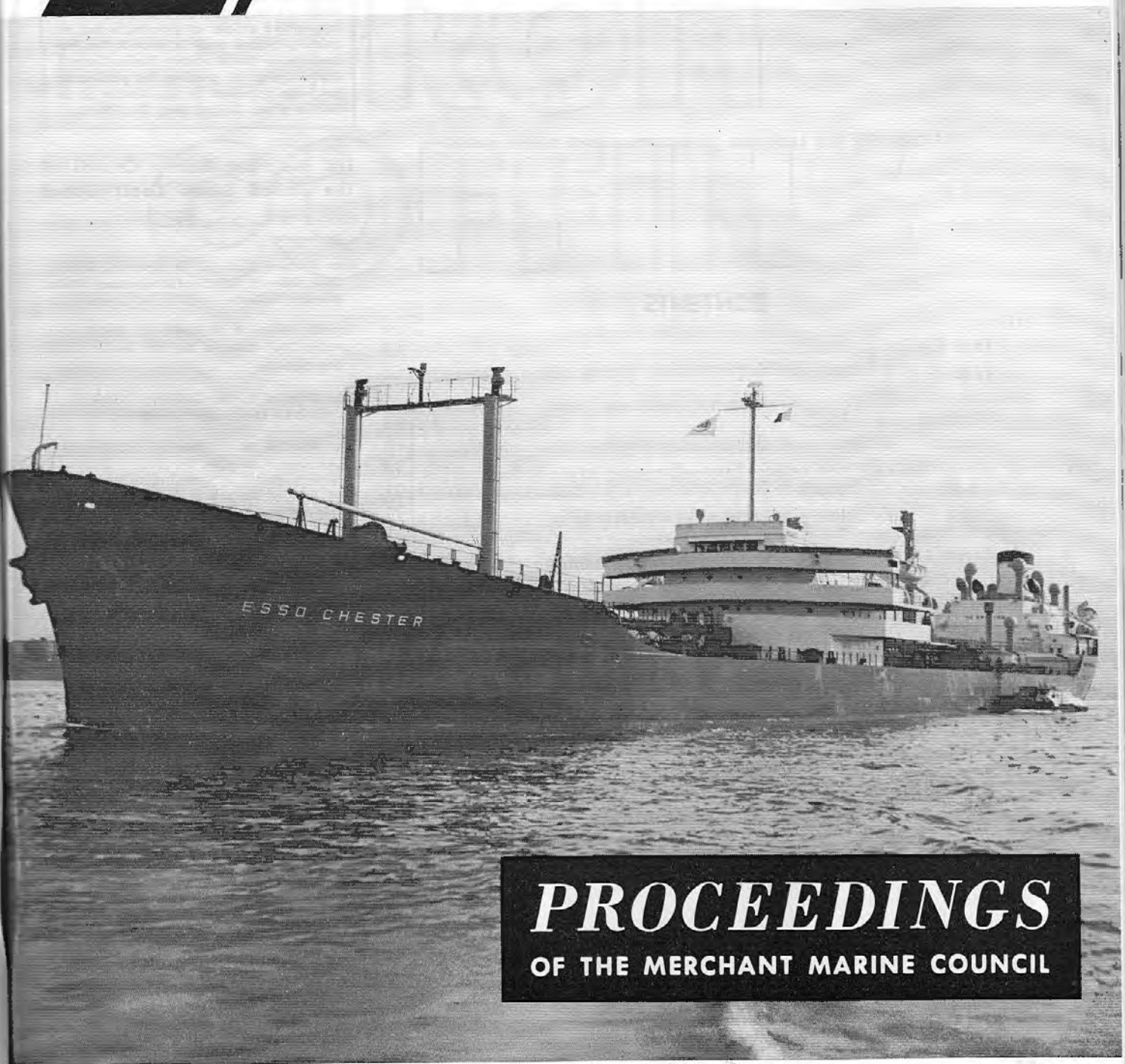
COAST GUARD



PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

Vol. 27, No. 4 CG-129 April 1970

IN THIS ISSUE . . .

Iron Coffins . . .

F/V *Fenwick Island* . . .

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

CONTENTS

COVERS

FRONT COVER: The tanker *Esso Chester*. The 17,327 gross ton vessel is 602.2 feet long, has a beam of 82.7 feet and a depth of 42.7 feet. *Courtesy, Humble Oil Co.*

BACK COVER: A message of value to all mariners emphasizes the cooperation needed for the operation of navigational aids. *Courtesy, Fathom, Naval Safety Center.*

DIST. (SDL NO. 90)

A: abcdew(2); fghijklmnopqrstuv(1)
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D: i(5); abdefklmnsuvx(1)
E: d(1)
F: p(1)
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PROCEEDINGS

OF THE

MERCHANT MARINE COUNCIL

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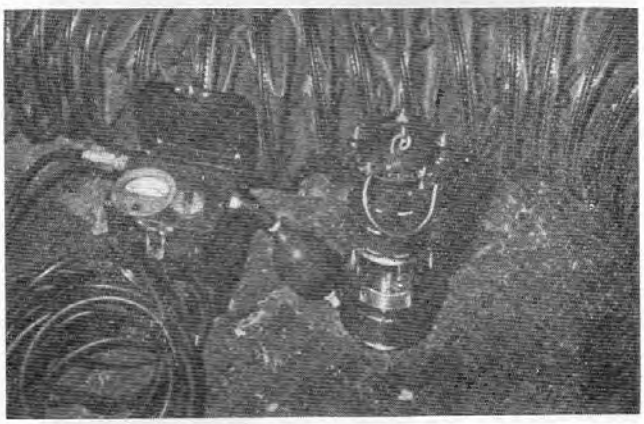
IRON COFFINS

SINCE you normally think of breathing as an automatic body function, you seldom worry about the air being safe (or unsafe) to breathe. But on ships this is a very real problem which has cost many lives! This is especially true in spaces that are not well ventilated or which have been closed for appreciable lengths of time. Unventilated storerooms, blisters, double bottoms, tanks, cofferdams, pontoons, voids and cold boilers are typical "iron coffins."

The air you breathe is composed of several different gases. Approximately 20 percent of the air content is oxygen under *normal* conditions. If for any reason this percentage is reduced much below 16 percent you cannot survive. Fire, rusting, the drying of paint and the decomposition of organic material can all contribute to oxygen deficiency. If you step into a closed compartment and there is insufficient oxygen in the air to support life, the results will be painfully swift. You will be immediately weakened. Your body may not respond to even the most desperate efforts to escape. If the oxygen content is particularly low, you may have time for only a few futile gasps before losing consciousness. Death may be only a breath away in an oxygen deficient atmosphere. But *beware*—even if the air does contain enough oxygen, it may also contain concentrations of other gases which are flammable, toxic or both. Flammable or toxic gases and vapors may be just as deadly as the lack of oxygen.

The first question which comes to mind is, "What precautions should I take before entering a closed or poorly ventilated compartment?" Before you enter a closed or poorly ventilated compartment, the Gas-Free Engineer or his designated representative must test the air and certify the compartment to be safe.

The men who enter spaces for gas tests should be equipped with airline masks or OBA's and life lines tended by men outside. The first test is made with the Type "E" Combustible Gas Indicator (explosimeter) to find out if flammable gases or vapors are present. If this test shows any positive indication that flammable gases or vapors are present, regardless of whether they are below, within or above the explosive range, the space must be gas-freed until there are no further indications. This is because



These are the tools.

Testing for explosive vapors and gases.

Testing for oxygen deficiency.

No coffin here! However, note hazardous manhole cover stowage.

Life Line Signals

Tender to man in compartment

1 pull – Are you alright?
2 pulls – Advance
3 pulls – Back out
4 pulls – Come out immediately

Man in Compartment to Tender

1 pull – I am alright
2 pulls – I am going ahead
3 pulls – Keep slack out of line
4 pulls – Send help

Memorize These Signals

A quick way of remembering the signals.

Code	Pull	Meaning
0	1	OK
A	2	Advance
T	3	Takeup
H	4	Help

Dangerous Gases And Vapors!

Gas or Vapor	Flammable	Toxic
Fuel Oil	yes	yes
Gasoline	yes	yes
Kerosene	yes	yes
Acetylene	yes	yes
Ammonia	yes	yes
Benzene	yes	yes
Carbon Dioxide	no	yes
Carbon Monoxide	no	yes
Chlorine	no	yes
Chlorinated Hydrocarbons (Trichloroethane)	no	yes
Freon–12	no	yes
Hydrogen	yes	no
Hydrogen Sulfide	yes	yes
Deisel Fuel	yes	yes
JP-series Fuel	yes	yes
Xylene	yes	yes
Ethyl Methyl Ketone (used in paint thinner)	yes	yes

flammable gases can be toxic in concentrations considerably below their explosive limits.

When tests for flammable gases or vapors are negative, the air must then be tested with a Flame Safety Lamp to find out if enough oxygen is present to support life (the Flame Safety Lamp will extinguish at about 16 percent oxygen). Here are two very important safety precautions. The Flame Safety Lamp must *NOT* be used *BEFORE* making tests with the Combustible Gas Indicator and the Flame Safety Lamp must *NOT* be used when combustible gas tests are positive. To do otherwise would risk an explosion. If the test with the Flame Safety Lamp shows that there is not enough oxygen to support life, the space must be ventilated until test indications are satisfactory.

Now, at this point let us suppose that tests show the space is free of flammable gases and vapors and contains enough oxygen to support life. Fine, but what has been done to find out if other toxic vapors or gases are present? Nothing! Some ships are equipped with Carbon Monoxide Indicators, Carbon Dioxide Indicators and Hydrogen Sulfide Detectors. If your ship has this equipment, the next step is to use it to find out if any of those agents are present. If any of these tests are positive the space must be thoroughly ventilated until indications are satisfactory. But even if you do test for carbon monoxide, carbon dioxide or hydrogen sulfide and the results are negative, there are several other toxic gases and vapors which could be present which you cannot detect. So, if it is suspected that toxic vapors may be present, the *SAFE* procedure is to thoroughly ventilate the space before anyone enters without a breathing device.

Some may say, "This is nice information to know, and since I do know it, it can't happen to me." Not so! We all know that familiarity breeds contempt. The following incident related by Mr. W. W. Griffith, Naval Ship Engineering Center, which occurred in 1967 aboard a CVA should convince you that safety demands knowledge plus constant vigilance.

After controlling a fire in a bale of rags in a fifth deck storeroom a team entered a nearby fourth deck storeroom to investigate possible damage. This team consisted of the Assistant Command Duty Officer (a Lieutenant Commander), a supply corps Lieutenant experienced as an assistant repair party officer, an SFP–3 OBA man who was an OBA instructor and an FA OBA Tender. The storeroom was found undamaged but a slight odor of smoke was traced to an open manhole leading to a trunk below. From above, the trunk appeared to be clear.

Prior to entering the trunk the SFP–3 told his tender that he was using the same OBA canister that was used while fighting the fire and that it was probably pretty well spent. However, he stated, he would not be in the trunk long. After a short time the tender called the SFP–3 and asked if he was all right. He received an affirmative answer but thought the voice sounded strange so he entered the trunk to investigate without an OBA. The SFP–3 was found unconscious on the deck with his mask off.

The tender tried unsuccessfully to get the unconscious man to the ladder and called for help.

The ACDO went to summon help while the Lieutenant dropped through the manhole to assist. The tender climbed out of the trunk and attempted to pull the OBA man up with the Lieutenant lifting from below. This failed as the tender passed out. The officer below was then overcome. The next man on the scene was a hospitalman who had been summoned with a respirator. Seeing two men unconscious in an apparently clear atmosphere he entered the trunk to check them for electrical shock and was also overcome.

Two OBA men arrived and entered the trunk. The hospitalman was passed up to waiting hands above. One of the OBA men was having difficulty seeing and removed his face mask and in a short time was unconscious. The second OBA man, due to a spent cannister, became dizzy and managed to climb high enough to be dragged from the trunk.

Another OBA rescue team consisting of a Lieutenant (jg) and an FN entered and managed to recover the man most recently overcome. The Lieutenant (jg), due to a spent cannister, became dizzy and was relieved by another OBA man. This team recovered the Lieutenant and finally hoisted the body of the original investigator to helping hands above.

As a result of being caught off guard by the harmless appearance of a space having only a slight smoke odor and haze, in a frantic attempt to assist shipmates in distress, one died, one required prolonged hospitalization and five others were sufficiently asphyxiated to be hospitalized for a short period of time. A total of 10 men were directly involved. Four were overcome in the trunk, four passed out after climbing out of the trunk and one, a seaman, who did not enter the trunk but remained full time at the manhole assisting in pulling people up was sufficiently asphyxiated to require overnight hospitalization.

Only one man of the 10 had no more ill effects than exhaustion.

This accident occurred because of an invisible odorless gas called carbon monoxide (CO). This gas is a product of incomplete combustion given off by a fire which is supplied insufficient oxygen. In this case the smoldering rag bale in the fifth deck storeroom was the culprit.

This is not the only case of well-meaning but inadequately equipped men rushing into a space to rescue others and in turn succumbing to an oxygen-deficient or toxic atmosphere. *DON'T DO IT!* ‡

—Reprinted from the fall, 1969 issue of Fathom magazine, Naval Safety Center

F/V "FENWICK ISLAND" CAPSIZING IN ATLANTIC OCEAN

The actions taken on the F/V *Fenwick Island* case follow in chronological order

MARINE BOARD OF INVESTIGATION

FINDINGS OF FACT

1. On the night of 7 December 1968, the fishing vessel *Fenwick Island* encountered high winds and heavy seas while returning to the port of Beaufort, North Carolina. The vessel, laden with fish, took a severe starboard list when water from seas breaking on deck entered the main fish hold. Upon the release of the starboard purse seine boat, while ballasting to correct the starboard list, the vessel assumed an extreme port list, capsized, and sank in 47 feet of water off Cape Lookout, North Carolina at Lat. 34 degrees, 27′ N, Long. 76 degrees, 30′ W. USC&GS Chart No. 1233 encompasses the area. Seven of the fourteen crew members were rescued within an hour of the casualty. The remaining seven perished with all deaths being attributed to exposure. One body was picked up with the survivors and the other six recovered the following day.

2. The F/V *Fenwick Island,* official number 271387, designed for menhaden fishing was built at Port Arthur, Texas, in 1956. She was of welded steel construction, 130.4 feet long, a breadth of 23.1 feet, a depth of 8.4 feet, 199 gross tons, 135 net tons, with diesel propulsion of 800 horsepower. Her home port was Wilmington, Delaware. She was owned by Fenwick Island, Inc. of Lewes, Delaware. The F/V *Fenwick Island* was an uninspected vessel. The vessel was equipped with radio telephone and citizen's band radio. Her master at the time of the casualty was Charles L. Forrest, age 37, of Susan, Virginia. He was holder of a license as Mate of Uninspected Motor Fishing Vessels of not more than 500 gross tons. The license held by the master was a prerequisite, established by the owner, for employment aboard the vessel.

3. Significant compartmentation, conditions and characteristics of the *Fenwick Island* were as follows (forward to aft):

a. Water ballast tank—stem to watertight bulkhead at frame 8. Estimated capacity—2,400 gallons. Empty during casualty.

b. Crew's berthing—watertight bulkheads at frames 8 and 23.

c. Water ballast tank—frames 8 to 13, beneath crew's berthing compartment. Estimated capacity—2,400 gallons. Empty during casualty.

d. Potable water tank—frames 15 to 21, beneath crew's berthing compartment. Estimated capacity—3,500 gallons. About 75 percent full during casualty.

e. Void spaces (2)—one at each extremity of potable water tank. Empty during casualty.

f. Main fish hold—watertight bulkheads at frames 23 to 51. Capacity about 170 tons (500,000 menhaden fish). Filled to near capacity at time of casualty. The main hold was separated by one longitudinal partition of wooden construction, 4 inches thick, and supported by pipe stanchions and braces. The partition extended along the center line the entire length of the hold, from the bottom to the under side of the main deck transverse members. The partition was basically solid but not constructed to be watertight. The main hatch was 15 feet, fore and aft, by 11 feet across. The hatch coaming was 3 feet in height. The hold was fitted with 8 trimming ports approximately 18 inches in diameter, 4 on each side, on the main deck outboard of the main hatch. The trimming ports were designed with two dogs each on the under side, which were moved radially into locking position by downward travel of a vertical shaft. The covers were removed by pulling a ring attached to the vertical shaft. Drainage

flumes, one on each side of the hold partition, extended along the bottom of the hold from aft to about 75 percent of the compartment length. The flumes were 21 inches wide, 8 inches deep, and connected by a 10-inch pipe to a common sump at the after end.

g. Engineroom—watertight bulkhead at frames 51 and 66. Located in forward end of engineroom were three pumps capable of taking suction from the fish hold drainage sump. One pump, starboard side, was solely for dewatering the fish hold. A bilge and ballast pump and a fire and bilge pump were located on the port side. Pumping capacity is unknown but they were referred to as "3-inch pumps."

h. Port and starboard fuel tanks—frames 66 to 72. Capacity 2,500 gallons each. Each tank was about ⅔ full at time of the casualty. Valves in a 2-inch diameter engine supply pipe interconnecting the two tanks were kept in an open position so that fuel was expended uniformly from each tank.

i. Port and starboard ballast tanks—watertight bulkheads at frames 72 and 77. Capacity 2,200 gallons each. Tanks were carried empty until partial ballasting prior to the vessel's capsizing.

j. After peak—frame 77 to stern. Compartment served as engineer's storeroom.

k. A seine boat was carried on each side of the main deck, aft. The weight of each boat fully equipped was estimated to be between 6 and 8 tons.

4. The following persons lost their lives as a result of the casualty:

a. Bobby L. Diggs, fisherman, age 23, of Port Haywood, Virginia. Next of kin is listed as his wife, Mamie Thomas Diggs, of the same address.

b. Harold Diggs, fisherman, age 50, of Susan, Virginia. Next of kin is listed as his wife, Mary O. Diggs, of the same address.

c. Harold H. Johnson, fisherman, age 41, of Susan, Virginia. Next of kin is listed as his wife, Vivian B. Johnson, of the same address.

d. Sylvia A. Pollard, fisherman, age 51, of Route 3, Gloucester, Virginia. Next of kin is listed as his father, Richard Pollard, of the same address.

e. Lynwood L. Smith, fisherman, age 27, of Beaverville, Virginia. Next of kin is listed as his father, Barry Smith, of the same address.

f. Robert E. Thomas, fisherman, age 32, of Mathews, Virginia. Next of kin is listed as his wife, Gladys Thomas, of the same address.

g. William R. Thomas, Jr., Mate, age 36, of Susan, Virginia. Next of kin is listed as his wife, Shirley Thomas, of the same address.

The loss of the Fenwick Island *was attributed to the entrance of sea water into her main fish hold, similar to the one pictured above. Heavy seas and the failure of efforts to regain stability doomed the vessel and seven crew members.*

The death certificates issued for the above persons indicate that the immediate cause of death in each case was exposure to elements while immersed in ocean water.

5. Weather conditions at the time of the casualty were: winds NW 60 knots, seas 15 to 20 feet, air temperature 40° F, water temperature 63° F, visibility 3 miles. The 1100 marine weather forecast for 7 December 1968, Hatteras to Savannah, received by the master of the *Fenwick Island* from the marine operator, predicted variable mostly northeast to east winds in the afternoon 5 to 15 knots gradually becoming northwest to north 10 to 20 knots that night. The 1700 forecast, which placed small craft warnings in effect, predicted variable winds 10 to 20 knots becoming north to northwest and increasing to 20 to 30 knots later that night. At about 1800 a vessel in the vicinity of the *Fenwick Island* heard a weather report on a commercial radio station in Morehead City, North Carolina, advising of a front moving in that would cause winds to shift to the northwest at 25 knots.

6. At or about 0200 on 7 December 1968, the *Fenwick Island* departed Beaufort Inlet enroute the menhaden fishing grounds in the area of Cape Hatteras, North Carolina. At 0830 the vessel's purse boats were launched and routine fishing activity commenced. Throughout the day favorable weather and sea conditions prevailed and at

1430 the vessel's main fish hold was bulk loaded to near capacity, within 2 to 3 inches from the top of the hatch coaming. In addition, approximately 20,000 fish were carried in bulk on deck in the waist of the ship—for a total of about 520,000 fish on board.

7. At approximately 1800, while on a course of about 215 degrees true, southwest winds of 10 to 15 knots and swells of 5 to 8 feet were encountered. Cape Lookout buoy R 4, LL No. 176 was rounded at 2100 and the vessel's course changed to 320 degrees true. The southwest wind which had gradually increased to 25 knots rapidly changed to northwest and increased to 60 knots or more. The seas became higher and swells of 12 to 15 feet from the southwest soon were mixed with seas of 15 to 20 feet from the northwest. The *Fenwick Island* began rolling heavily with seas occasionally breaking on deck which washed the fish on deck overboard. The vessel had been running in heavy winds and seas for almost two hours at reduced speed when she suddenly assumed a starboard list estimated at about 22 degrees, with the water's edge reaching the main deck at midship. One of the crewmembers who failed to survive the casualty reported to the master that one of the starboard trimming port covers was missing. Another crewmember later found a trimming port cover missing on the port side. The master made radio contact with his office, which in turn relayed information to the Coast Guard for assistance.

8. The master, in an attempt to correct the starboard list, went aft to release the starboard seine boat. As the boat was successfully disengaged and set adrift, the *Fenwick Island* righted herself but then assumed an even greater list to port. The water's edge now reached the bulwark cap midship and seas were breaking into the main hatch. The port seine boat was partially released by disengaging the after fall, but the vessel's list to port increased until she finally capsized. The vessel remained on her port side for ½ to ¾ of an hour before sinking at about 2300, 1.3 miles distance, bearing 285 degrees true from Cape Lookout Buoy R 4.

9. During the *Fenwick Island's* return trip the Chief Engineer had intermittently operated the fish hold pump to keep the drainage sump empty. At the time of the vessel's starboard list the pump was in operation and observed to be pumping a good stream of water overboard. In an additional effort to correct for the starboard list, the bilge and ballast pump was started to fill the after port ballast tank. It was estimated that the port ballast tank was approximately 50 percent full when the vessel assumed the port list. The pump was then realigned and water was being transferred from the port ballast tank to the starboard hallast tank when the Chief Engineer went topside and prepared to abandon ship.

10. After rounding Cape Lookout and encountering the strong wind and heavy seas, the *Fenwick Island*'s main engine was reduced to half ahead. Later it was reduced to the slowest speed attainable. There was a loss of rudder response while on manual steering during the starboard list. Rudder response did not improve and the vessel gradually swung to starboard until reaching a southeast heading, which she maintained until capsizing. The vessel's lights remained in operation until she laid over on her port side.

11. As capsizing of the *Fenwick Island* appeared imminent, all hands put on life preservers. Several of the crewmembers clung to the capsized vessel for a short period of time but were swept away by the sea. The vessel was not equipped with lifeboats or any other lifesaving devices other than the life preservers and ring buoys.

12. On 7 December 1968 the F/V *W. T. James, Jr.*, O.N. 297989, enroute Beaufort Inlet, North Carolina, was in the same general area as the *Fenwick Island*. Her master, Ernest T. Delano, had overheard radio traffic indicating that the *Fenwick Island* was experiencing difficulty. He had been observing the lights of a vessel, which later proved to be the *Fenwick Island*, about 2½ miles southwest of his position. At about 2300 the lights disappeared. The darkened vessel was kept on radar as Captain Delano maneuvered his vessel through the heavy seas to investigate and render assistance if needed. At about ¾ mile distance, the radar target was lost. The *Fenwick Island* was then sighted in an overturned position, but soon disappeared beneath the surface of the water. Shortly thereafter, the master and six crewmembers of the *Fenwick Island* were found and taken aboard the *W. T. James, Jr.* One body was also recovered. The *USCGC Chilula* (WMEC 153) arrived on the scene at 0039 on 8 December 1968, and continued the search for survivors. About 10 hours later the Coast Guard cutter had recovered the last body of the six missing fishermen.

13. The master of the *Fenwick Island* received no special instructions for operation of his vessel nor any information pertaining to stability characteristics of the ship in different service conditions. On the final voyage the trimming ports were not utilized at any point in loading of fish into the main hold. The main hatch was left uncovered for the return trip to port. This was determined to be a normal operating procedure as the vessel did not normally go to sea in heavy weather. No attempt was made at any time during the casualty to place the hatch boards in position.

14. There was no stability data available on the *Fenwick Island* as the vessel had not been subjected to an inclining experiment. Testimony indicated, however, that the vessel had operated through the years without incident to cause suspicion of insufficient stability. On especially productive days in the past the main hold had been completely filled and as many as 300,000 fish carried on deck in the waist of the vessel for a total of 800,000 fish. On such occasions the fish were loaded on deck in bulk to the height of the bulwark and confined to the waist of

the vessel by use of retaining boards. After the vessel assumed a port list, it was noted that the level of fish was lower in the hatch coaming. It was not determined whether this was due to settling of the cargo or to the washing of the fish overboard by the seas breaking over the deck.

15. The *Fenwick Island* was located and her position buoyed by the U.S. Coast Guard. Salvage plans have been abandoned.

CONCLUSIONS

1. That the cause of the casualty to the extent determinable was the entrance of sea water into the main fish hold. The initial entrance of water was through the starboard trimming hatch after its cover was displaced. Water in large amounts subsequently entered the hold through the open fish hold hatch from seas breaking on deck. The wind on the port side of the vessel, the gravitation of fuel between the interconnected tanks, and shifting of cargo after the entrance of water contributed to the list. Other contributing factors were the release of the starboard seine boat and ballasting of the port ballast tank in an effort to correct the starboard list. This caused a second shift of water and cargo and an even greater list to port. Seas reaching the main hatch increased the flooding until all stability was lost. The weather and sea conditions encountered hy the *Fenwick Island* were unusual and are considered a major factor in the casualty not only to their effect on the vessel, but also to the restrictions placed on the crew in attempting to save their vessel.

2. That there is no evidence of misconduct, negligence, inattention to duty or incompetence warranting further actions under the revocation and suspension provisions against licenses held by the master or other members of the crew. Operating the vessel at sea with the main hatch uncovered was established to be common practice on vessels of this type and did not constitute a threat to safety in good weather, however, there was poor judgement on the part of the master when he took no action toward covering the main hatch after the vessel encountered unexpected heavy weather.

3. That there is no evidence that any law or regulation relating to vessels has been violated.

4. That there is no evidence that any personnel of the Coast Guard or any other Government agency contributed to the casualty.

5. That there is no evidence that any aids to navigation nor any uncharted or incorrectly charted area or objects were involved.

6. That the casualty may have been prevented by:

a. Maintenance and installation of the trimming hatch covers in such a manner as to prevent their becoming accidentally displaced. Means of securing the covers by chains, lanyards, or mechanical devices so they would remain within reach for replacement in the event they did come off might also be effective.

b. Closing the open main cargo hatch during heavy weather.

c. The use of all available pumps in dewatering the main hold. With the exception of the dewatering action using only one pump, steps taken by the crew in attempting to return the vessel to an even keel were ultimately damaging to the vessel's stability. Closure of valves in the lines inter-connecting the fuel tanks may also have prevented a small part of the list.

7. That the effects of the casualty may have been minimized if the vessel had been equipped with an approved inflatable liferaft for use as primary lifesaving equipment.

RECOMMENDATIONS

1. That a study be conducted concerning safety hazards peculiar to fishing vessels to determine if there are feasible means by which such hazards may be eliminated or reduced. In the interim, it is recommended that the fishing industry be alerted to the dangers connected with the operation of vessels such as the *Fenwick Island* and the methods by which such hazards may be eliminated by wide dissemination of this report and publication in periodicals such as the Proceedings of the Merchant Marine Council.

16 July 1969

COMMANDANT'S ACTION

1. The record of the Marine Board of Investigation convened to investigate subject casualty has been reviewed and the record, including the Findings of Fact, Conclusions and Recommendations, is approved subject to the following comments and the final determination of the cause by the National Transportation Safety Board.

SYNOPSIS OF FINDINGS OF MARINE BOARD OF INVESTIGATION

1. On or about 2300 on the night of 7 December 1968, the fishing vessel *Fenwick Island* sank in the Atlantic Ocean off Cape Lookout, North Carolina, after capsizing in heavy seas. Seven lives were lost due to exposure. The vessel has not been recovered.

2. As the 130-ft. steel hull fishing vessel *Fenwick Island* was returning to the port of Beaufort, North Carolina, laden with a cargo of menhaden fish, she encountered unexpected heavy weather and took on water in her main fish hold. There were eight trimming ports eighteen inches in diameter on the main deck. The cover was not in place on one of these ports. The water initially entered the hold through this port and later through the main hatch itself which was not covered. Although the hatch cover was available on board, this type of vessel normally engaged in fishing only in good weather and it was the general practice for such vessels to operate in the area with the main hatch open.

378-811—70——2

3. As water entered the hold the vessel assumed a starboard list and steps were taken to start dewatering the main hold and filling the port ballast tanks. This ballast on the port side and the reduction of weight on the starboard side affected by the release of the starboard seine boat caused the vessel to right herself but she then assumed an even greater list to port. The vessel capsized and lay on her port side one half to three quarters of an hour before sinking.

4. All crewmembers were wearing life preservers at the time of the casualty. The seven survivors were rescued within one hour after the vessel sank by another fishing vessel in the area. The bodies of the other seven crewmembers have been recovered.

ACTION CONCERNING THE RECOMMENDATIONS

1. A study of the type recommended by the Marine Board of Investigation to determine if there are feasible means by which safety hazards peculiar to fishing vessels may be eliminated or reduced has been initiated by the Coast Guard.

2. The report of the Marine Board of Investigation will be disseminated and published in the "Proceedings of the Merchant Marine Council" upon the final determination of the cause of the casualty hy the National Transportation Safety Board.

26 September 1969

W. J. Smith,
Admiral, U.S. Coast Guard,
Commandant.

ACTION BY NATIONAL TRANSPORTATION SAFETY BOARD

This casualty was investigated by a U.S. Coast Guard Marine Board of Investigation convened at Portsmouth, Virginia, on December 17, 1968. The National Transportation Safety Board has reviewed the investigative record and has considered those facts which are pertinent to the Board's statutory responsibility to make a determination of cause or probable cause.

ANALYSIS

The MV *Fenwick Island*, 199 gross tons and 130 feet in length, was constructed of steel and designed for menhaden fishing. The vessel was built in 1956. Lifesaving equipment consisted of life preservers and ring buoys. Twn seine boats were installed aboard for use at sea.

The *Fenwick Island* had one main fish hold. The hold was divided into two sections by a non-watertight centerline partition of wooden construction, 4 inches thick, supported by steel braces. The hatch coaming was 3 feet high. The hatch was provided with wooden hatch covers which were stowed on top of the after house. It was not the practice to cover the fish hold on the *Fenwick Island,* and at the time of the casualty it was not covered.

The hold was fitted with eight trimming ports, 18 inches in diameter, four on each side, on the main deck outboard of the main hatch. Flush-fit covers were provided for the trimming ports. They were designed with two dogs on the underside which were moved radially into locking position by downward travel of a vertical shaft through the center of the cover. The covers were removed on deck by pulling a ring attached to the end of the shaft. The hold was fitted with drainage flumes which connected to a common sump at the after end. One pump, located in the engine room, was used solely for dewatering the fish hold. However, there was also a general service pump and a bilge and ballast pump which could take suction on the fish hold through manifold connections.

The vessel had a superstructure forward of the fish hold and another aft. The wheelhouse, the rooms of the Captain and Mates, the crew's quarters, and the galley were located forward. The engineroom and the engineers' quarters were located aft. The waist of the vessel was not visible from the wheelhouse.

On December 7, 1968, the *Fenwick Island,* with a crew nf 14, was operating in the menhaden fishing grounds southwest of Cape Hatteras Light. The weather was good, with light airs and calm seas. The 1100 marine weather forecast for the area, which was received by the Master, predicted variable northeast to east winds 5 to 15 knots in the afternoon, changing to northwest to north 10 to 20 knots that night. The Master did not tune in to receive any further marine forecasts.

The 1700 forecast placed small craft warnings in effect and predicted variable winds 10 to 20 knots, becoming north to northwest and increasing to 20 to 30 knots later that night.

At about 1500, with a near capacity load of fish on board, the vessel got underway on a southwest course to return to Beaufort, North Carolina. The level of fish in the hatch was a few inches below the top of the coaming.

At about 1730, light wind from the southwest developed and increased to about 25 knots, with building seas. The vessel was slowed to half speed, and about 2100 rounded Cape Lookout buoy R4 and came to a course of 320 degrees true for Beaufort Inlet. Shortly thereafter, the wind veered rapidly to the northwest and increased to 60 to 70 knots. Seas increased to about 20 feet, with a confused state of wind-driven seas from the northwest and heavy swells from the southwest. Speed was further reduced and the vessel proceeded on, rolling heavily, and with seas occasionally breaking on deck. At about 2230, the vessel suddenly assumed a severe starboard list. One crew-

member, running out on deck, noted that one of the starboard trimming port covers was missing. Another crewmember found a cover missing from the port side and noted that the level of fish under the port was 5 or 6 feet below deck level. Boarding seas coming over the starboard side were seen entering the fish hold hatch and washing fish out of the hold.

As is the normal practice, the engineer had been operating the fish hold pump intermittently for a few minutes each hour during the return trip to keep the drain sump empty. After the vessel assumed the starboard list, he went on deck to check the overboard discharge and observed that the pump was discharging a good stream of water. In response to a request from the Master via the Mate to see if he could do anything to correct the list, the engineer started the ballast pump and began filling the after port ballast tank. The Master contacted his company office by radio and advised that the vessel had a bad list and requested help. He then decided to release the starboard seine boat in an attempt to correct the list. As the boat was released, the vessel righted herself, but then assumed an even greater list to port. At the time the vessel started listing to port, the port ballast tank was about half full. The engineer realigned the pump and began transferring the water to a starboard ballast tank. The crew then began attempts to release the port boat, but the vessel continued to list to port until it was on its beam ends.

All hands had donned life preservers when sinking had appeared imminent and several of them clung to the vessel for a short time until they were swept away by the sea. The vessel capsized and then sank at about 2300.

The Master of the fishing vessel *W. T. James, Jr.*, which was in the vicinity, overheard radio traffic indicating the distress and proceeded to the scene. By using a searchlight, the overturned vessel was found and shortly thereafter the Master and six crewmembers of the *Fenwick Island* were found and taken aboard the *W. T. James, Jr.* A Coast Guard cutter arrived on the scene at 0039 on December 8, 1968, and continued the search for survivors. About 10 hours later, the last of the bodies of the seven deceased crewmembers was recovered.

In analyzing the events, it appears that the vessel was experiencing heavy weather for about one and one-half hours prior to developing the starboard list. Sometime during that period, one or more of the trimming port covers became displaced and this permitted the ingress of water to the fish hold. The fact that the level of fish was observed 5 to 6 feet below the displaced cover on the portside indicates the existence of void areas which would permit a shift of cargo. The sudden development of the starboard list also indicates a cargo shift. It would appear that a quantity of water entering the starboard side of the fish hold would reduce the surface adhesion in the pile of fish in that area, with a resulting shift of bulk to a void or less densely packed area. The deep starboard list then permitted boarding seas to enter the hold through the open hatch. The release of the starboard boat and the ballasting of the port tank, together with the increased volume of water in the hold, caused a second shift of cargo and an even greater list to port. As the flooding progressed, stability continued to deteriorate and the vessel capsized and sank.

PROBABLE CAUSE

The National Transportation Safety Board finds that the probable cause of this casualty was the failure of the Master to have the main hatch covered when the vessel encountered heavy weather. A contributing cause was the failure to install and maintain the trimming hatch covers in a secure manner. Also contributing to the loss of the vessel were the steps taken by the crew to offset the starboard list.

Contributing to the effects of this casualty was the lack of primary lifesaving equipment which would be readily available and would provide exposure protection. Also, waterproof battery-powered lights attached to the life-preservers might have enabled rescue forces to detect the individuals in the water early enough to reduce the loss of life.

RECOMMENDATIONS

The Safety Board concurs with the Commandant relative to the recommendations of the Marine Board. In addition, the Board makes the following recommendations and reiterates a recommendation made by the Board in its action on the Marine Board report of the loss of the *Panoceanic Faith* relative to lights for life preservers:

1. The Coast Guard, in its study of fishing vessel safety, consider the need for legislative authority to require sufficient inflatable liferaft capacity to accommodate all persons on board fishing vessels in ocean and coastwise service.

2. The Coast Guard consider amending the applicable regulations to require that each life preserver be equipped with a waterproof battery-powered light.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD:

Adopted this 31st day of December, 1969:

/s/ JOHN H. REED,
Chairman.

/s/ OSCAR M. LAUREL,
Member.

/s/ FRANCIS H. MCADAMS,
Member.

/s/ LOUIS M. THAYER,
Member.

ISABEL A. BURGESS,
Member.
Not participating.

REAR ADMIRAL MURPHY RETIRES

Admiral Willard J. Smith, Commandant, U.S. Coast Guard, presents Rear Admiral Charles P. Murphy with a citation signifying a Gold Star in lieu of a second Legion of Merit. The award marked Rear Admiral Murphy's exceptional service as Chief, Office of Merchant Marine Safety, from May 1968 to January 1970, the time of his retirement. Rear Admiral Murphy had received similar recognition for his service from June 1966 to April 1968.

Rear Admiral Charles P. Murphy retired from the Coast Guard at the end of January, having served as Chief, Office of Merchant Marine Safety since June, 1964. No successor had been named at press time.

Rear Admiral Murphy graduated from Webb Institute of Naval Architecture in 1935 and served in the Commerce Department's Bureau of Marine Inspection and Navigation. He was commissioned as a lieutenant commander when the Coast Guard absorbed the Bureau in 1942. His assignments included service as Chief of the Naval Architecture Section, Assistant Chief and then Chief of the Merchant Marine Technical Division, and Deputy Chief, Office of Merchant Marine Safety.

Rear Admiral Murphy distinguished himself throughout his career as a member of numerous technical committees and as a guiding force in international maritime safety. He was advisor to the U.S. Delegation at the International Conference on Safety of Life at Sea convened in London, England in 1948 and again in 1960; headed the U.S. delegation at the 1969 Conference on the tonnage measurement of ships, was Co-chairman of the Atomic Energy Panel of the Society of Naval Architects and Marine Engineers and served longtime memberships on the Technical Committee and Naval Architecture Committee of the American Bureau of Shipping and on the U.S. State Department Shipping Coordinating Committee.

In recent years Rear Admiral Murphy was a leading participant on behalf of the U.S. in the Intergovernmental Maritime Consultative Organization (IMCO). He served as a U.S. Delegate or advisor in connection with the Assembly Council and Maritime Safety Committee of this international organization, distinguishing himself through his leadership and organizational abilities in matters relating to the Coast Guard's role in international maritime safety. In recognition of his

skills, Rear Admiral Murphy was elected Chairman of IMCO's Maritime Safety Committee in March 1968. He was the first American to serve in this important position.

Rear Admiral Murphy was awarded the Legion of Merit in 1968 and a Gold Star in lieu of a second Legion of Merit at the time of his retirement, both for his outstanding service in promoting international maritime safety. In addition he was awarded a "Tribute of Appreciation" by the Department of State. ⚓

Merchant Vessels of the U.S. Now Available

A new issue of "Merchant Vessels of the United States" (CG–408), a Coast Guard publication has been published. The volume contains the names of all American merchant vessels and yachts having uncanceled marine documents (registers, enrollments and licenses, or licenses) on January 1, 1968. The "Monthly Supplement" to "Merchant Vessels of the United States" regularly provides new listings to update the volume.

Previously, the compilation of data and preparation of copy for printing this publication have been hand operations. For the new issue data has been compiled and edited with the use of electronic data processing equipment, followed by preparation of copy on high speed electronic photo typesetting equipment.

"Merchant Vessels of the United States" is sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price $12.25. The "Monthly Supplement" to the volume may be obtained directly by subscription from Commandant (MVD), U.S. Coast Guard Headquarters, Washington, D.C. 20591. The cost is $5 per year. ⚓

nautical queries

Q. Large volumes of carbon dioxide are safe, and effective for fire fighting in an enclosed space, such as an engineroom, provided:

(a) You have the ventilation system operating.

(b) You hold a cloth over your face and breathe through it.

(c) The ventilation system is shut down and all personnel leave the space.

(d) You wear a gas mask.

A. (c) The ventilation system is shut down and all personnel leave the space.

Q. Carbon Dioxide extinguishes fires by:

(a) Smothering.

(b) By absorbing the inflammable material.

(c) Convection.

(d) Conduction.

A. (a) Smothering.

Q. CO2 should be applied to a fire by:

(a) Directing the gas into the very heart of the fire.

(b) Bouncing the stream off a bulkhead.

(c) Intermittent squirts to hasten the vaporization process.

(d) Directing the gas back and forth across the base of the fire.

A. (d) Directing the gas back and forth across the base of the fire.

Q. 1. Fires in the machinery space may be prevented by:

(a) Keeping the engine space closed up.

(b) Placing fuel tanks in separate spaces.

(c) Keeping engine space clean, ventilated and in good mechanical condition.

(d) Placing fire extinguisher in compartment.

A. (c) Keeping engine space clean, ventilated and in good mechanical condition.

Q. 2. The spread of fire is prevented by:

(a) Cooling of surfaces adjacent to fire.

(b) Removing combustibles from the endangered area.

(c) Shutting off the supply of oxygen (shutting off all possible ventilation or smothering).

(d) All of the above.

A. (d) All of the above.

Q. 1. Safety precautions for diesel engine installations provide that:

(a) Backfire flame arresters be installed.

(b) Drip collectors with flame screens be installed.

(c) Exhaust manifold be water cooled or protected.

(d) Both (a) and (b) above.

A. (c) Exhaust manifold be water cooled or protected.

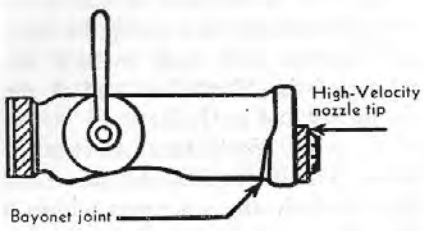
Q. 2. Which of the following is the maximum permissible content of petroleum vapors by volume for any compartment considered safe for men:

(a) 0.1%
(b) 1.0%
(c) 5.0%
(d) 10.0%

A. (a) 0.1%

Q. What position is the handle at on the all-purpose nozzle in this sketch?

(a) Shut.
(b) Solid stream.
(c) Filter.
(d) Fog.



A. (d) Fog.

POLLUTION IN PROHIBITED ZONES

In early February 1969 a United States tanker reportedly pumped oily ballast water into the Bay of Biscay, France. Although the vessel was approximately seventy (70) miles off shore, she was in violation of 33 CFR 151.30. Photographs of the water pollution by the tanker were taken by French Naval Aircraft, and a formal complaint was registered by the government of France concerning this infraction.

The New York Marine Inspection Office has since interviewed several ships' Masters and found that most of them were unaware of the extent of the prohibited zones outlined in Subchapter O, Title 33 CFR. As a reminder of prohibited zones, and particularly the special circumstances that prevail in many parts of the world, an extract from the Oil Pollution Regulations is reprinted below.

33 CFR 151.30 OIL POLLUTION REGULATIONS–PROHIBITED ZONES

(a) All sea areas within 50 miles from the nearest land shall be prohibited zones.

(b) The following sea areas, insofar as they extend more than 50 miles from the nearest land, shall also be prohibited zones:

(1) *Pacific Ocean-Canadian Western Zone.* The Canadian Western Zone shall extend for a distance of 100 miles from the nearest land along the west coast of Canada.

(2) *North Atlantic Ocean, North Sea, and Baltic Sea-(i) North-West Atlantic Zone.* The North-West Atlantic Zone shall comprise the sea areas within a line drawn from latitude 38°47′ N., longitude 73°43′ W., to latitude 39°58′ N., longitude 68°-34′ W.; thence to latitude 42°05′ N., longitude 64°37′ W.; thence along the east coast of Canada at a distance of 100 miles from the nearest land.

(ii) *Icelandic Zone.* The Icelandic Zone shall extend for a distance of 100 miles from the nearest land along the coast of Iceland.

(iii) *Norwegian, North Sea, and Baltic Sea Zone.* The Norwegian, North Sea, and Baltic Sea Zone shall extend for a distance of 100 miles from the nearest land along the coast of Norway, and shall include the whole of the North Sea and of the Baltic Sea and its Gulfs.

(iv) *North-East Atlantic Zone.* The North-East Atlantic Zone shall include the sea areas within a line drawn between the following positions:

Latitude	Longitude
62°N.	2°E.;
64°N.	00°;
64°N.	10°W.;
60°N.	14°W.;
54°30′N	30°W.;
53°N.	40°W.;
44°20′N.	40°W.;
44°20′N.	30°W.;
46°N.	20°W.;

thence towards Cape Finisterre at the intersection of the 50-mile limit.

(3) *Mediterranean and Adriatic Seas-Mediterranean and Adriatic Zone.* The Mediterranean and Adriatic Zone shall comprise the sea areas within a distance of 100 miles from the nearest land bordering the Mediterranean and Adriatic Seas along the coasts of France, Greece, Jordan, Lebanon, Israel, United Arab Republic, and Maltese Islands.

(4) *Black Sea and Sea of Azov.* (Not in effect.)

(5) *Red Sea-Red Sea Zone.* The Red Sea Zone shall comprise the sea areas within a distance of 100 miles from the nearest land along the coasts of the United Arab Republic bordering the Red Sea.

(6) *Persian Gulf-Kuwait Zone.* The Kuwait Zone shall comprise the sea area within a distance of 100 miles from the nearest land along the coast of Kuwait.

(7) *Arabian Sea, Bay of Bengal, and Indian Ocean-Malagasy Zone.* The Malagasy Zone shall comprise the sea area within a distance of 100 miles from the nearest land along the coast of Madagascar west of the meridians of Cape d'Ambre in the north and of Cape Ste. Marie in the south and within a distance of 150 miles from the nearest land along the coast of Madagascar east of these meridians.

(8) *Australia-Australian Zone.* The Australian Zone shall comprise the sea area within a distance of 150 miles from the nearest land along the coasts of Australia, except off the north and west coasts of the Australian mainland between the point opposite Thursday Island and the point on the west coast at 20°S. latitude. ⚓

Correction

The February issue of the *Proceedings* carried, on page 34, Maritime Sidelights, an account of the presentation of the 1969 American Merchant Marine Seamanship Trophy to the *SS African Star.* The description of the mishap in which the *African Star* was involved contained this sentence: "The *African Star* . . . was struck by the *MV Midwest Cities,* a barge laden with oil." No suggestion of fault was intended in this article, and the sentence in question should have read as follows: "The *African Star* . . . was involved in a collision in a meeting situation with a tank barge being pushed by the MV *Midwest Cities.*" ⚓

THE POSITIVE APPROACH TO RIVER SAFETY

Remarks by CAPT. A. F. Hubbard, USCG, Second Coast Guard District, St. Louis, Mo. at AWO Region 1 and 2 Meeting Stouffer's Inn, St. Louis, Mo., 20 January 1970.

Remember the song which was popular a few years back: "Accentuate the Positive?" I think in our approach to river safety that we should do just that: *accentuate the positive*. For years our approach has perhaps been too negative. Most of the things we have done to improve safety have been *negative* things, that is, they have been *don'ts*.

Don't violate the Rules of the Road. If you do, we'll give you a penalty. Don't fail to report a marine casualty. Again, a penalty for failure. Don't operate recklessly, if you do there's a fine. Don't neglect cargo manifest, don't neglect . . . oh, it's quite a long list.

Now I'm not saying that we can get rid of all the negative things. What I am saying is that by using the positive approach, we can get a lot better results. What do I mean by the positive approach? Let me give you some examples.

Let's take violation of the Rules of the Road. This type of violation is one of the most common and most disastrous that we see on the rivers. I think I am safe in saying it is the greatest cause of collisions on the rivers—collisions that result in property damage, personnel injury, perhaps even loss of life. They may result in putting a craft out of service, additional paper work and investigative time, perhaps long and expensive law suits. They may involve Coast Guard penalties. The thing to do, in a positive way, about collisions is to try to prevent their happening. No one thing, in my mind, would be better than education in Rules of the Road. Better training in towboat handling. Better selection of pilots and masters.

What about other types of marine casualties: explosion, fire, loss of personnel overboard, personal injury? Prevention lies in a combination of maintaining proper fire extinguishing and safety equipment, indoctrinating personnel in emergency procedures, supervision of inexperienced deck hands, a well-organized safety program.

Many river casualties are caused by improper handling of flammable, combustible and dangerous cargoes. Here again, prevention is the positive approach: prevention in the form of adequate safety programs, properly trained personnel, and a good industrial safety program to keep an eye on things and insure that the company's safety policies are actually carried out. The penalty for failure is a cargo lost, a vessel destroyed, lives snuffed out, punitive law suits, administrative or criminal fines. The reward is a good name, a happy healthy crew, a satisfactory profit. ⚓

DRIVE AGAINST VANDALS

The Coast Guard is stepping up its drive against persons who vandalize signal lights, buoys and other marine aids to navigation in the New York City area.

Those convicted will be liable for fines, paying for the damages or imprisonment. The Coast Guard is also offering a reward of one-half the sum collected from the violator to persons who furnish information leading to the conviction of the offender.

Coast Guard officials in New York point out that interfering with the aids endangers mariners who navigate by them. Vandalizing aids is also a crime against Government property and is handled by the Federal Bureau of Investigation. Under Federal regulations persons who knowingly "aid, abet, authorize, or instigate a violation" against marine aids can be punished by a "fine not exceeding $2,500, or by imprisonment for not more than one year, or both."

Coast Guard Group New York is responsible for maintaining the aids to navigation in the New York shipping area. In one recent case, a spokesman from Group New York reports that an 80-foot tower at New Dorp Beach on Staten Island was stripped of its equipment. Another case involved a sniper shooting out lights on marker buoys around John F. Kennedy International Airport where barges unload aircraft fuel.

Since July 1969, the Coast Guard has spent more than $1,600 repairing lights, beacons, light towers and buoys in the New York shipping area. ⚓

SYNTHETICS AND SUNLIGHT

During a recent inspection of a fairly new tanker on a coastwise voyage, a Coast Guard inspector noted the extensive use made of polypropylene line on the vessel's ring life buoys, safety lines, and lifeboat man ropes. These lines, of various sizes in strands of red, white, and blue colors, had probably been in service since the vessel was built some 5 years ago.

Examination of the lines, and particularly of the man ropes, showed the polypropylene material to be hard, brittle, and deteriorated to an extent that when rubbed by hand or given normal handling, the surface of the material flaked off and exposed its inner layers. This flaking was most extensive in the white strands of the lines.

The above condition for one ship is not unusual; the 1968 "Modern Plastics Encyclopedia" makes the following statement about the effects of sunlight on polypropylene: "Unprotected material crazes rapidly. Requires black for complete protection, but weather-resistant grades available in natural and colors".

The above observations are borne out further by weatherometer tests of polypropylene line performed by the Canadian Department of Public Works in Ottawa:

Samples:

(A) Yellow, ⅜-inch-diameter line; 2,400 pounds original breaking strength

(B) Black, ⅜-inch-diameter line; 2,600 pounds original breaking strength

Weatherometer exposure in cycles	Yellow		Black	
	Strength (pounds)	Percent of original	Strength (pounds)	Percent of original
45	810	34	2,400	92
90	330	14	2,350	90
125	220	9	2,100	81
150	50	2	2,000	77

The above data is proof that polypropylene line for use on a ship is not an unqualified success; black line appears to offer the best results. These facts are directed to the attention of vessel operators and purchasing officials as a guide for their selection of the various colors and grades of polypropylene line. ⚓

A LIFEJACKET WASN'T ENOUGH

A man drowned recently in the Midwest at a riverfront facility, even though he was wearing an approved lifejacket when he fell into the water. That's the operative phrase, "when he fell in." Seeing him fall in, one of his coworkers started for a ladder to render assistance. Before he could, however, the coworker saw the man in the water take off the lifejacket. The swimmer took a couple of strokes and went under. The coworker, wearing his jacket, dived in, but was unable to find the man in the water. The body was recovered later.

During the investigation, the coworker said that the victim, who had been a swimming champion in his youth, had said repeatedly that he would take off the lifejacket if he ever fell in, "because it would hinder my swimming." He kept his word. The weather was very cold, the air at 22° F., and the water about 32° F. Apparently the victim went into shock, but, unfortunately, not until he had removed his lifejacket. No violations of regulations were found. Men working over the water were wearing lifejackets. There were ladders reaching to the water, and rescue gear available. All that was missing was a couple of minutes, which the lifejacket would have provided.

The lesson for employers and supervisors is clear. Don't just issue safety equipment and enforce the rules about using it. Explain why, especially to the man who doesn't see the need for it. In this case, the victim was right—dead right—the jacket would "hinder" his swimming. The only trouble is that the jacket isn't a swimming aid, but only a float to buy time. ⚓

—Safety Standards

AMENDMENTS TO REGULATIONS

Title 46 Changes

Chapter I—Coast Guard, Department of Transportation

CERTAIN BULK DANGEROUS CARGOES ON UNMANNED TANK BARGES

A notice of proposed rule making was published in the FEDERAL REGISTER of February 7, 1969 (34 F.R. 1831) and in the Merchant Marine Council Public Hearing Agenda dated March 24, 1969 (CG–249). The proposed amendments were identified at Items PH 1–69 to PH 9–69, inclusive. Item PH 10–69 was published in the FEDERAL REGISTER of February 15, 1969 (34 F.R. 2254). The Merchant Marine Council held a public hearing on March 24, 1969 in Washington, D.C., on these ten items in accordance with the terms of the notices. Interested persons were given the opportunity to submit written comments and to make oral comments regarding all the proposed amendments at the public hearing. At the conclusion of the public hearing the Council at an executive session held on March 24 and 25, 1969 duly considered all the proposed amendments and the comments submitted.

This is the third of a series of documents which concerns the amend-

ments considered by the Merchant Marine Council at the public hearing held on March 24, 1969. The first document concerned the proposals designated as Items PH 5–69, PH 9a–69, and that part of Item 4a–69 which involved amendments to Title 33, Code of Federal Regulations. This document was published in the FEDERAL REGISTER of October 29, 1969 (34 F.R. 17478). The second document concerned the proposals designated as Items PH 2–69, PH 3–69, PH 4b and 4c–69, PH 6a and 6b–69, PH 8–69, PH 9b–69, PH 10–69 and that part of PH 4a–69 which involved amendments to Title 46, Code of Federal Regulations. This document was also published in the FEDERAL REGISTER of October 29, 1969 (34 F.R. 17479). This third document concerns the proposals designated as Item PH 1–69. This third document creates a new Subchapter O to Title 46, Code of Federal Regulations which regulates certain bulk dangerous cargoes when carried on unmanned tank barges. In addition, this document makes changes to Subchapters A, C, D, H, I, J, N, and T necessitated by the establishment of Subchapter O. The only remaining item, of the Public Hearing Agenda dated March 24, 1969 is Item PH 7–69 which will appear in a subsequent document.

The regulations promulgated by this document in Part 151, Subchapter O constitute the first phase of a program to develop regulations for water transportation of all bulk dangerous cargoes having hazards other than, or in addition to, the conventional flammability and combustibility of petroleum products. The scope of complete program includes all physical forms of such cargoes (solid, liquid, liquefied gas) transported in ships, barges, and portable tanks. However, the present Part 151 is limited to liquids and liquefied gases carried in unmanned barges and include only cargo carrying requirements. Certification as tank barges or cargo barges will continue to be in accordance with the procedures of Subchapter D or Subchapter I. As an interim measure pending development of additional parts to Subchapter O, Part 151 provides that manned barges carrying cargoes regulated by this subchapter will be considered by the Coast Guard on an individual basis and may be required to meet the cargo containment and handling requirements specified for unmanned barges. The additional parts to Subchapter O to complete the program are still being developed by the joint industry and Coast Guard Task Group under the Chemical Transportation Advisory Panel to the Merchant Marine Council of the Coast Guard. These additional regulations will be considered at public hearings in the future.

As a result of its study of the regulations proposed in Item PH 1–69 and the many comments received from the public with respect thereto, the Merchant Marine Council has recommended to the Commandant, U.S. Coast Guard a number of changes in the regulations as originally proposed. The significant changes recommended by the Council are as follows:

1. The proposed method of dealing with cargo compatibility has been changed to make it less restrictive by placing responsibility for cargo compatibility on the shipper and/or owner of the barge. This change avoids the necessity of including lengthy endorsements on the Certificate of Inspection. This change has been effected by altering the cargo separation column and the footnotes in Table 151.05, by deleting §§ 151.05–1(f), 151.13–5(a)(2), by changing §§ 151.13–5(b), 151.13–10(a), and by adding a new § 151.45–4(d)(11).

2. The hull type requirement was reduced from Type II to Type III for acetonitrile, *n*-butyl acrylate, isobutyl acrylate, ethyl acrylate, ethylenediamine, methyl acrylate and methyl methacrylate. This reduction is reflected by changes for these products in Table 151.05.

3. Table 151.01–10(d) was

ACCEPTABLE HYDRAULIC COMPONENTS

Nonductile hydraulic components which have passed high impact shock tests. Unless otherwise noted, the material is cast iron.

Manufacturer	Valve type	Identity	Maximum allowable working pressure
Vickers Marine & Ordnance Division, Troy, Mich. 48084.	Directional Control	DF10P1-16-**-2*	2700
Do	Relief	CF-16-**-1*	2700
Do	do	CGR-02-*-2*	3000
Do	Directional Control	DG17S4-01**-*-5*	3000
Do	do	DG17S4-06**-*-5*	3000
Do	do	DG17S4-10**-*-5*	3000
Do	do	DG18S4-01**-*-5*	3000
Do	do	DG18S4-06**-*-5*	3000
Do	do	DG19S4-06**-*-5*	3000
Do	do	DG19S4-10**-*-5*	3000
Do	Directional (check)	C5G-S15	3000
Do	do	C5G-S25	3000
Do	Servo (maximum ½-inch subplate port size).	SF4-***-**-***-1*	3000
Do	Flow control	FCG-02-1500-**-4*	2000
Do	do	DGFN-01-2*	3000
Do	Directional and flow control	L1-DF3S4-162C-5*	3000

PROPOSED REGULATIONS

(Extension of Time)

Item PH 9–70 of the Merchant Marine Council Public Hearing Agenda (CG–249) dated March 30, 1970, entitled "Measurement of Vessels—Limitations of Deep Floor Frames, Double Bottoms, and Side Frames" will be considered, as scheduled, at the March 30, 1970 public hearing. However, in response to a number of requests the time for the submission of written comments on this Item has been extended to 1 September 1970.

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changed to emphasize that all products regulated by Subchapter D (Tank Vessels) are flammable or combustible as defined in Subchapter D.

4. The following products were added to Table 151.01–10(d)—Cargoes to be regulated by Subchapter D: Asphalt blending stocks (roofers flux, straight run residue), cumene, distillates (straight run, flashed feed stocks), dodecanol, gas oil (cracked), gasolines (straight run, polymer), gasoline blending stocks (alkylates reformates), heptanol, hexanol, ethoxylated dodecanol, ethoxylated pentadecanol, ethoxylated tridecanol, ethoxylated tetradecanol, linear alcohol (12–15 carbon), nonanol, octanol, oils (clarified, road, transformer), pentadecanol, tetradecanol, undecanol, 1-pentene, 1-heptene, 1-octene, 1-decene, 1-undecene, 1-tridecene, 1-tetradecene, and 1-hexene.

5. The word "minimum" was inserted in the first sentence of § 151.01–1(a) to make it clear that Part 151 sets forth only the minimum requirements for unmanned tank barges.

6. In § 151.15–3, a new paragraph (c) has been added and the former paragraph (c) has been made (d). The new paragraph permits cargoes with a specific gravity greater than that for which the scantlings of the tank were designed to be carried provided the maximum cargo weight (tons) in a specific tank does not exceed the maximum cargo weight (tons) endorsed on the Certificate of Inspection, and provided the scantlings are sufficient to prevent rupture under the full head of the higher density cargo.

7. In § 151.50–22, a new paragraph (b) has been added, and the former paragraph (b) has been redesignated as (c). The new paragraph (b) permits the use of compressed air to discharge hydrochloric acid from gravity type cargo tanks if the tanks are of cylindrical shape with dished heads and the air pressure does not exceed the design pressure or 10 pounds per square inch gage.

8. In § 151.50–34(a) the listing of prohibited materials for the construction of equipment coming into contact with vinyl chloride has been changed by adding magnesium, mercury, and silver, and by deleting zinc and lead.

Accordingly, after due consideration of all the relevant matter including the comments of the interested persons and the recommendations of the Merchant Marine Council, the Commandant, U.S. Coast Guard has approved the regulations and the amendments to existing regulations.

The complete text of these changes was published in the "Federal Register" of February 25, 1970, part II.

These regulations may be obtained from the local marine inspection office or by writing Commandant (CAS–2) U.S. Coast Guard, Washington, D.C. 20591.

Approved Equipment

Commandant Issues Equipment Approvals; Terminates Others

U.S. Coast Guard approval was granted to certain items of lifesaving, and other miscellaneous equipment and materials. At the same time the Coast Guard terminated certain items of lifesaving, and other miscellaneous equipment and materials.

Those interested in these approvals should consult the Federal Registers of February 3, and 26, 1970, for detailed itemization and identification.

STORES AND SUPPLIES

Articles of ships' stores and supplies of a dangerous nature certificated from January 1, 1970 to February 28, 1970, inclusive, for use on board vessels in accordance with the provisions of Part 147 "Regulations Governing Use of Dangerous Articles as Ships' stores and Supplies on Board Vessels" are as follows:

CERTIFIED

Perolin Co., 350 Fifth Ave., New York, N.Y. 10001: Certificate 865, dated January 26, 1970, PEROLIN FUEL OIL TREATMENT 655–SN.

Metropolitan Petroleum Petrochemicals, 25 Caven Point Rd., Jersey City, N.J. 07304:

Certificate 866, dated February 5, 1970, M–303.

Certificate 867, dated February 5, 1970, M–606.

E. M. Howey and Co., 666 Tatum St., Woodbury, N.J. 08096:

Certificate 868, dated February 6, 1970, HOWKO ELECTRO-CLEANING SOLVENT.

Tam Chem, Inc., P.O. Box 2875, Tampa, Fla. 33601:

Certificate 869, dated February 9, 1970, RUST X, METAL PRIMER AND RUST REMOVER.

Certificate 870, dated February 9, 1970, SLUDGE X, FUEL OIL TREATMENT.

Certificate 871, dated February 9, 1970, SCALE X, BOILER WATER TREATMENT.

Certificate 872, dated February 9, 1970, STEAM X, LIQUID STEAM CLEANING COMPOUND.

Clarkson Laboratories, Inc., 1450 Ferry Ave., Camden, N.J. 08104:

Certificate 873, dated February 18, 1970, FORMULA 965 XV.

MERCHANT MARINE SAFETY PUBLICATIONS

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

The Federal Register will be furnished by mail to subscribers, free of postage, for $2.50 per month or $25 per year, payable in advance. The charge for individual copies is 20 cents for each issue, or 20 cents for each group of pages as actually bound. Remit check or money order, made payable to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated January 1, 1970 are now available from the Superintendent of Documents; price: $3.75.

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (7–1–63).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (5–1–68).
115	Marine Engineering Regulations and Material Specifications (3–1–66). F.R. 12–18–68.
123	Rules and Regulations for Tank Vessels (5–1–69). F.R. 10–29–69, 2–25–70.
129	Proceedings of the Merchant Marine Council (Monthly).
169	Rules of the Road—International—Inland (9–1–65). F.R. 12–8–65, 12–22–65, 2–5–66, 3–15–66, 7–30–66, 8–2–66, 9–7–66, 10–22–66, 12–23–67, 6–4–68, 10–29–69, 11–29–69.
172	Rules of the Road—Great Lakes (9–1–66). F.R. 7–4–69.
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids (3–2–64).
175	Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (3–1–65).
176	Load Line Regulations (1–3–66). F.R. 12–6–66, 1–6–67, 9–27–67, 7–12–68, 6–5–69, 7–26–69, 10–12–69.
182	Specimen Examinations for Merchant Marine Engineer Licenses (7–1–63).
184	Rules of the Road—Western Rivers (9–1–66). F.R. 9–7–66, 5–11–67, 12–23–67, 6–4–68, 11–29–69.
190	Equipment Lists (8–1–68). F.R. 11–7–68, 11–8–68, 11–16–68, 11–19–68, 11–20–68, 12–11–68, 12–18–68, 2–11–69, 2–18–69, 2–21–69, 2–26–69, 3–15–69, 3–27–69, 4–4–69, 4–12–69, 4–19–69, 4–25–69, 4–26–69, 4–28–69, 5–3–69, 5–9–69, 6–18–69, 6–19–69, 7–1–69, 7–15–69, 7–17–69, 9–12–69, 9–25–69, 10–10–69, 10–11–69, 10–22–69, 10–31–69, 11–19–69, 12–13–69, 1–27–70, 1–30–70, 2–3–70, 2–26–70.
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel (5–1–68). F.R. 11–28–68.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (5–1–67). F.R. 3–30–68.
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels (4–1–57).
227	Laws Governing Marine Inspection (3–1–65).
239	Security of Vessels and Waterfront Facilities (5–1–68). F.R. 10–29–69.
249	Merchant Marine Council Public Hearing Agenda (Annually).
256	Rules and Regulations for Passenger Vessels (5–1–69). F.R. 10–29–69, 2–25–70.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (8–1–69). F.R. 10–29–69, 2–25–70.
258	Rules and Regulations for Uninspected Vessels (3–1–67). F.R. 12–27–67, 1–27–68, 4–12–68, 12–28–68, 3–27–69, 10–29–69, 2–25–70.
259	Electrical Engineering Regulations (3–1–67). F.R. 12–20–67, 12–27–67, 1–27–68, 4–12–68, 12–18–68, 12–28–68, 10–29–69, 2–25–70.
266	Rules and Regulations for Bulk Grain Cargoes (5–1–68). F.R. 12–4–69.
268	Rules and Regulations for Manning of Vessels (5–1–67). F.R. 4–12–68.
293	Miscellaneous Electrical Equipment List (9–3–68).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (11–1–68). F.R. 12–17–68, 10–29–69.
323	Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (7–1–69). F.R. 10–29–69, 2–25–70.
329	Fire Fighting Manual for Tank Vessels (7–1–68).

CHANGES PUBLISHED DURING FEBRUARY 1970

The following have been modified by Federal Registers:

CG–190, Federal Register, February 3 and 26, 1970.

CG–123, CG–256, CG–257, CG–258, CG–259, CG–323; and Subchapters A, N and O of Title 46 CFR, Federal Register, February 25, 1970.

U.S. GOVERNMENT PRINTING OFFICE: 1970

Report Those NAVAIDs Out

MARINERS have the long established, internationally accepted, responsibility of reporting aids to navigation which are inoperative or appear to have discrepancies. This applies to all navigational aids, either visual or electronic. The Navy Oceanographic Office reminds us that: "Experienced mariners realize that the Coast Guard cannot keep the thousands of aids to navigation comprising the federal system under simultaneous and continuous observation and that, for this reason, it is impossible to maintain every buoy, daybeacon, light, fog signal and other aid operating properly and on its charted position at all times. Therefore, the safety of the mariner and that of all persons embarked or serving on vessels will be enhanced if every person who discovers an aid to be missing, sunk, capsized or damaged, or who observes a defect in the position or characteristic of any aid, will promptly notify the nearest Coast Guard District Commander of the fact. Radio messages should be prefixed 'Coast Guard' and transmitted directly to one of the United States Government shore radio stations listed under 'Activity' in Section 400B of Radio Navigational Aids HO-117 for relay to the Coast Guard District Commander. If the radio call sign of the nearest United States Government radio shore station is not known, radio-telegraph communication may be established by the use of the general call 'NCG' on the frequency of 500 kilocycles . . ."

Each Weekly Notice to Mariners contains a standard "Request for Corrective Information" and a form (the last page) to report any type of navigation information. Also, NAVOCEANO Form 3800/1 (Rev 10-63) is available from your Branch Oceanographic Office to report any item of interest.

For overseas areas check your numbered fleet commander's basic op-order for oceanographic procedures. – Remember, don't wait for the other guy to make a report; *it is too late when you are sitting on the rocks!* ■