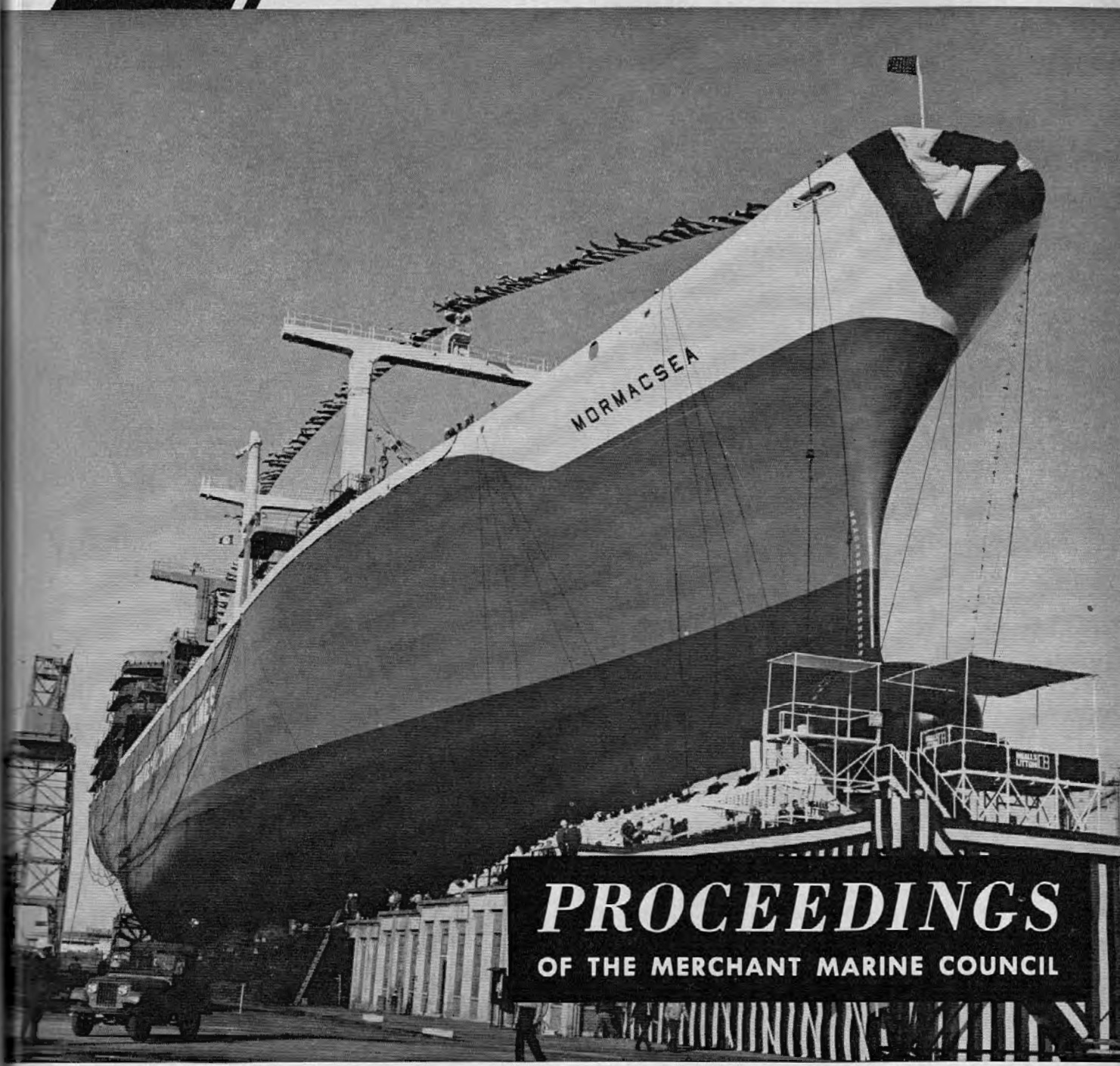
COAST GUARD



PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

Vol. 26, No. 5 CG-129 May 1969

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Licensing—A Program for the Seventies . . .

SS "Ocean Eagle". . .

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COVERS

FRONT COVER: The first combination roll-on/roll-off container ship ever designed and built in the United States was launched last fall. The *Mormacsea*, built for Moore-McCormack Lines by Ingalls Shipbuilding in Pascagoula, Miss., will have a cruising speed of 25 knots. *Courtesy Maritime Administration.*

BACK COVER: The 66,700 ton tanker *Esso New Orleans* serves as a reminder of National Maritime Day, May 22. *Courtesy Humble Oil & Refining Co.*

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PROCEEDINGS

OF THE

MERCHANT MARINE COUNCIL

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LICENSING—A PROGRAM FOR THE SEVENTIES

Lieutenant Commander James I. McLeaish

U.S. Coast Guard Headquarters

INTRODUCTION

ON JULY 28, 1852, the steamboat *Henry Clay,* while on a trip down the Hudson River from Albany, N.Y., caught fire and burned to the water's edge. This casualty resulted in the loss of over 100 lives. It was the final accident in an unusual series of seven major disasters, mainly boiler explosions, which took nearly 600 lives in a period of 8 months. This tragedy prompted Congress to pass the "Steamboat Act" of August 30, 1852, which signaled the beginning of the marine licensing function in this country under the Steamboat Inspection Service.

The scope of the Coast Guard licensing program has greatly broadened since 1852. From examining and licensing a few steamboat men, the program has grown by Congressional direction to include the crews of practically everything that floats and carries passengers or freight. Today, however, after more than a century of operation, the question is being asked, "Is the present licensing system adequate?"

LICENSING STUDY

Recently an intensive study of the licensing requirements and examination procedures used by the Coast Guard for licensing merchant marine officers was completed. The 8-month study was conducted by the Educational Testing Service (ETS) [1] at the request and under the sponsorship of the Coast Guard. The purpose of the study was to obtain an objective evaluation of the licensing function. Specifically, the study sought to identify problems and shortcomings in the present system and recommend improvements and methods for effecting change.

In conducting the study, the ETS staff made field visits to five Coast Guard Marine Inspection Offices located at the ports of New York, San Francisco, New Orleans, Cleveland, and Miami. The functions handled by these offices were considered to be representative of the licensing program. New York and San Francisco were chosen because they accounted for the highest volume of licensing on each coast. New Orleans was visited because of the large number of licenses issued by that office for oil and mineral industry vessels and its special involvement with towing vessels. Cleveland was chosen to represent licensing on the Great Lakes. Miami was selected because it would typify the licensing functions in a smaller office where few major licenses are issued, but where a considerable number of persons are licensed as operators of small passenger vessels.

The study group also visited several maritime academies to discuss the present examination procedures and to find out what changes in the licensing system they would recommend. Similar discussions were held with representatives of three labor organizations involved in operating

Lieutenant Commander James I. McLeaish is a 1956 graduate of the U.S. Coast Guard Academy. He has served aboard the cutters, *Winnebago, Mackinaw,* and most recently as the Engineer Officer aboard the *Minnetonka.* LCDR McLeaish's marine inspection career began in 1960 at the Port of Port Arthur, Tex. After serving as a field inspector, he was transferred to the 8th Coast Guard District Merchant Marine Technical Office. Presently, he is serving on the staff of the Merchant Vessel Personnel Division at Coast Guard Headquarters.

[1] The Educational Testing Service (ETS), Princeton, N.J., selected to conduct the Coast Guard study, is a nationally recognized leader in the field of examination development research and testing of personnel and is a nonprofit organization. ETS is responsible for testing over 5 million individuals annually, including examinations for the College Entrance Examination Board and testing of candidates for all of the Nation's military academies.

A prized possession of master mariners in the days of sail, this skillfully engraved license is similar to the licenses currently issued by the Coast Guard to merchant marine officers. The license issued in the Twentieth Century has as an illustration, in lieu of the sailing ship, two large ocean-going steamers depicting contemporary merchant vessels.

schools for training candidates for deck and engineer officer licenses.

After completing the survey, the study group stated quite succinctly their intentions "to tell it the way it is" in the final report and to suggest changes, which would be in the best interests of the entire maritime industry.

REVIEW OF EXAMINATION PRACTICES

Many of the issues developed in the body of the report have been the subject of controversy for years. The report found dissatisfaction with the examination procedure dating back to 1937 when licensing was lodged with the Bureau of Marine Inspection and Navigation in the Department of Commerce.

In 1942 the responsibility for marine inspection and licensing was transferred from the Bureau of Marine Inspection and Navigation to the U.S. Coast Guard, first as a wartime measure, then permanently in 1946. In 1943 work was started on a project to bring about uniformity in examinations and standardization of examination questions. Standard test items were developed at Coast Guard Headquarters and after over a year's preparation to print, assemble, and package these items, new sets of examination cards were distributed to all field offices.

Finally, on September 1, 1945, the new material, prepared by the Coast Guard, was placed in use simultaneously in all ports throughout the United States. This new program was expected to provide uniform examinations, centralized preparation

of examination questions, and continual updating of examination material; however, in 1953, defects in the system became evident. As a result, a survey of the examining procedures was conducted by the Coast Guard. The Coast Guard study recommended greater uniformity in licensing procedures together with a central control of all examinations. As a result of the Coast Guard study, a review of the examination questions in the card file and the removal of many of the obsolete items was accomplished; however, the proposal for central control of the examinations was never adopted.

In July 1960, conversion of essay questions to multiple-choice questions was undertaken as a formal "Management Improvement Project." Although work is in progress on the conversion, over 90 percent of the deck and engineer officer license questions still remain to be converted to multiple-choice type questions. It was to this situation that the current study on licensing addressed iself.

FINDINGS OF ETS STUDY

The study indicates that few major changes have been made to the licensing examination system in the past 30 years. The investigators conclude that there appears to be a substantial basis in 1969 for much of the criticism of the current system of licensing and examination. In suggesting change, the findings of the study direct attention to specific areas as follows:

1. The basic licensing structure represents a crazy quilt of historical precedents and pressures. The structure should be reviewed and revised.

2. The pool of questions from which licensing examinations are being assembled is common knowledge, and much of it appears to be in need of updating. No significant number of new questions has been added to the pool in the last several years.

3. The Coast Guard lacks an adequate staff at Coast Guard Headquarters to implement and maintain an effective examination program.

4. The present procedures used in administering and scoring examinations are not standardized.

5. The specifications for assembling examinations are vaguely defined and should be put into more definitive terms, not simply by subject alone. No clear relationship exists between examination content and the knowledge, skills, and understanding needed by the candidates for each of the various grades of licenses for deck and engineer officers.

6. The Coast Guard does not presently have a research and development program to evaluate the needs of an industry, which is changing at an increasingly accelerated rate. Methodology for keeping pace with the changes in the industry and a long range plan for continually increasing the operational efficiency of the program are needed.

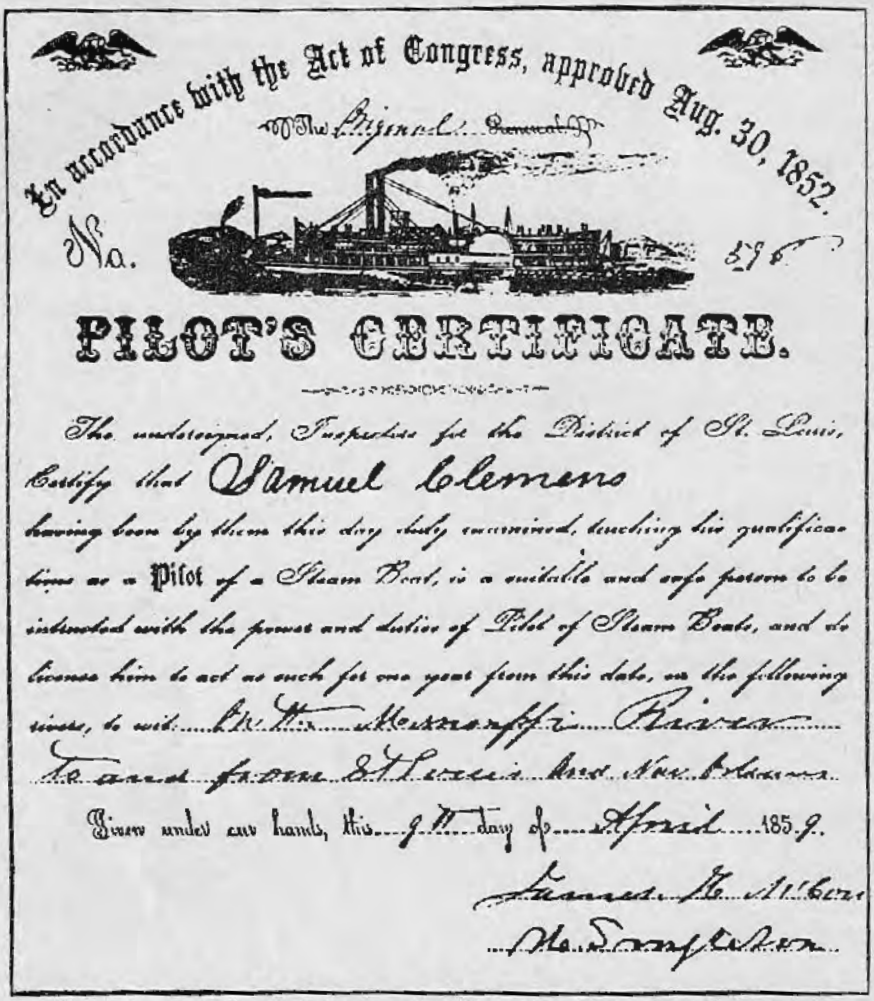
7. The maze of experience requirements and other prerequisites to qualify for a license make it difficult to achieve any degree of uniformity in evaluation of the applicant. This is especially true with evaluations of applications carried out in over 50 different locations. Simplification of the entire process as well as centralizing all evaluation activities in a single location, or at most, in a limited number of centers is needed.

LICENSING STRUCTURE

One of the most far-reaching changes proposed by the study dealt with a plan for simplifying the licensing structure. The present structure endeavors to cover a variety of concepts, including the following: whether the vessel on which a person is qualified to serve is inspected or uninspected, the tonnage of the vessel, the waters on which it operates, the type of propulsion system (steam or diesel), the horsepower rating, and, to some extent, the industry or type of activity engaged. The Coast Guard now issues approximately 90 different types of licenses, ranging from Master of sail to Chief Engineer of nuclear propelled vessels. There are 35 different Masters' licenses, 22 different Mates' licenses, 13 different Pilots' licenses, and 28 different Engineers' licenses. Licenses for new types of vessels such as hydrofoils, hovercraft, and submersibles will present additional requirements.

To achieve a more rational licensing structure, the study points out that a careful consideration of the purpose of the license is needed. It is apparent that the basic purpose of licensing is to promote *safety at sea* by insuring that all watchstanding personnel possess certain minimum skills. However, the investigators doubted the need for "governmental intercession at each step of the job ladder." They felt that the examinations for a raise of grade of license up to chief mate were largely repetitious. The need for a one-to-one relationship between licensing categories and job categories was questioned as was the need to distinguish vessels as "inspected" and "uninspected" for the purposes of licensing. Only those distinctions which make a significant contribution to safety at sea should be retained. The study recommended that the number, kinds and grades of licenses be reduced to a point which would optimize high licensing standards.

A simple two-level structure, similar to that used by some European maritime nations, was proposed. Under the new structure, a demonstration of general competency would be required at two points in the seafarers' career: First, prior to entry into the licensed officer ranks, and, second, prior to entry into the executive or command ranks. Thus, for a deck officer, a seaman would be examined at the entry level (third mate) for a Mate's license and again at the executive level (chief mate) for a Master's license. In order to be eligible to serve as Master on a vessel,



In accordance with the Act of Congress, approved Aug. 30, 1852.

The Original Document

No. 576

PILOT'S CERTIFICATE.

The undersigned, Inspectors for the District of St. Louis, certify that Samuel Clemens having been by them this day duly examined, touching his qualifications as a Pilot of a Steam Boat, is a suitable and safe person to be intrusted with the powers and duties of Pilot of Steam Boats, and do license him to act as such for one year from this date, in the following limits, to wit: the Mississippi River from St Louis to and from New Orleans.

Given under our hands, this 9th day of April 1859.

James H. McCord

Wm. Tompkins

The river pilot's license issued here in 1859 to Samuel Clemens (Mark Twain), to which was appended this proof of oath: "I, James H. McCord, inspector of the district of St. Louis, certify that the above-named Samuel Clemens this day before me solemnly swore that he would faithfully and honestly, according to his best skill and judgment, without concealment or reservation, perform all the duties required of him as a pilot, under act of congress, 'to provide for the better security and the lives of passengers on board of vefsels propelled, in whole or in part, by steam.'"

1 year's service as chief mate while holding a Master's license would be required.

OTHER RECOMMENDATIONS

In suggesting change, the study recommended the appointment of a broadly based Advisory Committee with representation from industry, unions, and maritime educational institutions to advise the Coast Guard on needed changes. It would assist the Coast Guard in suggesting reforms urgently needed in the existing system as well as in the development of a long-range program.

To bring about greater uniformity in the administering and grading of examinations, the report recommends modification of the present system which permits applicants to take their examinations at any one of 50 offices. While the report does not recommend the elimination of existing offices, it does propose that *grading* of examinations be concentrated in a relatively small number of centers. Applicants for any of the major deck or engineer officer licenses would still be able to take most of the tests at any of the satellite offices while the grading would be handled at a center.

Of particular interest to those who will take a license examination in the future, the report recommends that applicants who do not pass an examination be reexamined only on the subjects that have been failed rather than retaking the entire examination and that up-to-date informational and instructional booklets be prepared and made available to seafarers preparing for license examinations.

POSSIBLE OUTCOMES

Presently the Coast Guard is carefully reviewing the proposals in the study report and making plans to implement many of the recommendations. To predict exactly what will result from the recommendations contained in the report is not easy to do. Nevertheless, it is possible to suggest some of the probable outcomes and changes that may occur.

First, the Coast Guard will seek the participation of the maritime industry in developing substantive changes in the present licensing program. In the near future an advisory group with representatives from management, unions, educational institutions, and the government will be established. This group would review the suggested changes proposed in the study, especially those on the licensing structure and examination specifications, and advise the Coast Guard on implementing those changes that are consonant with the needs of the industry.

By the end of this year, it is anticipated that the staff in Coast Guard Headquarters will be augmented sufficiently to allow the development of new up-to-date examinations. In the meantime, meetings will be held with representatives of the various maritime educational and training organizations and other persons designated by the advisory group to assist in de-

veloping definitive test specifications.

Regrouping of some of the lesser licenses under a few broad categories to simplify the license structure will be accomplished, where possible, under the present context of the law. However, simplifying the structure of our licensing system is a task that cannot be approached lightly. Any significant change in the licensing structure may well require new legislation. Simplification in the structure of major licenses will be a long-range project requiring careful consideration by the Coast Guard and the advisory group.

LICENSING IN THE FUTURE

Many of the proposals in the study portend what our examination program might be like in the 1970's. It is possible to envision a modern system using centrally prepared examination booklets with multiple-choice questions and answer sheets that are machine graded. Each booklet or test module would consist of questions covering a particular subject or group of subjects. The test modules would take approximately 90 minutes to complete. Normally, no more than 3 days would be required to complete the written examination.

All formulas required for use during each examination would be contained in the test modules unless there was some essential reason to require applicants to memorize such data. In such an event, this information would be pointed out in specimen examination booklets. Up-to-date instructional booklets would be available for candidates to help them prepare for the license examinations.

Regional examination centers would be established in central locations on the east coast, west coast, gulf coast, Great Lakes, and western rivers to handle the majority of applicants for major licenses. Examinations would also be administered at satellite centers, located at the present Marine Inspection Offices. Normally, these satellite centers would handle only examinations for the lesser licenses such as licenses for small passenger vessels and motorboats. However, applicants for a major license would also be tested at these local centers if they were willing to wait for the examination to be mailed to the regional centers for processing and grading.

New techniques for testing candidates in the future system might include performance tests using simulators for radar plotting, loran, and RDF, or audiovisual devices for Rules of the Road examinations. Practical tests on most aspects of marine engineering appear to be within the capability of modern simulator testing. These are just a few of the changes that are likely to take place in the licensing program during the seventies.

Looking back over the more than 100 years of the merchant marine licensing program, it is interesting to note that one of the first licenses issued by the local Steamboat Inspectors at St. Louis was to a Mr. Samuel Clemens as Pilot on the Mississippi River. After receiving the license, Samuel Clemens, better known as Mark Twain, said, "After a year and a half of hard study, the United States Inspectors rigorously examined me and decided I knew every inch of the Mississippi—thirteen hundred miles in the dark and in the day."

For 3 years Mark Twain was a licensed pilot in charge of various paddlewheel steamboats on the Mississippi until the river was closed to navigation by the Civil War. It was a chapter in his life that always appealed to him—the excitement, the authority, and the prestige. Undoubtedly, it was one of Mark Twain's most satisfying accomplishments when he "learned the river" as an apprentice pilot and finally received his license. You may be assured that no matter what changes are made to the present licensing system, the licensed officers of the future will continue to enjoy the same stature and high esteem they have merited in the past. ‡

SYNTHETIC LINE HANDLING

Recently a tank vessel was mooring at a submarine terminal. A synthetic line was run to No. 1 buoy and was being hove on. There was a strong current running.

It became apparent that an excessive strain was being exerted on the line. The crew was ordered by the ship's Master to stand clear. All did except an O.S. who was in a bight.

The line jumped the gypsyhead and ran. It struck the O.S., dislocated his shoulder and broke two ribs. The operation was halted and the man sent ashore to a hospital.

Synthetic lines have many virtues. They are relatively light. They are extremely strong and can be used in smaller sizes. This makes for ease in handling.

On the other hand, their smaller size enables many more turns to be put on gypsyheads with a decrease in slippage.

The net result is that if an excessive force is placed on this type of line and if this force continues to increase, the line will fuse to the bitts or gypsyhead and build up a tremendous static force. Eventually something has to give and, if the line doesn't break, it will run with great violence.

Safety in using these lines lies in avoiding placing excessive strain on the lines, faking the lines where they will run clear, standing where you can jump clear if the line runs and not standing too close to the gypsyhead.

Excessive strains can be avoided in several ways. First, in the maneuvering of the ship. Second, by cutting down on the number of turns on the gypsyhead. Let the line run before an excessive tension is built up and before the line fuses. Third, by taking turns off bitts before building up a strain on the line. ‡

—Safety Bulletin, California Shipping Co.

SS "OCEAN EAGLE" LIBERIAN GROUNDING AND BREAKING UP WITH NO LOSS OF LIFE

The actions taken on the *Ocean Eagle* case follow in chronological order

MARINE BOARD OF INVESTIGATION

FINDINGS OF FACT

1. On 3 March 1968, the Liberian tankship SS *Ocean Eagle* laden with a cargo of crude oil from Puerto La Cruz, Venezuela, was navigated into hazardous waters while approaching the entrance buoys of San Juan Harbor without a pilot. Because of sea conditions and the speed of the vessel, the pilot was unsuccessful in several attempts to board *Ocean Eagle* from the starboard side. He realized that she was standing into danger but, because of lack of communications, was unable to warn the Master. The pilot's shouts and hand motions to stop were not heard or were not understood. However, the Master realized that he was standing into danger and dropped the starboard anchor. The pilot was then finally able to board the vessel from the port side. Shortly thereafter, at about 0659 (+4 zone time), with the anchor down, but with engines ahead and some way on, *Ocean Eagle* struck and broke in half. The bow section remained at anchor and the stern section drifted ashore. Both halves were later towed to sea and sunk. Spillage of the cargo caused extensive pollution to the harbor and adjacent beaches of Puerto Rico. There were no injuries or loss of life as a result of this casualty.

2. Vessel Data:
   Name: *Ocean Eagle.*
   Former names: *Ocean Trader,* 1956; *Maritime Trader,* 1954.
   Official No. 319.
   Home port: Monrovia, Liberia.
   Call sign: ELIP.
   Type: Tankship, machinery aft with 30 cargo tanks comprised of 10 wing tanks, port and starboard, and 10 center tanks.
   Where built: Hoboken, Belgium.
   Date built: 1953.
   Shipbuilders: John Cockerill, SA.
   Gross tons: 12,065.
   Net tons: 7,244.
   Summer deadweight: 18,524.
   Length: 579′00″.
   Breadth: 70′4″.
   Moulded depth: 39′9″.
   Moulded draft: 29′11¾″.
   Summer loadline: Freeboard, 9′11¾″; draft 29′ 11¾″.
   Tropical loadline: Freeboard, 9′4¼″; draft, 30′7¼″.
   Speed loaded to moulded draft: 15 knots.
   Propulsion: Single screw, right-handed four-blade, fixed pitch propeller. Pitch 4.915 meters. Three Parsons-Cockerill steam turbines, double reduction geared to shaft. 8,000 s. hp. Two oil fired watertube Babcock and Wilcox boilers. Design pressure 500 lbs. per square inch.
   Owners: Transocean Tankers Corp. (60 percent) and Northern Transatlantic Carriers Corp. (40 percent).
   Agent: Norland Shipping and Trading Corp., 29 Broadway, New York, N.Y.
   Charterer: Kupan Transport Co., New York, N.Y. (subsidiary of Gulf Oil Corp.). Cargo consignee: Caribbean Gulf Refining Corp., San Juan., P.R.
   Navigational equipment: Gyro and magnetic compasses (gyro error 0.5° east), radar, fathometer, radio direction finder, sextant, chronometer.

The radar had been used for navigational purposes during the approach but was not being utilized at the time of the casualty.

The Cargo Ship Safety Construction Certificate was issued on 17 April 1967. The Cargo Ship Safety Equipment Certificate and Load Line Certificate were en-

The bow of the Ocean Eagle *juts out of the water just off the Puerto Rican coast.*

dorsed while the vessel was drydocked in Liverpool, England, in September 1967. These certificates were issued by the American Bureau of Shipping which also classed the vessel.

3. Weather at the time of the casualty was partly cloudy, good visibility and a northeasterly wind force 4–5. There was a heavy north-northeasterly swell in excess of 15 feet. The distance between crests was one ship's length or slightly less.

The weather forecast by the U.S. Weather Bureau, San Juan, for 3 March 1968 was: "Smallcraft Warnings at 0030, 3 March 1968, for northwest and east coast. Swells will be increasing during the night to 7 to 12 feet. These swells caused by North Atlantic storm."

Sea water temperature at San Juan Harbor entrance was 85° F. Sunrise was at 0641.

Predicted tide at San Juan Harbor entrance 3 March 1968 (tide tables): Low, 0554; height (−0.1′); high 1130, height (0.6′); height of tide at 0700 (−0.1′).

Tidal Current Tahles 1968, Atlantic Coast of North America includes the following information: "At San Juan Harbor entrance current normally weak and variable, but winds may cause heavy swells."

The current at the time of the casualty was reported to be insignificant.

4. *Ocean Eagle,* under voyage charter of the Kupan Transport Co., departed on voyage No. 168 from Puerto La Cruz, Venezuela, at 1450 on 1 March 1968 en route to San Juan, Puerto Rico, loaded with a cargo of 19,233 tons of Leona crude oil. The recorded mean draft of 31′2″ was 6¾″ above the assigned tropical load line. At 1545, 1 March, *Ocean Eagle* was abeam Morro Pelotas and set course at 358° T. The course recorder tape corresponds with this entry except the time was 2145 indicating that the tape times were exactly 6 hours late. The change of course to 274° T. at 0235, 3 March, which was plotted, corroborates this fact. The voyage across the Caribbean Sea and through the Virgin Passage was uneventful. At about 0235 on 3 March, the vessel's course was changed to 274° T. with Culebra light abeam to port distant 8 miles. This course would closely parallel the north coast of Puerto Rico. Speed made good from 0235 to 0500 was 14.1 knots. The Master, who had been on the bridge since 2100, 2 March, testified that he had unsuccessfully tried to raise the pilot station on radio (2182 kcs) from 0400 to 0530 at which time he shifted to radio telephone on VHF. The Porto Rico Lighterage Co., received the transmission and, after checking with the pilot station, advised him that a pilot was on the way. The pilot station and the pilot boats are not radio equipped. At about 0600, the Chief Mate logged "End of Voyage," secured the automatic pilot and the helmsman took over with hand-telemotor. The Master, Chief Mate and the helmsman were the only persons on the bridge at that time. Speed was reduced to half ahead at 0608 and to slow ahead at 0612. Course varied between 285° T. and 270° T. from 0606

339-306—69——2

until 0613, at which time course was changed to 195° T. to make the approach. The Bar Channel range, marked by range lights, is 188° T. Based on logged courses and speeds, the 0606 DR position would have placed buoy No. 2, at the entrance to the channel, bearing 199° T. distant 3.2 miles. The Master estimated that he was "about 2 miles off San Juan" at 0613, when he turned to approach the channel. At that time he said the vessel was a little to the east of the range. At 0628 speed was increased from slow to half ahead and at 0631 engines were stopped. The last entry in the bridge bell log was at 0633, indicating that the engines were placed at half ahead at that time. The engineroom bell log was never found. The Master and Chief Engineer testified that various speed changes were made after 0633, with only slow ahead, dead slow ahead, and stop being used. Some sluggishness in steering was reported by the helmsman while steering a course of 195° T. which is attributed to the slow speed and following sea. The course recorder tape showed the course to have varied from 192° T. to 202° T. between 0633 and 0651. The vessel was not being steered on the Bar Channel range (188° T.).

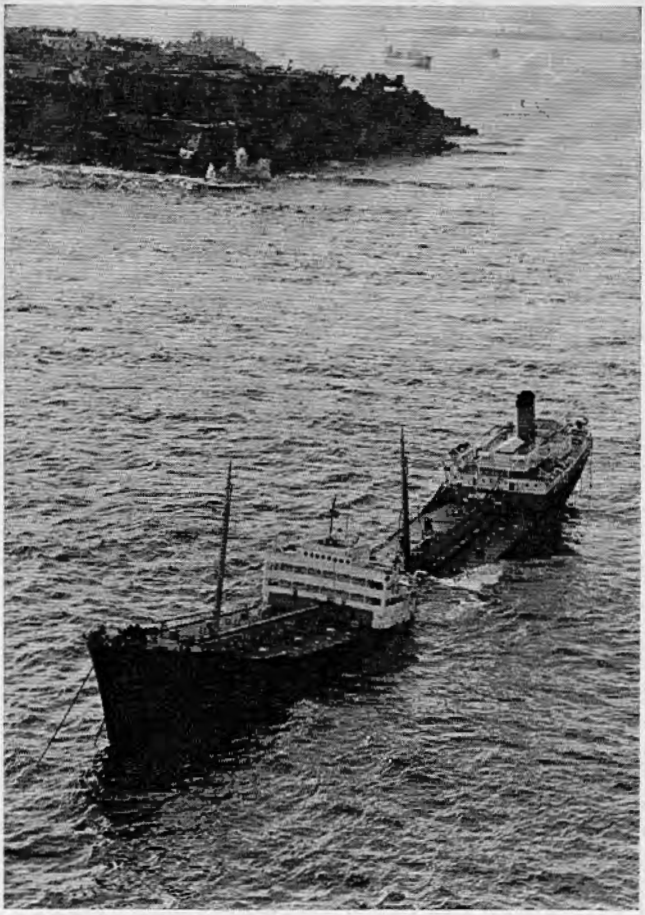
5. As *Ocean Eagle* approached the harbor entrance buoys, the pilot, Captain David T. Gonzalez, made several attempts to board her on the starboard side but failed to do so because of the high following sea and the way on the vessel, which was about 4 knots. He did, however, determine that the vessel was standing into danger and attempted to contact the Porto Rico Lighterage Co. tugs on his walkie-talkie radio. Being unable to raise them directly, he, at about 0645, contacted Pilot Rivera, who was standing by on another pilot boat near channel buoy No. 4 awaiting the arrival of the vessel *Stella Oceanic*. Pilot Gonzalez told him that the *Ocean Eagle* was standing into danger and would probably need a tug. Immediately, Pilot Rivera proceeded down the channel to the vicinity of LaPuntilla point and alerted the tugs *Catano* and *Borinquen*. At about 0650, both tugs responded to the call.

6. By approximately 0650, *Ocean Eagle* had approached to an estimated position of about 700 yards north of buoy No. 2, west of the centerline of the entrance channel extended and was headed slightly out of the channel on a heading of about 202° T. At that time the Master sent the Chief Mate down to the forecastle to drop the starboard anchor and placed the engines full astern. Approximately 0651: the starboard anchor was dropped and the anchor ball raised; buoy No. 2 is estimated to have been 600 yards about 5–10° off the port bow; the vessel had headway which caused the chain to tend aft and take such a strain that additional chain had to be veered until four or five shots of chain were out. The brake was alternately applied and released to ease the heavy strain on the chain. The effects of the pull of the starboard anchor chain caused by the residual way on the vessel, the backing down of the single screw, and the forces of the sea and wind on the starboard quarter caused the vessel's bow to swing to starboard, first slowly then more rapidly.

7. At approximately 0655, after the vessel was anchored and headed southwesterly with little way on, Pilot Gonzalez managed to board her on the port side. When he reached the bridge, the engines were still going astern. He recommended "left rudder" followed quickly by "all left rudder" and engines "ahead dead slow." The Master suggested the speed should be increased to "ahead slow" which was done. The vessel responded and by approximately 0657, the swing to starboard was checked at a heading of 263° T. The vessel then began to swing to port very slowly until it reached a heading of 258° T. The vessel was rising and falling in the sea which was then coming from three points abaft the starboard beam.

8. During this period (about 0659), the vessel struck the bottom at least one time and probably three times in quick succession. Three times the vessel reportedly vibrated and trembled and a noise was heard. On the third occasion the vessel sagged amidships and oil began to flow from the deck in the vicinity of No. 6 cargo tanks. The engine spaces were inspected by the Second Engineer and no damage was noted. The vessel continued to float freely and swung slowly to starboard. Intending to ground the vessel to minimize damages, the Master ordered an "ahead full" bell at about 0702. The vessel continued to swing to starboard to about 286° T. then back to port to about 270° T. at 0706. Upon realizing that the turning propeller would be hazardous to the crew in the lifeboat aft, which was about to be lowered, the Master decided that it was not practical to carry out this course of action. He stopped the engine and ordered the Chief Engineer to secure the engineroom for abandoning ship. The Master then gave the order to abandon ship. He did not transmit or display a distress signal. At about 0706, the vessel began to swing to starboard first slowly, then rapidly. After the vessel stopped its swing to starboard, it oscillated and settled on a generally northerly heading into the sea with the starboard anchor chain tending forward. The vessel continued to float freely. The midship section surged up and down approximately 8 to 10 feet in motion with the sea. Oil poured out of the hull as the deck rose and fell.

9. In her anchored position the *Ocean Eagle* lay just west of the northern extension of the line of buoys No. 2, No. 4 and No. 6, with her stern about 300 yards north of buoy No. 2. When a Coast Guard helicopter arrived on the scene at 0738, there were two *Ocean Eagle* lifeboats, two tugs, two pilot boats and a Coast Guard utility boat in the vicinity of *Ocean Eagle*. At that time, the Master



The Ocean Eagle *lies broken in half at the entrance to San Juan Harbor. The stern section later drifted ashore, while the bow section remained at anchor. The vessel's cargo of crude oil caused considerable pollution to the harbor and nearby beaches.*

went forward and dropped the port anchor, then returned to the bridge and raised the international signal "Not Under Command." The pilot had abandoned ship with the rest of the crew but later reboarded the vessel to talk to the Master, who was collecting ship's records, documents, papers, money and personal belongings prior to abandoning ship.

10. At approximately 0945, the two sections of *Ocean Eagle* separated. The stern section then drifted southerly toward shore and grounded in a position about 300 feet west of the Bar Channel between buoys No. 2 and No. 4. The bow section remained anchored in position about 450 yards to the north of buoy No. 2 just west of the line marking the western boundary of Bar Channel extension. At 1045, the tug *Catano* put a hawser on the bow section and pulled in a WNW direction until about 1300, but the bow section was not moved appreciably from her original position. A lighted wreck buoy was established by the Coast Guard Cutter *Sagebrush* at 1630 approximately 150 yards north of the bow section in line with buoys No. 2, No. 4 and No. 6 in position 18°28.7′ N., 66°07.7′ W. This buoy was removed on 13 March 1968. On 9 March 1968, a U.S. Naval Salvage team tried to tow the bow to sea but managed only to move it about 600 yards to the westward. The bow finally grounded just west of buoy No. 2 on a southwesterly heading outside of Bar Channel. Extensive surveys, removal of the cargo, deballasting and salvage were made by the U.S. Navy on the bow half and by Murphy Pacific Salvage, on behalf of the U.S. Army Corps of Engineers, on the stern section. The bow half was towed to sea by the Navy on 4 April 1968 and sunk in position 18°36.3′ N., 66°08.7′ W. The stern half was towed to sea on 11 April 1968 and sunk in position 18°-36.9′ N, 66°11.3′ W. The two halves which constituted hazards to navigation were considered complete losses and beyond economical salvage. An estimated 3,500,000 gallons of crude oil were discharged into the sea resulting in severe pollution of the harbor and adjacent areas. The oil pollution extended to the east of San Juan Harbor entrance for a distance of about 7 miles and to the west for a distance of about 9 miles. On 15 May 1968, the Puerto Rican Public Works Department reported that the cleanup of the beaches had been completed in all major areas and only minor cleanup operations in a very minor scale continues in places where the sand is saturated with oil-emulsifier mixture to a considerable depth necessitating physical removal of sand and pollutant. Approximately 2,200,000 gallons were salvaged from the bow and stern sections. The U.S. Army Corps of Engineers reported that approximately $1.2 million were expended to remove the two halves of the hull from the harbor. The Commonwealth of Puerto Rico estimates that the total loss would be in the hundreds of millions of dollars, because of loss of tourism revenue, claims from damage caused by the oil, and notoriety, causing future cancellation of tourist reservations.

11. Upon departure from Puerto La Cruz, Venezuela, for San Juan, *Ocean Eagle* loaded 19,233 long tons (135,464 barrels) (5,689,488 gallons) of Leona crude oil and 290 long tons of Bunker "C" fuel oil at Berth No. 1, Mene Grande Oil Co. All cargo tanks were essentially full except: No. 2 wing tanks and No. 10 wing tanks which were empty; No. 6 wing tanks were partially filled. The fuel and water tanks forward of cargo tanks No. 1 were empty. The water tanks in the double bottoms aft were partially empty. Peak tanks were empty. The cargo was consigned to Caribbean Gulf Refining Co., in San Juan. Some 65 to 75 tons of fresh water were pumped overboard in Puerto La Cruz because it was found that the vessel was overloaded. On sailing for San Juan the logged draft readings were 31′1″ forward, 31′3″ aft with a mean

draft of 31'2". The International Load Line Certificate issued under the authority of the Republic of Liberia under the provisions of the International Load Line Convention of 1930 authorized a freeboard from the deck line to the tropical load line of 9'4¼". This is equivalent to a draft of 30'7¼". The tropical load line was submerged 6¾" on departure from Puerto La Cruz. Puerto La Cruz is an open roadstead exposed to the Caribbean. There is no fresh water allowance. The deadweight scale reveals that at the departure draft the vessel had an immersion factor of 80.3 tons/inch. (Sea water temperature at Puerto La Cruz on 1 March 1968 was 78° F.) After 80 to 85 tons of fuel and water were consumed on the trip from Puerto La Cruz to San Juan, the vessel arrived off San Juan about 5½" over the tropical load line.

12. There have been no structural damages sustained or structural repairs made to the *Ocean Eagle* in the last 2 years. The vessel has been in severe weather in the North Atlantic without incident. No structural repairs were made to the hull and no structural defects or excessive deterioration in the hull were noted during the drydocking in Liverpool in September 1967. There were no known cracks in the hull or piping amidships or elsewhere on the *Ocean Eagle* prior to the casualty on 3 March 1968. There is no history of fractures or structural weaknesses. The vessel has never undergone major structural alterations since it was built.

Hull construction: Butts of all shell plating were welded. Seams of shell plates beginning with "D" strake up to the sheer strake were riveted. Frames were riveted. There was a riveted gunwale angle installed between the sheer plate and the deck stringer plate.

Scantlings:

Thickness of shell plating amidships: Deck plating: 22 mm. or 0.86614 inch. Deck stringer: 23 mm, or 0.90551 inch. Sheer strake: 29 mm. or 1.14173 inches. Strakes F. G. H. J: 19½ mm. or 0.767715 inch. Strakes A, B, C, E: 21 mm. or 0.82677 inch. Strake D: 22 mm. or 0.86614 inch. Keel plate: 28½ mm. or 1.122045 inches.

Spacing longitudinals: Deck and bottom: 30" apart. Upper side girder: 132" or 11'0" below the deck. Middle side girder: 117" or 9'9" below upper side girder. Lower side girder: 87" or 7'3" below middle and 33" above No. 15 bottom longitudinal.

Spacing frames (forward to aft): No. 211 to No. 197—24", No. 197 to No. 185—27", No. 185 to No. 176—32", No. 176 to No. 175—36", No. 175 to No. 55—33½", No. 55 to No. 54—36", No. 54 to No. 15—30", No. 15 to No. 0—24".

Steel: Mild steel in accordance with Lloyd's classification of 1950.

Framing of the vessel was numbered from aft to forward with the fore and aft center located at frame 106. The midship frame 106 was 8'4" forward of the bulkhead between cargo tanks six and seven. Inspection after the casualty was inconclusive as to the exact location of the origin of the separation (due to sea conditions and the fact that the bottoms of the halves were working against the rocky bottom and the tops were grinding together until separation). However, it appeared that the start of the separation was at or very near to frame 106 at the fore and aft center of the vessel. The Board received an affidavit, sworn to on the 15th of April 1968 by Mr. E. A. Lindberg, who dived in March 1968 for Murphy Pacific Salvage to examine the stern section of the *Ocean Eagle*. He stated that he observed a 30-foot gash in the bottom of the stern section approximately 4 feet wide which ran from the break amidships aft. The edges of the gash were pushed into the hull. He stated that he actually entered the gash at one point. Visibility under the water was about 10 feet.

13. The Guidance Manual for Loading *Ocean Eagle* prepared by Panagopoulos & Associates in December 1967 and approved by the American Bureau of Shipping dated February 1968 was not being used by personnel aboard *Ocean Eagle* prior to the casualty. With permission of the owners, pertinent information was obtained from the American Bureau of Shipping in order for Coast Guard personnel to compute estimated sag, stresses, and bending moments for *Ocean Eagle* as reportedly loaded and under conditions existing at the time of the casualty. The report from Chief, Merchant Marine Technical Division, U.S. Coast Guard Headquarters shows *Ocean Eagle* to have been in a sagged condition with a calculated Sag Numeral of 111.46. The report states that "the stresses calculated in the 'best estimate' wave condition are NOT high enough to categorically state that the ship fractured due to being stressed beyond the yield point of the metal. However, the vessel must be considered overstressed by improper loading as well as overloading. This conclusion is supported by the high Sag Numeral in the Loading Manual Calculations and by the independent calculation showing that, if the ship had been in a 'standard' wave condition, stresses would have been dangerously close to the yield point." (Standard wave condition is 26.25 feet.) "When a vessel is stressed to 25,000 p.s.i. or more there is a distinct danger that any minor structural detail which is normally a mild stress raiser will reach yield, fail, and transfer its load to adjacent structure, thereby opening the possibility of progressive failure." On 9 May 1968, the attorney for the charterer forwarded to the Board a copy of a preliminary report of the examination of both halves of *Ocean Eagle* made by H. M. Tiedemann & Co. of 74 Trinity Place, New York, which indicated that the vessel separated at the Plimsoll mark and gave micrometer readings of the plate thickness in the way of the break. On 17 June 1968. Mr. Savas and Mr. Mogavero of H. M. Tiedemann & Co. advised the Recorder of the Board by telephone that in their examination of the bow section of *Ocean Eagle* on 29 March 1968, they found no evi-

dence of grounding forward of the bridge, such as scrape marks, rips, or indentations. About 50 to 60 feet of the bottom of the bow section, forward of the break, was under sand and could not be examined. The only indication of grounding noted to the bow section was an elongated indented area in the starboard side at the turn of the bilge extending forward from the break, which was about about 13 inches in diameter and about 30 feet long. This indenture did not match any damage noted on the stern section.

14. The only current records rescued from *Ocean Eagle* were the ship's rough log and bridge bell book, neither of which had any entries at the time of or immediately prior to the casualty. The only pertinent navigational chart available which was used by the ship was C. & G.S. No. 904 which has pertinent navigational fixes recorded from 0235 to 0500, 3 March 1968. Important records, such as the bearing book, Captain's night order book, azimuth book, compass log, Engineer's bell book, engineering log, charts C. & G.S. No. 906 and No. 908, and the oil record book were not recovered.

15. No one was assigned to take soundings by leadline, nor was anyone assigned to observe the fathometer on the approach or at the time of the casualty. At the time of the casualty there was no person on the vessel whose sole duty was that of lookout.

16. Buoys No. 2, No. 4, and No. 6 were checked after the casualty by the Coast Guard Cutter *Sagebrush* and found to be on station.

17. The Master, Stelios Galaris, a 36-year-old Greek, holds a Liberian Master's license for any tonnage, any ocean and a Greek First Mate's license (which permits him to serve as master of vessels not over 450 tons). He had served in *Ocean Eagle* since 1964 in the capacity of Chief Mate, except for the period of 2½ months in 1966 when he acted as Master, and since December 1967 he had served as Master. He had never entered San Juan Harbor prior to the casualty.

18. The Chief Mate, Panagistis Michalopoulos, a 34-year-old Greek, has held a Greek Chief Mate's license since 4 December 1967. He has sailed *Ocean Eagle* as Chief Mate under Greek license since 23 February 1968. He previously sailed *Ocean Eagle* as Chief Mate under Temporary Liberian Chief Mate license October 1966–May 1967. He submitted papers 23 February 1968 for a Liberian Chief Mate license which has not yet been received.

19. The pilot, David T. Gonzalez, a 50-year-old American citizen, holds a U.S. Master's license for steam and motor vessels, any tonnage, any ocean. He has been a pilot in San Juan since 1966. He has been going to sea for 33 years.

20. After reviewing the trace of the course recorder, the Master, by affidavit dated 6 April 1968 in Athens, Greece, admitted that some of his statements to the Board were not correct. The Master, contra to his testimony before the Board, stated that when the pilot came aboard: the engines were going full speed astern; the heading was westerly; the starboard anchor was down; part of the vessel was outside the channel to the west. He also admitted that his previous testimony to the Board as to dropping the anchor one shot then raising it to the water's edge after the pilot boarded and dropping it again after the casualty was all incorrect.

21. After reviewing the trace of the course recorder, the Chief Mate, by affidavit dated 6 April 1968 in Athens, Greece, admitted that he had given incorrect testimony as to first dropping only one shot of anchor chain, then heaving it up again just to the surface and dropping it finally after the casualty. He also made admissions as to other incorrect testimony that he had given before the Board as to the vessel's heading and position when the anchor was dropped.

22. General description of pilot boats used by San Juan pilots: 30 to 35 feet in length; 8 foot beam; diesel powered; single screw; one-man crew.

CONCLUSIONS

1. That the casualty was caused by faulty navigation, in that the vessel was not conned on the Bar Channel Range and was navigated to the west of the western edge of the channel extension.

2. That at the time of the casualty the vessel was anchored with engines ahead and some way on, heading in a general westerly direction (258° T.) just west of the channel line extended about 450–500 yards north of Buoy No. 2. That the sea condition contributed to the casualty in that the vertical component of the surge of the sea caused the vessel to come in contact with the bottom in an area where the average depth of water was greater than the vessel's draft.

3. That the breaking in two was caused by three contributing factors: (1) Overloading, (2) improper loading, (3) grounding. It is concluded that the vessel was overloaded with improper load distribution which, together with the vessel's striking the seabed, caused the vessel to sag and break in half.

4. That there was no evidence of damage, fractures, or structural defects prior to the casualty which might have caused the vessel to break in half. Had the vessel not been overloaded and improperly loaded at the time of grounding, it is believed that total failure of the hull girder might not have occurred.

5. That there is no evidence that any act of misconduct, inattention to duty, negligence or incompetence, or any willful violation of any law or regulation by personnel licensed or certificated by the Coast Guard contributed to the casualty. The *Ocean Eagle* was of foreign registry and the Master and crew were not serving under the authority of licenses or documents issued by the U.S.

Coast Guard. The pilot was not serving under the authority of his Federal license. In view of the position of the vessel when the pilot boarded, there is no evidence of actionable negligence on the part of the pilot.

6. That there is evidence of violation of the Load Line Act of 1930 (46 U.S.C. 85g), in that the vessel's applicable loadline was submerged 5½ inches arriving in San Juan. (A report of violation will be forwarded to the Commander, 7th Coast Guard District for his evaluation.)

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

8. That there is no evidence that any aid to navigation contributed to the casualty.

9. That there is no evidence that any charted or uncharted object contributed to the casualty.

10. That the casualty could have been averted by prudent seamanship on the part of the Master by remaining a safe distance at sea until his vessel was lined up with the channel for a proper approach. The pilot undoubtedly would have been of assistance had he been able to board the *Ocean Eagle* at a greater distance from the entrance buoys. The pilot may have been able to board the vessel earlier had she been stopped or slowed sufficiently. A pilot boat of sufficient design and capability may have also enabled the pilot to board the *Ocean Eagle* under the prevailing conditions. The effects of the casualty might have been minimized by loading only to the allowable draft and by proper load distribution.

11. That there was insufficient evidence before the Board to determine whether or not the gash in the bottom of the stern section, reported by the diver in his affidavit, was caused by the vessel striking the bottom at the time of the casualty or occurred when the stern section broke loose from the bow and was driven aground by wind and wave action onto a coral outcropping. Similarly, there was insufficient evidence adduced to determine whether the indenture in the starboard turn of the bilge of the bow section was caused before or after the casualty.

RECOMMENDATIONS

1. That a copy of this report be forwarded to the Commonwealth of Puerto Rico for consideration of the following recommendations:

a. Vessels should be boarded at least 2 miles from the entrance buoys to provide sufficient time to allow pilots to make a proper approach to the harbor.

b. Pilot boats and the pilot station should be adequately equipped with radio telephone to communicate with vessels requiring pilots.

c. Pilot boats should be of adequate size and speed to enable pilots to board incoming vessels under adverse weather conditions.

d. The pilotage rules of the Commonwealth of Puerto Rico should be amended to show the above changes.

2. That a copy of this report be forwarded to the Government of Liberia for information and consideration of appropriate action concerning the license of the Master of SS *Ocean Eagle* for his part in the casualty.

19 June 1968.

COMMANDANT'S ACTION

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

SYNOPSIS OF INVESTIGATIVE REPORT FINDINGS OF FACT

1. In approaching the entrance to San Juan Harbor on the morning of 3 March 1968 the Liberian Tankship SS *Ocean Eagle* was navigated into shoal waters to the west of the channel extension where it struck bottom. The vessel sagged amidships and subsequently broke in half, causing extensive pollution of the adjacent waters.

2. The pilot who was unsuccessful in several attempts to board the SS *Ocean Eagle* from a small pilot boat, observed the vessel when it was standing into danger but, due to lack of means of communication, he was unable to warn the Master. The Master, failing to understand the pilot's shouts and hand motions to stop, continued ahead until he finally became aware that he was approaching shallow water when he backed his engines and dropped the starboard anchor. The pilot was then finally able to board the vessel but shortly thereafter, with the anchor down but with some way on with the engines ahead, the SS *Ocean Eagle* struck bottom at or about 0659. The vessel sagged amidships with oil flowing from the vicinity of No. 6 cargo tanks. At or about 0945 the two sections of the SS *Ocean Eagle* separated. The bow section remained at anchor and the stern section drifted ashore. Both halves were later towed to sea and sunk.

3. At the time of the grounding the SS *Ocean Eagle* was subjected to additional stresses due to overloading and improper cargo distribution. Laden with a cargo of 19,233 tons of crude oil the vessel had a mean draft of approximately 31 feet with the applicable load line mark submerged. The loading manual which had been recently prepared for the SS *Ocean Eagle* had not been used in loading the vessel at Puerto La Cruz, Venezuela, and No. 2 and No. 10 wing tanks remained empty. All other cargo tanks were essentially full with the exception of No. 6 wing tanks which were only partly full.

REMARKS

1. The circumstances surrounding the casualty, including the causes to the extent determinable, are set forth in considerable detail in the report of the Marine Board of Investigation. It is clear that the SS *Ocean Eagle* was navigated into shoal water, notwithstanding the absence of fixes and the conflicting evidence in the record concerning her exact position at the time of the casualty. Although the charted depth of water 450–500 yards north of buoy No. 2 is considerably greater than the vessel's draft of 31 feet there are several areas within two ship lengths of that position with charted depths of 31 feet or less.

ACTION CONCERNING THE RECOMMENDATIONS

1. In accordance with Recommendation No. 1 of the Marine Board of Investigation a copy of this Report of Investigation will be forwarded to the Commonwealth of Puerto Rico for consideration of the proposals concerning changes of pilotage procedures in entering San Juan Harbor. This case clearly indicates the need for adequate means of communication and the capability to board incoming vessels at a sufficient distance from the entrance buoys to enable them to make a proper approach under adverse weather conditions.

2. A copy of this Report of Investigation will be forwarded through appropriate channels to the Government of Liberia in accordance with Recommendation No. 2.

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

18 October 1968.

ACTION BY NATIONAL TRANSPORTATION SAFETY BOARD

This casualty was investigated by the U.S. Coast Guard under the authority of R.S. 4450 (46 U.S.C. 239) and the regulations prescribed by 46 CFR 136. The Marine Board of Investigation convened at San Juan, P.R., beginning March 11, 1968. A Member of the National Transportation Safety Board attended the proceedings. The Marine Board's report and the Commandant's Action thereon are included in and made a part of this report. The National Transportation Safety Board has considered only those facts in the Coast Guard report which are pertinent to the Board's statutory responsibility to make a determination of cause.

PROBABLE CAUSE

The National Transportation Safety Board finds that the cause of this casualty was faulty navigation on the part of the master in that he failed to utilize properly the aids to navigation which were available to him and navigated his vessel into shoal water while approaching the entrance to San Juan Harbor, P.R. A contributing cause was insufficient capability of the pilot boat, insofar as it concerns size, to enable the pilot to board the vessel under the existing conditions. Further, it is apparent that the pilot communication facilities were inadequate and that the misunderstanding of the pilot's shouts and the lack of an understandable system of hand signals were factors in this casualty.

Causal factors contributing to the breaking in half and loss of the vessel were the effect of the surge of the sea on the grounded vessel, and the overloading and improper distribution of the cargo.

RECOMMENDATIONS

The Safety Board concurs with the Commandant relative to the recommendations of the Marine Board. In addition the Board recommends that the Coast Guard, in its research and development program, give consideration to the design of equipment which could be quickly and easily rigged and would provide a safer and more efficient means for boarding a vessel from small craft during unfavorable sea conditions, and that information on a successful design be forwarded to the Maritime Safety Committee of the Intergovernmental Maritime Consultative Organization for their consideration.

It is further recommended that the Coast Guard study the development of internationally recognized hand signals, for backup communications between ships and pilots. It may be expected that hand signals will be attempted to be used in similar situations in the future, and this accident demonstrates that the results of misunderstanding are a positive hazard.

Adopted this 16th day of January 1969.

By the National Transportation Safety Board:

/s/ Joseph J. O'Connell, Jr.,
Chairman.
/s/ Oscar M. Laurel,
Member.
/s/ John H. Reed,
Member.
/s/ Louis M. Thayer,
Member.
/s/ Francis H. McAdams,
Member.

IMCO ACTIVITIES

THE PURPOSE OF the Intergovernmental Maritime Consultative Organization (IMCO), a specialized agency of the United Nations, is to achieve the highest standards of maritime safety and efficient navigation by facilitating cooperation among governments in technical matters of all kinds affecting shipping. As such it is responsible for updating and revising various international agreements including the 1960 SOLAS Convention. Its work is not, however, limited to this. IMCO is a dynamic organization holding approximately 24 meetings each calendar year.

These meetings range from the subcommittee level in which purely technical considerations are appropriate to those of the Assembly which as the governing body of IMCO votes on proposals from the lower bodies after all phases of the proposals have been considered.

The finished product of IMCO is the IMCO resolution. It has been examined carefully from all angles and been approved by vote of the Assembly on which all member nations have equal representation. At this point it is essential to appreciate the effect of an IMCO decision upon the U.S. industry and the public in general.

To begin with, it should be clearly understood that IMCO decisions are NOT automatically binding upon the various governments. IMCO "recommends" the decision to the governments for adoption. It is then up to the individual governments to decide if they want to adopt IMCO's recommended action. In this country, if the IMCO recommendation relates to an International Convention or an amendment to an International Convention, it would not be binding upon industry or the public until:

a. Ratified by the United States,

b. Implementing legislation is passed (if needed); and

c. Regulations (if needed) are promulgated in the normal manner (in the case of Coast Guard Regulations, this includes a public hearing).

If the IMCO recommendations did not relate to an International Convention it would not be binding upon industry or the public until:

(1) The Department of State refers the matter to the appropriate agency (in the case of a technical maritime safety matter this would probably be the Coast Guard);

(2) Implementing legislation is passed (if needed); and

(3) Regulations (if needed) are promulgated in the normal manner (in the case of Coast Guard Regulations, this includes holding a public hearing).

As industry has an opportunity to express itself before any of these steps are taken, it is obvious that it has voice in the procedures whereby IMCO recommendations are accepted or rejected.

In an effort to publicize the work of IMCO the "Proceedings" will contain timely articles describing the latest work accomplished by IMCO. The Resolutions of the Fourth Extraordinary Assembly of IMCO follow. Future editions will describe the work of the various bodies of IMCO as it progresses.

FOURTH EXTRAORDINARY SESSION OF THE INTERGOVERNMENTAL MARITIME CONSULTATIVE ORGANIZATION (IMCO) ASSEMBLY RESOLUTIONS

RESOLUTION 146

Amendments to SOLAS 1960. New Regulation 12 and addition of new Regulations 19 and 20 to Chapter V concerns carriage of radar, radio direction-finding gear, gyro compass, echo sounder, nautical publications and use of automatic pilot.

RESOLUTION 147

Reports on accidents involving significant spillages of oil. Requires masters to report all accidents in which they are involved to a government appointed officer or agency if an oil spill occurs or is probable. Governments are to insure that such reports are forwarded to the appointed

officer or agency promptly and are to provide IMCO with information designating appointed officers or agencies for circulation to member nations.

RESOLUTION 148

National arrangements for dealing with significant spillages of oil. Governments are to implement arrangements in order to deal with significant spillages of oil from ships.

RESOLUTION 149

Regional cooperation in dealing with significant spillages of oil. IMCO is to be kept informed and consulted as necessary on matters concerning regional cooperation such as that of the North Sea countries.

RESOLUTION 150

Research and exchange of information on methods for disposal of oil in cases of significant spillages. Encourages research on rapid, safe, and efficient disposal of oil in significant spillages and to make such studies available to IMCO for circulation.

RESOLUTION 151

Detection of offenses against and enforcement of the International Convention for the Prevention of Pollution of the Seas by Oil, 1954. Governments to cooperate in the detection of offenses, enforcement of provisions, and investigation of infractions.

RESOLUTION 152

Discharge of oily mixtures resulting from tank cleaning and ballasting into the sea. Encourages development and use of any possible system or device whereby oily mixtures from tank cleaning or ballasting are not discharged into the sea.

RESOLUTION 153

Penalties for unlawful discharge of oil into the sea. Review national laws on penalties for unlawful discharge of oil outside the territorial sea to insure adequate severity. Improve penalties if necessary and submit study and results to IMCO. Give prosecuting authorities such instructions as will enable systematic proceedings to be taken against any unlawful discharge of oil. Proposals for amending the 1954 Oil Convention in order to more severely penalize unlawful acts of pollution are to be prepared in time, if possible, for consideration of the next IMCO Assembly meeting.

RESOLUTION 154

Oil reception facilities. Governments are to report shore facility installation or changes to IMCO for distribution. Encourages studies on how facilities can be used in a more effective way. Encourages ships under their flag to use shore facilities where available.

RESOLUTION 155

Prevention of pollution of the sea by oil outside the prohibited zone. The Maritime Safety Committee of IMCO is to insure that amendments to the 1954 Oil Pollution Convention (especially in respect to prohibiting the discharge of oil) are proposed in time for the next session of the IMCO Assembly, and the need for amendment as regards to detection and enforcement of deliberate pollution be determined.

RESOLUTION 156

Recommendation on the carriage of electronic position-fixing equipment. Ships are to carry an efficient electronic position-fixing device suitable for the trade in which employed and that amendments to SOLAS 1960 to this end be prepared for consideration by the IMCO Assembly.

RESOLUTION 157

Recommendation on the use and testing of shipborne navigational equipment. The importance of making the most effective use of all navigational aids at their disposal is to be brought to the notice of ships' masters. Operational tests of shipborne navigational equipment are to be carried out as frequently as possible at sea and particularly when hazardous navigation is expected. Tests to be recorded in the Log Book. Development and use of reliable speed and distance indicators is to be encouraged.

RESOLUTION 158

Recommendation on port advisory services. Consider setting up port advisory services, particularly in terminals and ports where noxious or hazardous cargoes are handled. Instruct masters that early indication of expected time of arrival would contribute to safety.

RESOLUTION 159

Recommendation on pilotage. Pilotage services should be organized where they would contribute to the safety of navigation. Ships for which pilot services are mandatory should be defined.

RESOLUTION 160

Recommendation on data concerning maneuvering capabilities and stopping distances on ships. Such data should be available on the bridge for various conditions of draught and speed.

RESOLUTION 161

Recommendation on establishing traffic separation schemes and areas to be avoided by ships of certain classes. Adopts certain traffic separation schemes and areas to be avoided by certain classes of ships. Adopts terms, definitions and general principles concerning traffic separation and routing. Requests the IMCO Maritime Safety Committee to keep the subject of traffic separation schemes under continuous review.

RESOLUTION 162

Recommendation on additional signals for deep-draught ships in narrow channels. Recommends the use

of additional day and night signals for vessels in narrow channels which owing to its draught can navigate only inside such channels.

RESOLUTION 163

Recommendation for fire test procedures for "A" and "B" class divisions. Procedures for testing compliance with provisions for fire resistance laid down in Regulation 35 (c) and (d) and proposed Regulation 94(c) of Chapter II of SOLAS 1960.

RESOLUTION 164

Recommendation concerning checking the constancy of the properties of materials. Attention of Administrations should be drawn to the fact that properties of constituent materials approved for structural materials may change in time. Administrations should study this problem and conduct retests as required. Documentary information on this problem should be assembled.

RESOLUTION 165

Provisional guidelines on test procedures for deck coverings. Fire test procedure guidelines are given for use and the Maritime Safety Committee of IMCO is requested to continue study on the subject.

RESOLUTION 166

Guidelines on the evaluation of fire hazard properties of materials. Recommends that until such time as further technical studies have been completed leading to uniformity of test procedure, Administrations should apply these guidelines in deciding the flame-spread characteristics of surface and finishing materials.

RESOLUTION 167

Recommendation on intact stability for passenger and cargo ships under 100 meters in length. All governments are invited to give effect to the recommendation unless they are satisfied that national stability requirements insure adequate stability.

RESOLUTION 168

Recommendation on intact stability of fishing vessels. All governments are invited to effect these recommendations unless they are satisfied that national stability requirements insure adequate stability.

RESOLUTION 169

Recommendation for testing lifejackets. Recommendations are to be used when testing lifejackets for approval.

RESOLUTION 170

Recommendation on lifesaving appliances for air-cushion vehicles. Recommendations are to be applied to air-cushion vehicles when engaged on international voyages.

RESOLUTION 171

Convening of a conference on TORREY CANYON matters. A conference on public and private law aspects of pollution damage resulting from maritime casualties will be held from 10–28 November 1969 in Brussels.

RESOLUTION 172

Recommendation for uniform application and interpretation of Regulation 27 of the International Convention on Load Lines, 1966. Governments are invited to give effect to this recommendation as soon as possible.

RESOLUTION 173

Participation in official inquiries into maritime casualties. A state affected by or having an interest in a maritime casualty should be allowed participation in the inquiries or other such proceedings relating to the casualty.

It should be emphasized that these Resolutions are not binding at this time. ⚓

INTERNATIONAL CODE OF SIGNALS

H.O. Pub. 102, the 1969 edition of the International Code of Signals, became effective on 1 April 1969, and at that time superseded. H.O. Pubs. 103 [1] and 104,[2] International Code of Signals, Volumes I and II. All signals are now contained in a single volume suitable for all methods of communication.

The First International Code was drafted in 1855 by a Committee set up by the British Board of Trade. It contained 70,000 signals using 18 flags and was published by the British Board of Trade in 1857 in two parts; the first containing universal and international signals and the second British signals only. The book was adopted by most seafaring nations.

This early edition was revised by a Committee set up in 1887 by the British Board of Trade. The Committee's proposals were discussed by the principal maritime powers and at the International Conference in Washington in 1889. As a result, many changes were made. The Code was completed in 1897 and was distributed to all maritime powers. That edition of the International Code of Signals, however, did not stand the test of World War I.

The International Radiotelegraph Conference at Washington in 1927 considered proposals for a new revision of the Code and decided that it should be prepared in seven languages, namely in English, French, Italian, German, Japanese, Spanish

[1] Formerly identified as H.O. 87.
[2] Formerly identified as H.O. 88.

and in one Scandinavian language which was chosen by the Scandinavian Governments to be the Norwegian language. The new edition was completed in 1930 and was adopted by the International Radiotelegraph Conference held in Madrid in 1932. The new Code was compiled in two volumes, one for use by visual signaling and the other by radiotelegraphy. Words and phrases applicable to aircraft were introduced in Volume II together with a complete Medical Section and a Code for accelerating the granting of pratique. The Medical Section and the pratique signals were prepared with the assistance and by the advice of the Office International d'Hygiène Publique. The Code, particularly Volume II, was primarily intended for use by ships and aircraft and, via coastal radio stations, between ships or aircraft and authorities ashore. A certain number of signals were inserted for communications with shipowners, agents, repair yards, etc. The same Conference (Madrid, 1932) established a Standing Committee to review the Code, if and when necessary, to give guidance on questions of use and procedure, and to consider proposals for modifications. Secretarial duties were undertaken by the Government of the United Kingdom. The Standing Committee met only once in 1933 and introduced certain additions and amendments.

The Administrative Radio Conference of the International Telecommunication Union suggested in 1947 that the International Code of Signals should fall within the competence of the Inter-Governmental Maritime Consultative Organization (IMCO). In January 1959, the First Assembly of IMCO decided that the Organization should assume all the functions then being performed by the Standing Committee of the International Code of Signals. The Second Assembly in 1961 endorsed plans for a comprehensive review of the International Code of Signals intended to meet the present day requirements of mariners. A Subcommittee of the Maritime Safety Committee of the Organization was established to revise the Code, to prepare it in nine languages, namely the original seven (English, French, Italian, German, Japanese, Spanish, and Norwegian) together with Russian and Greek, and to consider proposals for a new radiotelephone Code and its relation to the International Code of Signals. The Subcommittee consisted of representatives of the following countries: Argentina, Federal Republic of Germany, France, Greece, Italy, Japan, Norway, Union of Soviet Socialist Republics, United Kingdom, and the United States of America. The following international governmental and nongovernmental organizations contributed to, and assisted in, the preparation of the revised Code: the International Atomic Energy Agency, the International Civil Aviation Organization, the International Labor Organization, the International Telecommunication Union, the World Meteorological Organization, the World Health Organization, the International Chamber of Shipping, the International Confederation of Free Trade Unions, and the International Radio Maritime Committee.

The Subcommittee completed the revision of the Code in 1964, taking into account Recommendation 42 of the 1960 Conference on Safety of Life at Sea and Recommendation 22 of the Administrative Radio Conference, Geneva 1959. The Code was adopted by the Fourth Assembly of IMCO in 1965.

The revised Code is intended to cater primarily for situations related essentially to safety of navigation and persons, especially when language difficulties arise. It is suitable for transmission by all means of communication, including radiotelephony and radiotelegraphy, thus obviating the necessity for a separate radiotelephone Code and dispensing with Volume II for Radiotelegraphy. The revised Code embodies the principle that each signal has a complete meaning. It thus leaves out the vocabulary method which was part of the old Code. The Geographical Section, not being considered essential, was omitted. By these means is was possible to reduce considerably the volume of the Code and achieve simplicity.

H.O. Pub. 102 is now available from authorized Sales Agents of the U.S. Naval Oceanographic Office and from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, price $4.

Although the new code is recommended for use on and after 1 April 1969, and is available within the United States, vessels of many countries will not be prepared to communicate by this system for some time to come. It is recommended that Mariners be alert to the possibility of vessels attempting to communicate using the older code. Publications H.O. 103 and 104 should be retained on board vessels for possible use during this transition period. ⚓

Bulk Cargo Code Now Available

The 1968 edition of the IMCO Code of Safe Practices for Bulk Cargoes is now available. The Coast Guard endorses this Code and considers it to fulfill subpart 97.12 of subchapter I (Cargo and Miscellaneous Vessels), which requires that masters of general cargo vessels be furnished guidance information relative to the handling of bulk commodities such as ore, ore concentrates, and similar materials. Copies of the Code may be obtained upon request from National Cargo Bureau, Inc., 99 John St., New York, N.Y. 10038. ⚓

National Transportation Week
May 11-17

National Maritime Day May 22