

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

MARINE ACCIDENT REPORT

COLLISION OF THE S/T TEXACO IOWA
AND THE M/T BURMAH SPAR
ON THE MISSISSIPPI RIVER
PILOTTOWN, LOUISIANA
OCTOBER 3, 1978

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INTRODUCTION

This accident was investigated jointly by the National Transportation Safety Board and the U.S. Coast Guard. The formal investigation began on October 7, 1978, in New Orleans, Louisiana. This report is based on the factual information developed by the investigation. The Safety Board has considered all facts pertinent to the Safety Board's statutory responsibility to determine the cause or probable cause of the accident and to make recommendations. The Safety Board's recommendations are made independently of any recommendations proposed by the Coast Guard. To assure public knowledge of all Safety Board recommendations and responses, all such recommendations and responses are published in the Federal Register.

SYNOPSIS

At 0420, on October 3, 1978, the Panamanian S/T TEXACO IOWA collided with the Liberian M/T BURMAH SPAR while both tank vessels were inbound and maneuvering in the pilot exchange area off Pilottown, Louisiana. The total damage to the vessels was estimated at \$680,000. No one was injured in the accident.

The National Transportation Safety Board determines that the probable cause of the accident was the failure of the bar pilot and the master to navigate the TEXACO IOWA at a safe distance from the BURMAH SPAR while maneuvering to change pilots. Contributing to the accident was the TEXACO IOWA bar pilot's misjudgment of the vessels' relative speeds and his failure to observe the Inland Rules of the Road, the delayed reaction of the master of the TEXACO IOWA in directing evasive maneuvers, and the failure of the pilots to establish bridge-to-bridge radiotelephone communications before the collision.

INVESTIGATION

The Accident

Shortly after 0400, 1/ on October 3, 1978, a Mississippi River pilot 2/ left the Pilottown pier on a pilot boat to board the inbound Liberian flag tanker M/T BURMAH SPAR. While on the pilot boat, he noticed the S/T TEXACO IOWA moving up river from Southwest Pass and about a mile away. The weather was clear and he could see the vessel's range lights and portside light as it approached Pilottown to exchange pilots. (See figure 1.)

At 0410, the river pilot boarded the BURMAH SPAR off Pilottown Wingdam Light and 600 to 800 ft from shore while the vessel was moving at a speed of 5 to 6 kns. He had a short discussion with the master on the bridge concerning the vessel's draft, tonnage, length, and engine rpm required for full speed ahead; he also looked at the radar scope and requested that it be kept on the 2-mile scale. An additional radar set was available on the bridge but it was not turned on. The river pilot relieved the "bar" pilot 3/ who debarked at 0413. Upon taking navigational control of the vessel, the river pilot directed a course of 335° (gyro) and ordered full speed ahead (maneuvering), or 12.5 kns, on the engine.

The BURMAH SPAR was carrying 65,893 long tons of crude oil and was at a level trim draft of 40 ft. Because the vessel had a Chinese crew, the pilot relayed his maneuvering orders to the bridge watch through the master who understood English. When the pilot took control, the vessel's navigation bridge watch consisted of the master, chief mate, third mate, a helmsman, and a lookout who was stationed on the starboard bridgewing.

As the BURMAH SPAR increased speed, the lookout informed the master about the approach of the TEXACO IOWA from astern. The master observed the TEXACO IOWA from the port bridgewing and estimated that it was about 1,200 to 1,800 ft away and moving about 2 to 3 kns faster than the BURMAH SPAR. Neither the master nor the pilot considered the maneuvering of the vessels dangerous because the BURMAH SPAR was then moving at an estimated 8 to 9 kns over the ground and accelerating, according to the master.

At 0416, the pilot adjusted the vessel's course to 333° (gyro) to keep the Old Quarantine Station Light on a bearing slightly off the starboard bow. He then used his portable VHF-FM radiotelephone, on channel 13, to call the TEXACO IOWA's river pilot using his personal radio call number but received no response. The BURMAH SPAR's bridge radio was also monitoring channel 13.

No one aboard the BURMAH SPAR sensed the impending collision until the TEXACO IOWA was about 300 ft away. The BURMAH SPAR's pilot ordered the rudder hard to starboard to bring the vessel's heading parallel to that of the TEXACO IOWA's, and he

1/ All times herein are central daylight time, based on the 24-hour clock, and are based on witness estimates given during the hearings.

2/ A pilot of the Crescent River Port Pilots' Association.

3/ A pilot of the Associated Branch Pilots.

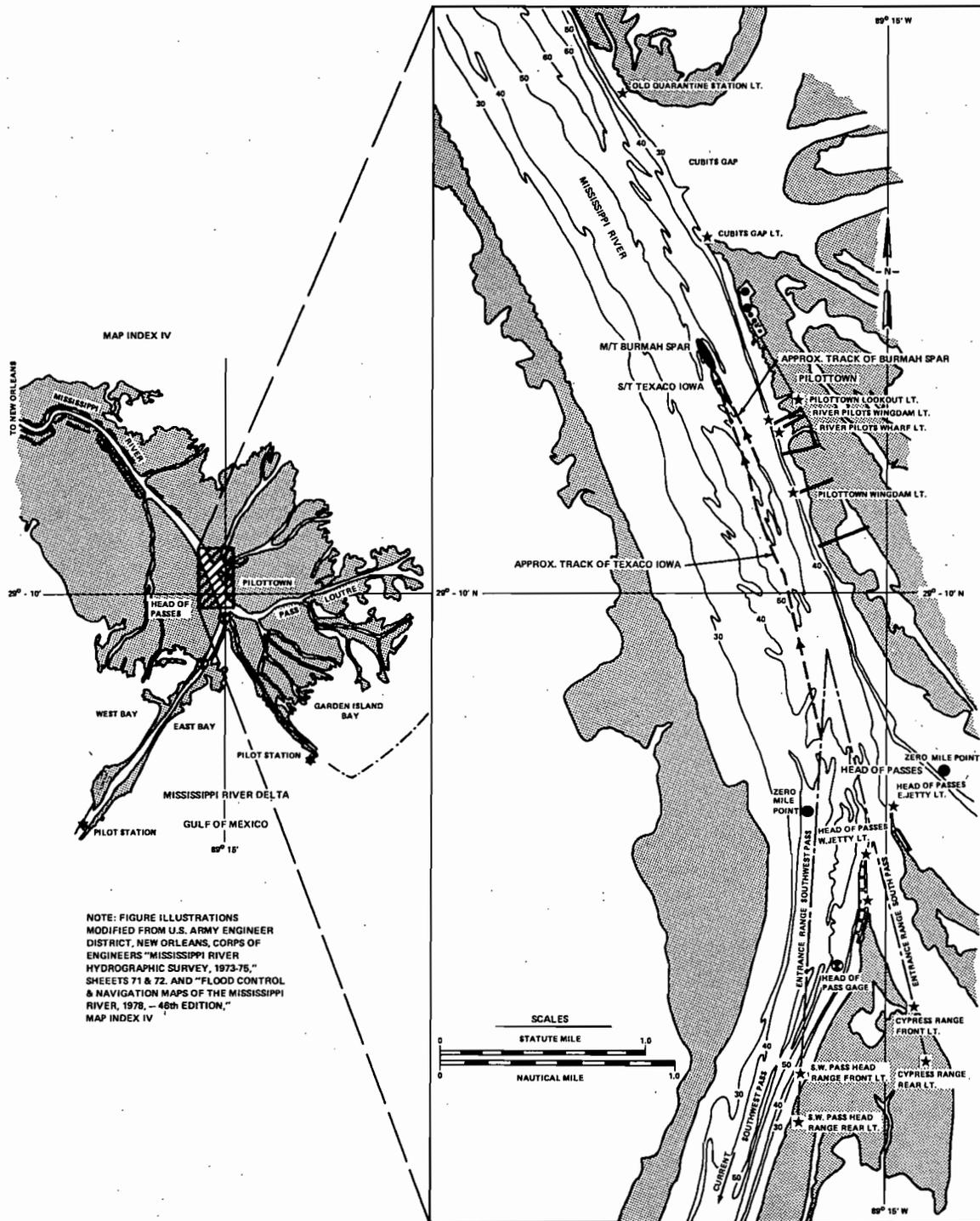


FIGURE 1. S/T TEXACO IOWA – M/T BURMAH SPAR collision site.

ordered the vessel's engine stopped at 0419 2/3. At about 0420, the TEXACO IOWA's starboard bow struck the BURMAH SPAR's stern on the port quarter. The TEXACO IOWA's starboard quarter then raked the BURMAH SPAR as it maneuvered to pass. Neither vessel sounded any whistle signals relative to maneuvering, nor did either vessel sound any emergency alarm to alert its crew of the impending collision. The BURMAH SPAR's deck and the engineroom bell books showed the following engine order entries, before and after the collision.

<u>Deck</u>	<u>Engine Order</u>	<u>Engineroom</u>
0413	Full ahead	0413
0419 2/3	Stop	0418 1/2
*	Full ahead	0421 3/4
*	Stop	0422 3/4
0423	Full astern	0423 1/3

*No entry

The Panamanian flag tanker S/T TEXACO IOWA had picked up its Mississippi River bar pilot at 0215 while entering the Southwest Pass. The vessel was carrying 40,000 long tons of crude oil and was at a level trim draft of 38 ft 7 in. The navigation bridge watch included the master, chief officer, a cadet, a helmsman, and a standby helmsman who was serving as a lookout. The chief officer was observing the radar scope which was set on the 3-mile scale, but he was not assigned to provide radar information to the bar pilot. The cadet was stationed at the engine telegraph. Upon taking control of the vessel, the bar pilot ordered full speed ahead. The bar pilot said he experienced no language problems with maneuvering orders to the vessel's Italian crew on the bridge watch. The bar pilot estimated the vessel's speed at a steady 12.5 mph, or 10.9 kns, over the ground against an estimated 1.5- to 2.0-kn current, while in the Southwest Pass en route to Pilottown.

Before reaching Pilottown, the bar pilot shifted the vessel's bridge VHF-FM radiotelephone to channel 9 to give the pilot station watchman a 30-minute advance notice of the vessel's arrival at Pilottown. He used the vessel's radio rather than his own portable radio because of its greater transmitting power; he then reset the bridge radio to channel 13. He said that no other radio communications were heard or attempted en route and that he put his portable transceiver into his bag for debarking when the vessel was 2 miles below Pilottown.

While approaching Pilottown to exchange pilots, the TEXACO IOWA's master became concerned about his vessel's greater speed relative to that of the BURMAH SPAR's, which he observed on radar was then about 1 1/4 nmi ahead. At 0412, the master requested the bar pilot to reduce the vessel's speed; the bar pilot complied by ordering half speed (7 to 8 kns maneuvering); and the speed was further reduced to slow (6 kn) and dead slow (3 kn). The bar pilot said that the TEXACO IOWA then suddenly sheered to port to about 335° (gyro), and he directed the helm hard to starboard and a course of 345° (gyro) to compensate for the vessel's change in heading. The course recorder trace indicates that the vessel's heading changed from 350° to 335° during the sheer. The bar pilot attributed the sudden sheering as the vessel's response to the rapid reduction in speed, and he stated this was not an uncommon occurrence when maneuvering deep-draft vessels.

Meanwhile, the pilot boat was maneuvering alongside the TEXACO IOWA. The pilot boat operator estimated that the TEXACO IOWA was moving at 8 to 9 kns, or 9 to 10 mph. At 0415, when the relieving river pilot boarded the TEXACO IOWA, he estimated

its speed at 6 to 7 mph. The river pilot observed that the vessel was about 400 ft from the BURMAH SPAR and that the distance between the vessels was decreasing, and he assumed that the TEXACO IOWA was overtaking the BURMAH SPAR. The pilot boat operator also saw that the TEXACO IOWA was closing with the BURMAH SPAR, and he became concerned that his boat would be caught between the vessels. When the vessels were about 50 ft apart, he backed the pilot boat away from the TEXACO IOWA to a safer position to wait for the debarking bar pilot.

When the vessels were about 400 ft apart, the BURMAH SPAR was heading about 333° (gyro) while the TEXACO IOWA's heading was 345° (gyro). The TEXACO IOWA's master then personally ordered full left rudder and full speed ahead in an effort to avoid collision. The full speed ahead was logged in the deck bell book at 0418; and in the engineroom bell book at 04ⁿ-18^m-20^s.^{4/} The pilot said that he was not aware immediately that the master had countermanded his orders. The vessel's engine was stopped at 0419. The TEXACO IOWA's deck logbook showed the time of collision at 0419.

After the TEXACO IOWA had moved clear of the BURMAH SPAR, the TEXACO IOWA's master turned the navigational control of his vessel over to the relieving river pilot at 0425, according to the deck bell book. The master informed him that he wanted to continue the trip up the river. The TEXACO IOWA's bar pilot testified that he had intended to stay astern and about 100 ft away from the BURMAH SPAR and that he had not planned to pass during the pilot exchange.

The damaged vessels were inspected and after determining that neither was taking on water nor causing any pollution, they proceeded to their respective destinations with the TEXACO IOWA in the lead. The BURMAH SPAR's river pilot reported the accident to the Coast Guard Vessel Traffic Service and informed the Coast Guard that there was no resulting pollution.

Injuries to Persons

There were no reported injuries to persons aboard either vessel.

Damage to Vessels

The TEXACO IOWA sustained a 30-ft longitudinal fracture at the forecastle in the starboard side plating. The starboard deck and freeboard plating were distorted. Total damage to the vessel was estimated at \$250,000.

The BURMAH SPAR's port quarter hull and deck plating, including the internal structure members were distorted. The portside superstructure, fittings and appurtenances were damaged. Total damage to the vessel was estimated at \$430,000.

Crew Information

The TEXACO IOWA had an Italian crew of 35, including the master. The master held an Italian master's license, issued in 1956, and an equivalent Panamanian license. He had sailed as a master since 1961; this assignment was his third aboard the TEXACO IOWA. He had sailed into New Orleans 8 to 10 times and his most recent visit was about 12 days before the accident. He spoke English.

^{4/} Time indicated in hours, minutes, and seconds.

The BURMAH SPAR had a Chinese crew of 40, including the master. The master held a Chinese master's license and equivalent licenses from Liberia and Panama. He had 2 1/2 years' experience as a master and 7 years' experience as a ship's officer. His training included 4 years at a Chinese maritime college and 6 months as an apprentice. He spoke English.

Pilot Information

The TEXACO IOWA's bar pilot had been a member of the Associated Branch Pilots since 1935. After serving his apprenticeship, he was licensed as a bar pilot in 1942. He had held a USCG license as first-class pilot and master of river steamers, any tonnage, since 1937. He was commissioned as a pilot by the State of Louisiana. He had piloted the TEXACO IOWA many times before this accident.

The TEXACO IOWA's relieving river pilot had been a member of the Crescent River Port Pilots' Association for the past 17 years. He had held a USCG first-class unlimited pilot's license for 23 years, and he was commissioned by the State of Louisiana.

The BURMAH SPAR's river pilot was a member of the Crescent River Port Pilots' Association. He had served as a quartermaster in the U.S. Navy from October 1966 through July 1970. Since August 1970, he had worked on river vessels as a deckhand and had become an "operator on inspected towing vessels" in 1973. He subsequently acquired the time and experience necessary to obtain his pilot's license. He had served a 6-month pilot apprenticeship with the Crescent River Port Pilots' Association. He had been issued a USCG first-class pilot's license in January 1974 and held a master's license for any gross tons, limited to Inland and Western Rivers, issued on March 7, 1975. The pilot said that he had been a "full working pilot for 1 month and 3 days" before the accident.

Vessel Information

The M/T BURMAH SPAR, a Liberian flag tanker of 38,690 gross tons, was built in 1965. It was classed by Det Norske Veritas. The vessel was diesel-powered, single screw, 19,800 horsepower, with a cruising speed of 15 kns. The vessel carried the required navigation equipment for a vessel of its size and there were no known equipment deficiencies. (See appendix A.)

The TEXACO IOWA, a Panamanian flag tanker, was built in 1959. It was classed by Lloyds. The vessel was steam turbine powered, single screw, 16,500 horsepower, with a cruising speed of 16 kns. The vessel carried the required navigation equipment for a vessel of its size and had a gyro course recorder. There were no known vessel equipment deficiencies. (See appendix A.)

Waterway Information

The Mississippi River has an extreme width of about 4,500 ft at Pilottown, and the river depth exceeds 50 ft at 1,000 ft off Pilottown Wingdam Light. About 2,000 ft of river width, extending from the Pilottown Wingdam Light pier-end, can accommodate vessels of 40 ft draft. 5/

5/ Mississippi River, Hydrographic Survey, U.S. Army Engineer District, New Orleans, Corps of Engineers.

Pilotage is compulsory at the bar and on the river for all foreign vessels and U.S. vessels under register in foreign trade. The Associated Branch Pilots' station, located at the entrance to Southwest Pass, is equipped to handle radio traffic on VHF-FM radiotelephone channels 6, 9, 13, and 16 with channel 9 serving as the working channel.

The pilot station at Pilottown maintains a lookout and is equipped to handle radio traffic on VHF channels 9 and 16 and monitors 2182 kHz. Pilots of the Crescent River Port Pilots' Association board vessels off Pilottown, about 2 miles above Head of Passes East Jetty Light and take vessels between Pilottown and New Orleans. All river and bar pilots carry portable radiotelephones for communications with vessels on the river. ^{6/}The BURMAH SPAR and TEXACO IOWA were scheduled to arrive off Pilottown at 0410 and 0415, respectively, according to the Crescent River Pilots' Association's vessel posting board.

Environmental Information

The TEXACO IOWA's logbook showed that the weather was clear; the wind was calm; the air temperature was 70° and rising; and the barometer was 1020 milibars and steady. The BURMAH SPAR reported the wind as northeast with a force of 7 to 10 kns. The weather was not a contributing factor in this accident.

The Mississippi River's current velocity varies from 1 to 5 kns, depending on the stage of the river. The velocity in the Southwest Pass, according to the Coast Pilot, varies from 0 to 4 kns with an average of about 1.7 kns. Because of the tide, the current is not strong at any point and is rarely taken into account for the purposes of navigation. The river current was not a contributing factor to this accident.

Other Information

Inland Rules of the Road

The Navigation Rules for Harbors, Rivers and Inland Waters (33 U.S.C., 151-232) and the Pilot Rules for Inland Waters (33 CFR 80) are pertinent to this accident. The rules cited in this report are included in appendix B.

Vessel Bridge-to-Bridge Radiotelephone

Vessel bridge-to-bridge radiotelephone regulations 33 CFR 26 and 47 CFR 83.251 are pertinent to this accident. (See appendix C.)

Vessel Traffic Service

The tape recording transcript from the New Orleans Vessel Traffic Service (VTS) indicated that the BURMAH SPAR's river pilot called the TEXACO IOWA's river pilot, using the pilot's call number, at 04-17-33 (hms) on channel 13, but he received no response. At 04-20-25 (hms), the BURMAH SPAR's river pilot called the TEXACO IOWA's bar pilot and requested that the vessel be "...put hard over or something." The TEXACO IOWA's river pilot responded that the vessel's bar pilot still had the vessel. At 04-23-25 (hms) the TEXACO IOWA's river pilot broadcast that "...I just took over..." control of

^{6/} U.S. Coast Pilot 5, Atlantic Coast, Gulf of Mexico, Puerto Rico, and the Virgin Islands.

the vessel. At 04-52-22 (hms), the BURMAH SPAR's pilot provided the New Orleans VTS with details of the vessel collision off Pilottown. The TEXACO IOWA's bar pilot was not participating in the VTS. The BURMAH SPAR's river pilot said that he routinely used the VTS.

ANALYSIS

Maneuvering of the Vessels

Although both vessels carried foreign crews, there is no evidence that the pilots experienced any difficulty in having their maneuvering orders understood by the navigation bridge watches aboard either vessel; all of the pilots' orders were properly executed aboard the vessels both before and after the accident.

While the TEXACO IOWA was approaching Pilottown, the vessel's heading sheered suddenly about 15° to the left. This sheering was registered on the vessel's gyro course recorder at 0415. The pilot attributed the sheering to the rapid deceleration of engine speed. The vessel was, however, responsive to right rudder and the vessel's heading was readily altered to the right when the pilot ordered corrective helm action. But, by directing the TEXACO IOWA's heading to the right, the pilot increased the collision risk in closing with the BURMAH SPAR. The overtaking situation was evident to the pilots and masters of both vessels. Although the TEXACO IOWA's bar pilot stated that he had no intention of overtaking the BURMAH SPAR, it was apparent to the TEXACO IOWA's master that, because of his vessel's high closing speed, a collision situation was developing. Consequently, the TEXACO IOWA's master ordered full left rudder and full engine speed ahead to alter his vessel's heading to the left to clear the BURMAH SPAR. The master made this maneuver on the assumption that the BURMAH SPAR, having exchanged pilots, was accelerating; he did not expect or anticipate that the BURMAH SPAR's pilot would stop his vessel's engine. Considering the relative headings of the vessels, the timing of the maneuvering, and the fact that the TEXACO IOWA hit the BURMAH SPAR with its bow and stern as it passed, it is doubtful that reversing the engine would have avoided the collision. Reversing the engine probably would have changed the angle of collision because reversing would have tended to alter the TEXACO IOWA's heading to the right; collision damage possibly might have been reduced. The master's evasive maneuver was taken too late, however, and no effort was made to avoid the collision by reversing the engine. Earlier action would have averted this accident.

If the TEXACO IOWA's bar pilot had been informed more accurately of his vessel's actual speed and if he had been able to compare it with the BURMAH SPAR's, he would have realized that the closing rate between the vessels needed earlier attention to speed reduction. The TEXACO IOWA's master and bar pilot were both using their observations and shiphandling experience to estimate relative motion with the BURMAH SPAR, rather than actual speed data of the vessels, and it is evident that they were reaching different conclusions. The required speed information could have been determined by visual or radar navigation plotting calculation (see appendix D) or through the exchange of more accurate maneuvering information between the vessels by radiotelephone. Despite his many years of experience and familiarity with the TEXACO IOWA's handling characteristics, the bar pilot misjudged the vessel's speed as it closed with the BURMAH SPAR, and he failed to make full use of the waterway available for safer maneuvering.

Despite the proximity of the TEXACO IOWA, neither the master nor river pilot on board the BURMAH SPAR considered the situation dangerous until a few moments before the collision. The BURMAH SPAR's speed was increasing and the pilot expected that the TEXACO IOWA's speed would be decreased sufficiently during the pilot exchange so that the BURMAH SPAR would precede the latter. The BURMAH SPAR's engine was already at full speed ahead, but the vessel had not yet achieved a speed greater than that of the TEXACO IOWA. When the BURMAH SPAR's pilot ordered right rudder in an effort to bring his vessel to a course parallel to that of the TEXACO IOWA's, he was not aware that the TEXACO IOWA's master had directed his vessel to port; and there is no evidence that he had observed any change in the TEXACO IOWA's heading. The BURMAH SPAR pilot's maneuver, however, would have caused his vessel's stern to move to port, closer to the TEXACO IOWA's bow, and thereby increase the collision danger between the vessels. Had the BURMAH SPAR's pilot ordered emergency full speed ahead without changing his vessel's heading, rather than stopping his vessel's engines, such a maneuver would have increased the vessel's speed and the increased propeller backwash could have helped to deflect the TEXACO IOWA's bow while the latter was attempting to turn away. Since the BURMAH SPAR had a cruising speed of 15 kns, reserve engine power was available. Although this maneuvering action may not have prevented the collision, it might have reduced the collision damage to the vessels. Therefore, the stopping of the BURMAH SPAR's engine may have increased the resultant collision damage.

Communications

Neither the vessels' nor the pilots' radiotelephone equipment, was used effectively. There was no evidence that any of the available equipment was malfunctioning. VTS tape recordings indicate that the vessels did not have any radiotelephone communication problems.

Although the BURMAH SPAR's pilot attempted to call the TEXACO IOWA's river pilot at 0417, using pilot radio call numbers on channel 13, he received no response because, at that time, the TEXACO IOWA's river pilot was apparently ascending to the vessel's navigation bridge and he did not hear the radio call. Therefore, radiotelephone communication between the BURMAH SPAR's and TEXACO IOWA's river pilots was not established until the vessels collided. And, at the time of collision, the river pilot had not yet accepted the responsibility for the TEXACO IOWA from the bar pilot. The failure to establish communication between the vessels was caused by incorrect radiotelephone procedures. Had the BURMAH SPAR's pilot directed his radio call to the TEXAS IOWA, using the vessel's name, as specified in 47 CFR 83.251, and not used pilots' call numbers, the TEXACO IOWA's master or bar pilot should have responded. Therefore, the use of the pilot call number to establish radio contact delayed response from the TEXACO IOWA.

The vessel bridge-to-bridge radiotelephone regulation, 33 CFR 2604(b), requires that the master or person directing the movement of a vessel ". . . shall, when necessary, transmit and confirm, on the designated frequency, the intentions of his vessel and other information necessary for the safe navigation of vessels." Although the TEXACO IOWA's pilot had stored his portable radiotelephone in his debarkation bag, the vessel's radiotelephone was available for the required bridge-to-bridge communications.

Inland Rules of the Road

Since the TEXACO IOWA was running in the same direction and overtaking the BURMAH SPAR from astern, the TEXACO IOWA was required by the Rules of the Road,

Article 24, and the Pilot Rules, 33 CFR 80.6 (b), to keep clear of the BURMAH SPAR. Under Article 23, The TEXACO IOWA was required, to slacken its speed, to stop, or to reverse its engines. Although the TEXACO IOWA had slowed its engine, the decrease in speed was not sufficient to prevent it from overtaking the BURMAH SPAR. Because of the momentum of the deep-draft, heavily laden TEXACO IOWA, reversing the engine might have been no more effective than the full speed ahead and full left rudder maneuver that the vessel's master used in his effort to avoid the collision. Regardless, the vessel failed to take the actions required by the Rules of the Road to avoid collision.

Although the TEXACO IOWA's bar pilot stated that he did not intend to overtake the BURMAH SPAR, the width of the river off Pilottown was adequate to allow the vessel to pass the BURMAH SPAR safely had he attempted to do so. Furthermore, leaving more maneuvering room between the two vessels, bow to stern or along parallel course headings, could have been accomplished without creating any undue delay during the pilot exchange.

When the BURMAH SPAR's river pilot became aware that the TEXACO IOWA appeared to be attempting to pass, he should have sounded the danger signal on his vessel's whistle as prescribed in the Rules of the Road, Article 18, Rule III, and the Pilot Rules, 33 CFR 80.1, to alert the TEXACO IOWA of the collision danger. However, it is doubtful that the use of the whistle signal would have changed the outcome of this accident because the TEXACO IOWA's master and bar pilot were already aware of the danger and were attempting to maneuver clear of the BURMAH SPAR.

Pilot Coordination at Pilottown

Because vessels exchanging pilots do not stop completely but only slow down to allow pilots to board while the vessels are moving at reduced speed, there seems to have been no problem with the vessels' scheduling off Pilottown. This accident indicates, however, that there may be a lack of coordination between the "bar" and "river" pilot associations, and, more significantly, a lack of communications between the bar and river pilots in connection with vessel maneuvering while the pilots are being exchanged. The bar and river pilots should be capable of keeping each other more adequately informed by radiotelephone about their vessels' speeds, courses, and maneuvering intentions.

CONCLUSIONS

Findings

1. The TEXACO IOWA's bar pilot underestimated the speed of his vessel while slowing to exchange pilots at Pilottown.
2. The TEXACO IOWA's bar pilot could have used the vessel's radar and the navigation bridge watch to assist in determining the closing rate with the BURMAH SPAR.
3. The TEXACO IOWA's bar pilot had ample navigable waterway available; there was no need to follow the BURMAH SPAR so closely.
4. The TEXACO IOWA's bar pilot should have used the vessel's bridge-to-bridge radiotelephone equipment available to him to communicate maneuvering intentions with the BURMAH SPAR.

5. The TEXACO IOWA's bar pilot did not comply with the Inland Rules of the Road and the Pilot Rules concerning an overtaking situation either in maneuvering or in the use of prescribed signals.
6. By stopping the BURMAH SPAR's engine, the river pilot may have increased the collision damage to both vessels.
7. Neither vessel used its whistle as prescribed in the Inland Rules of the Road and Pilot Rules to warn the other of the collision danger.
8. The BURMAH SPAR pilot's use of the pilot call number rather than calling the TEXACO IOWA by name delayed the establishment of radiotelephone communications between the vessels before the collision.
9. Coordination between the bar and river pilots while maneuvering vessels off Pilottown during pilot transfers needs to be improved.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the accident was the failure of the bar pilot and the master to navigate the TEXACO IOWA at a safe distance from the BURMAH SPAR while maneuvering to change pilots. Contributing to the accident was the TEXACO IOWA bar pilot's misjudgment of the vessels' relative speeds and his failure to observe the Inland Rules of the Road, the delayed reaction of the master of the TEXACO IOWA in directing evasive maneuvers, and the failure of the pilots to establish bridge-to-bridge radiotelephone communications before the collision.

RECOMMENDATIONS

As the result of its investigation of this accident, the National Transportation Safety Board made the following recommendations to the Associated Branch Pilots and the Crescent River Port Pilots' Association:

"Review the pilot exchange boarding and radiotelephone communications practices used off Pilottown and establish a policy by which (1) the bar and river pilots maintain uninterrupted communications during the pilot exchange, and (2) that they communicate vessel course and speed information and their maneuvering intentions. (Class II, Priority Action) (M-80-6)

"Request member pilots to inform vessel masters concerning the requirements of 33 CFR 164, Navigation Safety Regulations, and advise member pilots to use the navigation bridge watch to keep themselves advised of the vessel's position and speed. (Class II, Priority Action) (M-80-7)

"Encourage member pilots to monitor their portable radiotelephones while directing vessel movements until they are properly relieved of their responsibility. (Class II, Priority Action) (M-80-8)"

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JAMES B. KING
Chairman

/s/ ELWOOD T. DRIVER
Vice Chairman

/s/ FRANCIS H. McADAMS
Member

/s/ G.H. BURSLEY
Member

PATRICIA A. GOLDMAN, Member, did not participate.

February 14, 1980

APPENDIX A

VESSEL DATA

<u>Name</u>	<u>TEXACO IOWA TANKER</u>	<u>BURMAH SPAR TANKER</u>
Official Number	9509330	6512561
Nationality	Panamanian	Liberian
Home Port	Panama	Monrovia
Gross Tons	24,035	38,690
Net Tons	15,018	28,234
Deadweight Tons	41,282	74,350
Length (feet)	699.5	785
Breadth (feet)	97	121
Depth (feet)	49	42
Propulsion	Steam Turbine	Diesel
Horsepower	16,500	19,800
Speed (kns)	16	15
Class. Society	Lloyd's Register	Norske Veritas
Built	1959	1965
Crew (including master)	35	40
Owner/Operator	Texaco Panama, Inc.	Ritz Shipping, Inc.

APPENDIX B
RULES OF THE ROAD CITATIONS

INLAND RULES

VESSELS MEETING, NEARING BENDS, LEAVING BERTHS AND OVERTAKING

ART. 18.

RULE III. If, when steam vessels are approaching each other, either vessel fails to understand the course or intention of the other, from any cause, the vessel so in doubt shall immediately signify the same by giving several short and rapid blasts, not less than four, of the steam whistle.

RULE VIII. When steam vessels are running in the same direction, and the vessel which is astern shall desire to pass on the right or starboard hand of the vessel ahead, she shall give one short blast of the steam whistle, as a signal of such desire, and if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two short blasts of the steam whistle as a signal of such desire, and if the vessel ahead answers with two blasts, shall direct her course to port; or if the vessel ahead does not think it safe for the vessel astern to attempt to pass at that point, she shall immediately signify the same by giving several short and rapid blasts of the steam whistle, not less than four, and under no circumstances shall the vessel astern, attempt to pass the vessel ahead until such time as they have reached a point where it can be safely done, when said vessel ahead shall signify her willingness by blowing the proper signals. The vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the passing vessel.

GIVE-WAY VESSEL DUTY

ART. 23. Every steam vessel which is directed by these rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

OVERTAKING

ART. 24. Notwithstanding anything contained in these rules every vessel, overtaking any other, shall keep out of the way of the overtaken vessel.

Every vessel coming up with another vessel from any direction more than two points abaft her beam, that is, in such a position, with reference to the vessel which she is overtaking that at night she would be unable to see either of that vessel's side lights, shall be deemed to be an overtaking vessel; and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of these rules, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

As by day the overtaking vessel cannot always know with certainty whether she is forward of or abaft this direction from the other vessel she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

PILOT RULES FOR INLAND WATERS

SIGNALS

§ 80.03 Signals.

(a) The whistle signals provided in the rules in this part shall be sounded on an efficient whistle or siren sounded by steam or by some substitute for steam.

(1) A short blast of the whistle shall mean a blast of about one second's duration.

(2) A prolonged blast of the whistle shall mean a blast of from 4 to 6 seconds' duration.

(3) One short blast of the whistle signifies intention to direct course to own starboard, except when two steam vessels are approaching each other at right angles or obliquely, when it signifies intention of steam vessel which is to starboard of the other to hold course and speed.

(4) Two short blasts of the whistle signify intention to direct course to own port.

(5) Three short blasts of the whistle shall mean, "My engines are going at full speed astern."

(b) When vessels are in sight of one another a steam vessel under way whose engines are going at full speed astern shall indicate that fact by three short blasts on the whistle.

§ 80.1 Danger signal.

If, when steam vessels are approaching each other, either vessel fails to understand the course or intention of the other, from any cause, the vessel so in doubt shall immediately signify the same by giving several short and rapid blasts, not less than four, of the steam whistle, the danger signal.

§ 80.6 Vessels running in same direction; overtaking vessel.

(a) When steam vessels are running in the same direction, and the vessel which is astern shall desire to pass on the right or starboard hand of the vessel ahead, she shall give one short blast of the steam whistle, as a signal of such desire, and if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two short blasts of the steam whistle as a signal of such desire, and if the vessel ahead answers with two blasts, shall direct her course to port; or if the vessel ahead does not think it safe for the vessel astern to attempt to pass at that point, she shall immediately signify the same by giving several short and rapid blasts of the steam whistle, not less than four, and under no circumstances shall the vessel astern attempt to pass the vessel ahead until such time as they have reached a point where it can be safely done, when said vessel ahead shall signify her willingness by blowing the proper signals. The vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the passing vessel.

(b) Every vessel coming up with another vessel from any direction more than two points abaft her beam, that is, in such a position with reference to the vessel which she is overtaking that at night she would be unable to see either of that vessel's side lights, shall be deemed to be an overtaking vessel; and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of the rules in this part, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

(c) As by day the overtaking vessel cannot always know with certainty whether she is forward of or abaft this direction from the other vessel she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

APPENDIX C

VESSEL BRIDGE-TO-BRIDGE RADIOTELEPHONE REGULATIONS

33 CFR 26 CITATION

§ 26.04 Use of the designated frequency.

(a) No person may use the frequency designated by the Federal Communications Commission under section 8 of the Act, 33 U.S.C.A. section 1207(a), to transmit any information other than information necessary for the safe navigation of vessels or necessary tests.

(b) Each person who is required to maintain a listening watch under section 5 of the Act shall, when necessary, transmit and confirm, on the designated frequency, the intentions of his vessel and any other information necessary for the safe navigation of vessels.

(c) Nothing in these regulations may be construed as prohibiting the use of the designated frequency to communicate with shore stations to obtain or furnish information necessary for the safe navigation of vessels.

NOTE: The Federal Communications Commission has designated the frequency 156.65 MHz for the use of bridge-to-bridge radiotelephone stations.

§ 26.05 Use of radiotelephone.

Section 5 of the Act states—

(a) The radiotelephone required by this Act is for the exclusive use of the master or person in charge of the vessel, or the person designated by the master or person in charge to pilot or direct the movement of the vessel, who shall maintain a listening watch on the designated frequency. Nothing contained herein shall be interpreted as precluding the use of portable radiotelephone equipment to satisfy the requirements of this Act.

Subpart J—Distress, alarm, urgency, and safety

§ 83.251 Bridge-to-bridge communication procedure.

(a) Notwithstanding § 83.178, vessels, dredges, and floating plants subject to the Vessel Bridge-to-Bridge Radiotelephone Act transmitting on the designated navigational frequency shall initiate communications on this frequency in a format similar to those given below:

(1) This is the (name of vessel). My position is (give readily identifiable position and, if useful, course and speed) about to (describe contemplated action). Out.

(2) Vessel off (give a readily identifiable position). This is (name of vessel) off (give a readily identifiable position). I plan to (give proposed course of action). Over.

(3) (Coast station), This is (vessel's name) off (give readily identifiable position). I plan to (give proposed course of action). Over.

(b) Vessels acknowledging receipt shall answer "(Name of vessel calling). This is (Name of vessel answering). Received your call" and follow with an indication of their intentions. Communications shall terminate when each ship is satisfied that the other no longer poses a threat to its safety and is ended with "Out".

(c) Use of power greater than 1 watt in a bridge-to-bridge station shall be limited to the following three situations:

(1) Emergency.

(2) Failure of the vessel being called to respond to a second call at low power.

(3) A broadcast call as in paragraph (a)(1) of this section in a blind situation, e.g., rounding a bend in a river.

APPENDIX D

33 CFR 164 - NAVIGATION SAFETY REGULATIONS

Chapter I—Coast Guard, Dept. of Transportation

§ 164.11

PART 164—NAVIGATION SAFETY REGULATIONS

- Sec.
- 164.01 Applicability
- 164.11 Navigation underway: General.
- 164.15 Navigation underway: Confined or congested waters.
- 164.16 List of confined or congested waters. [Reserved]
- 164.19 Requirements for vessels at anchor.
- 164.25 Tests before entering or getting underway.
- 164.30 Charts, publications, and equipment: General.
- 164.33 Charts and publications.
- 164.35 Equipment: All vessels.
- 164.51 Deviations from rules: Emergency.
- 164.53 Deviations from rules and reporting: Non-operating equipment.
- 164.55 Deviations from rules: Continuing operation or period of time.
- 164.61 Marine casualty reporting and record retention.

AUTHORITY: Sec. 104, 86 Stat. 427 (33 U.S.C. 1224); 49 CFR 1.46 (m) and (n)(4).
 SOURCE: CGD 74-77, 42 FR 5956, Jan. 31, 1977, unless otherwise noted.

§ 164.01 Applicability.

This part applies to each self-propelled vessel of 1600 or more gross tons when it is operating in or on the navigable waters of the United States, except the Panama Canal and the St. Lawrence Seaway.

§ 164.11 Navigation underway: General.

The owner, master, or person in charge of each vessel underway shall ensure that:

- (a) The wheelhouse is constantly manned by persons who—
 - (1) Direct and control the movement of the vessel; and
 - (2) Fix the vessel's position;
- (b) Each person performing a duty described in paragraph (a) of this sec-

tion is competent to perform that duty;

(c) The position of the vessel at each fix is plotted on a chart of the area and the person directing the movement of the vessel is informed of the vessel's position;

(d) Electronic and other navigational equipment, external fixed aids to navigation, geographic reference points, and hydrographic contours are used when fixing the vessel's position;

(e) Buoys alone are not used to fix the vessel's position;

Note: Buoys are aids to navigation placed in approximate positions to alert the mariner to hazards to navigation or to indicate the orientation of a channel. Buoys may not maintain an exact position because strong or varying currents, heavy seas, ice, and collisions with vessels can move or sink them or set them adrift. Although buoys may corroborate a position fixed by other means, buoys cannot be used to fix a position; however, if no other aids are available, buoys alone may be used to establish an estimated position.

(f) The danger of each closing visual or each closing radar contact is evaluated and the person directing the movement of the vessel knows the evaluation;

(g) Rudder orders are executed as given;

(h) Engine speed and direction orders are executed as given;

(i) Magnetic variation and deviation and gyrocompass errors are known and correctly applied by the person directing the movement of the vessel;

(j) A person whom he has determined is competent to steer the vessel is in the wheelhouse at all times;¹

(k) If a pilot other than a member of the vessel's crew is employed, the pilot is informed of the draft, maneuvering characteristics, and peculiarities of the vessel and of any abnormal circumstances on the vessel that may affect its safe navigation.

(l) Current velocity and direction for the area to be transited are known by the person directing the movement of the vessel;

¹See also 46 U.S.C. 672, which requires an able seaman at the wheel on U.S. vessels of 100 gross tons or more in narrow or crowded waters or during low visibility.

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(m) Predicted set and drift are known by the person directing movement of the vessel;

(n) Tidal state for the area to be transited is known by the person directing movement of the vessel;

(o) The vessel's anchors are ready for letting go;

(p) The person directing the movement of the vessel sets the vessel's speed with consideration for—

(1) The prevailing visibility and weather conditions;

(2) The proximity of the vessel to fixed shore and marine structures;

(3) The tendency of the vessel underway to squat and suffer impairment of maneuverability when there is small underkeel clearance;

(4) The comparative proportions of the vessel and the channel;

(5) The density of marine traffic;

(6) The damage that might be caused by the vessel's wake;

(7) The strength and direction of the current; and

(8) Any local vessel speed limit;

(q) The tests required by § 164.25 are made and recorded in the vessel's log; and

(r) The equipment required by this part is maintained in operable condition.

§ 164.15 Navigation underway: Confined or congested waters.

In the confined or congested waters described in § 164.16, the master or person in charge of each vessel underway shall ensure that—

(a) Propulsion machinery can respond immediately through its full operating range;

(b) The engine room, including the main engine control station even if it is not in the engine room, is manned to operate the propulsion machinery as required by paragraph (a) of this section;

(c) Persons are available to rapidly anchor the vessel in an emergency; and

(d) The automatic pilot device is not in use.

§ 164.16 List of confined or congested waters. [Reserved]

§ 164.19 Requirements for vessels at anchor.

The master or person in charge of each vessel that is anchored shall ensure that—

(a) A proper anchor watch is maintained;

(b) Procedures are followed to detect a dragging anchor; and

(c) Whenever weather, tide, or current conditions are likely to cause the vessel's anchor to drag, action is taken to ensure the safety of the vessel, structures, and other vessels, such as being ready to veer chain, let go a second anchor, or get underway using the vessel's own propulsion or tug assistance.

§ 164.25 Tests before entering or getting underway.

No person may cause a vessel to enter into or get underway on the navigable waters of the United States unless, no more than 12 hours before entering or getting underway, the following equipment has been tested:

(a) Primary and secondary steering gear.

(b) All internal vessel control communications and vessel control alarms.

(c) Standby or emergency generator for as long as necessary to show proper functioning, including steady state temperature and pressure readings.

(d) Storage batteries for emergency lighting and power systems in vessel control and propulsion machinery spaces.

(e) Main propulsion machinery, ahead and astern.

§ 164.30 Charts, publications, and equipment: General.

No person may operate or cause the operation of a vessel unless the vessel has the charts, publications, and equipment as required by §§ 164.33 through 164.35 of this part.

§ 164.33 Charts and publications.

(a) Each vessel must have the following:

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(1) Except as provided by paragraph (b) of this section, charts of the area to be transited published by the National Ocean Survey, U.S. Army Corps of Engineers, or a river authority that—

(i) Are of a large enough scale and have enough detail to enable safe navigation of the area; and

(ii) Are the most recently published and available for the area and currently corrected.

(2) Except as provided by paragraph (b) of this section, the most recent, available, and currently corrected copy of, or applicable extract from, each of the following publications, if it includes the area to be transited:

(i) U.S. Coast Pilot.

(ii) Coast Guard Light List.

(iii) Notices to Mariners published by Defense Mapping Agency Hydrographic Center and local Coast Guard Notice to Mariners.

(iv) Tide Tables published by the National Ocean Survey.

(v) Tidal Current Tables published by the National Ocean Survey, or river current publication issued by the U.S. Army, Corps of Engineers, or a river authority.

(b) A vessel may have a chart or publication published by a foreign government instead of a chart or publication required by this section if the chart or publication contains similar information to the U.S. Government publication or chart. A vessel bound from a foreign port to a port in the United States may have the latest charts and publications that were available at previous ports of call.

§ 164.35 Equipment: All vessels.

Each vessel must have the following:

(a) A marine radar system for surface navigation.

(b) An illuminated magnetic steering compass, mounted in a binnacle, that can be read at the vessel's main steering stand.

(c) A current magnetic compass deviation table or graph or compass comparison record for the steering compass, in the wheelhouse.

(d) A gyrocompass.

(e) An illuminated repeater for the gyrocompass required by paragraph

(d) of this section that is at the main steering stand, unless that gyrocompass is illuminated and is at the main steering stand.

(f) An illuminated rudder angle indicator in the wheelhouse.

(g) The following maneuvering information prominently displayed on a fact sheet in the wheelhouse:

(1) For full and half speed, a turning circle diagram to port and starboard that shows the time and the distance of advance and transfer required to alter the course 90 degrees with maximum rudder angle and constant power settings.

(2) The time and distance to stop the vessel from full and half speed while maintaining approximately the initial heading with minimum application of rudder.

(3) For each vessel with a fixed propeller, a table of shaft revolutions per minute for a representative range of speeds.

(4) For each vessel with a controllable pitch propeller, a table of control settings for a representative range of speeds.

(5) For each vessel that is fitted with an auxiliary device to assist in maneuvering, such as a bow thruster, a table of vessel speeds at which the auxiliary device is effective in maneuvering the vessel.

(6) The maneuvering information for the normal load and normal ballast condition for—

(i) Calm weather—wind 10 knots or less, calm sea;

(ii) No current;

(iii) Deep water conditions—water depth twice the vessel's draft or greater; and

(iv) Clean hull.

(7) At the bottom of the fact sheet, the following statement:

WARNING

The response of the (name of the vessel) may be different from that listed above if any of the following conditions, upon which the maneuvering information is based, are varied:

(1) Calm weather—wind 10 knots or less, calm sea;

(2) No current;

(3) Water depth twice the vessel's draft or greater;

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- (4) Clean hull; and
- (5) Intermediate drafts or unusual trim.
- (h) An echo depth sounding device.
- (i) A device that can continuously record the depth readings of the vessel's echo depth sounding device.
- (j) Equipment on the bridge for plotting relative motion.

§ 164.51 Deviations from rules: Emergency.

Except for the requirements of § 164.53(b), in an emergency, any person may deviate from any rule in this part to the extent necessary to avoid endangering persons, property, or the environment.

§ 164.53 Deviations from rules and reporting: Non-operating equipment.

(a) If during a voyage any equipment required by this part stops operating properly, the person directing the movement of the vessel may complete the voyage subject to the requirements in Part 160 of this chapter.

(b) If the vessel's radar, gyrocompass, echo depth sounding device, or primary steering gear stops operating properly, the person directing the movement of the vessel must report or cause to be reported that it is not operating properly to the nearest Captain of the Port or Coast Guard District Commander as soon as possible.

§ 164.55 Deviations from rules: Continuing operation or period of time.

The Captain of the Port, upon written application, may authorize a deviation from any rule in this part if he determines that the deviation does not impair the safe navigation of the vessel under anticipated conditions and will not result in a violation of the rules for preventing collisions at sea. The authorization may be issued for vessels operating in the waters under the jurisdiction of the Captain of the Port for any continuing operation or period of time the Captain of the Port specifies.

§ 164.61 Marine casualty reporting and record retention.

When a vessel is involved in a marine casualty as defined in 46 CFR

4.03-1, the master or person in charge of the vessel shall—

(a) Ensure compliance with 46 CFR Subpart 4.05, "Notice of Marine Casualty and Voyage Records;" and

(b) Ensure that the voyage records required by 46 CFR 4.05-15 are retained for—

(1) 30 days after the casualty if the vessel remains in the navigable waters of the United States; or

(2) 30 days after the return of the vessel to a United States port if the vessel departs the navigable waters of the United States within 30 days after the marine casualty.