneth R. White	LCDR	Lykes Brothers
George J. Weidner	LT	Panama Canal Co.

equivalency standards used to determine eligibility for a merchant marine license or a raise in grade.

## ● LIEUTENANT

**Age**—Must not reach 38th birthday in the calendar year in which application is made.

**License**—Chief Mate (unlimited)—Oceans or Coastwise; Master and First Class Pilot (unlimited)—Great Lakes, Western Rivers, or other inland waters; or First Assistant Engineer (5000 or more horsepower); Chief Engineer (2000 or more horsepower).

**Experience**—Six or more years' service aboard a vessel of the U. S., in the capacity of licensed officer, of which not less than one year must have been served as Chief Mate or First Assistant Engineer.

Two years of the six required may have been served aboard public vessels. Service aboard public vessels, however, must meet the Coast Guard equivalency standards used to determine eligibility for a merchant marine license, or for a raise in grade.

An applicant who holds a degree from an accredited college, or who is a graduate of a federal or state maritime academy, may substitute his degree, diploma, or certificate of completion for one year of the required six.

Experience ashore as assistant port captain, assistant port engineer, ma-

rine surveyor, or comparable position may be substituted equally for up to two years of the required six.

A combination of substitutions of educational credit and experience ashore cannot serve to reduce actual sea service below the four years required by law. Credit for service aboard public vessels cannot reduce the required sea service aboard commercial merchant vessels below three years. Substitution cannot be made for the required one year's service as Chief Mate or First Assistant Engineer.

## ● LIEUTENANT COMMANDER

**Age**—Must not reach 40th birthday in the calendar year in which application is made.

**License**—Master (unlimited)—Oceans or Coastwise; Master and First Class Pilot (unlimited)—Great Lakes, Western Rivers, or other inland waters; or Chief Engineer (unlimited horsepower).

**Experience**—Twelve or more years' service aboard a vessel of the U. S., in the capacity of a licensed officer, of which at least one year must have been served as Master or Chief Engineer.

Four years of the twelve required may have been served aboard public vessels. Service aboard public vessels, however, must meet Coast Guard equivalency standards used to deter-

# FORMER MERCHANT MARINE OFFICERS SWORN IN COAST GUARD



CAPTAIN F. A. MacGurn, Marine Inspection Officer for the 12th Coast Guard District, swears in three former merchant marine officers at recent ceremonies held in San Francisco. Left to right they are LTJG James N. Schenck, Chief Warrant Boatswain John S. Cameron, Jr., and LT Raymond W. Bernhardt.



REAR ADMIRAL H. C. Perkins, Commander of the 3rd Coast Guard District, is pictured talking to LCDR Stephen Varanko (far left), LT George J. Weidner (2nd from right) and LT Edward S. Davis, Jr., after the trio had been sworn into the Coast Guard.



REAR ADMIRAL E. J. Roland, Commander of the 1st Coast Guard District, is photographed as he swears in Domenic A. Calicchio as a LTJG in the regular Coast Guard. This former merchant marine officer resides in Winthrop, Mass.



REAR ADMIRAL H. C. Moore, Commander of the 5th Coast Guard District, welcomes newly commissioned LT Jack A. Howell into the service. Both officers are graduates of the New York State Maritime College.

mine eligibility for a merchant marine license or for a raise in grade.

An applicant who holds a degree from an accredited college, or who is a graduate of a federal or state maritime academy, may substitute his degree, diploma or certificate of completion for one year of the required twelve.

Experience ashore as assistant port captain, assistant port engineer, marine surveyor, or comparable position may be substituted equally for up to five years of the required twelve.

A combination of substitutions of educational credit, experience ashore, and service aboard public vessels cannot reduce the required actual sea service aboard commercial merchant vessels below six years. Substitution cannot be made for the required one year's service as Master or Chief Engineer.

● COMMISSIONED WARRANT OFFICER—W-3

Age—Must have reached 27th birthday and must not reach his 40th

birthday in the calendar year in which application is made.

*License*—Third mate (unlimited)—Oceans or Coastwise; First Class Pilot (1000 or more gross tons)—Great Lakes, Western Rivers, or other inland waters; Third Assistant Engineer (2500 or more horsepower); First Assistant Engineer (1000 or more horsepower).

*Experience*—Six or more years' service aboard a vessel of the U. S. in the capacity of a licensed officer.

(Continued on page 207)

## ANDREA DORIA RESCUERS HONORED



FIRST PEACETIME Gallant Ship Awards were presented by Louis S. Rothschild, Under Secretary of Commerce for Transportation, left, to Captain John S. Shea of the USNS *Pvt. William H. Thomas*, Captain Raoul de Beaudean of the SS *Ile De France*, and Captain Joseph A. Boyd of the SS *Cape Ann*. Captain Rene Blanc, extreme right, was presented with a Letter of Commendation. Photograph courtesy Military Sea Transportation Service, Department of the Navy.

OFFICIAL recognition of three American-flag and one foreign ship for their participation in the rescue of passengers and crew from the sinking *Andrea Doria* in July 1956 was made at ceremonies in New York recently.

Gallant Ship Awards were conferred on the SS *Cape Ann*, USNS *Pvt. William H. Thomas*, and the SS *Ile De France*, and a Letter of Commendation was presented to the SS *Robert E. Hopkins*.

In ceremonies aboard the *Ile De France*, Louis S. Rothschild, Under Secretary of Commerce for Transportation, made the first peacetime presentations of these awards which cite the courage, resourcefulness, sound seamanship, and teamwork of the masters and men which successfully completed this heroic operation.

The awards, authorized under Public Law 759, are authorized by the Secretary of Commerce with concurrence of the Secretary of Treasury. For awards to foreign ships, the Secretary of State must also concur.

The honored ships are:

- The SS *Cape Ann*

Owned by the Munargo Line, a subsidiary of United Fruit Company and chartered to the Isbrandtsen Co., this Gallant Ship answered the SOS from the *Andrea Doria* and rushed to the side of the stricken ship. She brought aboard 129 victims of the disaster and ferried others to the *Ile De France*.

For this action she was awarded a *Gallant Ship Plaque* to the ship, a Meritorious Service Medal to Capt. Joseph A. Boyd, together with a Letter of Citation and Gallant Ship Bars to each member of the crew serving at the time of the rescue, and a Letter of Commendation. A special Letter of Commendation was awarded to messman Hugh J. Allen who jumped from a lifeboat to rescue a child.

- The USNS *Pvt. William H. Thomas*

A ship of the Military Sea Transportation Service, she arrived at the scene within two hours after the first SOS. She put two lifeboats into the

water and brought aboard 159 survivors, and then stood by to direct the rescue operations of other ships until relieved by the Coast Guard.

For this action she was awarded a *Gallant Ship Plaque* to the ship, a Meritorious Service Medal to Capt. John S. Shea, together with a Letter of Citation. Gallant Ship Bars are to be awarded to each member of the crew serving at the time of the rescue together with a Letter of Commendation.

- The SS *Ile De France*

This Gallant Ship of the French Line was many miles from the *Andrea Doria*, outward bound from New York when the SOS came. She proceeded immediately at top speed to the side of the *Andrea Doria* and put thirteen lifeboats into a ferrying operation. Her appearance lifted the morale of the passengers of the stricken ship and she took aboard with her lifeboats and from other lifeboats 753 survivors, some seriously injured.

(Continued on page 208)

## SPECIAL SHIP—SPECIAL PRODUCTS



**BIGGEST WINE TANKER** in the world, the *SS Angelo Petri*, slices through the water on her trials. Conventional in appearance, this ship has 26 stainless steel-lined tanks for the carriage of special edible products.

A NEW chapter in American flag shipping history was made recently with the completion of the maiden trip of the *SS Angelo Petri*, largest wine tanker in the world.

Designed to eliminate the overland delivery from California vineyards to Eastern markets, the ship chalked up a first by delivering more than 2 million gallons of wine—the first to be transported by sea between United States ports.

Her two main discharge ports will be Port Newark, New Jersey, and Houston, Texas, and marks a radical departure in the care, treatment, and transport of wine and other edible products. It is expected the vessel will carry such cargoes as sugar in solution and beverage alcohol on its return trip to Stockton, California.

The edible cargoes are carried in 26 stainless steel-lined tanks ranging in capacity from 31,000 to 211,000 gallons each. Four thousand feet of stainless steel piping is installed to carry the products without risk of contamination.

Each tank is separated by cofferdams which are shown in the photograph of the vessel in its initial stages of construction. It is interesting to note the double bottoms—an unknown feature in the conventional tanker.

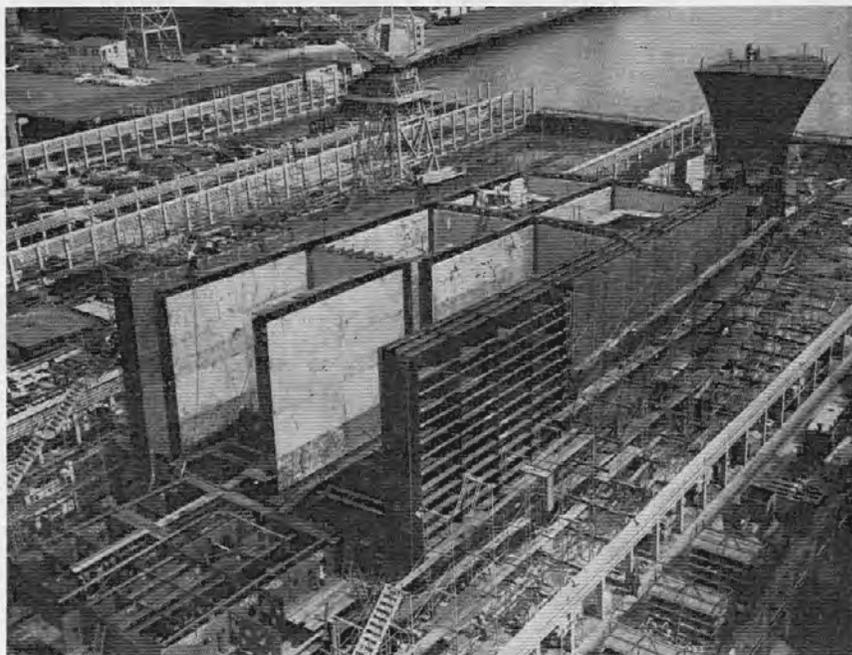
The stern section, from frame 56, is that of the former *SS Sacketts Harbor* which served as a power plant for the city of Anchorage, Alaska, while this northern city completed its hydroelectric installation. From Anchorage, the stern was towed to Seattle and offered for sale. The United Vintners Lines of San Fran-

cisco purchased the section intact and today it is the machinery section of the *Angelo Petri*.

Except for the layout of the tanks, pumps, and special measures to prevent contamination of the food products, the ship appears the same as any T-2 type tanker. Dry cargo

spaces are provided forward, deck officers are quartered in the forward house, and the galley, crew spaces, and engine officers are located in the after house.

All photographs appearing on this page are courtesy of *Bethlehem Steel Pacific*.



**BOW SECTION** takes shape in Bethlehem Pacific shipyard in San Francisco for the *SS Angelo Petri*. Note the special cargo tanks completely surrounded by cofferdams. This section was welded to the stern of the former *SS Sacketts Harbor*.



## VETERAN OFFICER RETIRES

Climaxing a service career that started with an enlistment in the U. S. Navy when he was 14 years of age, Commander Paul E. Savonis retired from active duty at Coast Guard Headquarters on November 1, 1957.

Born on March 5, 1907, he enlisted in the Navy in the early part of 1921 and served until July 1929 on battleships, destroyers, and submarines. After leaving the Navy, Commander Savonis served a four-year clerkship in New Britain, Connecticut, and was graduated from the Connecticut University Hartford College of Law in 1933. In 1936, after law practice in Jacksonville, Miami, and Tampa, Florida, he joined the Bureau of Marine Inspection and Navigation and was assigned in the Merchant Vessel Inspection Division.



Early in 1941 he was ordered to active duty with the Navy serving as an officer courier and with the Judge Advocate General's office. Following Pearl Harbor, he was loaned to the Coast Guard to assist in the development and preparation of the Coast Guard's "Wartime Safety Measures for Merchant Vessels." In 1946 while holding the rank of Commander, he resigned his commission in the Naval Reserve and accepted an appointment as Lieutenant Commander in the Coast Guard Reserve. In 1948 he became a regular member of the Coast Guard and was advanced to the rank of Commander in 1951.

### 40 YEARS AGO:

In the annual report of the Supervising Inspector General of the Steamboat Inspection Service to the Secretary of Commerce for the fiscal year ended June 30, 1917, the following statistics were listed: The Service inspected and certificated 6,984 vessels with a gross tonnage of 7,249,589, of which 6,776 were domestic vessels and 208 were foreign passenger vessels; inspected 82 hulls and 1,590 boilers for the Government; issued 26,962 licenses of all grades; and conducted 2,827 reinspections.

\* \* \*

Total number of accidents resulting in loss of life was listed at 257. The total number of lives lost was 592, of which 71 were passengers. Of the lives lost, 210 were from suicide, accidental drowning, or other causes beyond the power of the Service to prevent. This record shows that 4,466,129 passengers were carried for each passenger lost during the fiscal year.

\* \* \*

Accidents to vessels reported to the Bureau included the following: The steamer *Antilles*, on a voyage from St. Nazaire, France, to New York, in convoy, was torpedoed and sunk with the loss of 67 persons; the fishing steamer *Manhattan* stranded near Lituya Bay, Gulf of Alaska, resulting in the ship becoming a total loss. The ship and cargo were valued at \$163,000. The steamer *Schuykill* was torpedoed and sunk off the coast of Algiers. Although she went down in 15 minutes all crew were saved.

\* \* \*

### 30 YEARS AGO:

The schooner *Elizabeth Freeman*, of 1,665 gross tons, while on a voyage from Jacksonville to Boston was completely destroyed by fire. Loss estimated at \$100,000. The origin of the fire was not determined.

\* \* \*

The *Coos Bay*, of 5,149 gross tons, stranded at Land's End, entrance to San Francisco Bay. Case being investigated. The steamer *Beta*, of 5,665 gross tons, on a voyage from New York to Baytown, Texas, had an explosion when eight miles north of Barnegat, N. J., causing a fire in the crew quarters. The fire was extinguished three hours later and the vessel returned to New York. Three men were killed and one injured.

\* \* \*

### 20 YEARS AGO:

The Bureau was called on to investigate two cases of failure of main steam piping; one occurred on the SS *Brazos* in New York Harbor, causing the loss of four lives, in addition to which four other persons were seriously burned by the escaping steam. The other occurred on the SS *Caloria* at sea and resulted in the loss of two lives.

\* \* \*

On November 1, 1937, American shipyards were building or had under contract to build for private shipyards, exclusive of vessels previously launched, 151 vessels aggregating 294,411 gross tons, a decrease of four from the previous month.

\* \* \*

### 15 YEARS AGO:

The regulations applicable to merchant vessels and shipping during the emergency have been brought up to date and published. These emergency regulations deal with material and personnel matters concerning inspected merchant vessels.

\* \* \*

Nine new cutters have been launched for the Coast Guard during the past two months, and will soon take their places in the expanding fleet. They are: *Conifer*, *Mesquite*, *Buttonwood*, *Sorrel*, *Madrona*, *Tupelo*, *Cosmos*, *Barberry*, and *Fern*.

At the time of retirement he was Chief, Marine Casualty Review Section, and acting Chief in the absence of the Chief, Merchant Vessel Inspection Division. His duties at Headquarters covered a wide range of activities in connection with marine safety and enforcement including interpretation, review, and revision of marine safety and other navigation statutes, rules, and regulations.

In September 1956, Commander Savonis was an adviser to the delegate representing the Government of the United States to the Preparatory Technical Maritime Conference of the International Labor Organization in London, England. Rocco C. Siciliano, Chairman of the U. S. Delegation, and former Assistant Secretary of Labor, officially commended Commander Savonis for his "able assistance" at this ILO conference.

In addition, Vice Admiral A. C. Richmond, Commandant of the Coast Guard, expressed his appreciation of the faithful and competent service Commander Savonis has rendered the Coast Guard and the Nation.

A familiar figure on Capitol Hill, Commander Savonis has served as a technical adviser before many Senate and House committees, and is the Coast Guard's representative on the National Fire Protection Association's subcommittee on Standards for Motor Craft and Marinas.

### LEGAL OPINIONS

In *Capehorn SS Corporation v. Texas Co.*, 1957 A. M. C. 1335, a vessel's rough log contained entries about collisions on the wrong side of the page and out of chronological order; the smooth log contained no entries of the collision. The discrepancies were not explained in court. The court said:

"Where a party comes into court with log entries which will not stand the test of credibility, the party's chance of success in litigation is little short of nonexistent."

### CONVENTIONS

The Government of the United Kingdom has advised this country that in accordance with Article 66 of the International Convention for the Safety of Life at Sea signed at London on May 31, 1929, a notification of denunciation of the Convention was received by the Government of the United Kingdom from the Government of the People's Republic of Bulgaria on February 25, 1957, and that the denunciation will take effect on February 25, 1958.

## SQUARE RIGGED TRAINING SHIPS

Seventeen nations utilize square rigged sailing ships for merchant marine and naval training purposes, it was pointed out in a recent New York Times article.

Although details are lacking, the Soviet Union is known to have more than a dozen barkentines built by Finland as World War II reparations, but the names are unknown.



THE COAST GUARD Academy's 295-foot, three masted training bark *Eagle*, with foresail furled, heads to sea on a cadet training cruise. Handling her 22,000 square feet of sail and more than 20 miles of rigging presents a great challenge to the young men in the art of seamanship and leadership. Formerly the German training ship *Horst Wessel*, this ship was acquired by the Coast Guard after World War II as part of Germany's reparations.

Following is a list of seagoing square-rigged training vessels identifiable by past or present names or still under construction, as reported in the *Times*:

Flag	Name	Rig (Masts)	Year Built
United States	<i>Eagle</i>	Bark (3)	1936
Argentina		Barkentine (4)	(*)
Belgium	<i>Mercator</i>	Barkentine (3)	1932
Brazil	<i>Guanabara</i>	Bark (3)	1937
Brazil	<i>Almirante Saldanha</i>	Barkentine (4)	1933
Chile	<i>Esmeralda</i>	Barkentine (4)	1953
Denmark	<i>Danmark</i>	Ship (3)	1933
Denmark	<i>Georg Stage</i>	Ship (3)	1934
Germany, East	<i>Wilhelm Pieck</i>	Brigantine (2)	1951
Germany, West	<i>Passat</i>	Bark (4)	1911
Germany, West			(*)
Indonesia	<i>Dewarutji</i>	Barkentine (3)	1953
Italy	<i>Amerigo Vespucci</i>	Ship (3)	1930
Italy	<i>Palinuro</i>	Brigantine (2)	1920
Italy	<i>Georgio Cino</i>	Barkentine (3)	1896
Japan	<i>Kaio Maru</i>	Bark (4)	1930
Japan	<i>Nippon Maru</i>	Bark (4)	1930
Norway	<i>Christian Radich</i>	Ship (3)	1937
Norway	<i>Sorlandet</i>	Ship (3)	1927
Norway	<i>Statsraad Lehmkuhl</i>	Bark (3)	1914
Poland	<i>Dar Pomorza</i>	Ship (3)	1909
Portugal	<i>Sagres</i>	Bark (3)	1896
Spain	<i>Juan Sebastian de Elcano</i>	Barkentine (4)	1928
Spain	<i>Galatea</i>	Bark (3)	1896
U. S. S. R.	<i>Tovarich</i>	Bark (3)	1933
U. S. S. R.		Ship (3)	1928
U. S. S. R.	<i>Krusenstern</i>	Bark (4)	1926
U. S. S. R.	<i>Sedov</i>	Bark (4)	1921
Yugoslavia	<i>Jadran</i>	Barkentine (3)	1932

\*Under construction.



# MARITIME SIDELIGHTS

"All Hands," published by the Australian National Line, received the following message from the master of the *River Glenelg*, which had to shelter on a voyage from Townsville to Melbourne with 7,980 tons of sugar: "Sheltering Hervey Bay. Refer Jonah 1-4." This passage reads:—

The Lord sent out a great wind into the sea. And there was a mighty tempest in the sea, so that the ship was like to be broken.

‡ ‡ ‡

Former ships of the Pacific Transport Lines, Inc., and States Steamship Company, consolidated under the States Line banner will display a colorful seahorse stack design on their 13 trans-Pacific vessels. The design, part of an overall corporate identification program, depicts a red seahorse on a white field with a navy blue border.

‡ ‡ ‡

Factors which go into determination of construction-differential subsidies for United States merchant ships are detailed in a new 15-page booklet entitled "Manual of Procedure for Determination of Construction-Differential Subsidy." The pamphlet may be obtained from the Sales and Distribution Office of the Department of Commerce, Room 6327 Commerce Department Building, Washington 25, D. C., for 25¢ per copy.

‡ ‡ ‡

Eighteen proposals to develop a gas-cooled nuclear powerplant, suitable for propelling merchant ships, were received by the Atomic Energy Commission and the Maritime Administration in response to their invitations. The plant will consist of a gas-cooled reactor coupled with a closed cycle gas turbine.

‡ ‡ ‡

The Safety Bureau of the New York Shipping Association, Inc., has reprinted a comprehensive report on Carbon Monoxide (CO) as Safety Report No. 1, dated April 25, 1952, which

covers in some detail the properties, generation, detection, and prevention of inhalation of the gas.

‡ ‡ ‡

The nuclear-powered merchant ship discussed in the September 1957 issue of the *Proceedings* will be named the *NS Savannah*. This revolutionary new vessel will have the same name as the first transoceanic steamship that made a crossing from Savannah, Georgia, to Liverpool, England, on May 22, 1819, in 22 days. The *NS Savannah* is expected to be in service by 1960.

‡ ‡ ‡

Moore-McCormack Lines' two South American passenger ships, now being built at Pascagoula, Mississippi, will have the same names as the present company liners—The *Brazil* and the *Argentine*—with one small exception. Company officials have acceded to the wishes of the Brazilian Government and will spell that vessel's name *Brazil*.

‡ ‡ ‡

The thirty-fifth annual report of the American Merchant Marine Library Association showed that since 1921 it has distributed 11,455,983 books in 204,136 seagoing library units. Donations of books to this non-profit organization may be made to the following port offices: 406 E. Plume Street, Norfolk, Va.; 105 Embarcadero, San Francisco 11, Calif.; 820 S. Beacon Street, San Pedro, Calif.; 3415 Marginal Way, Seattle, Wash.; Old Weather Bureau Building, Sault Ste. Marie, Mich.; 408 Atlantic Avenue, Boston 10, Mass.; Charleston Public Library, Charleston, S. C.; and Esplanade Avenue Wharf, New Orleans 16, La.

‡ ‡ ‡

The Society of Naval Architects and Marine Engineers has published a 2-volume reference book entitled, "Hydrodynamics in Ship Design," written by Capt. H. E. Saunders, USN (ret.), and his staff. The ma-

terial covers applied and theoretical ship hydrodynamics.

‡ ‡ ‡

The St. Lawrence Seaway Development Corporation and Canadian interests have reached a decision which will permit ships having an overall length of up to 730 feet and a beam of up to 75 feet to use the St. Lawrence Seaway, it was announced in the magazine *Great Lakes and Inland Waterways*.

‡ ‡ ‡

More than 300 Great Lakes mariners have enrolled in Lake Carriers' Association-sponsored winter schools, which start in January, to prepare for Coast Guard examinations which lead to licenses and officers' posts.

‡ ‡ ‡

As a result of discussions with various boating groups, the Coast Guard has decided that on motorboats of Class A and 1 (less than 26 feet in length) the after white all-around light and white 12-point light may be carried off the centerline. An interpretative ruling to this effect was published in the Federal Register on November 1, 1957.

‡ ‡ ‡

Lykes Brothers Steamship Corporation has inaugurated a program of annual awards to ships of its fleet designed to improve the operating efficiency of their seagoing fleet. First winners were: C-3 class, SS *Almeria Lykes*; C-1 class, SS *Marion Lykes* and the SS *Joseph Lykes*; C-2 class, SS *Kendall Fish* and the SS *Elizabeth Lykes*; and the Victory class, SS *Charlotte Lykes*.

‡ ‡ ‡

The Lake Carriers' Association Bulletin carried a tongue-in-cheek article in its October 1957 issue which read: "Mrs. Anita Sombs, who operates the Shoreline Taxi service at Silver Bay, Minn., would like to advertise her phone number (BA-6-4241) in the Bulletin. Sorry, Mrs. Sombs, the Bulletin accepts no advertisements."

## MARINE SECTION, 45TH NATIONAL SAFETY COUNCIL

L. H. Quackenbush, Vice President, States Marine Corporation, was elected General Chairman of the Marine Section of the National Safety Council at the 45th Annual Safety Congress and Exposition held in Chicago, Illinois, October 22-24.

Attended by marine and Government officials from all parts of the country, the sessions included two ship operator meetings, a business meeting, a Coast Guard session, and concluded with a joint luncheon with the Propeller Club of Chicago.

Captain Jones F. Devlin, General Manager, United States Lines, the out-going General Chairman, made the welcoming and opening remarks, and speeches by David L. Buchanan, Captain A. W. Smith, and S. B. Parsell followed.

Mr. Buchanan, Director, Claims Division, Pittsburgh Steamship Division, U. S. Steel Corporation, spoke on "Knowing's Not Enough"; Captain Smith, President, Southern Stevedoring Company, New Orleans, La., "Accident Prevention in Stevedoring"; and Mr. Parsell, Operating Manager, Inland Division, Socony Mobil Oil Company, "Safety Precautions Taken on Inland Water Vessels to Avoid Accidents—And Still They Happen."

Mr. Buchanan's talk was highlighted by a color-sound movie under the same title as his speech which illustrated the theme of his presentation in a most graphic fashion.

The second ship operators' session included papers by Carl F. Vander Clute, Robert J. Tarr, and Captain L. A. Renehan; and a sound movie, "Accidents on the Navy's Merchant Ships," shown by the Military Sea Transportation Service, Department of the Navy.

Mr. Vander Clute, General Manager, Marine Department, Gulf Oil Company, New York, spoke on "Protecting Oil Tanker Crews from Accidents;" Mr. Tarr, Operating Manager, Luckenbach Steamship Company, Brooklyn, New York, "Prevention of Accidents to Crew Aboard Freighters;" and Captain Renehan, "Accident Prevention on Board Passenger Liners."

Rear Admiral H. T. Jewell, Chief, Office of Merchant Marine Safety, Coast Guard Headquarters, and Rear Admiral E. H. Thiele, Commander 9th Coast Guard District, Cleveland, Ohio, headed a group of Coast Guard officers and safety engineers who took part in the activities of the Marine Section.

## COAST GUARD COMMENDATION



William Velazquez is pictured above receiving a Coast Guard Commendation from Commander A. W. Johnsen, Officer in Charge, Marine Inspection, New York, in ceremonies aboard the SS Steel Apprentice, for his rescue of a shipmate in Basrah, Iraq. Others in the photograph are J. W. McDiarmid, Isthmian official; J. White, Chief Mate; and Isthmian Port Captain A. Hiorth. Photograph Courtesy Seafarers Log.

MR. WILLIAM VELAZQUEZ,  
8715 Avenue L,  
Brooklyn, N. Y.

DEAR MR. VELAZQUEZ:

The U. S. Coast Guard, as the principal agency of the United States charged with the safety of life and property at sea, takes pleasure in commending you for your exemplary conduct and heroism at Basrah, Iraq, on 26 June 1956 when, according to an official report of the incident, you saved the life of Mr. James Downey after he had fallen overboard from the SS Steel Worker. While serving as Boatswain on the SS Steel Worker you were supervising the painting of the ship's hull when Ordinary Seaman James Downey fell overboard into the water between the ship and the dock, striking his head on the dock, rendering him unconscious. You heard the cry of alarm by another member of the crew and recognized that Mr. Downey was in imminent danger of drowning. Without hesitation, with utter disregard of your own personal safety but knowing that a current existed and that the area was infested with sharks, you immediately jumped into these dangerous waters and were successful in locating and saving the unconscious man. But for your prompt and persevering efforts, the life of James Downey would have been lost. The courage you displayed in risking your life to save that of another is in keeping with the highest traditions of the United States Merchant Marine.

Very truly yours,

J. A. HIRSHFIELD,  
Rear Admiral, U. S. Coast Guard  
Acting Commandant.

Rear Admiral Jewell made general comments on progress of marine safety during the past year and introduced the speakers for the session which included Rear Admiral H. Arnold Karo, Director, Coast and Geodetic Survey, U. S. Department of Commerce; Commander Joseph W. Naab, Jr., U. S. Coast Guard Yard; and Captain L. M. Thayer, Jr., Officer in Charge, Marine Inspection, Portland, Oregon.

Rear Admiral Karo was the initial speaker and talked on "Nautical Charts for Safe Navigation;" Com-

mander Naab, "Current Developments in Inflatable Liferrafts;"\* and Captain Thayer, "Radar Plotting on Merchant Ships."

Vice Admiral J. M. Will, Commander Military Sea Transportation Service, Department of the Navy, was the featured speaker at the luncheon meeting.

Attendance at the sessions was at capacity and those attending agreed the papers presented were timely, interesting and thought provoking.

\*See page 195 this issue.



# nautical queries

**Q.** In a cross-compound turbine, where is the astern turbine usually installed? How does horsepower of the astern turbine generally compare with the ahead turbine?

**A.** Astern turbines are usually installed in the casing of the low pressure ahead turbines with the rotors mounted directly on the ahead turbine shaft. In general, the astern turbines are much smaller, and develop only from one-fifth to one-half of the maximum power of the ahead turbines.

**Q.** What is the distinguishing difference between impulse blading and reaction blading?

**A.** In the impulse blading the cross-sectional area of the steam passages between the blades remains approximately the same. In the reaction blading the passages between adjacent blades must be in the form of correctly shaped nozzles in order that the steam may expand the correct amount without turbulence.

**Q.** Explain the use and advantages of reheaters in connection with turbines.

**A.** In expanding through a turbine, steam becomes wet. This moisture causes both corrosion and erosion, especially in the later stages. Therefore, some turbines are fitted with reheaters between the high-pressure and low-pressure units. Wet steam is removed and reheated by an outside source. It is then returned to the unit as dry or superheated steam. This feature not only lessens damage to blading, but combines the thermodynamic advantages of superheat, giving increased economy.

**Q.** When and why is binding wire used on blading?

**A.** Binding wire is used to increase the rigidity and to decrease vibration of blades. It is usually used on installations in which shrouding is not fitted, or where the blades have been thin-tipped.

**Q.** Why are impulse blades heavier and stronger in construction than reaction blades installed in impulse-reaction turbines?

**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.

**Q.** What are the four (4) principal families or types of clouds, and what feature forms the basis of the classification?

**A.** The clouds have been divided into four families or types; high clouds, middle clouds, low clouds and clouds with vertical development.

The feature which forms the basis of the classification of the clouds is their height.

**Q.** What is the name of the cloud type which gives rise to halos of the sun and moon?

**A.** Cirrostratus.

**Q.** Cirrus clouds are composed of water in what state?

**A.** Ice crystals.

**Q.** When the sky is completely overcast, how may cumulonimbus clouds be distinguished from nimbostratus by the character of precipitation if this occurs?

**A.** If precipitation occurs, its character is violent and intermittent (showers) in the case of cumulonimbus, as opposed to the relatively gentle and continuous precipitation from nimbostratus.

**Q.** Low clouds are defined as those whose mean upper level is 6,500 feet.

Middle clouds are defined as those whose mean lower level is 6,500 feet and whose mean upper level is 20,000 feet.

High clouds are defined as those whose mean lower level is 20,000 feet.

Classify as low, middle, or high the following cloud forms:

(a) Stratocumulus.

(b) Cirrocumulus.

(c) Cirrostratus.

**A.** (a) Strato-cumulus.....low clouds.

(b) Cirro-cumulus ----high clouds.

(c) Cirro-stratus -----high clouds.

**Q.** (a) What are the factors that determine the stability characteristics of a body of air?

(b) When is a body of air known as unstable?

(c) When is a body of air known as stable?

**A.** (a) The existing lapse rate and the humidity of the air determine stability characteristics.

(b) If a volume of air is caused to move upward for any reason, it will continue its upward journey after the initial impulse is removed, provided it finds itself surrounded by air colder than itself. The air then is known as unstable.

(c) If the air after being forced upward is colder than its environment, it will tend to sink back downward. This is a condition of stability.

**Q.** Does the greatest vertical development of cumulonimbus clouds occur in the tropics or in high latitudes? Explain the reason for your answer.

**A.** The greatest vertical development of cumulonimbus clouds occurs in the tropics because the troposphere reaches its greatest height in that area and because temperature differential between the lower and upper layers of the troposphere is greater.

**Q.** Why are islands or shore lines in the tropics often marked by cumulus type clouds in the daytime, particularly in the afternoon?

**A.** Cumulus clouds are the product of convectional activity. During the day the land surfaces are heated more than the sea, and the adjacent layer of air is heated and rises rapidly through the cooler air lying over the sea. As it rises it cools through expansion below its dew point creating the cumulus type clouds.

**Q.** What sequence of cloud types is characteristic of the approach of a warm front?

**A.** The sequence of cloud types characteristic of the approach of a warm front is as follows:

Cirrus.

Cirrostratus.

Altostratus.

Nimbostratus.

**Q.** What publication, containing information of the storm advisory services from whom weather information may be obtained by radio, is required to be carried by U. S. Merchant vessels?

**A.** H. O. Publication No. 206 Radio Weather Aids.

**Q.** What is the usual sequence of directions in which a tropical cyclone in the Northern Hemisphere moves?

**A.** In the Northern Hemisphere the usual sequence of directions in which a tropical cyclone moves is toward the northwest changing to north and, finally to northeast.

An applicant who holds a license higher in grade than the basic requirement may substitute the higher license, of whatever higher grade, for a maximum of two years of the six required.

Two years of the six required may have been served aboard public vessels. Service aboard public vessels, however, must meet Coast Guard equivalency standards used to determine eligibility for a merchant marine license or for a raise in grade.

A combination of substitutions of higher license credit and service aboard public vessels cannot reduce the required actual sea service aboard commercial merchant vessels below three years.

#### ● COMMISSIONED WARRANT OFFICERS—W-4

**Age**—Must have reached 27th birthday and must not reach his 40th birthday in the calendar year in which application is made.

**License**—Third mate (unlimited)—Oceans or Coastwise; First Class Pilot (1000 or more gross tons)—Great Lakes, Western Rivers, or other inland waters; Third Assistant Engineer (2500 or more horsepower); First Assistant Engineer (1000 or more horsepower).

**Experience**—Twelve or more years' service aboard a vessel of the U. S. in the capacity of a licensed officer.

An applicant who holds a license higher in grade than the basic requirement may substitute the higher license for two years of the required sea service. Only two grades higher than the basic license requirement will be credited, and the maximum possible substitution of higher license for sea time is four years.

Four years of the twelve required may have been served aboard public vessels. Service aboard public vessels, however, must meet Coast Guard equivalency standards used to determine eligibility for a merchant marine license or for a raise in grade.

A combination of substitutions of higher license credit and service aboard public vessels cannot reduce the required actual sea service aboard commercial merchant vessels below six years.

The annual examining period is February 1, 1958 through April 30, 1958. Applications may be made at any time, but with approximately 30 days needed to process an application, the cut-off date has been established as April 1. Interested mariners may apply for application forms and further information to the

Commandant (PTP)  
U. S. Coast Guard  
Washington 25, D. C.

same reasons, and others, the U. S. Navy and the U. S. Coast Guard have adopted inflatable liferafts to replace all other types of floats and rafts.

In Great Britain, since October 1, 1956, all fishing vessels between 50 and 145 feet in length have been required by law to carry one or two inflatable rafts. On July 3, 1957, the British Minister of Transport and Civil Aviation announced regulations to be effective 1 January 1958 requiring the carrying of inflatable liferafts on cross-channel passenger ships, cargo ships engaged in coastal and short international voyages, ocean-going tugs and other small craft.

In general, every category except large vessels engaged on long international voyages is required to replace the present buoyant apparatus with liferafts. Vessels on long international voyages are excluded because these vessels come under the regulations for lifesaving equipment set up by the International Convention for the Safety of Life at Sea. The Convention expressly forbids the use of devices dependent on inflation by either air or gas as part of the mandatory equipment on the various types of vessels. Liferafts may be carried in addition to the required equipment, however.

There have been reports recently that the British Government has reached agreements with the Scandinavian countries at a meeting in Copenhagen, and with other European countries at a meeting in London, to support a change in the Convention to permit use of inflatable liferafts in lieu of the present buoyant apparatus and possibly to replace some lifeboats, even on passenger vessels on international voyages. The next international meeting to consider possible changes in the Convention will not occur before 1960, which will give time for more development and more evidence pro and con to accumulate.

#### INFLATABLE RAFTS PRECLUDED

The United States is one of the signatory nations to the International Convention for the Safety of Life at Sea, and as such, at present is precluded from approving inflatable liferafts on vessels in international trade. In addition, the United States Revised Statutes 4488, which lists the required "Lifesaving Appliances on Ocean, Lake, Bays and Sound Steamers and Foreign Vessels" specifically states "No boat may be approved, the buoyancy of which depends upon the previous adjustment of one of the principle parts of the hull".

Therefore, unless the law is changed, inflatable liferafts may not be substituted for lifeboats on United States vessels required to have them.

The Coast Guard is making a very careful study of this problem along with the other agencies affected and it may be some time before a decision is reached as to whether or not a recommendation by the United States for a change in the Convention should be made; or a recommendation to Congress for a change in R. S. 4488.

The use of the inflatable liferaft is becoming more widespread, and will increase as its reliability is increased and its cost reduced. It is already replacing the older type balsa and Carley rafts in many countries, and in some cases all or part of the lifeboats required. One might be tempted to say that the inflatable liferaft will never replace the lifeboat entirely—but in this changing world "never" is a pretty risky word.

#### ACKNOWLEDGMENT

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Mr. C. E. Manhart, General Manager, Pan Avion Company  
Mr. C. E. Miller, Bureau of Ships, U. S. Navy  
Captain R. A. Smyth, Assistant Chief, Office of Merchant Marine Safety, U. S. Coast Guard

#### DON'T TRIM YOUR LIGHTS

The International Rules of the Road require a power driven vessel 150 feet or over in length to carry two white 20 point lights so placed in a line that one shall be at least 15 feet higher than the other and in such a position that the lower light shall be forward of the upper one.

It has come to the attention of the Coast Guard that in the case of some larger tankers or bulk carriers the range lights are properly located while on an even keel, but when in ballast and trimmed by the stern the lights may be on the same horizontal line. In some cases the after light may be lower.

The International Rules make no exception for a vessel's trim. All merchant marine personnel are advised to insure that their vessel's lights conform to the Rules.

## NUMBERED AND UNDOCUMENTED VESSELS

more on **RESCUERS**

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 ended 30 September 1957. 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	17,397
	(1) Portland, Maine	9,801
	(2) St. Albans	5,955
	(5) Providence	5,188
	<b>Total</b>	<b>33,341</b>
2 (St. Louis)	(45) St. Louis	12,191
	(12) Pittsburgh	2,657
	(24) Pembina	198
	(25) Minneapolis	3,078
	(40) Indianapolis	6,592
	(42) Louisville	3,298
	(43) Memphis (part)	6,524
	(46) Omaha	440
	(47) Denver	37
<b>Total</b>	<b>35,015</b>	
3 (New York)	(10) New York	53,994
	(6) Bridgeport	10,543
	(11) Philadelphia	22,595
<b>Total</b>	<b>87,132</b>	
5 (Norfolk)	(14) Norfolk	17,412
	(13) Baltimore	24,576
	(15) Wilmington, N. C.	8,835
<b>Total</b>	<b>50,823</b>	
7 (Miami)	(18) Tampa (part)	26,391
	(16) Charleston	1,680
	(17) Savannah	2,630
	(49) San Juan	504
	(51) St. Thomas	128
<b>Total</b>	<b>33,333</b>	
8 (New Orleans)	(20) New Orleans	22,413
	(18) Tampa (part)	560
	(19) Mobile	8,729
	(21) Port Arthur	4,722
	(22) Galveston	10,261
	(23) Laredo	1,792
	(24) El Paso	24
	(43) Memphis (part)	65
<b>Total</b>	<b>48,566</b>	
9 (Cleveland)	(41) Cleveland	11,713
	(7) Ogdensburg	2,820
	(8) Rochester	6,456
	(9) Buffalo	4,451
	(36) Duluth	2,716
	(37) Milwaukee	4,358
	(38) Detroit	24,172
	(39) Chicago	9,921
	<b>Total</b>	<b>66,607</b>
11 (Long Beach)	(27) Los Angeles	15,175
	(25) San Diego	2,620
	(26) Nogales	169
<b>Total</b>	<b>17,964</b>	
12 (San Francisco)	(28) San Francisco	16,712
	<b>Total</b>	<b>16,712</b>
13 (Seattle)	(30) Seattle	22,694
	(29) Portland, Oregon	8,749
	(33) Great Falls	742
<b>Total</b>	<b>32,185</b>	
14 (Honolulu)	(32) Honolulu	3,841
17 (Juneau)	(31) Juneau	8,372
<b>Grand Total</b>	<b>Grand Total</b>	<b>433,891</b>

For this action she was awarded a *Gallant Ship Plaque* and a Letter of Commendation to Capt. Raoul de Beaudean. This is the first time a *Gallant Ship Plaque* has ever been awarded to a foreign ship.

● *The SS Robert E. Hopkins.*

Captain Rene Blanc was presented a Letter of Commendation in recognition of the rescue efforts of himself and crew. The *Hopkins* is owned and operated by the Tidewater Oil Company.

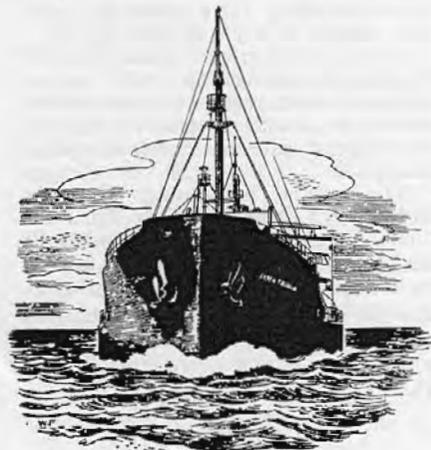
To each of the ships designated as a *Gallant Ship*, the Maritime Administration gave an appropriately mounted *Gallant Ship Plaque* which becomes the property of the ship. This plaque consists of a special rendering of a ship proceeding full ahead by the distinguished sculptor Jo Davidson. A bronze plate details the action on which the award is made and these are mounted on an oak plank.

To date, the *Gallant Ship Plaque* has been awarded to only nine other vessels, all of them participants in gallant action under fire in World War II.

### WEATHER FORUMS

Weather forums for merchant mariners are being continued by the Marine Section of the New York Office of the Weather Bureau, it was announced in the *Mariners Weather Log*.

The sessions will be held daily from 10 a. m. to noon at the Weather Bureau Office, 1st floor, 17 Battery Place, New York. Instruction and information will be given on such subjects as observations, map analysis, application of meteorology to marine observations, and other phases applicable to merchant shipping.



## MERCHANT MARINE STATISTICS

There were 1,036 vessels of 1,000 gross tons and over in the active oceangoing United States merchant fleet on October 1, 1957, according to information released by the Maritime Administration, U. S. Department of Commerce. This was 66 less than the number active on September 1, 1957.

There were 104 Government-owned and 932 privately-owned ships in active service. These figures did not include privately owned vessels temporarily inactive, or Government-owned vessels employed in loading grain for storage. They also exclude 42 vessels in the custody of the Departments of Defense, State, and Interior.

There was a decrease of 22 active and an increase of 20 inactive vessels in the privately owned fleet. Of the total of 80 inactive vessels, 30 freighters and 13 tankers were laid up because of lack of business or strikes. Most of the others were undergoing repairs or conversion. Two freighters were sold—foreign—making a net loss of 2 ships in the total privately owned fleet.

The Maritime Administration's active fleet decreased by 44, while its inactive fleet increased by 56. One freighter was seized by the United States from Red China, and one freighter was transferred to the Navy. Two Navy owned vessels were withdrawn from the reserve fleet and four were placed in fleet custody, while 10 owned or operated by the Navy were turned over to the Maritime Administration, making a net increase of 12 in the Government fleet. This made a net increase of 10 vessels in the total merchant fleet, active and inactive, which numbered 3,085 on October 1, 1957.

Orders for 2 new tankers, 1 cargo ship conversion, and 1 hydrographic survey ship for the Coast and Geodetic Survey, the delivery of 2 new and 2 converted tankers and the experimental Liberty ship *GTS William Patterson*, and the cancellation or suspension of orders for 6 private tankers brought the total of merchant oceangoing ships being built or converted in United States shipyards to 116.

Seafaring jobs on active United States flag ships of 1,000 gross tons and over, excluding civilian seamen manning Military Sea Transportation Service ships was 56,036. Prospective officers in training in Federal and State nautical schools numbered 1,966.

## MERCHANT MARINE PERSONNEL STATISTICS

### MERCHANT MARINE OFFICER LICENSES ISSUED

QUARTER ENDING 30 SEPTEMBER 1957

#### DECK

Grade	Original	Renewal	Grade	Original	Renewal
Master:			Second mate—Continued		
Ocean.....	39	535	Coastwise.....	2	
Coastwise.....	10	29	Third mate:		
Great Lakes.....		15	Ocean.....	155	118
B. S. & L.....	20	146	Coastwise.....		2
Rivers.....	5	52	Pilots:		
Radio officer licenses issued.....	31	58	Great Lakes.....	13	22
Chief mate:			B. S. & L.....	77	36
Ocean.....	53	134	Rivers.....	135	48
Coastwise.....		2	Master: Uninspected vessels.....	2	19
Mate:			Mate: Uninspected vessels.....	16	43
Great Lakes.....					
B. S. & L.....			Motorboat operators.....	654	1,168
Rivers.....					
Second mate:			<b>Total.....</b>	<b>1,265</b>	<b>2,560</b>
Ocean.....	53	138	<b>Grand total.....</b>	<b>3,825</b>	

#### ENGINEER

Grade	Original	Renewal	Grade	Original	Renewal
STEAM			MOTOR—continued		
Chief engineer:			First assistant engineer:		
Unlimited.....	50	534	Unlimited.....	9	15
Limited.....	12	148	Limited.....	19	26
First assistant engineer:			Second assistant engineer:		
Unlimited.....	43	167	Unlimited.....	5	25
Limited.....	4	14	Limited.....		3
Second assistant engineer:			Third assistant engineer:		
Unlimited.....	39	220	Unlimited.....	146	284
Limited.....	2		Limited.....	4	8
Third assistant engineer:			Chief engineer: Uninspected vessels.....	8	21
Unlimited.....	200	236	Assistant engineer: Uninspected vessels.....	4	2
Limited.....	2				
MOTOR			<b>Total.....</b>	<b>589</b>	<b>2,097</b>
Chief engineer:			<b>Grand total.....</b>	<b>2,596</b>	
Unlimited.....	5	115			
Limited.....	37	189			

#### WAIVER OF MANNING REQUIREMENTS

Waivers	Atlantic Coast	Gulf Coast	Pacific Coast	Great Lakes	Total
Deck officers substituted for higher ratings.....				12	12
Engineer officers substituted for higher ratings.....	1	1	4	17	23
O. S. for A. B.....	1		14		15
Wiper or compassers for QMED.....	5	1	9	3	18
<b>Total waivers.....</b>	<b>7</b>	<b>2</b>	<b>27</b>	<b>32</b>	<b>68</b>
Number of vessels.....	6	2	18	20	46

#### INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 4,055 cases during the third quarter of 1957. From this number, hearings before Examiners resulted in involving 59 officers and 308 unlicensed men. In the case of officers, 1 license was revoked, 10 were suspended without probation, 13 were suspended with probation granted, 5 cases were dismissed after hearing, and 5 hearings were closed with admonition. Of the unlicensed personnel, 29 documents were

#### ORIGINAL SEAMEN'S DOCUMENTS ISSUED

Type of document	Atlantic Coast	Gulf Coast	Pacific Coast	Great Lakes and rivers	Total
Staff officer.....	40	9	44	4	97
Continuous discharge book.....	233	34		6	273
Merchant mariner's documents.....	2,177	536	1,595	2,133	6,741
AB any waters unlimited.....	213	86	134	49	482
AB any waters, 12 months.....	117	32	47	175	371
AB Great Lakes, 18 months.....	9		11	75	95
AB tugs and tow-boats, any waters.....					1
AB bays and sounds.....	1				5
AB seagoing barges.....		5			5
Lifeboatman.....	520	88	139	208	955
QMED.....	251	68	104	200	623
Radio operators.....	11	4	6	3	24
Certificate of service.....	2,227	795	1,520	2,026	6,568
Tankerman.....	26	49	16	67	158
<b>Total.....</b>	<b>5,825</b>	<b>2,606</b>	<b>3,616</b>	<b>4,955</b>	<b>16,402</b>

revoked, 16 were suspended without probation, 110 were suspended with probation granted, 30 hearings were closed with admonition, and 27 cases were dismissed after hearing. Eleven licenses and 92 documents were voluntarily surrendered.

## UNSAFE PRACTICE SUMMARY

The following is a brief summary of some of the unsafe practices observed by Coast Guard Marine Inspectors on oceans, rivers, and Great Lakes vessels during the period from 1 January 1957 through 30 June 1957:

### ● Lack of proper officer supervision

(1) Working overside, on stages, etc.—8 cases; 6 in Great Lakes and river ports and 2 in Gulf ports.

(2) Working with lines or rigging—1 case in a Great Lakes port.

(3) Improper stowage of cargo, stores, gear, etc.—15 cases; 2 in Atlantic ports, 1 in a Pacific port, 9 in Great Lakes and river ports and 3 in Gulf ports.

(4) Poor supervision of drills—33 cases; 3 in Pacific ports and 30 in Great Lakes and river ports.

(5) Use and maintenance of equipment—5 cases; 1 in an Atlantic port, 1 in a Great Lakes port and 3 in Gulf ports.

(6) Other—7 cases; 3 in Pacific ports, 3 in Great Lakes and river ports and 1 in a Gulf port.

### ● Unsafe access to vessel

(1) Gangway inadequate as to length, width, strength, etc.—15 cases; 6 in Atlantic ports, 3 in Great Lakes and river ports and 6 in Gulf ports.

(2) Gangway improperly secured—34 cases; 6 in Atlantic ports, 1 in a Pacific port, 17 in Great Lakes and river ports and 10 in Gulf ports.

(3) Gangway improperly rigged—47 cases; 8 in Atlantic ports, 34 in Great Lakes and river ports and 5 in Gulf ports.

(4) Gangway angle too steep—28 cases; 5 in Atlantic ports, 16 in Great Lakes and river ports and 7 in Gulf ports.

(5) Gangway not clear at either end—4 cases; 1 in an Atlantic port and 3 in Great Lakes and river ports.

(6) Ring lifebuoy with lanyard not at hand—53 cases; 11 in Atlantic ports, 27 in Great Lakes and river ports and 15 in Gulf ports.

(7) Insufficient number of gangways—4 cases; 1 in an Atlantic port, 1 in a Pacific port and 2 in Great Lakes and river ports.

(8) Water discharging onto gangway—3 cases in Great Lakes and river ports.

(9) Other—15 cases; 1 in a Pacific port, 12 in Great Lakes and river ports and 2 in Gulf ports.

### ● Unsafe access to spaces on board vessels

(1) Loose or jury rigged ladders—14 cases; 4 in Atlantic ports,

8 in Great Lakes and river ports and 2 in Gulf ports.

(2) Missing or loose ladder rungs or steps—39 cases; 5 in Atlantic ports, 1 in a Pacific port, 16 in Great Lakes and river ports and 17 in Gulf ports.

(3) Ladders deteriorated to a weakened condition—34 cases; 6 in Atlantic ports, 2 in Pacific ports, 17 in Great Lakes and river ports and 9 in Gulf ports.

(4) Cluttered doors or passages—25 cases; 11 in Atlantic ports, 1 in a Pacific port, 10 in Great Lakes and river ports and 3 in Gulf ports.

(5) Blocked or locked escape doors or passages—19 cases; 1 in a Pacific port, 15 in Great Lakes and river ports and 3 in Gulf ports.

(6) Ladders without hand rails—9 cases in Great Lakes and river ports.

(7) Other—19 cases; 1 in a Pacific port, 16 in Great Lakes and river ports and 2 in Gulf ports.

### ● Hazards at deck openings, ship's sides, catwalks, etc.

(1) Inadequate or no life lines, rails or chains—23 cases; 3 in Atlantic ports, 3 in Pacific ports, 11 in Great Lakes and river ports and 6 in Gulf ports.

(2) No provision for removable life lines or rails where needed—8 cases; 5 in Atlantic ports, 1 in a Great Lakes or river port and 2 in Gulf ports.

(3) Weakened life lines, rails or chains—26 cases; 5 in Atlantic ports, 7 in Pacific ports, 10 in Great Lakes and river ports and 4 in Gulf ports.

(4) Hatch covers or beams improperly maintained or dangerously piled—12 cases; 3 in Atlantic ports, 2 in Pacific ports and 7 in Great Lakes and river ports.

(5) Hatch beam locking lugs missing or defective—13 cases; 5 in Atlantic ports, 7 in Great Lakes and river ports and 1 in a Gulf port.

(6) Catwalks or gratings not provided or in a deteriorated condition—16 cases; 4 in Atlantic ports, 1 in a Pacific port and 11 in Great Lakes or river ports.

(7) Defective fuel oil tank vents, screen, check valves, etc.—35 cases; 8 in Atlantic ports, 2 in Pacific ports, 14 in Great Lakes and river ports and 11 in Gulf ports.

(8) No guards or rails at 'tween deck openings—14 cases; 3 in Atlantic ports, 3 in Pacific ports, 6 in Great Lakes or river ports and 2 in Gulf ports.

(9) Other—19 cases; 2 in Atlantic ports, 7 in Pacific ports, 9 in Great Lakes or river ports and 1 in a Gulf port.

### ● Hazardous cargo handling gear

(1) Safe load not marked on booms—10 cases; 2 in Atlantic ports, 2 in Great Lakes and river ports and 6 in Gulf ports.

(2) Improper use of cargo gear—2 cases; 1 in an Atlantic port and 1 in a Great Lakes or river port.

(3) Use of deteriorated cable, line, hooks or slings—1 case in a Great Lakes or river port.

(4) Improper rigging (guys, etc.)—5 cases; 2 in Pacific ports and 3 in Great Lakes and river ports.

(5) General poor maintenance—2 cases in Great Lakes and river ports.

(6) Jury rigged winch controls—1 case in a Pacific port.

### ● Hazardous conditions in use and maintenance of life saving equipment

(1) Faulty controls (limit, disconnect and control switches)—12 cases; 5 in Atlantic ports, 1 in a Pacific port, 5 in Great Lakes and river ports and 1 in a Gulf port.

(2) Faulty boat releasing gear—25 cases; 5 in Atlantic ports, 2 in Pacific ports, 11 in Great Lakes and river ports and 7 in Gulf ports.

(3) Lifeboat not properly secured—12 cases; 1 in an Atlantic port, 1 in a Pacific port and 10 in Great Lakes and river ports.

(4) Defective pulleys or wheels on davits—7 cases; 2 in Atlantic ports, 2 in Great Lakes and river ports and 3 in Gulf ports.

(5) Improperly located or secured life ring buoys, etc.—6 cases; 1 in an Atlantic port, 3 in Pacific ports and 2 in Great Lakes and river ports.

(6) Poor maintenance of required equipment—17 cases; 6 in Atlantic ports, 5 in Pacific ports, 1 in a Great Lakes or river port and 5 in Gulf ports.

(7) Other—19 cases; 1 in an Atlantic port, 4 in Pacific ports, 10 in Great Lakes and river ports and 4 in Gulf ports.

### ● Ventilation hazards

(1) Improper ventilation of confined spaces which may be gassy or lack oxygen—6 cases; 2 in Atlantic ports, 1 in a Pacific port and 3 in Great Lakes and river ports.

(2) Accumulation of grease, dust, etc. in vents—42 cases; 5 in Atlantic ports, 27 in Great Lakes and river ports and 10 in Gulf ports.

(3) Faulty equipment—13 cases; 8 in Atlantic ports, 1 in a Pacific port and 4 in Gulf ports.

(4) Gas masks, oxygen breathing apparatus, etc., improperly maintained or inaccessible—11 cases; 1 in an Atlantic port, 8 in Great Lakes and river ports and 2 in Gulf ports.

(5) Use of toxic solvent in confined spaces—5 cases; 1 in a Pacific

port and 4 in Great Lakes and river ports.

(6) Other—10 cases; 3 in Atlantic ports, 1 in a Pacific port, 5 in Great Lakes and river ports and 1 in a Gulf port.

● Lighting hazards

(1) Exposed wiring or fixture connections—49 cases; 5 in Atlantic ports, 8 in Pacific ports, 35 in Great Lakes and river ports and 1 in a Gulf port.

(2) Long extension cords—26 cases; 8 in Atlantic ports and 18 in Great Lakes and river ports.

(3) Insufficient light at gangway, ladders, deck openings, etc.—19 cases; 1 in a Pacific port, 14 in Great Lakes and river ports and 4 in Gulf ports.

(4) Defective portable lights and cords—10 cases; 2 in Atlantic ports, 5 in Great Lakes and river ports and 3 in Gulf ports.

(5) Improperly secured or jury rigged wiring—18 cases; 1 in an Atlantic port, 3 in Pacific ports, 10 in Great Lakes and river ports and 4 in Gulf ports.

(6) Vapor globes and guards missing from lights in hazardous areas—3 cases; 1 in a Pacific port, 1 in a Great Lakes or river port and 1 in a Gulf port.

(7) Other—4 cases in Great Lakes and river ports.

● Electrical equipment hazards

(1) Use of portable equipment without provision for grounding—11 cases; 2 in Pacific ports, 7 in Great Lakes and river ports and 2 in Gulf ports.

(2) Absence of guard rail or rubber matting at switchboards, or other installed equipment such as controllers, resistors, etc.—34 cases; 4 in Atlantic ports, 3 in Pacific ports, 25 in Great Lakes and river ports and 2 in Gulf ports.

(3) Overfused circuits—14 cases; 3 in Pacific ports, 8 in Great Lakes and river ports and 3 in Gulf ports.

(4) Other—16 cases; 1 in an Atlantic port, 5 in Pacific ports, 6 in Great Lakes and river ports and 4 in Gulf ports.

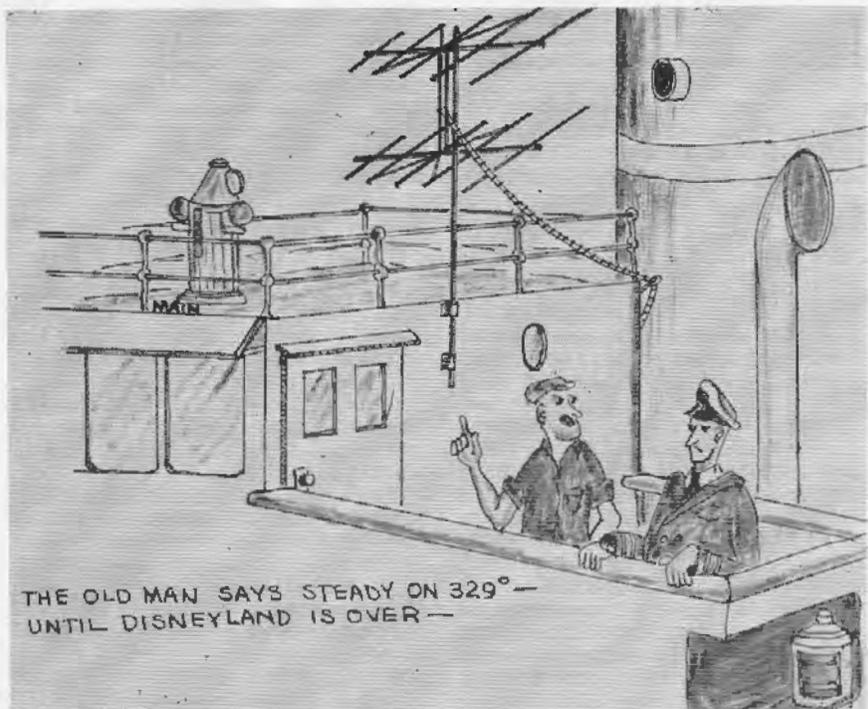
● Hazardous "hot work"

(1) Disregard of precautions while welding, burning, or riveting—15 cases; 3 in Atlantic ports, 3 in Pacific ports, 1 in a Great Lakes or river port and 8 in Gulf ports.

(2) Lack of valid gas-free certificate for "hot work" around oil tanks—7 cases; 2 in Atlantic ports and 5 in Gulf ports.

(3) Other—1 case in an Atlantic port.

● Hazardous deck conditions



(1) Oil spills on deck—41 cases; 8 in Atlantic ports, 2 in Pacific ports, 23 in Great Lakes and river ports and 8 in Gulf ports.

(2) Loose or oily floor plates—16 cases; 2 in Atlantic ports, 1 in a Pacific port, 1 in a Great Lakes or river port and 12 in Gulf ports.

(3) Cluttered decks—13 cases; 3 in Pacific ports, 5 in Great Lakes and river ports and 5 in Gulf ports.

(4) Hoses, etc., led along decks for prolonged periods—6 cases; 4 in Pacific ports, 1 in a Great Lakes or river port and 1 in a Gulf port.

(5) No deck hatches or wooden gratings where needed—2 cases; 1 in a Great Lakes port and 1 in a Gulf port.

(6) Floor plates, gratings, supports wasted—8 cases; 1 in a Pacific port, 6 in Great Lakes and river ports and 1 in a Gulf port.

(7) Oil and debris in bilges, etc.—23 cases; 10 in Atlantic ports, 1 in a Pacific port and 12 in Great Lakes and river ports.

(8) Other—16 cases; 1 in an Atlantic port, 3 in Pacific ports, 1 in a Great Lakes or river port and 11 in Gulf ports.

● Machinery hazards

(1) Guards on moving parts of machinery inadequate—25 cases; 8 in Atlantic ports, 1 in a Pacific port, 12 in Great Lakes and river ports and 4 in Gulf ports.

(2) Boiler water gage glass not shielded—9 cases; 2 in Atlantic ports, 6 in Great Lakes and river ports and 1 in a Gulf port.

(3) Steam lines not lagged or improperly secured—14 cases; 4 in Atlantic ports, 1 in a Pacific port, 8 in Great Lakes and river ports and 1 in a Gulf port.

(4) Pressure vessel relief valves set down to too high a pressure setting—10 cases; 2 in Atlantic ports, 4 in Great Lakes and river ports and 4 in Gulf ports.

(5) Improper maintenance of equipment—21 cases; 3 in Atlantic ports, 1 in a Pacific port, 14 in Great Lakes and river ports and 3 in Gulf ports.

(6) Defective or missing pipe guards—9 cases; 4 in Atlantic ports, 1 in a Great Lakes or river port and 4 in Gulf ports.

(7) No relief or reducing valve—4 cases; 1 in a Pacific port, 1 in a Great Lakes or river port and 2 in Gulf ports.

(8) Valve subject to steam and water pressure—8 cases; 2 in Atlantic ports, 5 in Great Lakes and river ports and 1 in a Gulf port.

(9) Other—16 cases; 7 in Atlantic ports, 3 in Pacific ports, 2 in Great Lakes and river ports and 4 in Gulf ports.

● Tank vessels

(1) Ullage or manholes open without flame screens—68 cases; 6 in Atlantic ports, 40 in Great Lakes and river ports and 22 in Gulf ports.

(2) Cargo tanks open but not gas-free—5 cases; 2 in Atlantic ports, 2 in Great Lakes and river ports and 1 in a Gulf port.

(3) Faulty PV valves and flame screens—22 cases; 8 in Atlantic ports, 6 in Great Lakes and river ports and 8 in Gulf ports.

(4) Other—32 cases; 7 in Atlantic ports, 1 in a Pacific port, 17 in Great Lakes and river ports and 7 in Gulf ports.

● In addition to the foregoing, there were a total of 34 other cases of unsafe practices noted, including 13 cases of improper maintenance of firefighting equipment.

● A total of 16 reports stated that "no unsafe practices were observed".

● Discussion

During the 12-month period ending 30 June 1956, 15 cases of unsafe practices were reported to the Commandant under the heading of Hazardous Hot Work, the majority in the category of "Disregard of Precautions while Welding, Burning or Riveting". For the corresponding period ending 30 June 1957 there were reported 36 cases of Hazardous Hot Work. These are cases in which marine inspectors took preventive action and possibly averted serious fires or explosions.

In addition to these figures, casualty reports submitted during the past 6 months have indicated that failure to take all safety precautions required for "hot work" has been the underlying cause of several serious accidents with loss of life. In these tragic explosions and/or fires, it is not indicated that precautions were disregarded so much as that complete action was not taken. It appears that sometimes it is the "remote" possibility of danger in connection with "hot work" that is not sufficiently considered until, too late, it suddenly becomes a startling reality.

Since a small amount of petroleum vapor can form an explosive atmosphere and since the effects of ignition are likely to be lethal to anyone within range, the need for scrupulous adherence to all safety considerations cannot be overstated. This by regulation in 46 CFR 35.01-1 must include the inspection required prior to undertaking fire-producing operations.

In one recent casualty a tank barge was being repaired at a shipyard and the cargo tanks had been gas-freed. It became necessary to remove a pipe projection above the deck near one of the ends. In doing so a workman applied his torch at the deck in way of a compartment assumed safe and not ventilated. His life was lost in the violent explosion which shortly followed. A small amount of oil was later found in the space, having apparently entered through a small crack in the deck.

In another casualty aboard a ship undergoing shipyard repairs a manhole cover plate was removed in a compartment other than the one where such action was intended to be taken. Flammable vapor escaped through this opening to be subsequently ignited during burning operations. A fatal flash fire resulted. The order to remove the plate was passed via several intermediaries including both shipyard and ships' personnel. In being conveyed through so many persons the order was accidentally changed with respect to the location of the manhole leading to the wrong one being opened.

This action resulted in a drastic change in the condition of the compartment—from safe for burning to unsafe for burning.

Inspectors and marine personnel should be alert to see unsafe practices are eliminated and that safe procedures for "hot work" are followed, and assist in promoting safety from "hot work" hazards at every opportunity afforded by giving safety indoctrination.

## WHY WASTE TIME?

It was just one of those days. His vessel was scheduled to sail at midnight but he didn't reach the dock until 1:00 A. M. Although the ship was still there the gangway had already been secured. The Old Man spotted him on the dock and ordered a ladder put over. Someone passed a heaving line for his suitcase and a couple of minutes later the deck gang lowered a pilot ladder and a voice said "come aboard". After climbing about 15 feet up the ladder he suddenly found himself back on the dock and the ladder with him. Following a little first aid the ambulance arrived and took him to the hospital where he was to remain for about a week. It had been a short day but a trying one. He learned his lesson—BETTER NEVER BE LATE. But what about his erstwhile shipmates?

There is always one guy to hold up the parade and since no one actually mentioned securing the ladder, why waste more time? So they didn't. The ladder was led out over the top of the bottom course of the chain guard rail and to anchor it down a couple of the boys stood on the last three rungs. It might have worked except the chain of the guard rail parted and the resulting jerk made one too many and the ladder pulled out from under their feet. It was then that they learned—FAILURE TO SECURE LADDERS TENDS TO CREATE VACANCIES.

# APPENDIX

## 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, Government Printing Office, Washington 25, D. C.]

### TITLE 33—NAVIGATION AND NAVIGABLE WATERS

#### Chapter I—Coast Guard, Department of the Treasury

[CGFR 57-43]

##### PART 1—GENERAL PROVISIONS

##### SUBPART 1.25—FEES AND CHARGES FOR COPYING, CERTIFYING, OR SEARCHING RECORDS AND FOR DUPLICATE DOCUMENTS AND CERTIFICATES

##### MISCELLANEOUS AMENDMENTS

By virtue of the authority described with the regulations below, the following amendments in this document are prescribed and shall become effective thirty days after the date of publication of this document in the Federal Register:

1. Section 1.25-25 is amended to read as follows:

§ 1.25-25 *Fees for services.* (a) The fees prescribed in this subpart include the charges for the services necessary in granting the request.

(b) The fee of \$2.00 shall be charged for the service necessary in searching Coast Guard records for the information desired when such information cannot be found.

2. Section 1.25-40 is amended by adding the following at the end thereof:

§ 1.25-40 *Excerpts from official documents or records.* \* \* \* The minimum fee charged shall be \$1.00.

3. Section 1.25-45 is amended by adding the following at the end thereof:

§ 1.25-45 *Marine casualty or accident record.* \* \* \* The minimum fee charged shall be \$1.00.

4. Section 1.25-50 is amended by adding the following at the end thereof:

§ 1.25-50 *Suspension and revocation proceeding record.* \* \* \* The minimum fee charged shall be \$1.00.

5. Section 1.25-55 is amended to read as follows:

§ 1.25-55 *Excerpts from certain merchant marine records.* The fees

for certain types of excerpts from merchant marine records are as follows:

(a) For each copy of an entry or excerpt from merchant vessel log book, the fee shall be \$1.00 for each entry or excerpt with a minimum fee of \$3.00.

(b) For each transcript of service of a merchant seaman prepared in report form as authorized by 46 CFR 154.07 the fee shall be \$.25 for each entry with a minimum fee of \$3.00.

6. Section 1.25-60 is amended to read as follows:

§ 1.25-60 *Shipping articles.* (a) For a photostat copy of a shipping article the fee shall be \$1.00 for each sheet of photostat used, with a minimum fee of \$3.00 for each request.

(b) For each excerpt from a shipping article, the fee shall be \$.25 for each excerpt, with a minimum fee of \$3.00 for each request.

7. Section 1.25-70 is amended to read as follows:

§ 1.25-70 *Certification or validation of records or documents.* (a) The fees for the certification or validation of any record described in this subpart, except duplicate documents or certificates listed in § 1.25-65, shall be in addition to any other fee prescribed in this subpart governing the information desired.

(b) The fee for certification or validation with appropriate Treasury Department seal shall be \$5.00.

(c) The fee for certification or validation with appropriate Coast Guard seal, when performed at Headquarters in Washington, D. C., shall be \$3.00. The fee for other certification or validation with appropriate Coast Guard seal shall be \$2.50. The fee for certification or validation without a Coast Guard seal shall be \$1.00.

(d) When the record or document is copied or duplicated by someone other than the Coast Guard and it is requested that such record or document be certified as a true copy of the Coast Guard record or document, the fee for such certification, without Coast Guard seal, shall be \$1.00 for each page or less. If the certification includes the appropriate Treasury Department or Coast Guard seal, the fees in paragraphs (b) and (c) of this section will also apply.

(Sec. 501, 65 Stat. 290, 5 U. S. C. 140)

Dated: October 1, 1957.

[SEAL] J. A. HIRSHFIELD,  
Rear Admiral, U. S. Coast Guard  
Acting Commandant.

Approved: October 18, 1957.

DAVID W. KENDALL,  
Acting Secretary of the Treasury.

[F. R. Doc. 57-8796; Filed, Oct. 24, 1957;  
8:48 a. m.]

## TITLE 46—SHIPPING

### Chapter I—Coast Guard, Department of the Treasury

#### Subchapter N—Explosives or Other Dangerous Articles or Substances and Combustible Liquids on Board Vessels

[CGFR 57-33]

#### PART 146—TRANSPORTATION OR STOWAGE OF EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES AND COMBUSTIBLE LIQUIDS ON BOARD VESSELS

#### PART 147—USE OF DANGEROUS ARTICLES AS SHIPS' STORES AND SUPPLIES ON BOARD SHIPS

#### MISCELLANEOUS AMENDMENTS RESPECTING DANGEROUS CARGOES

Notices regarding proposed changes in the navigation and vessel inspection regulations were published in the Federal Register dated March 7, 1957 (22 F. R. 1433-1439), March 28, 1957 (22 F. R. 2047), and May 4, 1957 (22 F. R. 3185, 3186), as Items I through XVIII of the Agenda to be considered by the Merchant Marine Council. Pursuant to these notices a public hearing was held on May 7, 1957, by the Merchant Marine Council at Washington, D. C. This document is the seventh of a series covering the regulations considered at this public hearing. The first document (CGFR 57-26) deals with inspection of cargo gear on passenger, cargo, and miscellaneous vessels. The second document (CGFR 57-27) deals with lifesaving, fire protection, and grain loading requirements for passenger, cargo, and miscellaneous vessels. The third document (CGFR 57-29) deals with cargo tanks for liquefied inflammable gases and anhydrous ammonia, stowage of baled cotton, and use of equivalents or alternative procedures respecting dangerous cargoes. The fourth document (CGFR 57-30) deals with crew accommodations on tank ships. The fifth document (CGFR 57-31) deals with drydocking of passenger, tank, cargo, and miscellaneous vessels. The sixth document (CGFR 57-32) deals with the first assistant engineer of vessels not over 2,000 horsepower and examination of lifeboatmen and able seamen.

The Coast Guard acknowledges the assistance given to it by those interested parties who submitted comments, views and data in connection with these items at the Merchant Marine Council public hearing. On the basis of the information received certain proposed regulations were revised. With respect to Item XVI—Dangerous Cargo Regulations; Miscellaneous Amendments, changes were made in 46 CFR 146.09-2, regarding

construction of magazines, and 146.10-4, regarding car floats. These changes should eliminate any possible misinterpretation. The amendments described in Item XVI as revised are adopted and included in this document. The provisions of R. S. 4472, as amended, 46 U. S. C. 170, require that the land and water regulations governing the transportation of dangerous articles or substances shall be as nearly parallel as practicable. The provisions in 46 CFR 146.02-18 and 146.02-19 make the Dangerous Cargo Regulations applicable to all shipments of dangerous cargoes by vessels. The Interstate Commerce Commission in Orders Nos. 21 through 29 has made changes in the ICC Regulations with respect to the definitions, descriptions, descriptive names, classifications, specifications of containers, packing, marking, labeling, and certifications which are now in effect for land transportation. Various amendments to the Dangerous Cargo Regulations in 46 CFR Part 146 have been included in this document in order that these regulations governing water transportation of certain dangerous cargoes will be as nearly parallel as practicable with the regulations of the Interstate Commerce Commission which govern the land transportation of the same commodities. For those changes in 46 CFR Parts 146 and 147 which involve changes other than shippers' requirements, the proposed amendments were considered at the Merchant Marine Council public hearing held on May 7, 1957. With the exception of changes proposed to 46 CFR 146.09-2 and 146.10-4 no comments were received. Because of the numerous changes that have been made in the commodity list, 46 CFR 146.04-5 has been amended and set forth in its entirety in this document.

Since the amendments in this document are interpretations of law, revised requirements to agree with existing ICC Regulations, relaxations of previous requirements, or are editorial in nature, it is hereby found that compliance with the Administrative Procedure Act respecting effective date requirements of regulations is unnecessary. These amendments shall become effective upon date of publication of this document in the Federal Register.

(Part II Federal Register of October 29, 1957)



## 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 October 4, 1957 (CGFR 57-44). Copies of these documents may be obtained from the Superintendent of Documents, Washington 25, D. C.]

## ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 1 October to 31 October 1957, 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

*Fulmar Chemical Co.*, 71 E. Centennial Ave., Roosevelt, Long Island, N. Y., Certificate No. 174, dated 8 October 1957, FULMAR ALL PURPOSE CLEANER.

### 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 15 September 1957 to 15 October 1957 is as follows:

*The Lunkenheimer Company*, Cincinnati 14, Ohio, Heat Nos. 564, 565, 566, 567 and 568.



## MARINE SAFETY PUBLICATIONS AND PAMPHLETS

The following publications and pamphlets are available and may be obtained upon request from the nearest Marine Inspection Office of the United States Coast Guard, except for cost publications which may be obtained upon application to the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Date of each publication is indicated following title.

CG No.	Title of Publication
101	Specimen Examinations for Merchant Marine Deck Officers. 1-50
108	Rules and Regulations for Military Explosives. 5-15-54
115	Marine Engineering Regulations and Material Specifications. 3-1-56
118	Overtime Services. 8-46
123	Rules and Regulations for Tank Vessels. 10-1-56
129	Proceedings of the Merchant Marine Council. Monthly Motorboat safety. 1957.
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. 1-2-57
172	Pilot Rules for the Great Lakes and Their Connecting and Tributary Waters. 7-1-57
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids. 7-2-51
175	Manual for Lifeboatmen and Able Seamen, Qualified Members of Engine Department, and Tankerman. 3-5-54
176	Load Line Regulations. 11-1-53
182	Specimen Examinations for Merchant Marine Engineer Licenses. 5-1-57
184	Pilot Rules for the Western Rivers. 7-1-57
187	Explosives or Other Dangerous Articles on Board Vessels. 7-1-54 (Cost Pub. \$2.50 from GPO)
190	Equipment Lists. 3-1-56
191	Rules and Regulations for Licensing and Certifying of Merchant Marine Personnel. 9-15-55
200	Marine Investigation Regulations and Suspension and Revocation Proceedings. 4-13-53
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels. 4-1-57
227	Laws Governing Marine Inspection. 7-3-50
239	Security of Vessels and Waterfront Facilities. 6-16-52
249	Merchant Marine Council Public Hearing Agenda. Annually
256	Rules and Regulations for Passenger Vessels. 3-1-57
257	Rules and Regulations for Cargo and Miscellaneous Vessels. 6-1-55
258	Rules and Regulations for Uninspected Vessels. 7-1-55
259	Electrical Engineering Regulations. 6-1-55
266	Rules and Regulations for Bulk Grain Cargo. 2-13-53
267	Rules and Regulations for Numbering Undocumented Vessels. 1-15-53
268	Rules and Regulations for Manning of Vessels. 9-3-57
269	Rules and Regulations for Nautical Schools. 11-1-53
270	Rules and Regulations for Marine Engineering Installations Contracted for Prior to July 1, 1935. 11-19-52
290	Motorboats. 4-15-57
293	Miscellaneous Electrical Equipment List. 2-1-57
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf. 1-2-57

Official changes in rules and regulations are published in the Federal Register, which is printed daily except Sunday, Monday and days following holidays. The Federal Register is a sales publication and may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. It is furnished by mail to subscribers for \$1.50 per month or \$15.00 per year, payable in advance. Individual copies desired may be purchased as long as they are available. The charge for individual copies of the Federal Register varies in proportion to the size of the issue and will be 15 cents unless otherwise noted on the table of changes below.

### Changes Published During October 1957

The following have been modified by Federal Registers:  
CG 190 Federal Register October 4, 1957.  
CG 187 Federal Register Part II October 29, 1957.  
CG 239 Federal Register October 25, 1957.

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# SHIPBOARD

# SAFETY

(is just **S**ea-horse **S**ense)



Captain Bjarne Borgen of the SS *Philippine Transport* is pictured above receiving the *States Line Fleet Safety Award* for 1956 from Port Captain H. E. Sievers. Interested observers at the San Francisco ceremonies are Ray Wilson, Chief Engineer, and Martin West, Chief Mate. This award is presented annually to the ship with the best safety record in the fleet.

**S**afety at **S**ea