PROCEEDINGS
OF THE MARINE SAFETY COUNCIL

DEPARTMENT OF TRANSPORTATION UNITED STATES COAST GUARD

Vol. 31, No. 11 CG–129 November 1974

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The MV *Inez Andreas* cruises past the Gateway Arch in St. Louis. Built by St. Louis Ship, the 8,400-hp towboat is now plying the Mississippi for the American River Transportation Co.

BACK COVER

Decked out in christening day array is the SS *Arco Fairbanks*, one of the largest vessels to fly the American flag. The 120,000 d.w.t. tanker was built for the Atlantic Richfield Co. by the Bethlehem Steel Co.'s Sparrows Point Shipyard.

DIST. (SDL No. 99)
A: abcd(2), fhklmntuv(1)
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Lists TCG-06, CG-13, CG-20

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PROCEEDINGS

OF THE

MARINE SAFETY COUNCIL

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Admiral O. W. Siler, USCG
Commandant

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Lieutenant (jg) G. D. Szczurek, Editor

Explosions on MV *Venus* Kill Master

Numerous articles and safety editorials in the recent past have argued that the key to any successful safety program rests with the individuals in that program. The contention that personnel training and individual awareness of hazardous conditions are essential to safe operations became evident on the night of May 4, 1972, as two explosions rocked the MV *Venus* as she lay at anchor in the St. Lawrence Seaway.

The *Venus,* a 44-year-old tankship, departed Ogdensburg, N.Y., light for Montreal, Canada on May 3 after discharging approximately 34,000 barrels of petroleum products. In addition to a licensed master, the vessel carried a pilot assigned under the District Great Lakes Pilotage Act.

Fog slowed vessel traffic on the Seaway so the vessel was directed by the dispatcher at the Eisenhower Lock to proceed to anchorage to await further orders. An anchorage watch of one deck officer and one AB-wheelsman was maintained on the bridge.

To take advantage of the fog-caused delay, tank washing and gas-freeing operations for the Nos. 1, 3, and 5 tanks were commenced at 1800 e.s.t. by the chief officer. Extra seamen, as well as an extra deck officer, and two crewmen from a watch below were assigned to augment and assist the regular watchstanders.

A pumpman, the holder of a Merchant Mariner's Document for Tankerman, Grade B and lower, was also on deck directing the necessary pumping operations. He had been on the *Venus* for 14 years and had a total of 20 years of experience on tankers.

Tank washing commenced in the No. 1 tank compartments and progressed to the No. 5 tank compartments. As they were washed, the pumpman stripped the slop from the tanks by pumping through the open starboard crossover valves. The slop was then pumped into the No. 4 center tank and later to the No. 2 center tank through the open port crossover valves. As darkness fell, the permanently installed floodlights were activated to illuminate the deck area.

The chief mate left the deck at 2330 e.s.t. and went below for some rest, leaving the third mate to supervise the remainder of the tank washing and gas freeing operations. Although he had been licensed as a deck officer for approximately 20 years, the third mate's experience on tank vessels was limited to the 8 days he had spent on the *Venus.* At the completion of washing operations in the No. 5 tank compartments, the third mate reported to the chief mate in his room.

The chief mate then directed the third mate to commence blowing the tanks, an operation the third mate had never performed before in his maritime experience. After returning on deck, the third mate ordered the No. 1 center tank hatch cover lifted. Two Coppus blowers were activated to blow air into the tanks through Butterworth openings. No formal step-by-step vessel or company precautionary procedures were initiated prior to commencing this "routine" work. The hatch covers of all other cargo tank compartments were closed but not dogged.

As the blowing of the No. 1 center tank continued, several crew members in the vicinity, including the third mate, remarked on the unusually strong gas smell in the area. Shortly after the tank venting began, a crewmember went to the berthing area for a flashlight. The port companionway door through which the man passed was open at the time and was not closed behind him.

Approximately 10 minutes after tank venting operations began, an explosion ripped through the No. 1 center tank compartment, sending a bright yellow-orange fireball through the hatch. The third mate, knocked by the blast from the No. 1 center tanktop to the No. 1 port wing tanktop 10 feet below, scrambled to the port quarter. The deckhand at the point of the explosion was thrown to the deck by the concussion and then crawled to a point between No. 2 and No. 3 tanks where he was assisted by the watchman. When the general alarm was sounded by the second mate on watch on the bridge, the wheelsman saw a figure run aft from the captain's cabin door located on the starboard side. Heavy smoke and steam had engulfed the area around the explosion.

Shortly after the first explosion, a louder and sharper sounding blast rocked the *Venus.* Dense choking smoke filled the companionways below deck. Newspapers scattered on the decks and indoor curtains ignited but were quickly extinguished by crewmembers.

The chief mate raced from his room at the sound of the explosion and proceeded around the starboard side of the vessel. There he found the master lying face down on the deck near the starboard companionway leading below. After a quick examination by other crewmembers, it was decided to take him to the after quarters. No pulse was felt. Attempts to stimulate the master's breathing by chest pressure while in the first as-

sistant engineers quarters proved fruitless.

Shortly after the second explosion, the pilot returned to the bridge and informed the dispatcher at Eisenhower Lock by radiotelephone of the situation aboard the *Venus*. Crewmembers swarmed on deck to fight the blazes in No. 1 port wing and center tank compartments. Foam was sprayed into the No. 1 center tank hatch until the supply was expended, and seawater was used after that. Though an auxiliary hose was rigged at the forward monitor, it broke as pressure was applied to it. Sea water was utilized through the forward and midship monitors to cool the decks. Below decks, three men successfully fought a blaze that had broken out in the deck gear locker in the crew hall. As the fire came under control, the firehose burst in two places.

With all fires under control, the crew became concerned for the vessel's stability and watertight integrity. The chief mate, realizing the condition of the master, assumed control. Pumping operations commenced to correct a developing list to port. When the *Venus* was on an even keel, the No. 2 tank compartments were pumped down partially to prevent the possibiilty of hydrostatic pressure carrying away the bulkheads. Pumping operations resulted in some pollution of the St. Lawrence River as the slops and wash water residue from the No. 2 center tank were pumped out.

Rescue and salvage operations were crippled by the dense fog. Alerted by message from another vessel moored at the Wilson Hill anchorage, the vessel traffic controller at the Eisenhower Lock notified St. Lawrence Seaway and commerical tugs of the emergency. Only one of the four boats dispatched that night was able to reach the *Venus* through the fog. The tug *Salvage Monarch* arrived on scene at approximately 0230 e.s.t. to transfer a rescue squad from Massenah, N.Y., to the tanker.

At 0345 e.s.t., the *Salvage Monarch* left the *Venus* with the body of the master and four injured crewmembers of the tanker. The master was pronounced dead on arrival, and three of the crewmembers were released after treatment. The fourth remained at the hospital for treatment of first-, second-, and third-degree burns on his face and hands.

At approximately 0530 e.s.t., a St. Lawrence Seaway tug anchored alongside the *Venus* and transferred additional foam concentrate to replace the exhausted supply. Coast Guard Marine Inspection Officers, St. Lawrence Seaway officials, and the vessel's commercial representatives visited the laker later in the day to determine her seaworthiness. On May 5 the *Venus* proceeded under tow to a shipyard in Montreal for repairs to the extensive damage she suffered.

A Coast Guard Marine Board of Investigation following the casualty discovered that the factors leading to the explosions were, in the main, personnel related. A hazardous situation was allowed to develop as a result of the lack of training and experience by the personnel involved. That hazardous situation was increased by the ship design of the *Venus*.

For example, the establishment of fume-tight boundaries to exclude entry of explosive gases was the generally understood protection standard aboard the *Venus*. However, neither the operational procedures used the night of the casualty nor the ship design prevented the explosive gases from entering the crew quarters. Washroom vents and open wireway holes within 9 feet of the tank trunk opening allowed dangerous gases ready access to areas of potential ignition. Although it was generally understood that the companionway doors leading onto the tank area were to be kept closed during tank ventilation, this had been interpreted by the crew to mean "when not in use." There was no limitation of the frequency of use and no assurance that normal traffic through the doors would not have admitted sufficient vapors to set off a disastrous explosion. If ignited in the crew quarters, the flaming vapors could travel back to the tank even if the doors had been closed because the doors were not designed to prevent the passage of flames.

It is the responsibility of every person working in a dangerous situation to recognize and *prevent* additional hazards. Trained and experienced personnel working under established procedures are the best insurance of accident prevention. Yet there was no positive policy for training or indoctrinating the constantly changing personnel on board the *Venus*. Written instructions and safety procedures were nonexistent. Verbal instructions were the only means of passing vessel policy to new men, and there was nothing in the record to indicate that this was done in a systematic manner. There were no company or vessel written procedures on the *Venus* relative to tank washing or gas freeing. The areas where smoking was permitted by the master were not specifically designated, nor was the location of smoking areas made clear to all crewmembers.

These factors, coupled with the lack of direct experience in tank washing and gas-freeing operations on the part of the third mate, allowed a dangerous situation to build to the explosive point.

The Marine Board of Investigation concluded that the initial explosion was caused by the ignition of airborne gasoline vapors in the crew quarters. Although unable to determine the exact source of ignition, the Board considered it likely that some smoking material touched off the blast.

The cause of the second explosion was ignition of vapors drawn into the immediate vicinity of the No. 1 center tank by the implosive aftereffects of the first blast. Ignition was most probably caused by material burning

(Continued on page 213.)

THE NATIONAL COMMITMENT TO MARINE SAFETY

During the week of September 30–October 3, 1974, safety experts from all over the nation gathered in Chicago, Ill., to present papers and exchange information on accident prevention. The Marine Section of the Congress carried full programs on stevedoring, shipbuilding and repair, barge and towing, ship operations, and the Coast Guard. Capping the affair was an address by Adm. Owen W. Siler, the Commandant of the Coast Guard, at the Port of Chicago's Propeller Club luncheon. Excerpts from Admiral Siler's remarks appear below.

The Coast Guard has a broad spectrum of safety responsibilities. Our traditional role in merchant marine safety has expanded in the past few years to include a much stronger posture in boating safety—and let us never forget that our waters are used for both commerce and pleasure. We are deeply involved in the safety of our ports and waterways and our work reflects the national concern for the environment. Perhaps the best way of expressing it is to say that we are involved in the total area of marine safety. In a broader and very real sense the "we" goes much further than the Coast Guard. It includes all of us who use the waters and ports of our Nation. Advancing marine safety isn't something that the Coast Guard—or any other agency, whether from Government, from industry, or from any other segment of our Nation can undertake successfully alone. It is a national goal and one that can only be pursued successfully by all of us, together.

Our Nation is now facing serious economic problems. President Ford has called for an "economic summit meeting" to find ways for us to work together to solve these problems. But for the time being we are all faced with tight budget constraints and with the impact of inflation. Those of you in industry and we in Government are tightening our belts and looking carefully at every dollar we spend. We are reviewing our programs to assure that our every action produces the best results. It's apparent to me—and I'm sure to you—that there is little room now for "frills". Let me assure all of you that the safety of all those who use the waters, and the protection of those waters, themselves, are the bone and muscle of Coast Guard programs. I, and the entire Coast Guard will not slacken in our safety efforts. I hope that you have the same determination. Safety is not an "add on." It is a vital part of your operations and "tight money" and an austere economic climate is no excuse to reduce your safety efforts. I know that as you restudy your safety programs you will find that they bring an excellent return for the time, talent and money you invest in them. Accidents are costly, not only in lives but in money. Safety is good business. Do not expect others to carry the safety load for you through this period of a tight economy. Safety is too important to us all.

Joseph Conrad, who knew the sea and ships as well as any man said—"Both men and ships live in an unstable element, are subject to subtle and powerful influences and want to have their merits understood rather than their faults found out". All of us try to put our best foot forward. But it is at national congresses such as the one held here this week that we get together to hear of the safety programs of others through the excellent papers presented and to offer constructive comment and sometimes constructive criticism of those efforts. This interchange of information is a vital part of our national safety effort.

However, no gathering such as this can cover more than a small part of an organization's safety efforts. And, today, I'd like to take the opportunity to tell you about some things the Coast Guard is doing which weren't covered in the "Coast Guard session". You are all aware that in June of this year we published two notices in the Federal Register, one a notice of proposed rulemaking concerning design and operation of certain seagoing U.S. tankships and barges certified to carry oil in the domestic U.S. trade and the other an advance notice of proposed

rulemaking concerning operation and possible equipment requirements for major U.S. and foreign vessels in our navigable waters. These two actions taken together speak to the problems of providing better protection to the environment by improving the design of oil carriers (and, incidentally improving the ships' survivability to the betterment of personnel safety) and reducing the incidence of groundings and collisions through better ship operations. In these actions, as in many others, it is difficult to separate the safety of people and property from the protection of the environment. The single goal is to prevent accidents and mitigate the consequences of those which do occur.

Since the notices were published we have received a substantial amount of comment, both written and at public hearings we've held in Seattle and in Washington, D.C. We are now analyzing these comments and I would be less than candid if I did not tell you that this is a most difficult task. There is no question but that everyone concerned is interested in the best practical level of personnel safety and protection of the environment. There are substantial differences as to the best combinations of construction features and operational controls to attain that goal.

On September 5 we published a notice of rulemaking establishing a regulated navigation area at the entrance to Chesapeake Bay, in the vicinity of the Chesapeake Bay Bridge-Tunnel complex and adding general requirements for masters of vessels and those who authorize the operation of vessels in regulated navigation areas. These additions to our ports and waterways safety regulations, which become effective the fifth of November, are intended to improve the safety of navigation in a heavily congested area which has been the source of a significant number of accidents. Unlike many of our requirements which concern vessels and their equipment, these speak directly to the actions of the people who navigate the vessels. It is still another recognition that people and their judgement (or sometimes their lack of it) are an important part of safety.

In both these cases the Coast Guard has issued regulatory material as the first step in meeting safety problems. It is easy to assume that regulations alone can do the job. I do not think so. Regulations are only a way of passing the word as to what needs to be done. It takes people to make safety work. And by people I do not mean Coast Guard people to enforce the regulations. Our waters are broad and those who use them are many. The master who ignores the requirements of a regulated navigation area may do so with a statistically small chance of being "caught in the act," but his actions can place his ship and others in danger. He must know what is required and he must understand that his safety responsibilities extend beyond the confines of his own vessel. Getting the word to those on the scene is an important part of every company safety program. A part which I feel confident you are doing and will continue to do well. Another major concern is the deep-water port construction program. The Coast Guard is working closely with industry to insure both safety of operations and the prevention of environmental damage. These deepwater ports will decrease the threat of oil pollution to our beaches and waterways. There will be less opportunity for spillage in unloading a supertanker rather than many smaller vessels. Tanker traffic and the threat of collisions will be lessened. The Coast Guard will have a major role in these ports. In fact we have established a special project office in anticipation of our new duties.

Since we are in a Great Lakes port I think that it's appropriate to talk about some of our work on the Lakes. Since 1971 we have had a "demonstration program" to extend the navigation season beyond the usual December 15 closing date. In 1970–71 Coast Guard icebreakers operated in ice on the Lakes for about 500 hours. Last year we operated for nearly 4,000 hours. Four hundred and twenty-three ships with a total cargo value of over $45 million were assisted. One of our charters is to facilitate commerce—and extending the season is certainly that—but our increased presence also is a plus in safety—safer ship operations.

On September 1 new pilotage rates for U.S. pilots on the Great Lakes came into effect. In the restricted pilot waters of the Lakes the services of our U.S. pilots are a necessary part of marine safety. The rates formerly in effect, and which had not been increased since 1970, did not reflect the increased costs of pilot operations. The new rates will aid in maintaining the availability of the pilots. There still remain significant problems concerning dispatching of pilots and coordination of pilotage activities with our Canadian neighbors. But the new rates are an important step in our effort to maintain a high level of pilotage.

I've been able to touch on only a few of the safety areas in which the Coast Guard is now working. Ours is a task which has its satisfactions in jobs well done and its frustrations, too, as we see the immensity of the challenges which will face us in the future. But in this the Coast Guard is little different from any other enterprise. We must serve our clients, in our case the Nation, and we must serve them well. We can do this well only with the cooperation and active assistance of all with whom we work. To attain this goal of constructive cooperation we must be open and candid—and I think we are. My staff and I consider it a privilege to work with the Propeller Club, with the National Safety Council and with many, many other groups and individuals. Meetings like this—and like the National Safety Congress which preceded it—can result only in a better understanding of our mutual goal of maritime safety and increase our abilities to move toward that goal in the best interest of our Nation.

WIRE ROPE FAILURES—AGAIN!

On the morning of January 19, 1974, the starboard lifeboat aboard a large freighter was lowered to facilitate securing the gear and stores in the boat. At approximately 9:40 a.m. stowage was completed and the boat was ready to be raised up to its inboard stowed position. Three men remained in the boat as it was being hoisted. The floating blocks connected with the davit arms and the davit arms started up the trackways. The davit arms were 23 inches up the trackways when, without warning, the forward lifeboat fall parted with a loud snap. All the men in the lifeboat were immediately dropped into the water as the boat swung, still being held by the after fall, against the after davit arm. Cause of the accident: Localized corrosion which caused thinning of the wires and thus the weakening of the strands. Failure occurred when the corrosion-reduced cross section was overloaded. Injuries: One man received a cervical sprain; another incurred a serious back injury, which caused considerable lost work time; the last man had his right ear drum perforated.

This accident description is, unfortunately, not unique. It is typical of a kind of accident which is repeated so often that even the casual observer cannot help but wonder at the mariner's failure to heed the safety measures which have been established to prevent such recurring accidents.

Standards and procedures for the care and maintenance of wire rope falls on lifeboat davits have long been established by both manufacturers and the U.S. Coast Guard; yet each year serious injuries to personnel and property damage are caused by the failure of wire rope falls.

These failures have two things in common: their cause, and the opportunity for their prevention. In nearly every case, such accidents are caused by the separation of the falls at a point which was inaccessible for proper maintenance and inspection when the davit was in a full upright stowed position. In nearly every case, the accidents could have been prevented had the davits been partially lowered to allow access to the entire length of the fall line for proper lubrication and inspection. This maintenance should be a regular follow up to the Coast Guard's annual or biennial inspections. Proper interim care by the crew, coupled with periodic inspection by Coast Guard personnel, can help prevent these all too typical accidents.

Wire rope, like complicated machinery, consists of many small interwoven parts that need lubrication. There isn't a mariner worth his salt who wouldn't acknowledge the necessity to keep an engine or winch well lubricated to achieve best results. Yet many of these knowledgeable seafarers ignore the necessity of keeping wire rope clean and well lubricated.

Most davits on shipboard are located so that they are continuously exposed to both sea spray and stack gas. The combination of salt water and the fumes from fossil fuels creates acids which pit and corrode wire rope, providing bending and fatigue points which eventually lead to failures. This weakening can be prevented by proper cleaning and lubrication. In most cases investigated, this wear at stress points around sheaves and through blocks would have been visible to the naked eye had the entire length of the fall been examined by the lowering of the davit. Lowering the davit would have allowed access to those areas of the fall line which are normally inaccessible.

In response to an article on wire rope failures which appeared in the November 1973 issue of the *Proceedings* a reader pointed out another factor contributing to failures: The failure of crew members to periodically change the position of wire rope, allowing a piece of wire rope to remain in a single use position for the expected life of the rope. A ship is subjected to considerable vibration while at sea. This vibration is arrested sharply at the tangent point in the sheaves creating areas of potential fatigue failure. If the position of the rope is periodically changed by moving the boom position, the wear and fatigure is distributed more evenly along the length of the rope, thus reducing the chance of failure.

Modern wire rope is made to the highest engineering standards. By the use of many tests and controls during its manufacture, it is almost impossible for serious flaws to exist in the finished product. An accident in service with wire rope almost always results from poor maintenance procedures. To keep wire ropes in safe operating condition, clean and lubricate them frequently, and regularly change their stowage position.

MARINE SAFETY COUNCIL MEMBERSHIP

Rear Adm. Robert Henry Scarborough, Jr., U.S. Coast Guard, was born on March 12, 1923, in Hawkinsville, Ga. He attended public schools in Hawkinsville and Toccoa, Ga., and was graduated from Hawkinsville High School in 1940. After graduation he attended North Georgia (Military) College at Dahlonega, Ga.

In 1942 he received an appointment as a cadet midshipman in the U.S. Merchant Marine Cadet Corps, U.S. Merchant Marine Academy (Kings Point). He served in various theaters of war aboard the SS *Black Hawk*, MV *Brandywine*, and the U.S. Army hospital ship *Seminole*, including participation in the Sicilian invasion while still a cadet. Upon graduation from the Cadet Corps, in May of 1944 he was licensed as third mate in the U.S. Merchant Marine. He was commissioned concurrently as ensign, U.S. Maritime Service, and as ensign, U.S. Naval Reserve.

After serving in various capacities as a licensed officer aboard the U.S. merchant vessels *Catawba Ford*, *Four Lakes*, *Beecher Island*, and *Antietam* he was assigned as chief officer of the T–2 type steam tankers, *Opequon* and *Saguaro*. In July of 1946, he was advanced to the provisional rank of lieutenant commander in the U.S. Maritime Service. Rear Adm. Scarborough maintains his license as Master of Ocean Steam and Motor vessels of unlimited tonnage by periodic renewals as required.

After World War II, he held a position as methods engineer for experimental production with R. G. LeTourneau, Inc., manufacturers of heavy grading equipment, in Longview, Tex. From this civilian job he went on active duty as an officer in the Navy where he remained until entering the Coast Guard, his last unit being the USS *Sumner* (DDC92).

He entered the Coast Guard as a lieutenant (junior grade) on November 30, 1949, serving for 8 months on various temporary assignments including the Coast Guard cutters *Tampa* and *Triton*, both vessels operating in the Gulf of Mexico. In August of 1949, he began serving aboard the cutter *Ingham*, a North Atlantic Ocean "weather" station vessel based out of Norfolk, Va.

Twelve months later he was assigned as a District Duty Officer in the 5th Coast Guard District Rescue Coordination Center in Norfolk. In April of 1952 he was designated District Public Information Officer, Administrative Assistant and Aide to the Commander, 5th Coast Guard District.

In April 1955 he became Operations Officer aboard the Coast Guard cutter *Chincoteague*, an ocean station vessel operating out of Norfolk. From March 1957 until August 1959, he served as District Public Information Officer on the staff of the Commander, 3rd Coast Guard District in New York City.

His assignment from August 1959 to January 1961 was Commanding Officer, Coast Guard cutter *Dione*, a rescue and law enforcement vessel operating out of Freeport, Tex. For the next 18 months Rear Adm. Scarborough served as Commander, Coast Guard Group Sabine and Captain of the Port for the Texas-Louisiana maritime area including the ports of Beaumont, Orange, Port Arthur, and Lake Charles.

Following graduation from the Armed Forces Staff College in January 1963, he remained in the Norfolk-Portsmouth, Va. area for assignments as Executive Officer of Coast Guard Group and Captain of the Port, Norfolk, Chief of the 5th Coast Guard District Readiness Branch, and for a second tour on the cutter *Ingham*, this time as Executive Officer from May 1964 to August 1966.

His assignment for the next 3-year period was on the Pearl Harbor based staff of the Commander, Antisubmarine Warfare Force Pacific (now Commander 3rd Fleet, U.S. Navy) in operational and planning posts and as liaison for the Commander, Western Area, U.S. Coast Guard. For the next year he was Chief, Personnel Division of the 14th Coast Guard District, Honolulu, Hawaii.

In August 1970, Rear Adm. Scarborough came to Washington, D.C., to attend the National War College. Graduated the following summer, he was assigned to Coast Guard Headquarters as Chief, Enlisted Personnel Division. Following his selection for flag rank in January 1973 he was reassigned at Headquarters to the post of Deputy Chief, Office of Operations and then acceded to his present assignment as Chief, Office of Operations in May 1974.

He is a 1963 graduate of the Armed Forces Staff College and a 1971 graduate of the National War College. While in the Coast Guard, he has also studied at various civilian universities earning a Bachelor of Business Administration (Management major) degree and a Master of Business Administration (Administration major) degree from the University of Hawaii as well as a Master of Science (International Affairs major) degree from the George Washington University. He is a member of Beta Gamma Sigma honorary fraternity.

Venus Explosions

(*Continued from page 208.*)

in the area as a result of the initial explosion.

Although the evidence compiled in the investigation indicated the third mate failed to recognize the hazardous conditions, the Board concluded that the quality of the evidence was insufficient to sustain a charge of negligence.

Among the Board's recommendations are the following:

1. That, the Coast Guard should institute a review of 46 U.S. Code 391a(6) which permits licensed officers of inspected vessels of the United States to serve as a tankerman. Many or these officers reach this status without any practical experience or training in tanker operations. An amendment to the existing regulations which would require tankerman endorsements on all officer licenses is recommended. Endorsements would be continued on the license upon renewal only if recency of service on tankers could be shown, or if the license renewal applicant showed, by written test or exercise, his continued knowledge of the handling of combustible or flammable liquid cargoes and the cleaning and gas-freeing of tanks.

2. That, the general safety rules in subpart 35.30 of the "Rules and Regulations for Tank Vessels" be amended to include a section on safety for tank cleaning and tank gas-freeing operations with the duties of the senior deck officer before the commencement and during the operations listed.

3. That, chapter 8 of the "Manual for the Safe Handling of Inflammable and Combustible Liquids" (CG–174), when revised, include general safety precautions to be exercised during cleaning and gas-freeing of cargo tanks.

The Commandant's Action concurred with the Board's recommendation to review the regulations which permit licensed officers of inspected vessels to serve as tankermen. The recommendation that the rules and regulations for tank vessels be amended to include a section on safety for tank cleaning and tank gas-freeing operations is being considered with a general review now underway of tanker operations pertaining to tank cleaning procedures.

The National Transportation Safety Board's Action discussed methods of minimizing the risks involved in the gas-freeing operations. Supervisor qualifications and shipboard training programs were examined by the NTSB. At the conclusion of its report, the NTSB stated its support of the Marine Board of Investigation's recommendation and further recommended that the Coast Guard:

1. Require that safety meetings be held on tankships to instruct supervisors and crewmembers in the specific procedures used to wash and gas-free cargo tanks on the particular tankship.

2. Conduct a special inspection on the *Venus* and similar tank vessels operating on the Great Lakes to make certain that inadequacies concerning the prevention of entry of inflammable vapors into the deckhouse which were revealed in this investigation have been corrected.

3. Require that all hazardous gases forced out of cargo tanks during gas-freeing operations shall be ducted to the safest areas available, preferably over the downwind side of the ship. In addition, a flame screen should be required in the duct or at the tank opening.

4. With the assistance of industry, develop methods to gas-free cargo tanks by suction processes which remove the vapors from the densest regions of the tank.

5. Evaluate the need for all future installations of normal cargo vent piping to contain an individual flame screen for each tank, in lieu of permitting a flame screen from a header to serve several tanks.

NOTE: This article is based upon the Marine Casualty Report of the incident, comprised of the Marine Board of Investigation Report, the Commandant's Action, and the Action by the National Transportation Safety Board released August 16, 1974. Copies of the full report may be obtained by writing Commandant (G–MVI–3), U.S. Coast Guard, Washington, D.C. 20590.

COAST GUARD RULEMAKING

(Status as of 1 October 1974)

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
1972 PUBLIC HEARING							
Tailshaft inspection and drawing (57-71, 4-71)	3-1-72	3-27-72	4-3-72	X			
ANCHORAGE REGULATIONS							
San Juan Harbor, P.R. (CGFR 72-12)	2-1-72		3-4-72	X			
Juan DeFuca, Wash. (CGD 72-233)	12-5-72		1-9-73	X			
Puget Sound Area, WA (CGD 73-180)	8-24-73		9-28-73	X			
Indian River, Sebastian, FL (CGD 74-104)	7-2-74		8-5-74	X			
BRIDGE REGULATIONS							
John Day R., Blind Slough, Clatskanie R., Oregon (CGD 72-231)	11-28-72		1-2-73			9-13-74	10-14-74
Sacramento R. et. al., CA (CGD 73-142)	7-20-73		8-21-73	X			
Westchester Ck., NY (CGD 73-166)	8-10-73		9-11-73	X			
Cheesequake Ck., NJ (CGD 73-162)	8-10-73		9-11-73	X			
AIWW, Mile 342, Fla.; Drawbridge Operations (CGD 72-190P)	9-30-72		11-1-72		8-7-74		
AIWW Mile 342, Lauderdale-By-The-Sea, FL (CGD 74-180)	8-7-74		9-6-74	X			
Rahway R., NJ (CGD 73-196)	9-11-73		10-16-73			8-29-74	9-30-74
Back Bay of Biloxi, MS (CGD 74-37)						2-21-74 Extended 8-29-74	8-29-74 through 1-31-75
Little Manatee R., FL (CGD 74-41)	2-21-74		3-19-74	X			
Grand R., Grand Haven, MI (CGD 74-42)	2-21-74		3-19-74			9-19-74	10-21-74
Sturgeon Bay, WI (CGD 74-97)	4-9-74		5-14-74			8-2-74	9-2-74
Galveston Channel, G.I.W.W., TX (CGD 74-85)	4-10-74		5-14-74			7-31-74	9-2-74
New River Sound and Stranahan River, FL (CGD 74-115)	4-22-74		5-20-74	X			
Genesee R., NY (CGD 73-203)	9-13-73		10-16-73			8-7-74	9-9-74
Stony Ck., MD (CGD 73-242)	10-12-73		11-20-73	X			
Lake Worth A.I.W.W., FL (CGD 74-117)	5-2-74		6-25-74	X			
San Joaquin River, Georgiana Slough, Sacramento River, CA (CGD 73-172)	5-24-74		7-2-74	X			
Buffalo R., NY (CGD 74-107)	5-30-74		7-2-74			9-13-74	10-14-74
AIWW, Hillsboro Inlet, FL (CGD74-22)	1-25-74		3-1-74	X			
Chuckatuck Ck., Va. (CGD 74-71)	3-29-74		4-30-74	X			
Chesapeake & Del. Canal, Del. (CGD 74-72)	3-29-74		4-30-74	X			
Coosaw R., S.C. (CGD 74-58)	3-11-74		4-12-74	X		8-7-74	9-9-74
New River, FL (CGD 74-114)	4-22-74		5-20-74	X			
Manatee River, FL (CGD 74-101)	4-22-74		5-20-74	X			
Chicago River, IL (CGD 74-137)	6-3-74		7-16-74	X			
Nanticoke River, MD (CGD 74-154)	6-17-74	7-24-74	8-7-74	X			
Cerritos Channel, Los Angeles/Long Beach, CA (CGD 74-220)						9-19-74	10-21-74
Bayou Little (Petit), Caillou, LA (CGD 74-215)	9-19-74		10-22-74				
Vermilion River, LA (CGD 74-214)	9-19-74		10-22-74				
Columbia and Snake Rivers, Pasco, WA (CGD 74-223)	9-20-74		10-22-74				

Coast Guard Rulemaking—Continued

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
HAZARDOUS MATERIALS							
Dichlorobutene, Corrected, F.R. 9–20–72, Hazardous Cargoes (CGD 72–162PH)	8–30–72	10–24–72	10–31–72	X			
Miscellaneous Dangerous Cargoes (CGD 72–182)	11–11–72	12–12–72	12–19–72	X			
Marking of radioactive materials packages (CGD 73–137)	8–31–73	9–25–73	10–5–73			9–13–74	10–15–74
Dangerous Cargo Regulations, miscellaneous (CGD 73–249)	1–16–74		3–4–74	X			
Notice of arrival of laden vessels (CGD 73–253)	6–25–74		8–8–74	X			
Sodium sulfide solution and sulfur dioxide (CGD 73–275)	7–16–74		10–29–74				
Vinyl chloride (CGD 74–167)	Corrected 9–5–74 7–23–74 Supp. Notice 9–19–74	8–15–74	9–6–74 11–4–74				
Use of dangerous articles as ships' stores and supplies (CGD 74–144)						9–13–74	9–13–74
MARINE ENVIRONMENT AND SYSTEMS (GENERAL)							
Marine Sanitation Devices (CGD 73–83)	3–1–74	5–1–74	5–14–74	X			
Vessel traffic system, Puget Sound (CGD 73–158)	8–6–73	8–30–73	9–17–73			7–10–74	9–30–74
Chesapeake Bay entrance (CGD 73–152)	12–18–73	1–23–74	2–11–74			9–5–74	10–5–74
Boundary Lines of Inland Waters (CGD 73–241)	4–8–74 corrected 5–8–74		5–26–74	X			
Great Lakes pilotage; rates, charges and conditions (CGD 74–9)						8–29–74	9–1–74
Captain of the Port Areas and Marine Inspection Zones, 8th CG District (CGD 74–40)						9–5–74	9–5–74
Captain of the Port Areas and Marine Inspection Zones, 1st CG District (CGD 74–169)						9–9–74	9–9–74
Lights to be displayed on pipelines (CGD 73–216)	9–19–74	10–21–74	11–4–74				
MERCHANT MARINE SAFETY (GENERAL)							
Oceanographic vessels, fire main systems (CGFR 72–20)	2–4–72		3–19–72	X			
Water lights, floating electric (CGFR 72–48)	3–9–72	4–18–72	4–24–72	X			
Ship's Maneuvering Characteristics Data (CGD 72–134PH)	8–22–72	9–28–72	10–13–72	X			
Emergency Position Indicating Radio Beacons (CGD 73–24)	Supp. Notice 7–20–73		8–31–73	X			
Radar observer licensing (CGD 73–238)	3–5–73	4–18–73	4–30–73			3–18–74	3–1–75
Portable tanks (CGD 73–172)	10–12–73		11–30–73			9–26–74	11–25–74
Tank vessel electrical installation (CGD 74–118)	12–5–73	1–15–74 New Orleans	1–21–74			6–25–74	10–1–74
	8–26–74		10–10–74				

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Unmanned Platforms (CGD 73–177)	1–8–74 Corrected 1–29–74	.....	2–25–74	X	.....	.....	.....
Releases, Lifesaving Equipment, Hydraulic and Manual (CGD 73–153)	1–8–74	.....	2–25–74	X	.....	.....	.....
Bulk Dangerous Cargoes, Inspection of Barges (CGD 73–271)	3–11–74	4–15–74	4–30–74	X	.....	.....	.....
Lifesaving Equipment Specification (CGD 73–246)	3–18–74	.....	5–2–74	X	.....	.....	.....
First Aid Certificates (CGD 73–272)	4–2–74	.....	6–15–74	X	.....	.....	.....
CO_2 Fixed Fire Extinguishing Systems (CGD 74–100)	5–8–74	.....	6–24–74	X	.....	.....	.....
Carriage of Solid Hazardous Materials in Bulk (CGD 74–13)	5–15–74	7–16–74	8–31–74	X	.....	.....	.....
Tank vessels in domestic trade (CGD 74–32)	6–28–74 Corrected 7–23–74	7–23–74 Seattle 7–30–74 Wash. D.C.	8–19–74	X	.....	.....	.....
Small passenger vessels, subdivision requirements (CGD 72–180)	6–5–74	.....	6–18–74	....	.....	9–20–74	9–20–74
Passenger vessels, subdivision requirements (CGD 72–181)	6–5–74	.....	6–18–74	....	.....	9–20–74	9–20–74
Construction and equipment of tank vessels (CGD 74–127)	Adv. Notice 9–5–74	.....	.....	....	.....	.....	.....
Welding and brazing; adoption of 1974 edition, Section IX, ASME Code (CGD 74–102)	9–26–74	.....	11–4–74	....	.....	.....	.....

NOTE: This table which will be continued in future issues of the Proceedings is designed to provide the maritime public with better information on the status of changes to the Code of Federal Regulations made under authority granted the Coast Guard. Only those proposals which have appeared in the Federal Register as Notices of Proposed Rulemaking, and as rules will be recorded. Proposed changes which have not been placed formally before the public will not be included.

AMENDMENTS TO REGULATIONS

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of Transportation

[CGD 73–152]

PART 128—REGULATED NAVIGATION AREAS

Chesapeake Bay Entrance

The amendments in this document—

(1) Establish a regulated navigation area for the entrance to Chesapeake Bay;

(2) Revise the authority citation for Part 128 to provide that the Ports and Waterways Safety Act of 1972 be the authority for Part 128, except for the regulations applicable to Apra Outer Harbor, Guam; and,

(3) Add general requirements for masters of vessels in regulated navigation areas and for persons who cause or authorize the operation of vessels in regulated navigation areas.

Interested persons were notified of the opportunity to participate in this rulemaking proceeding by the notice of proposed rulemaking published in the Federal Register of December 13, 1973 (38 FR 34778–80). A public hearing concerning these regulations was held in Norfolk, Virginia, on January 23, 1974. Statements made at this public hearing and all written comments received, were fully considered by the Coast Guard in promulgating these regulations. Except as noted and discussed in the following paragraphs, the regulations as proposed have been adopted without substantive changes.

1. Several comments were received supporting the proposed regulations. Most of these comments also noted that closing the Chesapeake Bay Bridge-Tunnel (CBBT) for repairs after each vessel collision with the structure has had an adverse economic effect on the Delmarva Peninsula and southeastern Virginia.

2. Seven comments objected to the proposed requirement in the notice

of proposed rule making for vessels to proceed at 10 knots or less in the vicinity of the CBBT. Three of these comments stated that proceeding at 10 knots or less, rather than at a great speed, in the two channels crossing the CBBT impairs a vessel's maneuverability. One comment stated that reducing speed on approach to the CBBT poses a possibility of engine failure or of a dangerous overtaking situation. Three comments noted that compliance with the proposed speed limit will significantly increase the time needed to transit the regulated navigation area and, thus, jeopardize the competitive position of shippers and ports in the Hampton Roads area. Because of the comments received, the proposed speed limit will not be adopted at this time. However the issue of speed and its relation to safety, is not closed. The Coast Guard will continue to study the problem and the effectiveness of the regulations as now published, and if necessary it will issue regulations imposing a speed limit.

3. One comment recommended that the proposed requirement in § 128.501(c)(2) in the notice for a vessel over 100 gross tons under tow in the regulated navigation area to have a secondary towing rig be revised to exclude manned barges. The comment stated that no manned barge has ever collided with the CBBT and that the crew of a manned barge that has parted its towline in the regulated navigation area can reconnect a towline quickly, or if necessary, drop anchor to prevent a collision with the CBBT. This recommendation has not been adopted in the final rules. During severe weather conditions a crew member of a barge that has parted its towline often cannot work safely on deck to take on a towline or anchor the vessel. Use of a secondary towing rig will eliminate the need for a crew member to be on the deck of the barge while it is being recovered in tow.

4. One comment recommended that vessels proceeding on a route between upper Chesapeake Bay and Hampton Roads passing east of Thimble Shoal Light not be required to comply with the proposed requirement to carry a secondary towing rig. The comment recommended in the alternative that the western boundary of the regulated navigation area be moved eastward of Thimble Shoal Light. Neither recommendation has been adopted in the final rules. Use of a secondary towing rig on board a vessel that has parted its towline will allow quick recovery of the vessel in tow. A vessel that parts its towline in the regulated navigation area east of Thimble Shoal Light is close enough to the CBBT to make its quick recovery in tow essential to avoid the possibility of a subsequent collision with the structure.

5. One comment asked whether the proposed requirement to carry a secondary towing rig applies to integrated tows. Section 128.501(c)(2) has been clarified in the final rules to require that a secondary towing rig be carried on each vessel over 100 gross tons under tow in the regulated navigation area, and on at least one vessel in a tow having two or more vessels each of which is less than 100 gross tons and the total tonnage of which is greater than 100 gross tons. Several smaller vessels connected together in tow can cause significant damage upon collision with the CBBT. Use of a secondary towing rig on these vessels should allow their quick recovery in tow if the towline to the towing vessel is parted.

6. One comment requested that tugboats, which because of their configuration do not have anchors rigged for quick release, not be required to comply with the proposed requirement in the notice to post an anchor detail when underway within 2 miles of the CBBT. As a result of this comment, § 128.501(c)(3) has been revised in the final rules to exclude its application to tugboats equipped with bow fenderwork constructed in a way that the anchor cannot be rigged for quick release.

7. One comment recommended that the proposed requirement to prohibit a vessel drawing less than 25 feet from entering Thimble Shoal Channel, except to cross the channel, be revised to allow use of the channel by a vessel drawing less than 25 feet whenever use of an auxiliary channel will reduce its maneuverability. This proposal has not been adopted in the final rules. For shallow draft vessels with reduced maneuverability that cannot navigate safely in these auxiliary channels, an authorization can be obtained from the Captain of the Port under § 128.501(c)(9)(i) to use the main channel.

8. One comment recommended that a regulation be added requiring the use of a licensed pilot on board self-propelled vessels over 100 gross tons, and on towing vessels over 26 feet in length, whenever hazardous conditions exist in the regulated navigation area. This recommendation has not been adopted in the final rules. The Commonwealth of Virginia has laws governing the use of pilots in the regulated navigation area; and Title 46, U.S. Code, section 364 requires the use of pilots on board coastwise sea-going steam vessels that are subject to the laws of the United States and not sailing under register. Section 128.501(c)(7) is amended by deleting references to operative ship-to-shore communications equipment; the final rule prohibits the entry of a vessel over 100 gross tons in the regulated navigation area unless the Captain of the Port has been notified of the vessel's time and place of entry, or unless the vessel has navigation charts of the regulated navigation area and operative radar during reduced visibility, or unless the vessel has a pilot or other person on board with previous experience in navigating the waters of the regulated navigation area. For a vessel entering without navigation charts and operative radar during reduced visibility, and without a pilot or other person with previous experience in navigating the waters of the regulated navi-

gation area, the Captain of the Port after notification from the vessel will normally provide an escort or provide the master of the vessel with information to assist its navigation through the regulated navigation area.

9. Minor revisions have been made to the final rules for purposes of clarification.

* * * * *

Effective date: Oct. 5, 1974.

Dated: August 30, 1974.

O. W. SILER,
Admiral, U.S. Coast Guard
Commandant.

(The full text of these amendments was published in the Federal Register of September 5, 1974.)

[CGD 74–40]

PART 3—COAST GUARD AREAS, DISTRICTS, MARINE INSPECTION ZONES, AND CAPTAIN OF THE PORT AREAS

8th Coast Guard District

These amendments revise the description of the captain of the port areas and the marine inspection zones of the Eighth Coast Guard District in 33 CFR Part 3.

The boundary between the Mobile Marine Inspection Zone (MIO) and the New Orleans MIO that is described in §§ 3.40–10(b) and 3.40–15(b) is moved westward to the east bank of the Pearl River. The Galveston MIO boundary that is described in § 3.40–30 is revised. The Mobile, New Orleans, Sabine, Houston, Galveston, and Corpus Christi Captain of the Port areas (COTP) are revised to coincide with the Mobile, New Orleans, Port Arthur, Houston, Galveston, and Corpus Christi MIO's, respectively. The descriptions of these COTP's, as amended by this document, are transferred to §§ 3.40–10, 3.40–15, 3.40–20, 3.40–25, 3.40–30, and 3.40–35, respectively. Accordingly, §§ 3.40–55, 3.40–60, 3.40–65, 3.40–70, 3.40–75, and 3.40–80, that contain the present descriptions of these areas, are deleted. The Port Isabel COTP is eliminated. Accordingly, § 3.40–85, that contains the description of this COTP, is deleted.

Since these amendments are matters relating to agency organization, they are exempt from the notice of proposed rule making requirements in 5 U.S.C. 553(b)(3)(A), and since these amendments announce an existing change in organization, they are effective immediately under 5 U.S.C. 553(d)(3).

* * * * *

Effective date. These amendments are effective on September 5, 1974.

Dated: August 29, 1974.

O. W. SILER,
Admiral, U.S. Coast Guard
Commandant.

(The full text of these amendments was published in the Federal Register of September 5, 1974.)

CORRECTION TO CASUALTY STATISTICS

The August 1974 *Proceedings* carried Casualty Statistics on Western Rivers in 1974. In the table A on page 149 in that issue, a casualty due to current is noted at mile 435.8 near Vicksburg. The cargo involved in that casualty is incorrectly listed as 75,000 long tons. The correct figure should have read 7,500 short tons of cargo.

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of Transportation

[CGD 74–119]

REVOCATION AND RECODIFICATION

The Coast Guard is revoking Part 170 and recodifying parts 136, 137, and 143 of title 46, Code of Federal Regulations. Parts 136, 137, and 143 are reissued as parts 4, 5, and 9 respectively of title 46.

46 CFR part 170 contains the general provisions for the numbering of undocumented vessels, statistics on numbering, and "boating accident reports" and accident statistics. The substantive boating regulations that 46 CFR part 170 is addressed to were revoked in the Federal Register issue of October 7, 1972 (37 FR 21404). Because of this revocation, 46 CFR part 170 does not serve any useful purpose and is being revoked.

46 CFR part 136, Marine Investigations Regulations, 46 CFR part 137, Suspension and Revocation Proceedings, and 46 CFR part 143, Extra Compensation for Overtime Services, now appear between subchapter J, Electrical Engineering, and subchapter M, Bulk Grain Cargoes, in title 46. 46 CFR parts 136, 137, and 143 are being reissued as 46 CFR parts 4, 5, and 9 respectively in subchapter A, Procedures Applicable to the Public, to which these parts are logically related. The recodification will promote reader understanding and facilitate reference.

Furthermore, 46 CFR 4.01–1 and 46 CFR 4.01–5 are revoked because they are references to 46 CFR part 173 that has been revoked, and 46 CFR part 136 that is recodified as 46 CFR part 4 by this document.

Since these amendments are not substantive, notice and public procedure are unnecessary under 5 U.S.C. 553(b)(3)(B), and they are effective immediately under 5 U.S.C. 553(d)(3).

In consideration of the foregoing, Chapter 1, of Title 46, Code of Federal Regulations is amended as follows:

1. 46 CFR Part 170 is revoked.

(46 U.S.C. 1488, 49 CFR 1.46(b))

2. 46 CFR Part 4.01–1 and 46 CFR part 4.01–5 are revoked and Parts 136, 137, and 143 of title 46, Code of Federal Regulations are adopted as amendments to Subchapter A of the same title by adding them as new Parts 4, 5, and 9, respectively, as set forth below.

* * * * *

Dated: August 30, 1974.

Effective date: This amendment is effective on September 13, 1974.

(The full text of these amendments was published in the Federal Register of September 17, 1974.)

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.[1] 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 Saturday, Sunday, and 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 $5.00 per month or $45 per year, payable in advance. The charge for individual copies is 75 cents for each issue, or 75 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 October 1, 1973 are now available from the Superintendent of Documents price: $5.80.

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (Chief Mate and Master) (1–1–74).
101–1	Specimen Examinations for Merchant Marine Deck Officers (2d and 3d mate) (10–1–73).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (4–1–72). F.R. 7–21–72, 12–1–72.
115	Marine Engineering Regulations (6–1–73). F.R. 6–29–73, 3–8–74, 5–30–74, 6–25–74, 8–26–74.
123	Rules and Regulations for Tank Vessels (1–1–73). F.R. 8–24–73, 10–3–73, 10–24–73, 2–28–74, 3–18–74, 5–30–74, 6–25–74.
129	Proceedings of the Marine Safety Council (Monthly).
169	Rules of the Road—International—Inland (8–1–72). F.R. 9–12–72, 3–29–74, 6–3–74.
172	Rules of the Road—Great Lakes (7–1–72). F.R. 10–6–72, 11–4–72, 1–16–73, 1–29–73, 5–8–73, 3–29–74, 6–3–74.
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 (3–1–73).
176	Load Line Regulations (2–1–71). F.R. 10–1–71, 5–10–73, 7–10–74.
182	Specimen Examinations for Merchant Marine Engineer Licenses (7–1–63).
182–1	Specimen Examinations for Merchant Marine Engineer Licenses (2d and 3d Assistant) (10–1–73).
184	Rules of the Road—Western Rivers (8–1–72). F.R. 9–12–72, 5–8–73, 6–27–73, 6–28–73, 3–29–74, 6–3–74.
190	Equipment List (8–1–72). F.R. 8–9–72, 8–11–72, 8–21–72, 9–14–72, 10–19–72, 11–8–72, 12–5–72, 1–15–73, 2–6–73, 2–26–73, 3–27–73, 4–3–73, 4–26–73, 6–1–73, 8–1–73, 10–5–73, 11–26–73, 1–17–74, 2–28–74, 3–25–74.
191	Rules and Regulations for Licensing and Certification of Merchant Marine Personnel (6–1–72). F.R. 12–21–72, 3–2–73, 3–5–73, 5–8–73, 5–11–73, 5–24–73, 8–24–73, 10–24–73, 5–22–74, 9–26–74.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (5–1–67). F.R. 3–30–68, 4–30–70, 10–20–70, 7–18–72, 4–24–73, 11–26–73, 12–17–73, 9–17–74.
227	Laws Governing Marine Inspection (3–1–65).
239	Security of Vessels and Waterfront Facilities (3–1–72). F.R. 5–31–72, 11–3–72, 7–8–72, 1–5–73, 1–23–74, 3–29–74, 4–2–74, 5–15–74, 5–24–74, 8–15–74, 9–5–74, 9–9–74.
256	Rules and Regulations for Passenger Vessels (5–1–69). F.R. 10–29–69, 2–25–70, 4–30–70, 6–17–70, 10–31–70, 12–30–70, 3–9–72, 7–18–72, 10–4–72, 10–14–72, 12–21–72, 4–10–73, 8–1–73, 10–24–73, 12–5–73, 3–18–74, 5–30–74, 6–25–74, 9–20–74.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (4–1–73). F.R. 6–28–73, 6–29–73, 8–1–73, 10–24–73, 3–18–74, 5–30–74, 6–25–74.
258	Rules and Regulations for Uninspected Vessels (5–1–70). F.R. 1–8–73, 3–28–73, 1–25–74, 3–7–74.
259	Electrical Engineering Regulations (6–1–71). F.R. 3–8–72, 3–9–72, 8–16–72, 8–24–73, 11–29–73.
266	Rules and Regulations for Bulk Grain Cargoes (5–1–68). F.R. 12–4–69.
268	Rules and Regulations for Manning of Vessels (10–1–71). F.R. 1–13–72, 3–2–73.
293	Miscellaneous Electrical Equipment List (7–2–73).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (7–1–72). F.R. 7–8–72.
323	Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (9–1–73). F.R. 1–25–74, 3–18–74, 9–20–74.
329	Fire Fighting Manual for Tank Vessels (1–1–74).
439	Bridge-to-Bridge Radiotelephone Communications (12–1–72).

CHANGES PUBLISHED DURING SEPTEMBER 1974

The following have been modified by Federal Registers:

CG–191, Federal Register of September 26, 1974.
CG–200, Federal Register of September 17, 1974.
CG–239, Federal Registers of September 5 and 9, 1974.
CG–256 and CG–323, Federal Register of September 20, 1974.

[1] Due to the paper shortage, certain publications may be temporarily out of stock. Titles 33 and 46, Code of Federal Regulations may be consulted for rules and regulations.