PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

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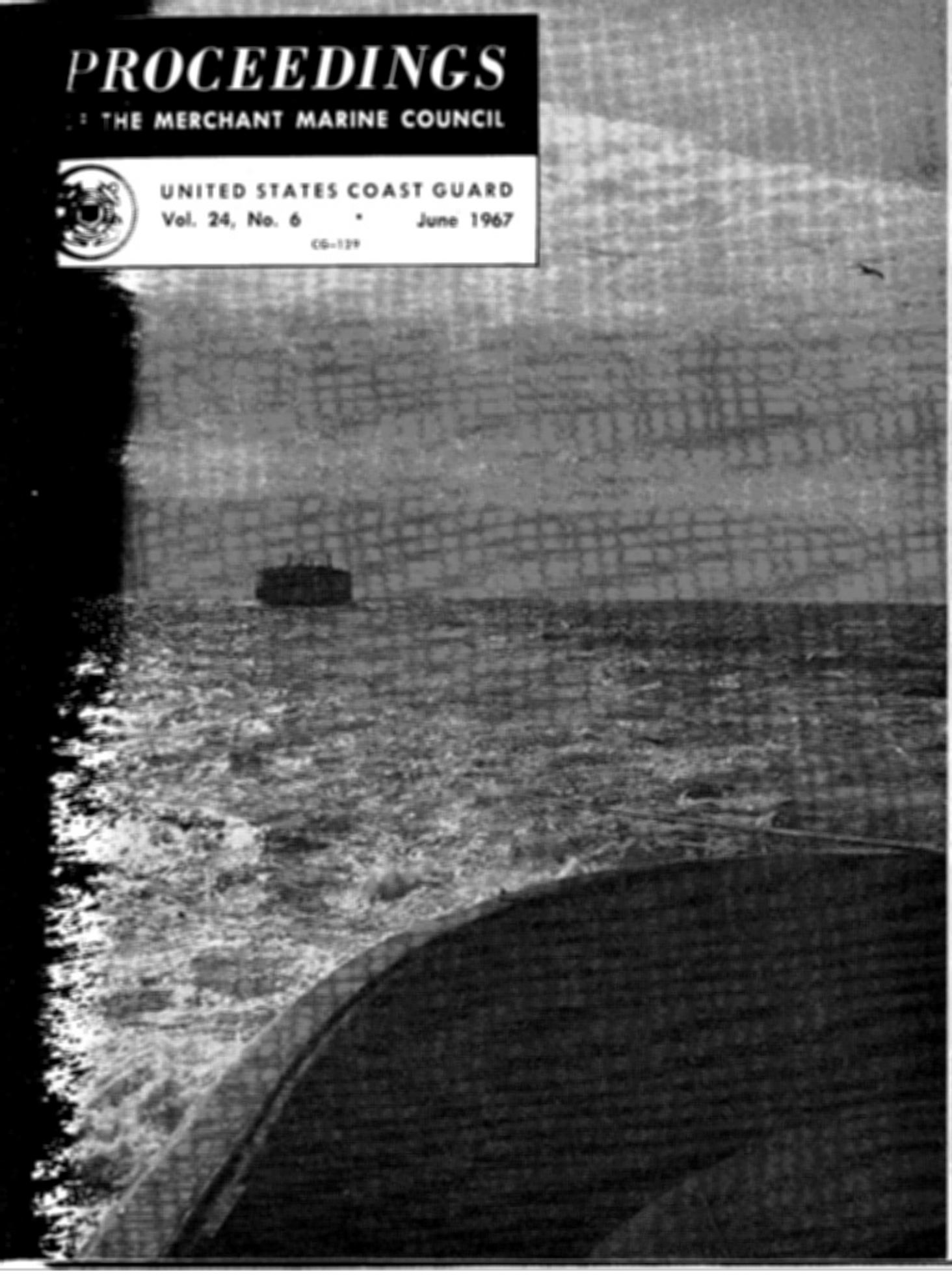

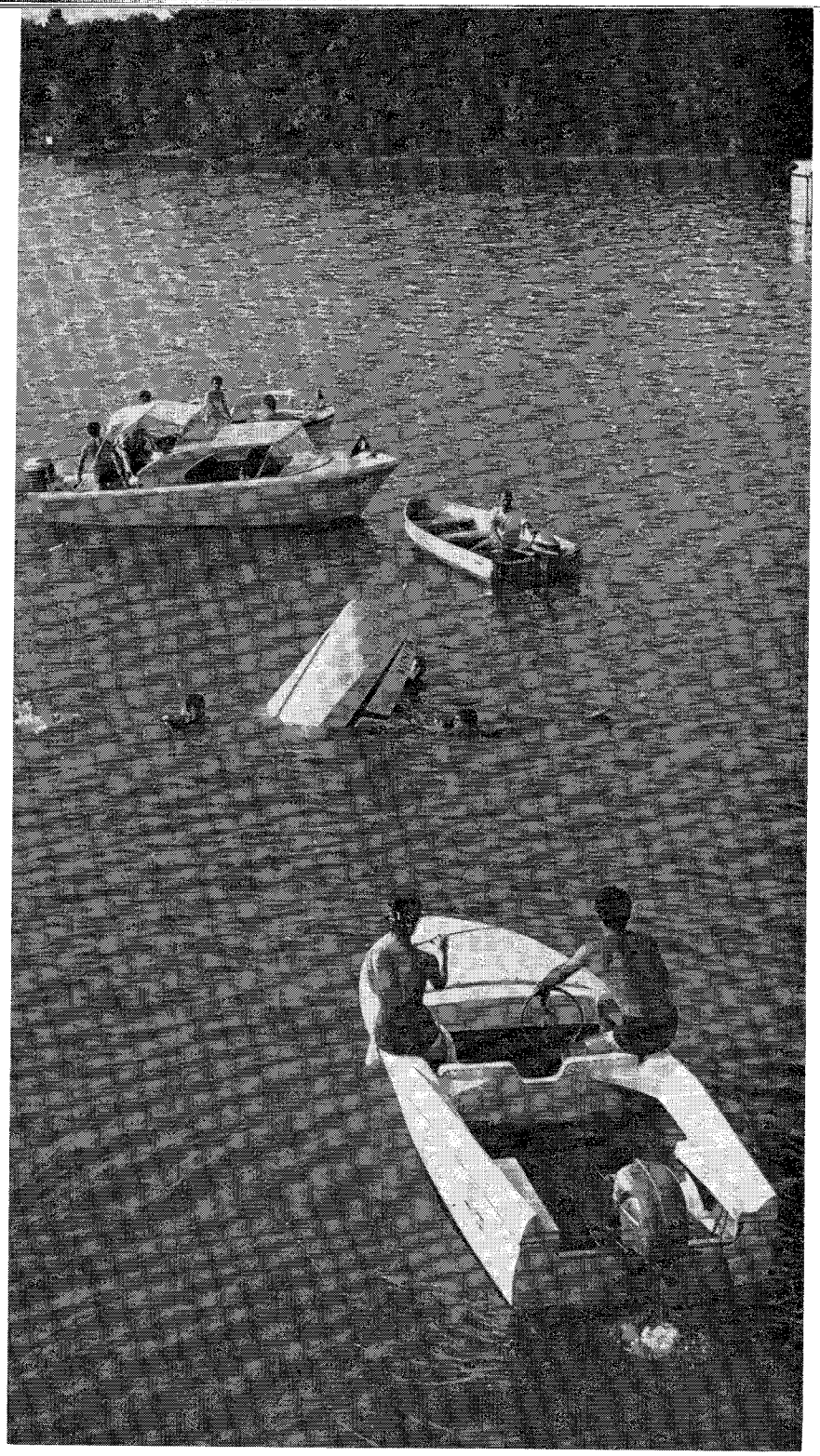

President Johnson has designated the week beginning July 2, 1967, as National Safe Boating Week.

PROCEEDINGS

OF THE

MERCHANT MARINE COUNCIL

IN THIS ISSUE . . .

TOWING SAFETY . . .

ALVA CAPE EXPLOSION . . .

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CONTENTS

DIST (SDL) NO. 84

A: a b c d e w(2); f g h i j k l m n o p q r s t u v(1)
B: n(35); c(16); e(5); f(4); gh(3); b d i k m o p q(1)
C: a b c d e f g i m n o u(1)
D: i(5); a b c d e f k l m r u v w(1)
E: d(1)
F: p(1)
List 141M
List 111

Lt. Comdr. Alvin Jones Arnett, USCG, *Editor*

T. A. DeNardo, *Assistant Editor*

Safety in Towing

Frank L. Bartak

From a Marine Section
National Safety Congress Paper

TIME COULD BE well spent reviewing what has been done on tugs in the way of safety, such as the use of nonskid paint on the decks and rails, the use of safety glass in the windows, the installation of grabrails; but probably the area that deserves the most attention is that of the towing tackle, that is, the towing pad, shackles, pendant, towline and tripline as well as one of the most important of shipboard fittings: chocks.

Towing Pad. Under our definition of "towing pad" we find many variations. Some vessels use a stem pad or clevice. Others merely drill a hole in the stem bar for the pin of the shackle. On most deep sea vessels it is nonexistent. The effectiveness of a tug is drastically reduced with a high lead of a towline or a lead from a chock on either side of the bow or stern.

Shackles. Now consider the "running" or movable parts of the towing gear. We must start off with the premise that there must be a "weak link" in the towing tackle. This must be the towline. Consequently, the shackles, pendants, chains and wire rope that are used must be of greater breaking strength than the towline itself. Since we have experienced failures in these items, let us determine what can be done to minimize them. From the standpoint of an officer on a vessel, safety demands inspection. Shackles should be inspected for evidence of wear, cracks, distortion, or the stripping of threads of the pin. A shackle should never be painted since the paint merely hides defects which would be apparent on visual inspection.

Several years ago a man suffered a severe knee injury when a shackle, between a chain pendant and a nylon towline, failed. The gear flew aboard the tug and struck him. A metallurgist examined the shackle and concluded:

1. The failure of the shackle resulted from the application of a pull on an interlocked chain link producing a maximum tensile stress on the inner surface of the arms.

2. The actual fracture occurred at a location where a ⅛-inch deep crack existed in the arm prior to failure. The fact that the surface of this crack was both rusted and partially painted indicated the prior existence of this crack.

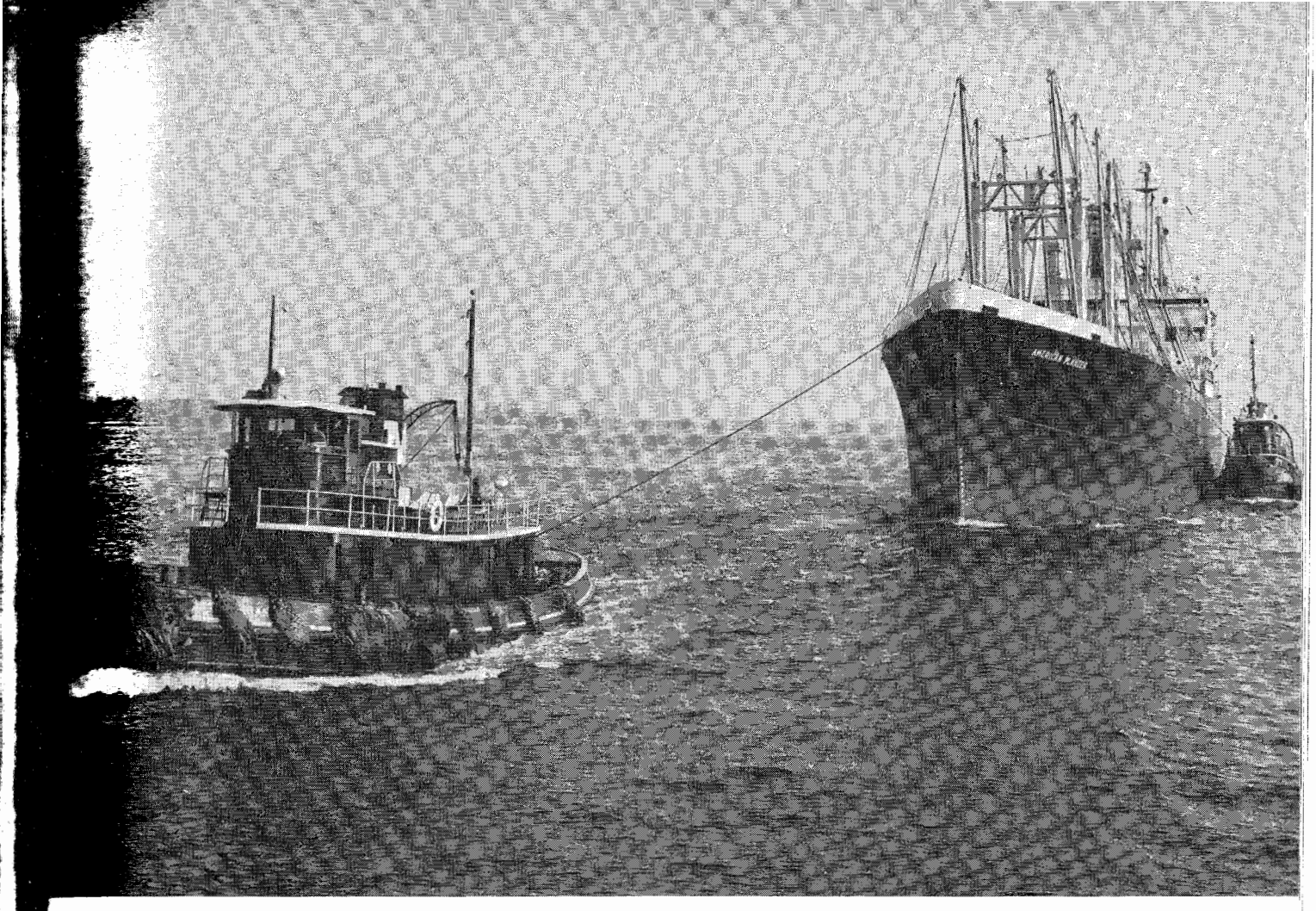
3. The crack was probably a fatigue crack produced by repeated load applications.

4. A similar type of crack existed in the other arm of the shackle approximately opposite the crack from which fracture occurred. It appears that this crack would have eventually led to a service failure had not a prior fracture of the shackle taken place.

5. The steel used for this shackle was poor quality as revealed by the serious attack during macroetching, high phosphorus content, and nonmetallics in the microstructure. The phosphorus content was appreciably in excess of that specified for shackles in Federal Specification RR–C–271.

Pendants. Wire rope pendants should be inspected for kinks, fish rooks, rust, wear and flattening of individual wires, exposed hearts (cores) of the strands or of the center of the cable.

Awhile back two men were injured when a splice of a wire pendant pulled out. A nylon towline was part of the towing tackle. The gear flew aboard the tug striking the men. The wire pendant was of 1⅜-inch galvanized plow steel 6 x 12 x 7, six strands of



12 wires with seven hemp centers. It was in good condition. However, wire rope experts arrived at the following conclusions:

1. First and foremost this wire rope was not suitable for towing. For any particular size of wire rope, the more wires per strand the more flexibility. To give this wire pendant flexibility, with its relatively heavy individual wires, it was annealed.

2. Secondly, the splice consisted of three tucks when there should have been a minimum of five tucks.

3. Thirdly, the normal maneuvering of the tug; namely, the repeated application of strain and easing off, along with the shifting of position, and the normal surging of the vessel, will tend to unlay or loosen the splice.

While splicing is getting to be a lost art among our seamen this was the only case that I can recall where a splice pulled out.

Chains, used as pendants, should be regularly inspected for wear, distortion, stretch, and surface gouging and bruises. It is worth repeating that paint may cover up a defect that might otherwise be easily discovered. Chain inspection should be made with the chain hanging free. Twists are then easily seen. All the links should be in a straight line. Any binding will also be easily detected. If any cracks are observed, the chain should be immediately taken out of service. We recommend against the use of chain where wire rope can be used, since any deficiencies of the latter are more readily apparent upon inspection.

Towline. The field of synthetic lines is still developing. We are presently using dacron and a blend of dacron and polypropylene. These

(*Continued on page 131*)

Alva Cape Explosion

The Commandant has announced his action on the M/V Alva Cape—investigation into the explosion and fire with subsequent death of John Carter, Allan B. Clegg, Lawrence B. Howland, and Chester Miller on June 28, 1966.

The findings of fact, conclusions, and recommendations of the one-man formal investigation are approved subject to the following comments.

REMARKS

The primary cause of this casualty was the lack of communication and understanding of the procedures and problems involved in inerting and controling gas hazards during the salvage operations. It was incumbent upon those persons directly in charge to comply with the requirements of the New York City Fire Department. It was also incumbent upon those persons who had particular knowledge or warning of the hazards involved to forward this information to those on board. The acceptable procedures as set forth by the National Fire Protection Association, in particular, the one requiring prior approval of the use of the inerting procedure by a marine chemist, if adhered to, in all likelihood, would have prevented this casualty.

Additionally, had a marine chemist been called and on the scene at the commencement of the inerting procedure it would have been apparent that the method and amount of inerting gas were manifestly insufficient to maintain the atmosphere within the tanks below the required lower explosive limit. The damaged hull from the collision and prior fire, the damaged condition of the deck fittings and piping, the tank bulkhead leaks, and the application of the inerting gas through open expansion trunks are some of the broad reasons why such a procedure was inadequate for the purpose intended.

Since there was an apparent violation of the New York City Fire Department Order No. 2464–6, issued June 27, 1966, and possibly other local ordinances while there was complete compliance with the U.S. Coast Guard captain of the port orders issued June 24, 1966, conclusion four is changed to read: "That there is no evidence that any Federal law or regulation relating to vessels has been violated."

Since there is evidence that some persons other than Federal employees were negligent or used poor judgment, conclusion five is changed to read: "That there is no evidence that any personnel of the Coast Guard or any other Federal agency contributed to the casualty."

In the interest of safety of life and property at sea, this casualty will be published in the PROCEEDINGS OF THE MERCHANT MARINE COUNCIL to inform those in the merchant marine and the allied marine industries of the potential hazards and problems involved in the method of inerting tanks containing flammable and explosive mixtures.

R. Y. EDWARDS,
Captain, U.S. Coast Guard
Acting Chief, Office of Merchant Marine Safety

2 March 1967

FINDINGS OF FACT

1. The British tankship MV *Alva Cape* suffered an explosion at approximately 3:43 p.m., e.d.s.t., June 28, 1966, while anchored in Gravesend Bay, New York Harbor. The initial explosion was followed by fire and further explosions, resulting in the death of four persons. Seven other persons were injured. The *Alva Cape* incurred severe damage to the forward cargo tanks. The New York City fireboat *Alfred E. Smith* incurred moderate damage to her superstructure during one of the subsequent explosions while fighting the fire. The *Alva Cape* was towed to sea and sunk on July 3, 1966.

2. Detailed vessel data deleted here.

3. Names of deceased deleted here.

4. Names of injured deleted here.

5. At the time of the casualty the wind was southeast at 4 to 6 knots and blowing over the port bow of the *Alva Cape*. The barometric pressure was 29.98, the temperature was 74° F. and the relative humidity was 58 percent. Visibility was reduced to less than 2 miles by haze. The current was flooding.

6. On June 16, 1966, the *Alva Cape* and the American tankship SS *Texaco Massachusetts,* O.N. 290306, collided in Kill Van Kull, New York Harbor. This collision is the subject of a marine board of investigation, convened on June 20, 1966, at New York, N.Y. Number 1 starboard cargo tank of the *Alva Cape* was holed, as shown by photograph, enclosure 1, extensive fire damage was sustained, and the vessel grounded. At the time of the collision the *Alva Cape* was en route Humble Oil Refinery, Bayway, N.J., from Karachi, Pakistan, with a cargo of approximately 132,854 barrels of light virgin naphtha. The flashpoint (Pensky Martens, closed cup) of the cargo was determined to be −25° F. The Reid vapor pressure at 100° F. of a cargo sample taken at Karachi, Pakistan, was determined to be 7.5 pounds. The Reid vapor pressure at 100° F. of a cargo sample taken after the casualty was determined to be 8.4 pounds. An estimated 8,000 to 9,000 barrels of naphtha was lost as a result of the collision and fire, leaving approximately 124,000 barrels aboard the vessel.

7. Other than collision damage in the way of No. 1 starboard tank there was no known structural damage to the hull or cargo tank bulkheads as a result of the initial casualty on June 16. Enclosure 2, drawn from information provided by the vessel's agents, indicates 18 minor tank bulkhead leaks known to exist prior to loading at Pakistan. Nearly all gaskets on tank, ullage hole, and butterworth covers had been destroyed by fire. Many of these covers, although closed, could not be dogged because of fire damage to dogs and hinge pins. The condition of the cargo lines in the tanks was unknown. The cargo tank branch vent lines which terminated in common vent headers on the masts were not inspected or tested after the collision. The tanks were uncoated and no sacrificial anodes were installed.

8. Following the collision, with Coast Guard and New York City Fire Department units keeping surveillance, the *Alva Cape* was lightened by discharging a portion of the cargo to a tank barge. On June 20, 1966, the vessel was refloated, towed to Gravesend Bay, and anchored in the northeast corner of Anchorage No. 49–C, approximately 162° T, 400 yards from the charted position of Fort Hamilton Southwest Buoy 20 (LLp 246), C. & G.S. Chart 540. Cargo salvage operations were conducted on the *Alva Cape* at Gravesend Bay by Merritt-Chapman & Scott Corp., 260 Madison Avenue, New York, N.Y., under the direction of Salvage Master Capt. Frederick Zickl. Employees of Tollefsen Bros., Inc., 128 Beard Street, Brooklyn, N.Y., were utilized as part of the salvage crew, under the direction of the salvage master. There were no *Alva Cape* crewmembers aboard the vessel. Coast Guard and fire department vessels continued surveillance during salvage.

9. Until June 24, 1966, discharging of cargo was accomplished by pumping over the top; i.e., placing the open end of a cargo hose into the cargo tanks through tank cleaning openings and utilizing tank barge cargo pumps to take suction. After approximately half the cargo had been discharged by this method the tank barge pumps could no longer maintain suction and lift. The captain of the port, New York, in response to a request from Navcot Corp., the vessel's agent, authorized the discharge of the remaining naphtha cargo using the installed ship's pump with steam to be supplied by a Coast Guard certificated tug. This authorization was granted subject to certain conditions as set forth in captain of the port letter of June 24 1966 to Navcot Corp., exhibit 2. The New York City Fire Department concurred with the authorization.

10. After some delays, the prescribed conditions were complied with and the discharging of cargo was resumed on the morning of June 26, 1966. The tug *Susan A.*

Moran, O.N. 240611, was moored on the port quarter of the *Alva Cape,* outboard of a wooden barge with a breadth of approximately 40 feet. The *Susan A. Moran* provided steam to the installed ship's cargo pump through a 400-pound test rubber hose leading aboard the *Alva Cape* to a manifold at the upper level of the after pumproom. Ship's piping was used from the manifold to the pump and from the pump to the individual tanks. The naphtha cargo was discharged through a cargo hose connected to an installed discharge line at the upper level of the pumproom. The tank barge receiving the cargo was moored on the port side of the *Alva Cape,* forward of the wooden barge and the *Susan A. Moran.* A pumping rate of approximately 1,500 barrels per hour was maintained using the ship's pump.

11. John T. O'Hagan, chief of the fire department, had been informed that upon completion of the discharging of cargo it was intended to move the vessel to a local shipyard for gas freeing and survey. Chief O'Hagan, after visiting the *Alva Cape* on June 26, considered it necessary to take additional precautionary measures to prevent an explosion. The Fire Department Board of Fire Prevention Regulations was convened and agreed that the vessel should be inerted. Accordingly, on the afternoon of June 27, 1966, the New York City Fire Commissioner issued an order to Navcot Corp., exhibit 5, directing that the cargo compartments of the *Alva Cape* be inerted below the lower explosive level by means of an inert gas. This order also stated in part, "Certifications of the inerting shall be obtained from a marine chemist." Upon receipt of the order Navcot Corp. directed Merritt-Chapman & Scott Corp., to cease pumping operations. This order was relayed to Captain Zickl aboard the *Alva Cape* and the pumping was stopped. Later that afternoon a fire department official contacted Merritt-Chapman & Scott Corp., and advised that it was not the intention of the order to stop pumping until the inerting was accomplished. Navcot Corp. contacted Merritt-Chapman & Scott Corp., and directed that pumping be resumed. This order was relayed to the *Alva Cape* and cargo salvage operations were resumed.

12. At about 4 p.m., June 27, 1966, Mr. Robert K. Thurman, assistant operations manager, salvage division, Merritt-Chapman & Scott Corp., directed Mr. Thomas Tracy, purchasing agent, to place an order for 10 bottles of carbon dioxide and two hose and nozzle assemblies. Mr. Tracy placed the order for this equipment at approxi-

ing Chester Miller, a Merritt-Chapman & Scott employee, in charge. John J. Frain, John Carter, Herman Thomas, Edward Tjolsen, Richard Devine, and Giuseppe Pesce, all Tollefsen employees, were working on the inerting operation with Miller. Lawrence B. Howland, a crewmember of the *Vincent C. Turecamo,* was standing close by watching the operation. Allen B. Clegg, a cargo surveyor, Albert R. Lee & Co., Inc., 90 John Street, New York, N.Y., was also in the general vicinity, on the starboard side of the foredeck. Haakon Bentzen, Z–1168431, tankerman, employed by Tollefsen Bros., Inc., and Buckley were aft of the midships deckhouse at No. 6 tank.

20. The hose and nozzle assembly was connected to a full CO_2 bottle at No. 2 center tank. The CO_2 bottle was held upright, resting on deck. Thomas was standing close to and facing the ullage hole, observing his watch to time the amount of discharge. It was intended to discharge CO_2 for a period of 80 seconds. There were no noticeable odors or fumes from the tank when the ullage hole cover was removed. Devine inserted the nozzle into the ullage hole in the expansion trunk cover. It could not be determined definitely if the nozzle was in contact with the rim of the ullage hole. Testimony indicated that Devine was believed to be holding the nozzle with one hand in an approximately vertical position completely inside the tank. He opened the valve at the nozzle and then Miller opened the valve on the bottle manifold and CO_2 commenced discharging into the tank. After about 10–20 seconds of discharging, without any warning, an explosion occurred. The explosion was described by John J. Frain as sounding similar to a roar of a jet engine. There was a large amount of heavy black smoke and a tremendous pressure was experienced.

21. Frain had been standing about 3–5 feet from the expansion trunk and had started to back away as the CO_2 commenced discharging. The force of the explosion threw him about 5 feet in a direction away from the expansion trunk. He recalled being hit by flying debris. His left arm was broken, he had severe burns on his left forearm, minor burns on his nose and in his ears, and also had numerous cuts inside his mouth. When he rose from the deck he saw Chester Miller and Lawrence Howland lying nearby. They both appeared to be dead. He found Richard Devine not far away on the deck near No. 2 port tank, unconscious. Frain was able to partially revive Devine and assisted him aft to the port side just forward of the midships deckhouse. Pesce, Tjolsen and Thomas, also injured, had already managed to come aft to that location unassisted. Frain then returned to the scene of the explosion and found John Carter. He was unable to revive him and so dragged Carter aft about halfway toward the others. A pipe along the deck prevented him from dragging Carter further. Frain was unable to lift Carter and so had to leave him and returned to the others. Alan Clegg was not seen by anyone at this time. According to Frain, there were no flames in the vicinity of No. 2 center expansion trunk after the explosion and the deck in this area was not unbearably hot.

22. At the time of the first explosion Captain Zickl was on the port side at the midships deckhouse, walking aft. As soon as the explosion occurred, he, together with Bentzen and Buckley, headed for the ladder near No. 5 port tank and climbed down to the *Vincent C. Turecamo.* The barge captain, Kristian Briseid, Z–761443–D1, and Bentzen went back aboard the *Alva Cape* and found Pesce coming aft from the deckhouse apparently in shock. They escorted him from the ship to the tank barge. Briseid went forward on the tank barge to assist Captain Zickl and others who were raising a wooden ladder against the port side of the *Alva Cape* forward of the deckhouse where Frain, Thomas, Tjolsen, and Devine were located. As the ladder was put in place, a second explosion occurred and the men on the deck of the *Alva Cape* could no longer be seen through the smoke. Captain Zickl and the other men on the tank barge all boarded the *Lester Gillen.* The *Gillen* proceeded to the *Chapman,* offloaded some of the men and returned near the *Alva Cape.*

23. The fireboat *Alfred E. Smith* got under way from its position aft of the wooden barge immediately after the first explosion and proceeded forward along the port side of the *Alva Cape* and around the bow to the starboard side. Flames and smoke were emitting from the collision hole in the starboard side of No. 1 tank. The *Smith* took a position near this hole and fought the fire with foam and water. A second explosion then occurred which blew nearly all the firemen on the deck of the *Smith* off their feet and the fire and smoke around the collision hole increased in intensity. The *Smith* continued fighting the fire at this position until a third explosion occurred. This third explosion, apparently stronger than the first two, also blew out through the collision hole and damaged the fireboat. A few small sections of plating of the *Alva Cape* were blown aboard the *Smith,* damaging a utility boat and davit and much of the firefighting equipment.

Lt. Louis J. Rubino, firefighting officer aboard the *Smith,* was blown into the water. A ring buoy was thrown to him from the fireboat and he stayed afloat without difficulty until picked up by *CG–40451* shortly thereafter. A fourth explosion occurred at about 4 p.m.

24. The *Smith,* with its firefighting equipment damaged, went back to the port side of the *Alva Cape* and rescued Thomas and Tjolsen from the deck of the *Vincent C. Turecamo.* These two men, both with serious injuries, slid down the wooden ladder from the *Alva Cape* to the tank barge. John Frain and John Carter apparently also escaped from the deck of the *Alva Cape* in the same fashion. Frain was taken from the tank barge by the *CG–40451* to the CGC *Tuckahoe* nearby, CG Helicopter 1353 transported him from the *Tuckahoe* to the U.S. Public Health Service Hospital, Staten Island, N.Y. Carter was taken from the tank barge by police launch No. 6 and delivered to an ambulance ashore. Richard Devine was found on the deck of the *Alva Cape* by the first fire and police personnel boarding the vessel after the explosions and was taken to an ambulance ashore.

25. Immediately after the first explosion the *Susan Moran* had disconnected the hose providing steam to the aft pump room of the *Alva Cape* and circled the vessel searching for men in the water. Additional Coast Guard, fire department, and police department units arrived and participated in firefighting operations and the search of the surrounding waters. The *CG–40466* came alongside and towed the wooden barge away at about 4:25 p.m. The fire on the *Alva Cape* was brought under control at about 4:30 p.m. and firemen boarded the vessel. Water was used to cool the forward deck of the *Alva Cape* and then foam was introduced into all forward tanks.

26. Three unidentified bodies were removed from the *Alva Cape* by fire and police personnel. (Names deleted here).

27. (Names of other deceased deleted here).

28. Richard Devine, Herman Thomas, and Edward Tjolsen were hospitalized and not available as witnesses during the investigation. Thomas and Tjolsen were informally interviewed in the hospital by the investigating officer. Their recollections, although sketchy, basically substantiated John Frain's testimony as to what took place just prior to the explosion. Devine was in serious condition for an extended period of time and could not be interviewed.

29. No examination was made of the *Alva Cape* following the explosions and fire on June 28. All parties concerned strongly recommended that no persons go on board the vessel unless absolutely necessary. Photographs taken by the New York fire department soon after the fire was extinguished on June 28, information from fire department officials aboard the vessel immediately after the fire, and the testimony of various witnesses, indicate that all explosions occurred in tanks No. 1 port, No. 1 and 2 center, or in No. 1 starboard. There was considerable damage to bulkheads between these tanks. Tank tops in this area were severely buckled. There was a considerable amount of additional damage incurred in the area of the collision hole. The forward pumproom was not damaged.

30. The *Alva Cape* was removed from New York Harbor on July 2, 1966, by the tug *Terry Moran.* At the request of the owners, the vessel was sunk on July 3, 1966, in 1,200 fathoms of water, position 38°55′ N., 72°20.1′ W., by gunfire from the CGC *Spencer* (WPG 36).

CONCLUSIONS

1. That the cause of the casualty was the ignition of an explosive mixture of naphtha vapors in No. 2 center tank. The probable source of ignition of the first explosion was static electricity generated by the carbon dioxide being discharged into No. 2 center tank. The force of the explosion ruptured the bulkhead between No. 2 center and No. 1 starboard tanks with a resulting fire at the collision hole where an adequate supply of oxygen was available.

2. That the subsequent explosions were caused by the heating of naphtha vapors in the adjacent cargo tanks, No. 1 port and No. 1 center.

3. That no person on board the MV *Alva Cape* was serving under the authority of licenses or documents issued by the Coast Guard.

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

5. That there is no evidence that any personnel of the Coast Guard or any other government agency or any other person contributed to the casualty.

6. That the recommended inerting procedures as set forth in the National Fire Protection Association publication relating to control of gas hazards on vessels to be repaired (NFPA No. 306, par. 3221) were not adhered to in that a marine chemist did not approve or supervise this inerting procedure. ⚓

COMPUTER PROGRAMS AVAILABLE

The Merchant Marine Technical Division at Coast Guard Headquarters, Washington, D.C., has developed a series of computer programs which have been tested and used successfully by the Coast Guard. The programs as listed below are available to interested parties. It should be understood that the Coast Guard makes no representations as to the correctness of these programs or that use of these programs will satisfy the requirements of laws and regulations governing the acceptability of vessel plans and specifications. Programs may be obtained at a cost of $5 each by writing Commandant (MMT), U.S. Coast Guard, Washington, D.C. 20591. Checks and money orders should be made payable to the U.S. Coast Guard.

Program Number	*Title and Description of Program*	*Dated*
MMTO2	Hydrostatic curves of form for fair hull forms	11–8–66

Given station half-breadths at evenly spaced waterlines, the program calculates over a series of drafts the values used in plotting the displacement, bonjean, and other curves, and the form coefficients. Vertical and horizontal integration is performed using Simpson's rule.

MMTO3	Hydrostatic curves of form for hard chine vessels	1–5–67

The program, ideally suited for vessels whose body plan contains straight segments, points of inflection and points of discontinuity, calculates the displacement, bonjean, and other curves, using Simpson's rule for longitudinal integration. Stations are defined as line segments between points of discontinuity.

MMTO4	Floodable lengths	11–1–65

Given the bonjean areas at the subdivision loadline and various trimlines, the program calculates floodable lengths and compartment midpoints. The routine interpolates to find the end point.

MMTO7	Barge saddle reactions in grounded conditions	12–15–66

The program calculates total moments, tank moments, and saddle reactions for independent tank barges in a grounded condition, where the tanks contribute to the barge hull strength. The bending moment at each saddle location is proportioned between the tanks and the barge by the stiffness ratio. The tank is then analyzed as a simple beam to find the reactions. Using the reactions on the barge, the bending moment is recalculated at each saddle location, reproportioned by the stiffness ratio, and new reactions are calculated. The program converges to a solution.

MMT11	Short circuit analysis	3–1–67

The short circuit analysis computes available fault currents at five locations in a shipboard electrical system. The results are used to determine the size and strength requirements of circuit breakers and bus work in the system. The five locations examined are the main switchboard, the emergency switchboard, up to 10 various power panels, the load side of a main transformer—usually a 120-volt system, and the load side of a transformer on the emergency system. Calculations are based on the General Electric Technical Publication GET1470D "Short Circuit Currents in Low and Medium A.C. Power Systems."

MMT15	Thermal stress in ships	11–17–66

The program uses a theoretical method for computing temperature-induced stresses in a nonhomogeneous or homogeneous beam of uniform cross section for any temperature distribution over the cross section. It is assumed that all cross sections have the same temperature distribution. The theory and output format follow DTMB Report 937, by Dr. Norman H. Jasper. ⚓

AMENDMENTS TO REGULATIONS

Title 46 Changes

Safety Standards Disclosure Required for Passenger Vessels Effective May 6, 1967

Public Law 89–777, approved November 6, 1966, requires under certain conditions the disclosure of safety standards of foreign and U.S.-flag passenger vessels that are 100 gross tons or over having berth or stateroom accommodations for 50 or more passengers. These regulations implement section 362 of Title 46, U.S. Code, and are also effective May 6, 1967.

A notice of proposed rule making setting forth the proposed regulations on disclosure of safety standards of passenger vessels and the announcement of a public hearing by the Merchant Marine Council were published in the FEDERAL REGISTER of February 22, 1967 (32 F.R. 3153–3155). The written comments submitted at or prior to the public hearing and the oral comments made at the Merchant Marine Council Public Hearing held March 20, 1967, were considered. A number of comments submitted were not responsive to the proposals, but in effect objected to the new statutory requirements. Other comments raised hypothetical questions with respect to application or administration of the law and implementing regulations.

Application. The amendments to 46 CFR 70.05–1 and 70.05–3 in the Federal Register of April 25, 1967, clarify the application of the passenger vessel regulations with respect to the addition of 46 CFR Part 80. These changes are based on the description in 46 CFR 80.05–1 and 80.05–3.

Safety information. It is the intent of the regulations in 46 CFR Part 80 to inform what needs to be done

without obtaining prior approval or clearance from the Coast Guard. In response to comments received, changes were made in 46 CFR 80.10–1, 80.10–10, 80.10–15, and 80.10–20. The important change was to provide in § 80.10–15 for a short safety information statement for those U.S.-flag vessels built subsequent to May 26, 1936.

Promotional literature or advertising. A number of comments recommended that the phrase "promotional literature or advertising" be considered in the alternative rather than an all inclusive descriptive term. These comments were not accepted. The term "promotional literature or advertising" is deemed to be an all inclusive description.

Details of information printed or spoken. The intent of the regulations is to have the safety information when printed, to be readable, easily identified and readily recognized. The safety information in a television broadcast shall be spoken regardless of whether or not it is made available as a part of the picture transmitted. The printing of safety information statements in certain types of promotional literature or advertising is covered in a new paragraph designated 46 CFR 80.10–20(e).

Civil penalties. The provisions of section 362 of Title 46, U.S. Code, provide for civil penalties to be applied when violations of the law and regulations in 46 CFR Part 80 may occur. The navigation and shipping laws have provided for the assessment, mitigation, or remission of civil penalties in cases of alleged violations. The regulations describing the procedures are set forth in 46 CFR 2.50 and the same procedures will be utilized in the enforcement of the regulations in this document. If a person, organization, or company objects to the Coast Guard's findings of a violation of law or regulations and the assessment of a civil penalty by the Coast Guard and refuses to pay the civil penalty assessed, then the matter is referred to the Department of Justice for appropriate action. If the penalty is not paid, the case may be tried in the U.S. District Court having jurisdiction in a civil trial de novo. A reference to these procedures has been added to 46 CFR 80.20–1.

A. The vessel inspection regulations in 46 CFR Chapter I shall be amended in accordance with the changes and additions in the Federal Register of April 25, 1967.

B. The regulations in this Federal Register shall be effective on and after May 6, 1967.

C. On and after November 2, 1968, the safety information based on § 80.10–10 shall show whether or not the particular passenger vessel meets the 1966 fire safety requirements.

D. Promotional literature or advertising printed, filmed, or electronically recorded prior to May 6, 1967, or contracted for prior to that date, may be used without the safety information required by 46 CFR Part 80 until January 31, 1968.

E. All promotional literature or advertising printed, filmed, or electronically recorded and disclosed or utilized after January 31, 1968, shall contain the safety information required for the specific passenger vessel by 46 CFR Part 80.

The new regulations read as follows:

Subpart 70.05—Application

Section 70.05–1 is amended by adding a paragraph (b) reading as follows:

§ 70.05–1 U.S.-flag vessels subject to the requirements of this subchapter.

* * * * *

(b) The requirements for notification of safety standards to prospective passengers apply to every domestic passenger vessel of 100 gross tons or over having berth or stateroom accommodations for 50 or more passengers as set forth in Part 80 of this subchapter. The requirements for safety information in promotional literature or advertising apply to such passenger vessels only on international ocean voyages and U.S. domestic ocean voyages.

Section 70.05–3 is amended by revising the introductory text of paragraph (a), but not Table 70.05–1(a) and the subparagraphs thereunder, the introductory text of paragraph (b), but not the subparagraphs thereunder, and by adding a new paragraph (d), which read as follows:

§ 70.05–3 Foreign Vessels Subject to the Requirements of This Subchapter.

(a) Except as specifically noted in paragraph (b) of this section, Parts 70 to 78, inclusive, of this subchapter shall be applicable to the extent prescribed by law to all foreign vessels of the following classifications indicated in column 4 of Table 70.05–1(a) that are 100 gross tons or over.

* * * * *

(b) The provisions of Parts 70 to 78, inclusive, of this subchapter shall not be applicable to those foreign vessels covered by paragraph (a) of this section which are:

* * * * *

(d) The provisions of Part 80 of this subchapter regarding disclosure of safety standards shall apply to foreign passenger vessels of 100 gross tons or over having berth or stateroom accommodations for 50 or more passengers, as well as to the owners, operators, agents, or any persons involved in offering passage or soliciting passengers or selling passage on such vessels, when such vessels embark passengers at U.S. ports; or for such vessels on international ocean voyages anywhere in the world for which any offers of passage or soliciting of passengers is made by or through promotional literature or advertising in or over any medium of communication within the United States.

Subpart 80.01—Authority and Purpose

§ 80.01–1 Purpose.

(a) The purpose of the regulations in this part is to require the disclosure of safety standards of passen-

ger vessels and to specify the manner in which the disclosure shall be made.

§ 80.01–5 Authority.

(a) The regulations in this part regarding disclosure of safety standards of passenger vessels interpret or apply section 362 of 46 U.S. Code (R.S. 4400, as amended).

Subpart 80.05—Application

§ 80.05–1 Passenger Vessels Embarking Passengers at U.S. Ports.

(a) The regulations in this part apply to passenger vessels of 100 gross tons or over having berth or stateroom accommodations for 50 or more passengers and embarking passengers in:

(1) The United States;

(2) The Commonwealth of Puerto Rico;

(3) The Virgin Islands; or,

(4) Guam; and;

On one or more of the following type voyages:

(i) International voyages;

(ii) U.S. domestic ocean voyages;

(iii) Voyages on the Great Lakes; or

(iv) Coastwise voyages, including those voyages conducted solely on U.S. inland waters.

§ 80.05–3 Promotional literature or advertising.

(a) All promotional literature or advertising in or over any medium of communication within the United States offering passage or soliciting passengers for international ocean voyages anywhere in the world and for U.S. domestic ocean voyages shall comply with regulations in this part.

§ 80.05–10 Companies, organizations, and persons.

(a) Owners, operators, or agents of passenger vessels subject to this part, or persons offering or selling passage on either a foreign or U.S.-flag passenger vessel shall be governed by applicable regulations in this part.

Subpart 80.10—Disclosure of Passenger Vessel Information

§ 80.10–1 General.

(a) All information required by this subpart or furnished voluntarily by or in any means of communication shall be accurate and factual. Owners and operators of passenger vessels subject to this part shall furnish the required information to agents or persons offering or selling passage on foreign or U.S. passenger vessels subject to this part.

(b) Agents or persons offering or selling passage by or through any medium shall be deemed to have complied with this section if they repeat the information furnished them by the owner or operator of the vessel on which they offer or sell passage.

§ 80.10–3 Notification of safety to prospective passengers.

(a) Every prospective passenger shall be given a notification of safety for the passenger vessel on which such person desires to sail which will inform him of the safety standards which the vessel does or does not meet. This information shall be furnished by the owner, operator, or agent selling passage on the vessel and shall include all the information required by § 80.10–10 or § 80.10–15 as appropriate and shall be furnished in writing to each prospective passenger at or prior to his purchase of passage.

(b) This notification of safety shall be furnished separately from any promotional literature or advertising used.

§ 80.10–5 Promotional literature or advertising information requirements for international ocean voyages and U.S. domestic ocean voyages.

(a) All promotional literature or advertising in or over any medium of communication offering passage on/or soliciting passengers for specific vessels, voyages or cruises on international ocean voyages and U.S. domestic ocean voyages shall include all the information required by this part.

NOTE: This requirement shall be applicable on and after May 6, 1967; however, all promotional literature or advertising printed, filmed or electronically recorded prior to May 6, 1967, or contracted for prior to that date, may be utilized until January 31, 1968.

§ 80.10–10 Safety information requirements for passenger vessels other than U.S. passenger vessels engaged on voyages on U.S. domestic inland and Great Lakes voyages.

(a) Information required for notification to a prospective passenger and for promotional literature or advertising in or over any medium of communication shall be as set forth in this paragraph. Select appropriate parenthetical word, phrase or date which accurately describes the vessel. Wording in brackets may be used but will not be required until November 2, 1968.

(1) For vessels meeting 1948 or 1960 International Convention for the Safety of Life at Sea (SOLAS) standards for new vessels:

SAFETY INFORMATION

The_____registered in
(Name)
_____meets International
(Country)
Safety Standards for new ships developed in_____ [(and meets)
(1948) (1960)
(but does not meet) the 1966 fire safety requirements].

(2) For vessels in which the hull, decks and deckhouses (except isolated deckhouses containing no accommodations) are of steel or aluminum and which substantially comply with all other safety standards of the 1948 or 1960 SOLAS Convention for new vessels:

SAFETY INFORMATION

The_____registered in
(Name)
_____substantially meets
(Country)
International Safety Standards for new ships developed in_____[(and
(1948) (1960)
meets) (but does not meet) the 1966 fire safety requirements].

(3) For vessels not included in subparagraphs (1) and (2) of this paragraph:

The_____registered in
(Name)
_____ (meets Interna-
(Country)
tional Standards for new ships developed in 1929) (does not meet any International Safety Standards developed as a result of an International Convention). Vessel's

hull is of (combustible) (incombustible) material. Vessel's decks are of (combustible) (incombustible) material. Vessel's deckhouses are of (combustible) (incombustible) material. Vessel's structural bulkheads are of (combustible) (incombustible) material. Internal partitions are of (combustible) (incombustible) (both combustible and incombustible) materials. An automatic sprinkler system (is) (is not) fitted in passenger living and public spaces. [The vessel (meets) (does not meet) the 1966 fire safety requirements.]

(b) Additional factual information regarding a passenger vessel's safety may be added separately from the required information.

(c) Descriptive information as to hull structure and partitions of identical materials may be consolidated.

§ 80.10–15 Safety information requirements for U.S. passenger vessels engaged on U.S. domestic inland and Great Lakes voyages.

(a) Information required for notification to a prospective passenger shall be as set forth in this paragraph. Select appropriate parenthetical word, phrase, or date which accurately describes the vessel.

(1) For vessels built on or after May 26, 1936:

SAFETY INFORMATION

The _____ meets U.S. Coast Guard
(Name)
standards for vessels built in _____.
(Year)

(2) For vessels built prior to May 26, 1936:

SAFETY INFORMATION

The _____ meets U.S.
(Name)
Coast Guard standards for a vessel built to _____ regulations for inland waters.
(Year)
Vessel's decks are of (combustible) (incombustible) materials. Vessel's deckhouses are of (combustible) (incombustible) materials. Vessel's structural bulkheads are of (combustible) (incombustible) materials. Internal partitions are of (combustible) (incombustible) (both combustible and incombustible) materials. An automatic sprinkler system (is) (is not) fitted in passenger living and public spaces.

(b) Additional factual information regarding a passenger vessel's safety may be added separately from the required information providing it is not misleading to a prospective passenger.

(c) Descriptive information as to hull structure and partitions of identical materials may be consolidated.

§ 80.10–20 Details of information required to be printed or spoken.

(a) The information concerning any passenger vessel required by this section on all printed promotional literature or advertising, including notifications, shall be in the same wording and format as set forth in § 80.10–10 or § 80.10–15, as applicable.

(1) The word "text" as used in this section means any portion of the printed matter, including any heading, wherein voyage or vessel description is made.

(b) Information disclosed on any type of electronic communications shall be spoken in the same wording and format as required by the applicable § 80.10–10.

(c) The wording and format in printed media, as required by the applicable § 80.10–10 or § 80.10–15, shall meet the following minimum requirements:

(1) The safety information statement shall be in at least the same size type as the body of text but in no event smaller than 6 point American point system.

(2) The heading "Safety Information" shall be in all caps, bold face type of a size at least as large as that used in the statement itself.

(3) The safety information heading and text shall be separated from other portions of advertisement, promotional literature, notifications, etc. by at least a double spacing or a box ruling.

(d) In promotional literature or advertising listing 2 or more passenger vessels, the safety information may be varied from that required by § 80.10–10 for each vessel to eliminate unnecessary repetition, so long as it is clear what standards each vessel meets. This may be done by inserting in the list of vessels appropriate footnote or asterisk reference after each vessel and in the safety information text have corresponding information which will be easily understood.

(e) In the brochures, pamphlets, schedules, etc., it is only necessary that the safety information for each vessel named therein be given once in each publication. Appropriate references shall be made as to where the safety information statement may be found for each vessel. For example, in a book or pamphlet the safety information statements for all vessels named therein may be printed on one page and the table of contents and notes throughout the text where the vessels are named may refer to such page and thereby eliminate repeating the safety information statement for each vessel on each and every page; or if the reference to safety information statements for all passenger vessels is noted prominently on the cover as to the page or place on which printed therein, the reference or notes about safety information with each vessel named may be omitted.

Subpart 80.20—Penalties

§ 80.20–1 Civil penalty assessed.

(a) For each violation of regulations in this part, the owner, operator, agent, or other person involved shall be subject to a civil penalty of not more than $10,000 for which the vessel on which passage is to be sold shall be liable. If tickets are sold, the owner, operator, agent, or any other person involved in each violation of regulations in this part shall also be subject to a civil penalty of $500 for each ticket sold for which the vessel on which passage is sold shall be liable.

(b) Procedures for assessment, mitigation, or remission of civil penalties in Subpart 2.50 in Part 2 of Subchapter A (Procedures Applicable to the Public) of this chapter will be followed in handling violations of regulations in this part.

(Federal Register of Apr. 25, 1967)

hull is of (combustible) (incombustible) material. Vessel's decks are of (combustible) (incombustible) material. Vessel's deckhouses are of (combustible) (incombustible) material. Vessel's structural bulkheads are of (combustible) (incombustible) material. Internal partitions are of (combustible) (incombustible) (both combustible and incombustible) materials. An automatic sprinkler system (is) (is not) fitted in passenger living and public spaces. [The vessel (meets) (does not meet) the 1966 fire safety requirements.]

(b) Additional factual information regarding a passenger vessel's safety may be added separately from the required information.

(c) Descriptive information as to hull structure and partitions of identical materials may be consolidated.

§ 80.10–15 Safety information requirements for U.S. passenger vessels engaged on U.S. domestic inland and Great Lakes voyages.

(a) Information required for notification to a prospective passenger shall be as set forth in this paragraph. Select appropriate parenthetical word, phrase, or date which accurately describes the vessel.

(1) For vessels built on or after May 26, 1936:

SAFETY INFORMATION

The _____ meets U.S. Coast Guard
(Name)
standards for vessels built in _____.
(Year)

(2) For vessels built prior to May 26, 1936:

SAFETY INFORMATION

The _____ meets U.S.
(Name)
Coast Guard standards for a vessel built to _____ regulations for inland waters.
(Year)
Vessel's decks are of (combustible) (incombustible) materials. Vessel's deckhouses are of (combustible) (incombustible) materials. Vessel's structural bulkheads are of (combustible) (incombustible) materials. Internal partitions are of (combustible) (incombustible) (both combustible and incombustible) materials. An automatic sprinkler system (is) (is not) fitted in passenger living and public spaces.

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(3) The safety information heading and text shall be separated from other portions of advertisement, promotional literature, notifications, etc. by at least a double spacing or a box ruling.

(d) In promotional literature or advertising listing 2 or more passenger vessels, the safety information may be varied from that required by § 80.10–10 for each vessel to eliminate unnecessary repetition, so long as it is clear what standards each vessel meets. This may be done by inserting in the list of vessels appropriate footnote or asterisk reference after each vessel and in the safety information text have corresponding information which will be easily understood.

(e) In the brochures, pamphlets, schedules, etc., it is only necessary that the safety information for each vessel named therein be given once in each publication. Appropriate references shall be made as to where the safety information statement may be found for each vessel. For example, in a book or pamphlet the safety information statements for all vessels named therein may be printed on one page and the table of contents and notes throughout the text where the vessels are named may refer to such page and thereby eliminate repeating the safety information statement for each vessel on each and every page; or if the reference to safety information statements for all passenger vessels is noted prominently on the cover as to the page or place on which printed therein, the reference or notes about safety information with each vessel named may be omitted.

Subpart 80.20—Penalties

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(a) For each violation of regulations in this part, the owner, operator, agent, or other person involved shall be subject to a civil penalty of not more than $10,000 for which the vessel on which passage is to be sold shall be liable. If tickets are sold, the owner, operator, agent, or any other person involved in each violation of regulations in this part shall also be subject to a civil penalty of $500 for each ticket sold for which the vessel on which passage is sold shall be liable.

(b) Procedures for assessment, mitigation, or remission of civil penalties in Subpart 2.50 in Part 2 of Subchapter A (Procedures Applicable to the Public) of this chapter will be followed in handling violations of regulations in this part.

(Federal Register of Apr. 25, 1967)

Plastic Foam Life Preserver Specifications Changed

In January 1966, the Coast Guard's attention was directed at a problem of donning certain vinyl dip coated plastic foam life preservers which lost a considerable amount of flexibility after exposure to temperatures below 28° F. This loss in flexibility could prevent a person from stretching the head opening wide enough to don these life preservers. Upon notification, the manufacturers accepted suspension of the outstanding certificates of approval bearing Approval Nos. 160.055/1/0 through 160.055/29/0. The Coast Guard's actions suspending these approvals are reaffirmed and all these certificates of approval are terminated.

By a Notice to Mariners, instructions were directed to all vessels on routes where the air temperatures would be below 28° F. that have on board unicellular plastic foam life preservers bearing Approval Nos. 160.055/1/0 through 160.055/29/0, urging that such approved life preservers should be checked for donning at these low temperatures. It was recommended that such life preservers be stowed inside the vessel or transferred to other vessels on routes with warmer air temperatures.

Because certain vinyl dip coated unicellular plastic foam life preservers lost their flexibility at temperatures below 28° F. so that it is not possible to stretch the head opening wide enough to don such life preservers, it has been deemed necessary that such life preservers bearing Approval Nos. 160.055/1/0, 160.055/2/0, 160.055/5/0, 160.055/6/0, 160.055/7/0, 160.055/8/0, 160.055/11/1, 160.055/12/1, 160.055/20/1, 160.055/21/1, 160.055/22/0, 160.055/28/0, and 160.055/29/0 be removed from all vessels, including motorboats, and the Coast Guard approval markings thereon be obliterated so that such life preservers may not be carried as a lifesaving appliance meeting the requirements in any inspection law or the Motorboat Act of 1940, as amended, and implementing regulations in 46 CFR Chapter I. It is urged that such life preservers be replaced as soon as possible. Effective November 1, 1967, such life preservers shall not be carried on board any vessel or motorboat as approved equipment. The certificates of approval issued to manufacturers of such life preservers, suspended by letters dated January 25, 1966, are also withdrawn. Any life preservers bearing such approval numbers and in good and serviceable condition may be used on board vessels and motorboats only until October 31, 1967. Any person aggrieved by this withdrawal of approval and removal of such life preservers from use as approved equipment on vessels and motorboats may appeal to the Commandant (CMC), U.S. Coast Guard, Washington, D.C. 20591, in writing within 30 days after publication of this document in the FEDERAL REGISTER of April 4, 1967. Such an appeal shall set forth the reasons why this decision or action should be set aside or revised.

The specification designated 46 CFR Subpart 160.055, consisting of §§ 160.055–1 to 160.055–9, inclusive, have been revised. The Type I Standard, Models 61 and 65, unicellular plastic foam life preservers was discontinued. The design for the vinyl dip coated unicellular plastic foam life preservers has been revised. A new model unicellular plastic foam life preserver has been developed which utilizes a cloth covering. These two new standard designs are identified as Type IA Standard, Models 62 and 66, for the vinyl dip coated plastic foam life preservers, and Type IB Standard, Models 63 and 67, for the cloth covered plastic foam life preservers. The new standard designs permit cold weather donning, with one motion accomplishing the securing and adjusting. Further the new designs include the stowage characteristics desired by operators of ferry and excursion steamers. The preliminary draft of this specification was given to those persons and companies who had expressed an interest in this subject. They were requested to check the proposed specification from a production standpoint and to comment thereon.

Changes in 46 CFR 160.055–1 to 160.055–5, inclusive, have been made. Briefly, these changes include revising and bringing up to date referenced specifications, standards, and plans; a revised design providing for the splitting of the front of the bib into two legs, and a squaring of the outer border around the neck hole from the previous circular outer edge; and a revised body strap arrangement, which limits the distance of separation of the bib legs while donning but still providing full reversibility. The marking provisions in 46 CFR 160.055–8 were modified to show the various standard types of these life preservers, as well as to require the marking to show that it is "Approved for use on all vessels and motorboats."

STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from April 1, to April 28, 1967, 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

Uniroyal Chemical Inc., Elm Street, Naugatuck, Conn. 06770: Certificate No. 642, dated April 21, 1967, HYDRAZINE (solutions).

AFFIDAVITS

The following affidavits were accepted and canceled during the period from March 15, 1967, to April 15, 1967:

California Controls Co., 2212 Sixth Street, Berkeley, Calif. 94710, VALVES.

J. P. Ward Foundries, Inc., Blossburg, Pa. 16912, FITTINGS.

CANCELED

Conoflow Corp., Blackwood, N.J. 08012, VALVES AND FLANGES.

TOWING

(*Continued from page 117*)

lines are easy to handle and do not have the tendency to stick to the bitts as does the 100-percent polypropylene line. Quite frankly, we probably have not as yet found the "best" synthetic towline for harbor towing. Presently, we find dacron to be the best all-around harbor towline with one reservation—that it tends to retain water, which makes it heavy to handle. This should not be a problem for ships since the towline can be hung in a dry place between tows.

While nylon is an excellent line, we cannot recommend its use in harbor towing. Its elasticity presents a serious problem both to the tug and her personnel. Because of its stretch, it is impossible to maintain precise positioning of the tug, especially during alongside maneuvers. It can have a slingshot effect.

A lineman was killed while a tug was assisting at the stern of a vessel. One of the chain links of a chain towing pendant parted. The bitter end of the chain carried by the contracting nylon line struck the stern of the tug and struck the man in the head. He was dead on arrival at the hospital.

One problem with all synthetic lines is the difficulty in ascertaining just when the line should be discarded. We have seen some sad synthetic lines which have tested substantially in excess of 52,000 lb. tensile strength of an 8-inch manila. We have also seen good looking synthetic lines test below their advertised tensile strength.

Tripline. A tripline is a line about the diameter of a heaving line attached to the towline to facilitate hauling the towline aboard at the completion of the tow. A tripline should not be spliced into the towline but should be belayed to the towline. A clove hitch is a good knot to use. The tug crew can then shift it when it interferes with the handling or securing of the towline.

Chocks. Chocks must be inspected for grooving or sharp edges. In ports like Chicago, we sometimes have to furnish a bridle (two cables secured to a towline). Each cable of the bridle is led through a chock on the side of the bow or stern. We have experienced some cutting of cables in the chocks, or outside the chocks. In one accident, we found that the shell plating extended above the deck level so that the cable was cut on leaving the chock. If such a condition exists, we suggest that a beading bar be placed over the sharp edge or that chafing gear be used. Better yet—install the recommended towing tackle.

We should mention one area that has resulted in much sharp language and has also resulted in injury to our personnel and damage to our tugs. In some circumstances we are forced to furnish towlines to vessels. Attached to our towline will be either a single cable or a bridle which the ship hauls aboard and secures to its bitt or bitts. The problem arises in getting the gear back. It seems that once the tow is completed, good seamanship is suddenly forgotten and instead of passing the gear down to the tug on a heaving line, it is often dropped.

We have had several propeller foulings. These can be exceedingly serious, especially when the tug is released while underway.

We have also had two personal injury claims, both resulting in litigation. In both cases the vessel was alongside the dock when the towing gear was dropped. In one case, the gear fell into the water. At the time, the tug was under the bow of the freighter and was drifting into a bank. Since it was necessary to maneuver the tug, the tug captain ordered his men to haul in the gear as soon as possible. The deckhand, with the line in his hand, ran up the deck to haul it aboard. He fell when the shackle between the cable and towline caught on the rail at the stern of the tug. This ended up being a very expensive case.

In the other case, the tug was again under the bow of the steamer when the gear was dropped. It struck the knee of a deckhand. He was hospitalized for 10 days.

One of the most important of all aspects of safety practice in towing is the establishment and maintenance of good communications between tug and tow. Whenever possible, the master or pilot of the tow and the tug captain should discuss and mutually understand the procedure to be followed during the tow. Once the service starts, it is a cooperative venture with everyone alerted, for the safety of everyone else.

Most tugs are equipped with VHF (FM) radiotelephone, with necessary channels to permit bridge-to-bridge communication throughout the service. At the present time, most lake ships and all salt water ships entering through the Seaway have VHF (FM) radiotelephone equipment. Some of our tugs have MF (AM) radiotelephone equipment, which is useful for long-distance purposes, but is not as satisfactory for close aboard communication as VHF (FM). There is in addition to radio, the voice hail from the forecastle or bridge to the deck of the tug. This, of course, can become totally ineffective due to wind and other interferences with hearing.

Neither radio nor direct voice communication can fully supplant the whistle as a standard means of communication between tug and tow.

Referring specifically to the whistle signals, our notice to shipmasters and pilots points out that they do not supplant any navigational signal required by statute and regulation nor can they in any case supersede any requirement of the "Great Lakes Rules of the Road." They are, however, of extreme importance to the safety of tug and tow during the towing operation. ⚓