



UNITED STATES COAST GUARD

REPORT OF INVESTIGATION INTO THE COLLISION AND FIVE FATALITIES ONBOARD THE **M/V ZIM MEXICO III AND THE OSV LEE III**

IN THE SOUTHWEST PASS OF THE MISSISSIPPI RIVER
ON 02/21/2004



MISLE Activity Number: 2021113



16732

MAR 19 2010

FORMAL INVESTIGATION INTO THE COLLISION OF THE M/V ZIM MEXICO III (IMO #9063988) AND THE OSV LEE III (O/N 542918) AT MILE MARKER 8 ON THE SOUTHWEST PASSAGE OF THE MISSISSIPPI RIVER ON 21 FEBRUARY 2004, RESULTING IN THE SINKING OF THE LEE III AND LOSS OF FIVE LIVES.

COMMANDANT'S ACTION ON THE INVESTIGATION

The record and the report of the investigation into the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations are approved subject to the following comments.

COMMANDANT'S COMMENTS ON CONCLUSIONS

Of the 42 conclusions included in the report of investigation 39 are approved without further comment. We do not concur with the remaining three as noted below.

Investigating Officer's Conclusion 1: The primary cause of this casualty was that the Pilot of the ZIM MEXICO III and the Mate of the LEE III failed to recognize that a risk of collision existed until a matter of seconds before impact. In addition, the Master of the ZIM MEXICO III had recognized that there was a risk of collision when the LEE III was 2/10th of a mile away from the ZIM MEXICO III, but failed to take appropriate action (Transcript 3/4/04, p. 63, 86, & 136).

Comment: In his endorsement for this investigation, the Eighth District Commander made the following statement regarding Conclusion 1: "I do not concur with the comment that the primary cause of this casualty was the failure to recognize that a risk of collision existed until a matter of seconds before impact. Although there were only 37 seconds of time between the first exchange of voice communications between the Pilot of the ZIM MEXICO III and the LEE III and the collision, on two occasions the Pilot of the ZIM MEXICO III demonstrated an understanding of the meeting situation of the two vessels."

He continued, "It is my opinion that the primary cause of this casualty was the Mate of the LEE III lacked the qualifications required by regulation to act as Pilot to navigate the vessel out of Southwest Pass. Accordingly, he therefore lacked the knowledge and experience necessary to safely navigate the Lower Mississippi River, resulting in the LEE III transiting on the wrong side of the channel and turning directly in the path of inbound traffic. The Mate's inexperience and lack of situational awareness was clearly demonstrated when the vessel turned to the starboard cross the bow of the ZIM MEXICO III. The Mate's inexperience led to confusion time and time again as described throughout the investigator's report."

We concur with the Eighth District Commander's comment that the primary factor leading to this casualty was the LEE III mate's lack of knowledge, experience, and professional qualifications necessary to safely navigate the Lower Mississippi River. Additionally, we also agree that, while this is considered the primary factor, it was only one of many factors that contributed to this casualty.

Investigating Officer's Conclusion 29: There is evidence of negligence on the part of the Pilot in that he operated the ZIM MEXICO III in thick fog without sounding fog signal as required by Rule 35. The vessel entered fog so thick that the bridge team could not see beyond the bow of the vessel at either Light 16 (05:06:40) or Light 18 (05:10:36) according to the Master and the Pilot, respectively. Since the Master did not turn on the vessel's fog signal until 05:15:31, this means the vessel was operating in those conditions for five to eight minutes without its fog signal sounding. This did not contribute to the casualty since the Master turned on the fog signal five minutes before the collision and it sounded three times before impact. It does reflect, however, on the Pilot's and Master's consideration for the safety of other vessels operating on Southwest Pass and on the timeliness of the decisions they made.

Comment: In his endorsement for this investigation, the Eighth District Commander made the following statement regarding Conclusion 29: "I do not concur with the comment that the Pilot operated the vessel negligently in thick fog without sounding fog signals as required in Rule 35 of the Navigation Rules. It is primarily the Master's responsibility to sound the fog signals, which he did at approximately 0515 hours. Based upon the estimated time of activation and the fact that the fog signals were sounded at least three times prior to the collision, there is no indication that the collision occurred as a result of the violation of Rule 35 of the Navigation Rules."

We concur with the Eighth District Commander's comments that the Pilot did not operate the vessel negligently in thick fog without sounding fog signals as required in Rule 35 of the Navigation Rules.

Investigating Officer's Conclusion 32: Had the Pilot been convicted of driving a car recklessly anywhere in the country, the Coast Guard would have the authority to initiate remedial Suspension and Revocation proceedings against his First Class Pilot's license, even though he would not have been acting under the authority of the license. But when there is evidence that he negligently operated a vessel as a State Pilot, something that clearly reflects directly on his skills and ability to serve as a Federal Pilot, the Coast Guard can take no action.

Comment: In his endorsement for this investigation, the Eighth District Commander made the following statement regarding Conclusion 32: "I do not concur with the statement that had the pilot been convicted of driving a car recklessly the Coast Guard would have authority to take action against the Pilot's License. The Coast Guard has no authority when a Pilot is suspected of negligence while operating under the authority of his State License. This statement is immaterial to the findings of this investigation."

We concur with the Eighth District Commander's comments. The statement regarding reckless operation of a car is immaterial to the investigation. The Coast Guard does not have the authority to take action against a First Class Pilot's license when they are acting under the

authority of their State License except in limited circumstances such as under 46 USC 7704 concerning dangerous drugs and those provisions under 46 USC 7703(2) – (5).

COMMANDANT'S ACTION ON RECOMMENDATIONS

Of the sixteen safety recommendations issued by the investigating officer, the actions taken by the Officer in Charge, Marine Inspection, New Orleans and the Eighth District Commander in response to recommendations 3 through 5 and 9 are noted. The following is the Commandant's Action for the remaining safety recommendations:

Investigating Officer's Recommendation 1: That the U. S. Coast Guard seek a change to the United States Code that would give the Coast Guard jurisdiction over First Class Pilot's licenses held by State Pilots. This jurisdiction should apply when the holder of U. S. Coast Guard issued First Class Pilot's license performs an act of negligence, misconduct, or violates a navigation law or regulation of the United States while serving as a State Pilot. The law should grant the Coast Guard jurisdiction over the license regardless of whether the license is required as a prerequisite for a State Pilot's License/Commission by any particular state.

Action: We do not concur with this recommendation. We are satisfied with the current state - federal regulatory regime from a marine safety standpoint, and do not believe the case has been made in this investigation that that regime needs to be changed. In many cases, one of the basic criteria that must be met when determining jurisdiction over a mariner's merchant marine license, certificate, or document is that the mariner be acting under the authority of that license, certificate, or document when they commit an alleged violation. This requirement applies to all mariners, not just State Pilots holding First Class Pilot's licenses. When serving as a State Pilot, holders of USCG First Class Pilot's licenses are acting under the authority of their State Pilot licenses or commissions and fall under the authority of the appropriate State Pilot Association or Commission, which has the authority to take appropriate enforcement action for any alleged violations. The courts have historically recognized this federal/state allocation except for certain specified "holder" offenses set out in 46 USC 7703(2) – (4). These "holder offenses" include: being convicted of a crime that would prevent issuance of the license; being a security risk that poses a threat to the safety or security of a vessel; committing an act of incompetence relating to the operation of a vessel; or within three years of the initiation of the suspension and revocation proceeding against the federal pilot's license, being convicted of operating a motor vehicle under the influence of alcohol or a controlled substance, or a traffic violation resulting in a fatality."

Investigating Officer's Recommendation 2: That the Eighth Coast Guard District (dm) issue a Safety Bulletin regarding the requirement that watertight doors are to be kept closed when a vessel is underway.

Action: We concur with the Eighth District Commander's response to this recommendation. The practice of operating vessels without securing watertight doors and hatches is not limited to vessels operating in the Eighth Coast Guard District. Therefore, the Coast Guard will publish a safety alert addressing this issue that will be sent out nationwide.

MAR 19 2010

Investigating Officer's Recommendation 6: That the Coast Guard discuss pilotage issues with area industry organizations and send out an Information Bulletin regarding pilotage requirements for inspected vessels under 1600 gross tons as detailed in 46 CFR 15.812.

Action: We partially concur with this recommendation. While we believe the regulations, as published in the Federal regulations are quite clear, we will encourage discussions between our representatives in the Eighth Coast Guard District and regional industry organizations on this and any related topics as a means to ensure maritime safety.

Investigating Officer's Recommendation 7: That the Coast Guard establish a policy guidance for the field regarding verification that operators of inspected vessels of less than 1600 gross tons sailing on pilotage waters have the required number of trips to serve as pilot. 46 CFR 15.812(d) requires Masters and Mates to provide the Coast Guard with documentation of proving compliance with pilotage trip requirements when asked.

Action: We do not concur with this recommendation. Existing policy in Volume III of the Marine Safety Manual states that individual mariners self-certify their qualifications for a route and that it is incumbent upon the mariner who will "act as" a pilot to determine in advance whether he/she meets the local pilotage requirements. In situations where a mariner's qualifications come into questions, such as during an investigation into a marine casualty, Coast Guard personnel conducting the investigation can seek proof of compliance under existing regulations and policy.

Investigating Officer's Recommendation 8: That the various Pilot's associations and the Pilot Board of Examiners require all pilots to comply with the requirements of 47 CFR 80.331 in that all pilots should identify themselves by the name of the vessel they are piloting, rather than by their pilot designation. Failure to use the name of the vessel being piloted can create doubt in the mind of other vessel operators as to which vessel the Pilot is on.

Action: We concur with this recommendation. We will provide a copy of this report to the Pilot Board of Examiners highlighting the need for all pilots to comply with the requirements of 47 CFR 80.331 when identifying themselves while engaged in piloting. In addition, we will partner with the American Pilot's Association to raise awareness of this issue among its member groups of state-licensed and U.S.-registered pilots.

Investigating Officer's Recommendation 10: That the U. S. Coast Guard considers making a change to the regulations to prohibit the use of handheld radios on the Lower Mississippi River.

Action: We do not concur with this recommendation. The use of handheld VHF radios by pilots has been a necessary, accepted, and reliably proven piece of electronic communications equipment.

Investigating Officer's Recommendation 11: That the Pilot Associations and Board of Examiners attempt to identify any new technologies that would allow both the vessel and the Pilot to have their radios on Channel 67 at the same time without the two radios interfering with one another.

Action: We concur with the intent of this recommendation. Interference between VHF radios operating on the same channel in close proximity to each other is a common problem that is not limited to Pilot radios and those on vessel bridges. We will forward this recommendation to Pilot Associations and Boards of Examiners for their consideration and action, as appropriate.

Investigating Officer's Recommendation 12: That the Board of Examiners identify and require Pilots to utilize portable radios that a pilot can easily retain on his or her person throughout a long transit up the river—one that will not have to be held in the hand at all times.


Action: We concur with the intent of this recommendation. We agree that the use of portable radios that can be easily retained by the pilot without having to be held in the hand could improve their ability to keep the radio where they can hear it and use it. We will forward this recommendation to Pilot Associations and Boards of Examiners for their consideration and action, as appropriate.

Investigating Officer's Recommendation 13: That both the Master and the Pilot of the ZIM MEXICO III attend Bridge Resource Management training.

Action: We do not concur with this recommendation. There is no indication that the Master or Pilot and the bridge team of the ZIM MEXICO III failed to act in a cooperative environment. The investigation states that the Pilot had already taken Bridge Resource Management (BRM) training. And, while not specifically mentioned in the report, the Master of the ZIM MEXICO III would have had to have taken BRM training to obtain his STCW certification.

Investigating Officer's Recommendation 16: That the U. S. Coast Guard review its licensing regulations for First Class Pilot's licenses and considers developing a tiered tonnage system for pilotage endorsements. The tonnage of the vessels that a Pilot is authorized to serve on as a pilot should directly reflect the tonnage of the vessels that the pilot has gained both his qualifying sea service on and his required round trips on.

Action: We do not concur with this recommendation. While the inexperience of the licensed mate onboard the LEE III and the decision of its master to leave the mate alone on the bridge were factors in this incident, we do not believe they were the result of inadequate regulation. The mate did not have the required number of trips when he piloted the LEE III and the company did not properly evaluate the qualifications of the mate before placing him in a position where he was required to pilot the vessel in an area he was not familiar with. As such, it was not a failure of the existing pilotage regulations, but the failure to adhere to them that was the factor in this incident. Therefore, we do not believe changing the existing regulations, including the development of a tiered tonnage system to replace the existing requirements is necessary.



KEVIN S. COOK
Rear Admiral, U.S. Coast Guard
Director of Prevention Policy

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16732

AUG 27 2009

MEMORANDUM

From: [REDACTED]
MARY. E. LANDRY, RADM
CGD EIGHT

Reply to: CGD EIGHT (dp)
Attn of: V.B. GIFFORD, CAPT
(504) 671-2104

To: COMMANDANT (CG-545)

Subj: AMENDMENT TO CGD EIGHT ENDORSEMENT 16732 OF 7 JUN 06 ON
FORMAL INVESTIGATION INTO COLLISION OF THE M/V ZIM MEXICO III
(IMO #9063988) AND THE OSV LEE III (O/N 542918)

1. In review of the D8 Commander's endorsement, an error was noted that requires correction in order to accurately reflect the D8 Commander's position and align with the other comments in the referenced endorsement.
2. In conclusion 29 of the endorsement, it states "I concur with the comment that the Pilot did not negligently operate the vessel in thick fog without sounding fog signals as required in Rule 35 of the Navigation Rules." I am amending this statement to the following: "I do not concur with the comment that the Pilot operated the vessel negligently in thick fog without sounding fog signals as required in Rule 35 of the Navigation Rules."
3. This change is necessary because the original statement did not reflect the D8 Commander's opinion of conclusion 29.

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Copy: CG Sector New Orleans

dpi
16732

JUN - 7 2006

FIRST ENDORSEMENT on MSO New Orleans memo 16730 of 28 October 2004

From: RADM R. F. Duncan
CCGD Eight

To: Commandant (G-PCA)

Subj: FORMAL INVESTIGATION INTO COLLISION OF THE M/V ZIM MEXICO III (IMO #9063988) AND THE OSV LEE III (O/N 542918) AT MILE MARKER 8 ON THE SOUTHWEST PASS OF THE MISSISSIPPI RIVER ON 21 FEBRUARY 2004, RESULTING IN THE SINKING OF THE LEE III AND LOSS OF FIVE LIVES

1. Forwarded for review and approval. I concur with the investigation with the following exceptions and comments.

Conclusion #1

I do not concur with the comment that the **primary cause** of this casualty was "the failure to recognize that a risk of collision existed until a matter of seconds before impact". Although there were only 37 seconds of time between the first exchange of voice communications between the Pilot of the ZIM MEXICO III and the LEE III and the collision, on two occasions the Pilot of the ZIM MEXICO III demonstrated an understanding of the meeting situation of the two vessels.

First, at 05:19:39, the time of the first communication between the vessels, (see Table 7, page 30) both the Pilot and Master of the ZIM MEXICO III notice the LEE III make two slight course changes to its starboard. Both the Pilot and the Master testified that even "after the LEE III made slight heading changes it still would have passed astern of the ZIM MEXICO III" (see #17 page 57 and #34 of page 35). This testimony indicates the Pilot made an evaluation of the meeting situation including:

- An awareness that the LEE III was in a position that placed the vessel on the wrong side of the channel and,
- An awareness of the present course of the LEE III and recognition of the vessel's closest point of approach to the ZIM MEXICO III.

The second time the Pilot demonstrated an understanding of the meeting situation was eleven seconds later at 05:19:50. At that time, the Pilot of the ZIM MEXICO III made meeting arrangements for a starboard-to-starboard pass ("Meet you on two." Item #35 page 36.) The Pilot testified the LEE III was still well outside the channel at that time.

These two facts demonstrate the Pilot had properly evaluated the situation and had made sound decisions for a safe passing arrangement. It must be concluded that the Pilot clearly understood the risk of collision and under the prevailing circumstances had taken necessary actions to reasonably believe a collision would be avoided. Only after the Mate of the LEE III made a sharp and unexpected turn to starboard (directly towards the starboard-to-starboard passing

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arrangement) and cut across the bow of the ZIM MEXICO III (see Item #24, page 59) did the situation deteriorate from an “arranged vessel passing” to a “high risk of collision” situation. At that time (05:20:01, see Item #36, page 36) the Pilot of the ZIM MEXICO III did recognize a greater or imminent risk of collision and did take evasive action by ordering turns to the port, consistent with the starboard-to-starboard passing arrangement. However, the radical course change of the LEE III happened only 15 seconds before the collision making the casualty unavoidable by that time.

It is my opinion that the **primary cause** of this casualty was the Mate of the LEE III lacked the qualifications required by regulation to act as Pilot to navigate the vessel out of Southwest Pass. Accordingly, he therefore lacked the knowledge and experience necessary to safely navigate the Lower Mississippi River, resulting in the LEE III transiting on the wrong side of the channel and turning directly in the path of inbound traffic. The Mate’s inexperience and lack of situational awareness was clearly demonstrated when the vessel turned to the starboard crossing the bow of the ZIM MEXICO III. The Mate’s inexperience led to confusion time and time again as described throughout the investigator’s report. Examples include:

- Referencing Conclusion 5 on page 54: “Based solely on the actions taken by the Mate of the LEE III, it was clear that he was unfamiliar with the area of the Lower Mississippi River...”
 - “He had to ask what frequency to monitor.”
 - “He admitted he was not familiar with the waterway.”
 - “While transiting...he apparently got nervous/confused/expressed doubt and even turned around in the channel...”
 - “He did not know the navigation aids were lights.”
- Referencing Conclusion 16 on page 57: “Rule 9(a)(i) of the Inland Rules of the Road requires the vessel proceeding along the course of a narrow channel shall keep as near to the outer limit of the channel which lies on her starboard side...” “At the time of the collision the LEE III was nearer to the outer limit of the channel off her port side.”

I must emphasize that there are many contributing factors that ultimately led to the casualty, and just as many opportunities by all parties to perhaps prevent the casualty, it is my opinion that the primary cause of this incident is the inexperience of the waters being transited and lack of required professional qualifications of the Mate of the LEE III who was in charge of navigation of that vessel at the time of the casualty.

Subj: FORMAL INVESTIGATION INTO COLLISION OF THE M/V ZIM MEXICO III (IMO #9063988) AND THE OSV LEE III (O/N 542918) AT MILE MARKER 8 ON THE SOUTHWEST PASS OF THE MISSISSIPPI RIVER ON 21 FEBRUARY 2004, RESULTING IN THE SINKING OF THE LEE III AND LOSS OF FIVE LIVES

Other Comments:

Conclusion #29

I concur with the comment that the Pilot did not negligently operate the vessel in thick fog without sounding fog signals as required in Rule 35 of the Navigation Rules. It is primarily the Master's responsibility to sound the fog signals, which he did at approximately 0515 hours. Based upon the estimated time of activation and the fact that the fog signals were sounded at least three times prior to the collision, there is no indication that the collision occurred as a result of the violation of Rule 35 of the Navigation Rules.

Conclusion #32

I do not concur with statement that had the pilot been convicted of driving a car recklessly the Coast Guard would have authority to take action against the Pilot's License. The Coast Guard has no authority when a Pilot is suspected of negligence while operating under the authority of his State License. This statement is immaterial to the findings of this investigation.

Recommendation #2

I concur with the recommendation to release of a Safety Bulletin regarding the federal regulations requiring the securing of watertight doors when a vessel is underway. However, it is recommended that it be issued in the form of a Safety Alert through the office of Prevention at Coast Guard Headquarters. The practice of operating vessels without securing watertight doors and hatches is not a conundrum limited to vessels operating in the Eighth Coast Guard District.

Recommendation #4

I concur with the recommendation that the findings of the investigation do not adequately support the pursuit of civil penalty action against the owner and operators of the ZIM MEXICO III.

Recommendations #10, 11 & 12

I concur with the recommendation that there should be an emphasis on the proper monitoring of Channel 67, especially regarding relying on the use of handheld or hands-free radios. The facts of the investigation state that the master of the ZIM MEXICO III informed the Pilot that the ship's radios were tuned to Channels 9 and 16 respectively. Neither the Pilot nor the Master made any attempt to tune any of the ship's radios to Channel 67. The report further states that the Pilot had his handheld radio tuned to Channel 67 and that he kept it in the window because that is where it typically got the best reception. Based on this information, the handheld radio may not be the most reliable equipment for consistent monitoring of Channel 67. If one of ship's radios were tuned to Channel 67 along with the Pilot's radio, the opportunity for interference would have been diminished.

2. Please contact LCDR [REDACTED] of my staff at 504-589-3642 if you have any questions.

#

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Investigative Report

Collision of the M/V ZIM MEXICO III (IMO # 9063988) and the M/V LEE III (O/N D542918) with Five Fatalities on February 21, 2004, in the Southwest Pass of the Mississippi River, at Mile Marker 8 Below Head of Passes

USCG MISLE Incident Investigation Activity Number 2021113

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I. Executive Summary

1. On 21 February at 0520 the container vessel ZIM MEXICO III collided with the offshore supply vessel LEE III in the Southwest Pass of the Mississippi River. The collision occurred at approximately mile marker 8 Below Head of Passes. There was heavy fog in the area at the time of the collision with visibility limited to several hundred feet. The ZIM MEXICO III struck the LEE III nearly broadside while both vessels were near the center of the channel. The bow of the ZIM MEXICO III penetrated the LEE III, almost cutting the vessel in half. The LEE III capsized and sank immediately. All five crewmembers aboard the LEE III died. There was minimal damage to the ZIM MEXICO III. None of the ZIM MEXICO III's crewmembers were injured.

2. The LEE III sank in the navigation channel and prevented the safe passage of vessel traffic. The Captain of the Port at Coast Guard Marine Safety Office New Orleans, LA, closed the channel for 5 days while efforts were made to remove the vessel. 175 vessels were held up, either offshore or in the Port of New Orleans, waiting for the channel to be cleared and reopened. After 5 days the LEE III was raised, placed on a barge and transported to Amelia, LA. The LEE III was surveyed, determined to be a total constructive loss, and then cut up for scrap. The ZIM MEXICO III proceeded to the Port of New Orleans, where repairs were made to the minor damage it sustained to its bulbous bow.

II. U. S. Coast Guard Formal Hearing

1. On Tuesday, March 2, 2004, the Commander, Eighth Coast Guard District, in New Orleans, LA, convened a Formal Hearing to investigate the causes of the collision between the Offshore Supply Vessel LEE III and the container ship ZIM MEXICO III. The Hearing concluded on Friday, March 11, 2004, after compiling evidence and testimony for seven days. This report is a result of that Hearing.

2. A total of 11 Parties in Interest were designated. They are listed below. Each Party in Interest was represented by counsel:

- [REDACTED], Master of the ZIM MEXICO III
- [REDACTED], Pilot aboard the ZIM MEXICO III
- B. Rickmers GMBH & CIE, Owners of the ZIM MEXICO III
- Zim-American Israeli Shipping, Operators of the ZIM MEXICO III
- The Family of Baldemar Villarreal, Master of the LEE III
- The Family of Daniel Lopez, Mate aboard the LEE III
- The Family of Joseph Brown, Engineer aboard the LEE III
- The Family of Lawrence Glass, Crewmember aboard the LEE III
- The Family of Ramon Norwood, Crewmember aboard the LEE III
- Ocean Runner, Owner/Operator of the LEE III
- Pilot Board of Examiners

3. The Coast Guard called 13 witnesses to testify at the Hearing. None of the Parties in Interest called any witnesses. The witnesses are listed below:

- [REDACTED], Ocean Runner
- [REDACTED], Ocean Runner
- [REDACTED], Ocean Runner
- [REDACTED], on board the M/V LEE III on Friday, February 20, 2004
- [REDACTED], Second Captain on board the M/V CAPTAIN NICK
- [REDACTED], Federal Pilot on board the M/V COLUMBIA
- [REDACTED], Mate on board the M/V STONE BUCCANEER
- [REDACTED], Master on board the M/V ZIM MEXICO III
- [REDACTED], Pilot on board the M/V ZIM MEXICO III
- [REDACTED], Chief Mate on board the M/V ZIM MEXICO III
- [REDACTED], Helmsman on board the M/V ZIM MEXICO III
- [REDACTED], Lookout on board the M/V ZIM MEXICO III
- [REDACTED], Lookout on board the M/V ZIM MEXICO III

III. Findings of Fact

A. M/V LEE III Particulars and other Vessel Information

1. Vessel Particulars:

O/N Number	D542918 (IMO #7230408)
Flag	United States
Service	Offshore Supply Vessel
Gross Tons	186
Net Tons	126
Class	ABS #7209340
Length	166.3 Feet
Breadth	38.0 Feet
Depth	13.5 Feet
Propulsion	Diesel Reduction
H. P.	1,800
Hailing Port	Houston, TX
AIS Equipped	No
Owner/Operator	Ocean Runner, Inc.
Master	Baldemar Villarreal
License	Master; Near Coastal; 500 GT; United States; 846114

2. The LEE III was a welded steel vessel constructed in 1972 at Moss Point Mississippi. The vessel is of typical OSV design with twin screws, a large flush aft cargo deck and a forward pilothouse. The vessel had two watertight doors below the main deck—one in the forward engine room bulkhead and one in the aft engine room bulkhead leading to the steering compartment. The vessel's main propulsion was by two Caterpillar, V-12, turbo-charged engines that generated 900 HP each. In addition to other bridge navigation gear, it was equipped with two VHF radios, two Furuno Radars, and an air horn with a pull cord. The vessel was not equipped with an Automated Identification System (AIS).

3. The vessel had 31 below deck compartments or integral tanks. These were the forepeak ballast tank, port and starboard ballast tanks, the tunnel where the bow thruster is located, two port and starboard outboard fuel oil tanks, three port and starboard inboard ballast tanks, four bulk mud tanks, port and starboard liquid mud tanks, port and starboard fuel oil day tanks, the engine room, port and starboard potable water tanks, two port and starboard ballast tanks, the rudder room with a tunnel, the rudder compartment, and the port and starboard afterpeak ballast tanks.

4. The LEE III held a U. S. Coast Guard Certificate of Inspection (COI) issued by the Officer in Charge, Marine Inspections (OCMI), at Port Arthur, TX. The COI was issued October 3, 2000, and was to expire on October 3, 2005. The vessel had an Oceans route that allowed it to sail in the Gulf of Mexico out to a maximum of 200 miles offshore. It was equipped with engineering automated control/monitoring systems that allowed the vessel to operate with reduced manning. The COI requires that any major failure of an

essential component of the automated systems must be immediately reported to the OCMI. No reports of any failures were made since the vessel's last Coast Guard inspection (see paragraph #6 below). Ocean Runner's representatives testified that the equipment aboard the LEE III was in good working order.

5. The COI required the LEE III to be crewed by one Master, two Mates, two Able Seamen, and one Ordinary Seaman. It also authorized the vessel to transport 15 "persons in addition to the crew." These persons usually included representatives of the company that had the LEE III under contract and other personnel associated with the business of the vessel. At the time of the collision, the vessel was on a voyage of less than 600 miles and was operating with a reduced crew of one Master, one Mate, one Able Seaman, and one Ordinary Seaman as allowed by the COI. In addition to the required crew, the vessel also had a Coast Guard licensed Chief Engineer. It was equipped with one rescue boat/platform, two inflatable rafts capable of holding a total of 40 persons, 24 life preservers, six ring buoys, and an Emergency Position Indicating Radio Beacon (EPIRB).

6. The LEE III underwent its U. S. Coast Guard hull examination and reinspection on October 14, 2003 (IO Exhibit #8). Both inspections were conducted in Amelia, LA, by the OCMI in Morgan City, LA, and were completed on October 27, 2003. During the reinspection there were two discrepancies of note. The Radar was found to be inoperative and a "light bulb" on the mast was burned out. Both deficiencies were corrected and the vessel completed both inspections with no outstanding deficiencies.

B. M/V ZIM MEXICO III Particulars and other Vessel Information

1. Vessel Particulars:

IMO Number	9063988
Flag	Antigua and Barbuda
Service	Container Ship
ITC Gross Tons	10,736
ITC Net Tons	5,478
Deadweight Tons	14,120
Class	Germanischer Lloyd
Length	162.8 Meters
Breadth	22.3 Meters
Depth	11.1 Meters
Propulsion	Diesel Direct with Controllable Pitch Propeller
H. P.	9,421
Homeport	Hamburg
AIS Equipped	Yes
Owner	Rickmers Reiderbach GmbH & Cie. KG
Operator:	Zim-American Israeli Shipping Co. Inc
Master	██████████
License	Master Mariner; Republic of Poland; 016004-12-01

2. The ZIM MEXICO III is a steel container ship with an ice-strengthened hull built in 1993. It is certified to carry 1,156 Twenty-foot Equivalent Unit containers. The vessel is equipped with three cargo holds and has two cranes on deck. The vessel's Minimum Safe Manning Certificate (IO Exhibit #73) requires a crew of 15 personnel. The crew must be comprised of one Master, one Chief Mate, two Deck Officers, one Chief Engineer, one 2nd Engineer, four Ratings forming part of a navigation watch, two Rating Deck, one Rating forming part of an engineering watch, one Rating Engine, and one Cook.

3. The ZIM MEXICO III is required by its Cargo Ship Safety Equipment Certificate (IO Exhibit # 21) to carry one lifeboat, one rescue boat, and three life rafts. The vessel passed its required flag state inspection on February 9, 2004, in Houston, TX, with no notable deficiencies. The report of inspection (IO Exhibit # 23) indicates that, in addition to the above equipment, the vessel also carried 14 lifebuoys.

4. The vessel is equipped with two radars with speed and distance indicators and an Automatic Radar Plotting Aid (ARPA), a magnetic compass, a gyrocompass and repeater, an echo depth sounder, a course recorder, a foghorn, and two VHF radios in addition to other gear. Although the vessel was not yet required to have an AIS on board, the system was installed and transmitting.

5. The vessel's engine generally operates at two speeds, 135 RPM and 115 RPM. The vessel's speed is changed by altering the pitch of the propeller rather than by changing the engine RPMs. The Pilot Card (IO Exhibit # 17), under the section entitled "Engine," shows both engine RPM settings, but it does not clearly indicate whether the listed vessel speeds are for 135 RPM or for 115 RPM. The Maneuvering Speed/RPM/Pitch Setting table (IO Exhibit # 20) posted on the bridge only shows speed and pitch data for 115 RPMs. The "Wheelhouse Poster" (IO Exhibit # 69) shows the vessel's maneuvering characteristics and other data. It has a section entitled "Propulsion Particulars" that shows a variety of RPM/Pitch settings and the associated vessel speeds at those settings. The speeds, however, are shown only for when the vessel is in a ballasted condition. There is no information on the Poster for the vessel's speed when loaded. The Poster shows that with the engine at 132 RPM and the propeller set to 74% pitch the vessel, when in ballast, will make 15.65 knots through the water. There was no documentary information available to the Pilot on the bridge that indicated what speeds the loaded vessel would make through the water at the various pitch settings of the propeller when the engine was turning at 135 RPM.

6. When the vessel is at Full Maneuvering Speed and a speed change is desired, the computer that controls the vessel's speed requires up to "10 minutes notice" to slow the vessel down. The reason for this is that it takes the computer approximately 10 minutes to fully implement the required changes to the propeller's pitch. This feature is built into the control system to prevent damage to the vessel's propulsion machinery. In an emergency situation the "10 minute notice" can be overridden on the bridge by simply pressing a button on the console.

7. The Coast Guard Marine Safety Office (MSO) in Tampa, FL, conducted a Port State Control inspection of the vessel on February 19, 2004 (IO Exhibit # 14). The inspection was satisfactorily completed with no outstanding deficiencies noted.

C. M/V LEE III Personnel Information

1. The LEE III had a total of five crewmembers on board at the time of the casualty. All five died as a result of the collision. Table 1 contains a basic record of the deceased.

Table 1: Record of Deceased LEE III Crewmembers

<i>Name</i>	<i>Position</i>	<i>Age</i>	<i>USCG License or MMD</i>	<i>Address</i>
<i>Baldemar Villarreal</i>	Master	████	Master 500 GT N/C	████████████████████
<i>Daniel Lopez</i>	Mate	██	Master 100 GT N/C; Mate 1600 GT N/C	████████████████████
<i>Joseph Brown</i>	Engineer	██	Chief Engineer, Motor Vsls, 5000 HP, LTD Oceans	████████████████████
<i>Ramon Norwood</i>	Deckhand	██	Ordinary Seaman	████████████████████
<i>Lawrence Glass</i>	Deckhand	██	Able Seaman-OSV	████████████████████

2. The Master of the LEE III was Baldemar Villarreal. He was the holder of U. S. Coast Guard license number ██████. His license, which was on its second issue, authorized him to serve as “Master of Near Coastal Steam or Motor Vessels of not more than 500 Gross Tons.” The license also had a valid Unlimited Radar Observer endorsement. The license was issued by the Regional Examination Center (REC) in Houston, TX, on March 15, 1999, and was due to expire on March 14, 2004. In addition to his license, Mr. Villarreal also held a Merchant Mariner’s Document (MMD) endorsed as Able Seaman – Special (OSV), Wiper, and Steward’s Department (Food Handler). The MMD was issued by the REC in Houston, TX, and had the same issue and expiration dates as his license.

3. Mr. Villarreal completed a U. S. Coast Guard approved course in Basic and Advanced Ship Firefighting on March 14, 1998, at Delgado Community College in New Orleans, LA. He also completed a 5-day Radar Observer course on March 5, 1999, at Louisiana Technical College, Young Memorial Campus, in Morgan City, LA.

4. Mr. Villarreal’s license and MMD file at REC Houston was reviewed as was his personnel record at Ocean Runner. He has documented extensive sea service dating back

as far as 1987. Table 2 lists the extent of his experience.

Table 2: Baldemar Villarreal's Documented Sea Service

	Company Name	Dates	Position	Days Sailed	Type Vessels	Waters Sail
1.	Cayman Services Clute, TX	6/87 to 1/89	Deckhand	399	Crewboats / OSV's	GOM, 100 Miles Offshore between New Orleans, LA & Corpus Christi, TX
2.	Ryan Marine Services Galveston, TX	7/93 to 12/93	Deckhand	111.5	Crewboats / OSV's	GOM, 100 Miles Offshore between New Orleans, LA & Brownsville, TX
3.	Muchowich Offshore Oil Services Freeport, TX	2/94 to 5/94	Master	41.5	Not Specified	GOM, 100 Miles Offshore
4.	Gulf Crews Cameron, LA	6/94 to 7/94	Master	35	Passenger	GOM, 100 Miles Offshore between Venice, LA & Brownsville, TX
5.	Ryan's Marine Services Galveston, TX	7/94 to 11/94	Master	42.5	Crewboats / OSV's	GOM, 100 Miles Offshore between New Orleans, LA & Brownsville, TX
6.	Masco Operators Freeport, TX	4/95 to 2/96	Master	445	Not Specified	GOM
7.	Candy Fleet Morgan City, LA	2/97 to 11/97	Master	288	Crewboats	GOM, 200 Miles Offshore
8.	Riviera Marine Cut-Off, LA	3/98 to 8/98	Port Captain	Unk	Unk	Unk
9.	Ocean Runner Galveston, TX	10/98 to 2/04	Master Mate	Unk	OSV's	GOM

5. Investigators from MSO Morgan City contacted Mr. Villarreal's family and his previous employers in an effort to determine whether or not he had any experience sailing in Southwest Pass (See Enclosure # 3). Only two companies indicated he did. Mr. Villarreal worked for Masco Operators in Freeport, TX from April 1995, through January 1996. Masco indicated that he had made at least eight trips in Southwest Pass while employed there. Mr. Villarreal worked for Candy Fleet from February 1997, through November 1997. Candy Fleet located a letter written by Mr. Villarreal, dated June 7,

1997, stating that he had completed eight trips in Southwest Pass. These were the only companies that indicated Mr. Villarreal had sailed in Southwest Pass. Ryan Marine Services, Inc., and Gulf Crews, Inc., were also contacted. Both companies said that Mr. Villarreal did not sail into Southwest Pass while in their employ. The last three companies, Cayman Services LTD, Inc., Muchowich Offshore Oil Services, Inc., and Riviera Marine, could not be located. Computer searches for the vessels Mr. Villarreal sailed on while in the employ of these companies produced negative results. Mr. [REDACTED], a Charter Representative for Ocean Runner, testified that he thought Mr. Villarreal had sailed 28 days in South West Pass one year ago. The Ocean Runner possessed no records to confirm or verify this experience.

6. The Mate of the LEE III was Daniel Lopez. He was the holder of U. S. Coast Guard license number [REDACTED]. His license was on its first issue. It authorized him to serve as “Master of Steam or Motor Vessels of not more than 100 Gross Registered Tons (Domestic) upon Near Coastal waters.” It was also endorsed as “Mate of Steam or Motor Vessels of not more than 1600 Gross Registered Tons, (Domestic) 3000 Gross Tons, (ITC Tonnage) upon Near Coastal Waters.” The license also had an Unlimited Radar Observer endorsement valid until December 10, 2004. The license was issued at the REC in Houston, TX, on December 20, 1999, and was valid at the time of the collision. Mr. Lopez held a MMD endorsed as Able Seaman – Unlimited, Wiper, and Steward’s Department (Food Handler). The MMD was issued by the REC in Houston, TX, and was due to expire on December 3, 2004.

7. Mr. Lopez completed several U. S. Coast Guard approved courses. At Delgado Community College in New Orleans, LA, he completed Basic and Advanced Ship Firefighting on December 17, 1999 and a 32-Hour Bridge Resource Management Course on June 9, 2002. At Houston Marine Training Services he completed a 40-Hour Radar Observer – Unlimited course on December 10, 1999. At Two Rivers Marine Training & Consulting in Nederland, TX, he completed a 12-Hour Personal Survival training Course on March 20, 2002. Finally, at Texas A & M University’s Center for Marine Training and Safety in Galveston, TX, he completed a 4-Hour personal Safety & Social Responsibilities Course on October 9, 2001, and an 8-Hour First Aid & CPR Course on October 10, 2001.

8. Mr. Lopez’s complete License/MMD file was obtained from the Coast Guard REC in Houston, TX, as a part of this investigation. In addition, his Ocean Runner personnel file and copies of the logs from every Ocean Runner vessel he sailed on were subpoenaed and provided. Based on a review of his License/MMD file, his application for employment submitted to Ocean Runner, vessel logs, sworn testimony from Ocean Runner employees and other witnesses taken during the Coast Guard Hearing, and calls from Coast Guard Investigators to Mr. Lopez’s previous employers and representatives of his family, Mr. Lopez’s sailing experience was documented. He worked for nine different employers since 1991 (See Enclosure # 4). Table 3 lists the extent of his experience.

Table 3: Daniel Lopez's Documented Sea Service

	Company Name	Dates	Position	Days Sailed	Type Vessels	Waters Sailed Upon
1.	U. S. Navy	1/91 to 11/95	Comm & Intel Specialist	2 yrs	Unk	Unk
2.	Dinko's Marine Service Aransas Pass, TX	1/96 to 2/96	Deckhand	31	Passenger	GOM, 150 Miles Offshore between New Orleans, LA & Brownsville, TX
3.	Neches-Gulf Marine Sabine Pass, TX	10/96 to 10/97	O/S	218.5	Offshore Lightering Vessels	GOM, 100 Miles Offshore between Southwest Pass, LA & Corpus Christi, TX
4.	SPT Offshore Houston, TX	7/98 to 11/98	A/B	102	Unk Lightering Support Vessels	Unk
5.	C & G Boat Operators Golden Meadow, LA	11/97 to 7/98	A/B	159	M & O Vessels	GOM, 200 Miles Offshore between TX & FL
6.	Offshore Marine Services Sabine Pass, TX	2/99 to 10/99	A/B	197	Unk	Unk
7.	Offshore Marine Services Sabine Pass, TX	12/99 to 9/00	Mate	173	Unk	Unk
8.	Ocean Runner Galveston, TX	9/00 to 2/04	Mate	193 as of 5/02	OSV's	GOM, 200 Miles Offshore between Brownsville, TX & mouth of the Mississippi River
9.	Pelican Offshore Galveston, TX	5/01 to 12/01	Mate	122	OSV's	GOM & Caribbean, more than 12 Miles Offshore

9. All but one of the companies Mr. Lopez worked for were contacted. The last company, Dinko's Marine Services, Inc, was no longer operating. Computer searches for the vessels he operated while working for Dinko's produced negative results. Mr. Lopez worked from Neches-Gulf Marine Inc, from October 1996, through October 1997. Neches stated that Mr. Lopez did not sail into Southwest Pass while working there. Mr.

Lopez worked for C & G Boat Operators, formerly SPT Offshore, from November 1997 to July 1998. They had no records or knowledge of Mr. Lopez making any trips into Southwest Pass while working there. He worked at Offshore Marine Services, Inc, from February 1999, until October 1999. Pelican Offshore Services purchased this company, and Mr. Lopez worked for Pelican from May 2001, to December 2001. Pelican Offshore Services said that the company's vessels do not transit Southwest Pass and that they are engaged in offshore lightering operations. The company said that Mr. Lopez did not make any trips into Southwest Pass with either Offshore Marine Services or Pelican Offshore Services.

10. No evidence was located indicating that Mr. Lopez had previous experience sailing on the waters of Southwest Pass. In response to the Investigating Officer's subpoenas, Ocean Runner supplied three witnesses to testify at the hearing about Ocean Runner's policies and the experience of the crew on board the LEE III. The first witness was Mr. [REDACTED] and the second was [REDACTED] the Operations Manager for Ocean Runner. Neither had any knowledge of Mr. Lopez having any experience sailing in Southwest Pass. The Investigating Officer also subpoenaed Mr. [REDACTED]. He brought the LEE III from Morgan City, LA, to Venice, LA, prior to Mr. Lopez getting aboard. Mr. Lopez met the vessel at Venice, LA, and relieved Mr. [REDACTED] as Mate several days prior to the casualty. Mr. [REDACTED] testified that during the relief process Mr. Lopez told Mr. [REDACTED] that he was familiar with the Southwest Pass. Mr. Lopez offered no specifics, nor did Mr. [REDACTED] inquire further. Mr. [REDACTED] had no other knowledge of Mr. Lopez's experience in Southwest Pass other than this one brief statement made by Mr. Lopez during their relief.

11. Mr. Joseph Brown served as the LEE III's Engineer. He was the holder of U. S. Coast Guard license number [REDACTED] and a MMD. Both were issued by the REC in New Orleans, LA, on July 3, 2000, and were due to expire on July 3, 2005. He was on the 4th issue of his license. The license was endorsed as "Chief Engineer of Motor Vessels of not more than 5000 Horsepower (3667 KW) Upon Limited Oceans." The MMD was endorsed as Ordinary Seaman, Any Unlicensed Rating in the Engine Department, and Steward's Department (Food Handler).

12. A review of Mr. Brown's REC file indicates that he has extensive experience sailing in the Gulf Of Mexico (GOM) area dating back to 1981. He has completed several Coast Guard approved courses at Piney Point, MD. In February 2002, he completed Water Survival (Lifeboatman) training and Basic Safety Training that included courses in Fire Prevention and Fire Fighting, Personal Safety & Social Responsibilities, Personal Survival Techniques, and Elementary First Aid. He also completed Basic & Advanced Shipboard Fire Fighting on February 14, 2003.

13. Mr. Ramon Norwood served as a Deckhand aboard the LEE III. He held an original issue U. S. Coast Guard MMD that authorized him to serve as an "Ordinary Seaman, Wiper, Steward's Department (Food Handler)." His MMD was issued by the REC in Houston, TX, on June 20, 2000, and was due to expire on June 20, 2005. The only documented sea service in his MMD file was with Ocean Runner and dates back to

November 2000.

14. Mr. Lawrence Glass also served as a Deckhand aboard the LEE III. He held an original issue U. S. Coast Guard MMD endorsed as “Able Seaman-OSV, Wiper, Steward’s Department (Food Handler).” The MMD was issued by the REC in New Orleans, LA, on September 15, 2000, and was due to expire on September 15, 2005. He served in the U. S. Navy from 1956 to 1960. The only sea service documented in his MMD file was with Tidewater and dates back to April 2000.

15. In April 2000, Mr. Glass completed U. S. Coast Guard approved STCW Basic Training courses in Personal Safety & Social Responsibilities, Fire Fighting, Personal Survival, and Elementary First Aid. In May 2000, he completed Rigger Training and in November 2001, he completed a 24-hour course in Proficiency in Survival Craft (Restricted). All of the courses were taken at Houston Marine Training Services.

D. M/V ZIM MEXICO III Personnel Information

1. The ZIM MEXICO III had a total of three of its personnel on the bridge as the vessel transited Southwest Pass. These were the Master, the Chief Mate, and the Helmsman. The vessel also had two Lookouts stationed on the forecastle.

2. The Master of the ZIM MEXICO III, [REDACTED], holds a license issued by the Republic of Poland on December 19, 2001, and valid until November 4, 2006. It authorizes him to serve as “Master Mariner” on ships of “3000 Gross Tons and More” with no restrictions. He also completed several training courses including Basic Safety Training in Personal Survival Techniques, Personal Safety & Social Responsibility, Medical Care, Advanced Firefighting, Radar Observation and Plotting, ARPA, Global Maritime Distress and Safety System (GMDSS), and Survival Craft & Rescue Boats other than fast Rescue Boats.

3. Captain [REDACTED] testified at the hearing that he has been sailing for 25 years. He graduated from High Mariner’s School in Gdynia, Poland in 1978 and has been sailing since that time. His experience is primarily on container vessels and roll-on/roll-off vessels, but he also has experience on general cargo vessels. After graduating he sailed with the company Polish Lines for 10 years. Following that he worked for several other companies. On October 13, 1990, he was hired by his current employer, Rickmers Reiderbach, and has remained in their employ since that time. He signed on board the ZIM MEXICO III for the first time on October 18, 2003, and has remained on board as Master of the vessel since that date. He has also sailed on its sister vessel, the M/V MARFRED NORMANDIE (formerly the M/V MARIA RICKMERS), for six months in 2002. He has made six trips into the Port of New Orleans since October 2003. Four of those trips were through the Mississippi River Gulf Outlet and two were through Southwest Pass.

4. The Chief Mate on the ZIM MEXICO III was [REDACTED]. He holds a license issued by Romania on June 4, 2003. The license authorizes him to serve as “Master – On Ships of 3000 GRT or More.” He has completed courses in Personal Survival Techniques, Proficiency in Survival Craft and Rescue Boats other than Fast Rescue Boats, Advanced Fire Fighting, Radar Plotting, ARPA, Ship Security Officer, and GMDSS.

5. The Chief Mate testified that he has been sailing for about 12 years. He attended the Merchant Academy in Constanta, Romania, for five years and graduated in 1992 with a license as Apprenticeship Officer. He sailed on that license for one year, attended a preparation school, passed all the IMO licensing requirements and obtained his license as 3rd Mate in 1993. After that he sailed as a 3rd Mate for Regina Fleet, then worked on Greek flagged vessels for two years where he earned his 2nd Mate’s license. Following that he sailed on German flagged container ships for a year and earned his Chief Mate’s license. He has sailed into the Port of New Orleans, LA, six-seven times in his career. On one of those trips the vessel came up Southwest Pass. The remaining trips were all through the Mississippi River Gulf Outlet Channel. He has sailed on other rivers throughout the world including the Elba River in Germany, the Schelde River in Antwerp, the Seine in France, and others. He signed aboard the ZIM MEXICO III on February 4, 2004.

6. The Helmsman on watch was [REDACTED]. He holds a Certificate of Competency issued by the Republic of the Philippines on February 11, 2002, and valid until February 11, 2007. The Certificate is endorsed for the function of “Navigation Support” with a capacity of “Deck Rating.” He has completed Basic Safety Training in Personal Survival techniques, Fire Prevention and Fire Fighting, Elementary First Aid, and Personal Safety and Social Responsibilities. He also holds a Certificate of Proficiency in Survival Craft and Rescue Boats other than Fast Rescue Boats. He signed aboard the ZIM MEXICO III in July 2004, as a deckhand and has worked on the vessel since that time. On February 14, 2004, he was promoted to Helmsman. This was his first trip as Helmsman into Southwest Pass.

7. The ZIM MEXICO III’s Bosun, [REDACTED], was posted on the bow as a Lookout. He holds a Certificate of Competency issued by the Republic of the Philippines on August 21, 2001, and valid until August 21, 2006. The certificate is endorsed for the function of “Navigation Support” with a capacity of “Deck Rating.” He has completed Basic Safety Training in Personal Survival Techniques, Fire Prevention and Fire Fighting, Elementary First Aid, and Personal Safety and Social Responsibilities. He also holds a Certificate of Proficiency in Survival Craft and Rescue Boats other than Fast Rescue Boats. At the hearing he testified that he has been sailing for almost 10 years, four of which were as a Bosun. He has been employed on Rickmers vessels for five years. He signed aboard the ZIM MEXICO III in October 2003, and has remained with the vessel since that time.

8. [REDACTED] was on the bow of the ZIM MEXICO III with [REDACTED] and was also serving as a Lookout. He holds a Certificate of Competency issued by the Republic of the Philippines on January 17, 2002, and valid until January 17, 2007. The

Certificate is endorsed for the function of “Navigation Support” with a capacity of “Deck Rating.” He has completed Basic Safety Training in Personal Survival Techniques, Fire Prevention and Fire Fighting, Elementary First Aid, and Personal Safety and Social Responsibility. He also holds a Certificate of Proficiency in Survival Craft and Rescue Boats other than Fast Rescue Boats. He signed aboard the ZIM MEXICO III on September 14, 2003. He has served as a Lookout in the past on other vessels, but this was his first time on watch as a Lookout in Southwest Pass.

E. Bar Pilot Information

1. The Bar Pilot aboard the ZIM MEXICO III was [REDACTED]. He holds a U. S. Coast Guard license with the serial number [REDACTED]. His license is on its first issue. It was issued on December 20, 1999, by the REC in New Orleans, LA and expires on December 20, 2004. The license is endorsed for service as “Master of Steam or Motor Vessels of not more than 100 Gross Registered Tons (Domestic), upon Inland Waters, Except Waters Subject to the International Regulations for Preventing Collisions at Sea, 1972.” On May 11, 2000, the REC endorsed the reverse side of the license with, “Also, First Class Pilot of Steam or Motor Vessels of Any Gross Tons Upon Southwest Pass from Mile 21.8 BHP to Mile 0.0 AHP; Also Upon the Lower Mississippi River from Mile 0.0 AHP to Mile 94.3 AHP; Also, Upon the Mississippi River Gulf Outlet from Mile –11.5 (Sea Buoy) to Mile 38.3 (Light 96).” On May 11, 2000, the REC also added an endorsement to the reverse side as “Radar Observer Inland (Radar Expires Oct 2004).” Mr. [REDACTED] also has a State Commission to pilot vessels in the Southwest Pass and the Mississippi River Gulf Outlet.

2. Mr. [REDACTED] has attended classes at MITAGS, the Pilot Institute, and the model boat school in Grenoble, France. He has also attended seminars in security, anti-terrorism, and Bridge Resource Management. He completed Radar Observer Training in October 2000, but has not attended ARPA training.

3. He testified at the hearing about his experience. He spent one year as a Cadet aboard the Greek flagged bulk carrier M/V CHIOS DREAM where he worked on deck and as an observer on the bridge. The vessel sailed primarily in Central and South America and made one voyage to North Africa. Following that the Associated Branch Pilots for the Port of New Orleans, LA, hired him as a Boatman eligible for an apprenticeship as a Pilot. In his year as a Boatman, his primary duties were to operate a pilot boat taking Pilots to and from their assigned vessels. He made a “few hundred” trips in Southwest Pass as a Boatman. After one year as a Boatman he became an Apprentice Bar Pilot. He served as an Apprentice for 1-1/2 years. As an Apprentice his responsibilities expanded to include upkeep of the different pilot stations as well as the pilot boats. He next became a Cub Pilot. At this stage of the program his only responsibilities were to ride ships with a commissioned Pilot—he no longer operated pilot boats. In his year as a Cub Pilot he rode on approximately 800 ships under the supervision of State Commissioned Pilots. Throughout his entire four years as a Boatman, Apprentice Pilot, and Cub Pilot he was riding ships and observing licensed Pilots at work. At the end of his time as a Cub Pilot

F. Federal Pilotage Requirements

1. A U. S. Coast Guard issued First Class Pilot's license is required on pilotage waters. The pilotage waters of the United States are defined in Title 46, Code of Federal Regulations (CFR), Part 15.301 as "the navigable waters of the United States, including all inland waters and offshore waters to a distance of three nautical miles from the baseline from which the Territorial Sea is measured." 46 CFR 15.812 (a)(1) states that when underway on the navigable waters of the United States and not on register, "coastwise seagoing vessels propelled by machinery and subject to inspection" are required to be under the direction and control of an individual qualified to serve as a pilot.
2. A "coastwise seagoing vessel" is defined at 46 CFR 15.301 as a vessel that is authorized by its COI to proceed beyond the Boundary Line established at 46 CFR 7.105(a). In the Gulf of Mexico this boundary line is 12 miles offshore and marks the seaward limit of the contiguous zone. The requirement to be under the direction and control of an individual qualified to serve as pilot applies even if the vessel is on a trip that does not take it out beyond the defined Boundary Line. The vessel's COI need simply be endorsed for such voyages.
3. The M/V LEE III falls into the above-defined category of vessels and was, therefore, required to be under the direction and control of an individual qualified to serve as a pilot when underway on the pilotage waters of the United States. It was a coastwise seagoing vessel, was subject to inspection, and was propelled by machinery.
4. The LEE III was a self-propelled vessel. It had a valid COI issued by the Coast Guard OCMI in Port Arthur, TX, and later amended by the OCMI in Morgan City, LA. Its COI had a section entitled "Route Permitted and Conditions of Operation." That section stated, in part:

"Limited to the Gulf of Mexico within two hundred (200) miles of land while engaged in the support of exploration, exploitation, or production of offshore mineral or energy resources, not on an international voyage."

This route endorsement authorized the vessel to sail 200 miles offshore—188 miles beyond the defined 12-mile Boundary Line. It also prohibited the vessel from sailing on register (it is not allowed to make international voyages).

5. For pilotage purposes the navigable waters of the United States are divided into designated areas and nondesignated areas. Both designated and nondesignated areas require vessels such as the M/V LEE III to be under the direction and control of an individual qualified to serve as a pilot. "Designated areas" are defined by 46 CFR 15.301 as those areas within pilotage waters for which first class pilot's licenses or endorsements are issued by the OCMI.

6. The OCMI, in New Orleans, LA, has designated several segments of the Mississippi River as areas for which first class pilot's licenses are issued. These areas are listed on page 68090 of Federal Register Volume 61, Number 249, dated Thursday, December 26, 1996 (see Enclosure # 5). The designated areas are:

- The Lower Mississippi River including
 - (1) Southwest Pass from sea buoy to Head of Passes
 - (2) From Head of Passes to Mile 234 Above Head of Passes
- The Mississippi River Gulf Outlet
- The Inner Harbor Navigational Canal

These sections of the Lower Mississippi River cover the areas that the M/V LEE III sailed on the morning of the collision.

7. The pilotage requirements for vessels sailing on navigable waters that are designated areas are more stringent than for those vessels sailing on nondesignated areas. Table 4, excerpted from the CFR, summarizes the requirements spelled out in 46 CFR 15.812.

Table 4: Federal Pilotage Requirements

TABLE 15.812(e)(1)—QUICK REFERENCE TABLE FOR FEDERAL PILOTAGE REQUIREMENTS FOR U.S. INSPECTED SELF-PROPELLED VESSELS, NOT SAILING ON REGISTER

	Designated areas of pilotage waters (routes for which First Class Pilot's licenses are issued)	Nondesignated areas of pilotage waters (between the three mile line and the start of traditional pilotage routes)
Inspected self-propelled vessels greater than 1,600 GT, authorized by their Certificate of Inspection (COI) to proceed beyond the Boundary Line, or operating on the Great Lakes.	First Class Pilot	Master or Mate may serve as pilot if the individual: 1. Is at least 21 years old. 2. Has an annual physical exam. 3. Maintains current knowledge of the waters to be navigated. ¹
Inspected self-propelled vessels not more than 1,600 GT, authorized by their Certificate of Inspection to proceed beyond the Boundary Line, or operating on the Great Lakes.	First Class Pilot, or Master or Mate may serve as pilot if the individual: 1. Is at least 21 years old. 2. Maintains current knowledge of the waters to be navigated. ¹ 3. Has 4 round trips over the route. ²	Master or Mate may serve as pilot if the individual: 1. Is at least 21 years old. 2. Maintains current knowledge of the waters to be navigated. ¹
Inspected self-propelled vessels greater than 1,600 GT, not authorized by their COI to proceed beyond the Boundary Line (Inland route vessels); other than vessels operating on the Great Lakes.	First Class Pilot	Master or Mate may serve as pilot if the individual: 1. Is at least 21 years old. 2. Has an annual physical exam. 3. Maintains current knowledge of the waters to be navigated. ¹
Inspected self-propelled vessels not more than 1,600 GT, not authorized by their COI to proceed beyond the Boundary Line (Inland route vessels); other than vessels operating on the Great Lakes.	No pilotage requirement	No pilotage requirement.

¹ One round trip within the past 60 months.

² If the route is to be traversed during darkness, 1 of the 4 round trips must be made during darkness.

8. In the first column of Table 4, the LEE III falls under the category of “Inspected Self Propelled vessels of not more than 1600 GT, authorized by their Certificate of Inspection to proceed beyond the boundary line... .” The LEE III was inspected, it was self-propelled, it was admeasured as 186 Gross Tons, and it was authorized by its COI to proceed beyond the Boundary Line.

9. The second and third columns of the table detail the different requirements for vessels underway on pilotage waters that are designated areas and vessels underway on pilotage waters that are nondesignated areas. Since this casualty occurred in Southwest Pass, and Southwest Pass is a designated area, the requirements listed under the second column applied to the LEE III.

10. In accordance with Table 4, and 46 CFR 15.812(b), the M/V LEE III was required to either have a First Class Pilot on board or the Master or Mate could serve as the pilot provided that he met certain requirements. In order for the Master or Mate to qualify to serve as a Pilot he must have:

- Maintained current knowledge of the waters by completing a minimum of one round trip within the last 60 months, and
- Completed a total of 4 round trips over the route including at least one in darkness.

11. The LEE III did not have a licensed First Class Pilot on board as it transited Southwest Pass Above Head of Passes nor did it have a licensed First Class Pilot on Board as it transited Southwest Pass between Head of Passes and the Sea Buoy. Neither the Master nor the Mate had the required experience to serve as the Pilot on those waters.

12. Historically, and by law, Pilots licensed by the state are required on foreign vessels, and on U. S. vessels that are sailing on register (engaged in foreign commerce). Pilots with federal pilot’s licenses issued by the U. S. Coast Guard are required on U. S. coastwise seagoing vessels. The ZIM MEXICO III is a foreign flagged vessel that was sailing on the navigable waters of the United States at the time of the collision and, therefore, it was not required to have a federal Pilot on board as it transited Southwest Pass. The State of Louisiana, however, did require the vessel to take on a State Pilot.

G. U. S. Coast Guard Jurisdiction over Federal First Class Pilot Licenses

1. The United States Coast Guard is the exclusive federal agency charged with issuing federal First Class Pilot licenses. Once a First Class Pilot license has been issued, the Coast Guard has the authority to take remedial action against that license if the holder of the license is believed to have committed an act of negligence, misconduct, incompetence, violated a law or regulation, used a dangerous drug, or been convicted for using a dangerous drug (46 CFR Part 5). Generally, with the exception of drug related offenses, the holder of the license must have been “acting under the authority” of the

license at the time of the offense. 46 CFR 5.57 states that a person serving on a vessel is considered to be “acting under the authority” of the license when the license is:

- Required by law or regulation; or
- Required by an employer as a condition of employment.

This means that if the law requires the Master, Mate, Engineer, Pilot, or Operator of a vessel to hold a license, then the person sailing in that capacity is acting under the authority of his or her license. There are many instances where the law does not require the vessel to be under the command of a mariner that holds a U. S. Coast Guard issued license. In those cases, if the employer requires the mariner to hold a license, then that mariner is considered to be acting under the authority of his or her license because it is a “condition of employment” imposed by the employer.

2. There are additional instances, however, where the licensed mariner, including a licensed First Class Pilot, does not have to be acting under the authority of his or her license in order for the Coast Guard to have remedial jurisdiction over that license. The Coast Guard has jurisdiction concerning the mariner’s dangerous drug actions (46 U. S. C. A. 7704) at all times.

3. In addition, Title 46, United States Code Annotated (U. S. C. A), Section 7703 (2) & (3) states that a license can be suspended or revoked “if the holder is convicted of an offense that would prevent the issuance or renewal of a license, certificate of registry, or merchant mariner's document; or within the three-year period preceding the initiation of the suspension or revocation proceeding is convicted of an offense described in section 205(a)(3)(A) or (B) of the National Driver Register Act of 1982 (23 U.S.C. 401 note).”

4. Both sections of 46 U. S. C. A 7703 quoted above only require the mariner to be the “holder” of a license. The mariner does not have to be acting under the authority of his or her license. The Coast Guard has established standards for when a mariner may be denied the issuance and/or renewal of a license in 46 CFR 10.201. In particular the Tables at 46 CFR 10.201 (h) & (i) list convictions and the associated assessment periods of time that the OCMI may require a mariner to wait, following the conviction, before that mariner can be issued a license and/or have his or her license renewed.

5. Coast Guard Regional Examination Centers use the tables at 46 CFR 10.201 (h) & (i) to determine if mariners are eligible to be issued an original license or to renew an existing license. As an example, 46 CFR Table 10.201 (h) shows that a mariner that has been convicted of Reckless Driving can have the issuance/renewal of his or her license denied for between one and two years.

6. Since 46 U. S. C. A. 7703(2) states that a Coast Guard license can be “suspended or revoked” if the mariner is convicted of an offense that would prevent the issuance or renewal of that license, the tables at 46 CFR 10.201 (h) & (i) also serve as the basis for the OCMI to initiate remedial Suspension and Revocation proceedings against licensed mariners. Suspension and Revocation proceedings can be initiated following a listed

conviction even if the mariner is not attempting to renew the license at the time the remedial action is taken. This is so because those convictions would prevent the issuance or renewal of the license. As a result the Coast Guard can suspend or revoke a mariner's license if that mariner is convicted of, for example again, Reckless Driving even though that mariner was not "acting under the authority" of his or her license at the time of the offense. The mariner need only be the "holder of" a license. This authority applies to the holders of all U. S. Coast Guard issued licenses, including First Class Pilot's licenses held by State Pilots.

7. The Coast Guard does not have jurisdiction over a State Pilot when that Pilot is acting under the authority of his or State License/Commission. This is true even if the State Pilot was required by the state to hold a U. S. Coast Guard issued First Class Pilot's license in order to qualify for his or her State License/Commission. On at least two occasions in the past the Coast Guard has attempted to establish jurisdiction over a State Pilot's Coast Guard issued First Class Pilot's license, arguing that they had been acting under the authority of their Coast Guard issued Pilot's license. The first case was decided at the United States Court of Appeals, Ninth Circuit in 1974 (see Enclosure # 6, Soriano v. U. S., 494 F.2d 681, 9 Cir. 1974). The second case was decided at the United States District Court, Eastern District of Louisiana in 1976 (see Enclosure # 7, Dietze v. Commandant, E.D LA 1976, 414 F.Supp.1105). The jurisdictional argument used by the Coast Guard in both cases was that the State Pilot had been acting under the authority of the Pilot's Coast Guard issued First Class Pilot's license because that license was a "condition of employment." The Coast Guard argued that it was a condition of employment because the states in question had required their State Pilots to hold a Coast Guard issued First Class Pilots license in order for the State Pilots to qualify for their State Licenses/Commissions.

8. The Coast Guard Administrative Law Judges that initially heard the cases both ruled in favor of the Coast Guard. The Commandant upheld those rulings on appeal. In both instances the cases went to Federal Court as stated above. The courts ruled that it was not a "condition of employment" for the states to require a State Pilot to also hold a Coast Guard issued First Class Pilot's License. The reasons given were many and complex, but are rooted in the fact that the U. S. Congress has reserved regulation of State Pilots to the states.

9. In the case heard by the United States District Court for the Eastern District of Louisiana, the Judge commented that if the Coast Guard wanted authority to initiate Suspension and Revocation proceedings against U. S. Coast Guard issued First Class Pilot Licenses held by State Pilots, then the Coast Guard should seek a legislative remedy.

H. M/V ZIM MEXICO III Voyage, Sea Buoy to Southwest Pass Light 16

1. The M/V ZIM MEXICO III sails a regular route between Kingston, Jamaica; San Juan, Puerto Rico; Rio Haina, Dominican Republic; Tampa, FL; Mobile, AL; New Orleans, LA; and Houston, TX. It takes about 21 days for the vessel to run the entire route. Captain [REDACTED] has made six of these voyages in his time as Master of the vessel.
2. The vessel departed the Port of Mobile, AL, at 1706 on February 20, 2004, bound for Napoleon Avenue in the Port of New Orleans. The vessel's equipment functioned properly on the voyage between Mobile and New Orleans and up into the Southwest Pass. It arrived at the sea buoy at the mouth of Southwest Pass and took the Pilot, [REDACTED] on board at 0346 on February 21, 2004. The Master and the Pilot discussed the vessel's course and speed at the time. They also discussed the vessel's draft, Lookouts, VHF's, engine RPMs/controls, speeds, vessel traffic, visibility, and river stage. The Master gave the Pilot the Pilot Card (IO Exhibit # 17) containing basic ship data. The Pilot advised the Master that they would have to wait before they could enter Southwest Pass because there were two outbound vessels that needed to clear the channel. The Pilot advised that the visibility was good, but that he did not know what it would be like up river.
3. On the bridge at the time of the transit up Southwest Pass were the Master, the Chief Mate, the Helmsman, and the Pilot. The Master was in command of the bridge team and had assumed the watch when the Pilot came aboard. As the vessel transited up Southwest Pass the Master positioned himself at the starboard radar. The Pilot used the port radar. The Chief Mate stood behind the Helmsman and monitored how well the Helmsman was steering the vessel. The Chief Mate also made all the entries into the Bell Book. The Master had assigned two Lookouts and posted both on the bow.
4. Vessels operating in Southwest Pass are required to monitor VHF Channel 67 for bridge-to-bridge communications in accordance with 33 CFR 26.03 (e)(1) & 26.04(d). 33 CFR 26.05 requires the Master, or the person designated by the Master, to maintain a "listening watch" on the frequency. The M/V ZIM MEXICO III was equipped with two fixed VHF radios on the bridge. The Master set one radio, which is positioned on the bridge console between the two radars, to channel 9. This is the frequency he used to speak with the Pilot Station as the vessel arranged for a pilot. He set the second radio, which was in the radio room attached to the bridge, to channel 16. None of the ship's VHF radios were set to channel 67.
5. The Pilot had a handheld portable radio of his own. When the Master briefed the Pilot that the ship's radios were on channels 9 & 16 the Pilot said that that was fine since he had brought his own portable radio with him. The Pilot tuned his portable radio to channel 67, although he did not tell the Master what frequency it was set on (see transcript, 3/4/04, pp 42-44). The Pilot's radio was the only one on the ship set to channel 67 and thus was the only one used for bridge-to-bridge communications. The Pilot was also the only person who could clearly hear transmissions coming over channel 67 on his hand held radio, and he was the only person aboard the vessel to speak on

6. The Pilot testified that his hand held radio was functioning normally and that he had recharged the batteries before making this trip. When he was out near the sea buoy he said that in order to use the radio he had to go outside onto the vessel's bridge wings, but once the ZIM MEXICO III was in Southwest Pass he could talk to other vessels without difficulty from inside the bridge. His radio was turned on at all times and remained on channel 67 except for a few brief instances when he changed it to the "private" frequency to talk to the Pilot Station for traffic reports. (Investigator's note: The private frequency is not recorded by the Pilot Station, so the Investigating Officer was not able to determine the times and lengths of conversations the Pilot had with the Pilot Station.)

7. The Pilot did not hold his portable radio in his hands at all times when in Southwest Pass. He testified that he set the radio down in the window when he was not using it (see transcript 3/8/04, p. 40) because that is where it typically gets the best reception. It was never more than "five or six steps" from him. When he was positioned at the radar he was using, the radio was five to six steps away. He did not know what the radio's volume was set to, but said it was sufficient to hear it.

8. The ZIM MEXICO III passed the Sea Buoy at 0415 and headed for the entrance to Southwest Pass. The vessel was making 12.6 knots over the ground. The vessel's controllable pitch propeller was set at 75.2%. Prior to entering Southwest Pass, the Master advised the Pilot about the vessel needing 10 minutes notice to change speed. The Pilot told the Master that he would let him know in advance if they needed to slow down. From 04:28:51 through 04:30:07, after the vessel had entered Southwest Pass, it reduced the pitch of its propeller to 40.6%, which is Slow Ahead, and its speed to 6.1 knots. This took place as the vessel passed the construction site for the new Pilot Station. At 04:33:43 the Master increased the vessel's speed from Slow Ahead to slightly greater than Full Maneuvering Speed. The computer slowly increased the pitch of the propeller between 0433 and 0446 from 61.5% to 81.4% of the maximum available pitch (IO Exhibit # 6. Investigator's Note: times recorded on the Electronic Bell Log are in GMT, subtract six hours for local time. All times in this report are in local time). The pitch remained at 81.4% until the Master pressed the program override button at 0520—the time of the collision. According to the Master's testimony, 81.4% pitch represents a speed of "Full Maneuvering with 10 minutes notice."

9. Full Maneuvering speed for the ZIM MEXICO III is 14.5 to 15.0-knots through the water (see transcript, 3/4/04, pp 39-41). Since the vessel was heading into the current its speed over the ground was less than that. The vessel's radar is equipped with a speed indicator, which is tied into the GPS system. The Master testified that the vessel's speed over the ground averaged 11.5 knots based on his observations of the speed indicator. The Pilot agreed. The Master estimated that they were heading into a 3.5 to 4.0 knot river current.

10. As the vessel transited up the river the two Lookouts up forward, [REDACTED] and [REDACTED] were at their posts and watching. The bow of the vessel is equipped

11. As he stood his watch on the bow, the Bosun, ██████████ would rotate his position between the starboard side platform, the port side platform, and the platform located at the bullnose. ██████████ remained on the starboard platform throughout the trip. They followed this routine while on watch continuously at least until the vessel passed light 16. Mr. ██████████ had one of the ship's handheld radios that he used to communicate with the bridge. Mr. ██████████ was under the supervision of Mr. ██████████ and did not have a radio.

12. The ZIM MEXICO III's transit up the river was normal and uneventful prior to the collision. During the trip, the vessel passed several other ships, various navigation aids and other points. It also encountered fog of increasing density at various stages along the way. There were minor conflicts in the testimony of the various witnesses regarding times and locations of events. These conflicts are indicated in Table 5. Table 5 is a timeline that contains a summary of key points made by the Pilot, the Master, and the Chief Mate during their testimony as it relates to the position of the ZIM MEXICO III including when the vessel encountered fog. It also contains the Chief Mate's Bell Book entries.

13. Selected extracts from the AIS data and from recordings of VHF Channel 67 transmissions are contained in Tables 6 and 7. Table 6 contains AIS data extracts covering the ZIM MEXICO III's transit up the Southwest Pass from the point where the Pilot boarded the vessel to the point where the vessel passed Light 16 and was first reported to have encountered heavy fog. Table 7 contains extracts of AIS data from Light 16 up through the point of the collision.

14. The AIS data showed that the ZIM MEXICO III dramatically slowed down between 05:20:16 and 05:20:25. This was the moment of the collision. At that same approximate time the Electronic Bell Log showed where the Master cancelled the computer's control over the propulsion system and reversed the propeller's pitch—which he did at the moment of the collision. The Coast Guard Vessel Traffic Service (VTS) in New Orleans, LA, recorded the VHF transmissions on Channel 67 (IO Exhibit # 44). These recordings also indicate that the collision occurred at that time.

15. The Pilot testified that he slowed down at the new Pilot Station's construction site. Both the Electronic Bell Log (IO Exhibit # 6) and the data from the vessel's AIS reflect this fact (Enclosure #8). The Electronic Bell Log indicates that the Pitch of the vessel's propeller changed from 75.2% at 04:28:51 to a Pitch of 40.6% at 04:30:07. Pitch increases were recorded as 61.5% at 04:33:43, 67.8% at 04:35:51, 73.5% at 04:36:03, 76.2% at 04:37:45, 78.8% at 04:40:37, and 81.4% at 04:46:51. The vessel remained at

Pitch 81.4% until 05:20:07—the time of the collision as recorded by the Electronic Bell Log.

16. The data in Table 6 shows the vessel made a normal transit up Southwest Pass from the sea buoy to Light 16. The Pilot of the ZIM MEXICO III navigated the vessel past the sea buoy, into Southwest Pass, and up the river without incident. He used channel 67 to make passing arrangements with various southbound vessels. The AIS data reflects the fact the ZIM MEXICO III slowed down to a speed of six knots when it passed the construction site for the new pilot station and then increased in speed after going by as discussed above. It also shows, when watched on the animation provided by the VTS, that while transiting past the new pilot station construction site the Pilot safely took the vessel outside of the eastern limits of the charted channel. He reentered the channel after passing the M/V VALDA at Light 5. The Chief Mate testified that the minimum speed the ZIM MEXICO III can make in still water and maintain steerage is around 2.6 knots and that into a current of three to four knots the vessel would need to be making around six knots. He also testified that when the vessel slowed to 6 knots at the construction site they had no trouble maneuvering at the reduced speed. See Figure 1.

17. Table 6 also shows that before the ZIM MEXICO III reached Light 16 the LEE III had already made three broadcasts on VHF Channel 67. These broadcasts announced the LEE III's location and intentions, and indicated that it was heading southbound in Southwest Pass. These broadcasts into the blind were not directed towards any named vessel, nor did any vessel reply to them.

18. The first general broadcast on VHF Channel 67 was at 04:38:25, 42 minutes prior to the collision. The LEE III Operator said, "M/V LEE III, southbound in Mississippi River, just south of Head of Passes, be turning into Southwest Pass Shortly. LEE III." At the time of the LEE III's broadcast the ZIM MEXICO III was passing Southwest Pass Light 6, which is over 17 miles below Head of Passes, and its speed was 9.9 knots over the ground and increasing. The Pilot of the ZIM MEXICO III and the operator of the dredge BAYPORT had just finished making a passing agreement on Channel 67 a few seconds before the LEE III made its broadcast. When questioned about whether he heard this transmission from the LEE III, the Pilot testified that he did not hear it, but that he did remember his conversation with the BAYPORT (Transcript 3/8/04, p. 51).

19. The second general broadcast made by the LEE III on Channel 67 was at 04:44:19, 36 minutes prior to the collision. The LEE III Operator said, "M/V LEE III, southbound at the entrance to Southwest Pass, checking on any concerned traffic. LEE III." At that time the ZIM MEXICO III had just passed Southwest Pass Light 8, which is about 16 miles south of Head of Passes, its speed was 11.4 knots over the ground. It was about to pass the southbound vessel CARLI BAY. The Pilot testified that he did not recall hearing this transmission made by the LEE III (Transcript 3/8/04, pp. 51-52).

Figure 1: ZIM MEXICO III AIS Track as it Passed Southwest Pass Light 5

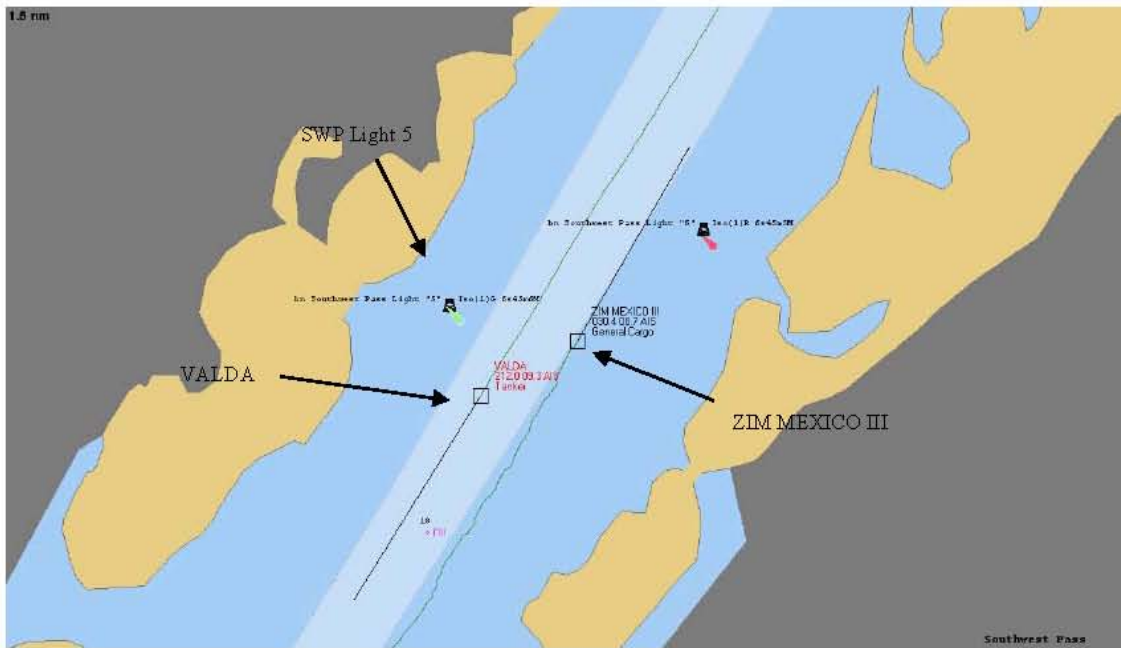


Table 5: ZIM MEXICO III Transit; Testimony & Bell Book Extract

Event	Pilot Testimony	Chief Mate Testimony & Bell Book	Master Testimony
Pilot Boarded ZIM MEXICO III	0346	0346	
Passed M/V SOUTHGATE Outside Sea Buoy	0410		
Passed Sea Buoy		0415	
Passed Southwest Pass Entry Light	0415		
Slowed to pass new Pilot Station Construction Site, Passed APJ SHALIN, & Began to Speed up	0425		
Passed AMBERJACK 1 mile astern APJ SHALIN			
Passed UBC BREMEN Between Lights 7 & 8, Appx 1 mile behind Tug AMBERJACK	0435	0445: Abeam "Buoy 8" & Fog	0445: At "Buoy 8" Fog Patches; Vis 1 – 1.5 Miles
Light 9; Passed Dredge BAYPORT	0445		
Light 10; Passed CARLI BAY near Burrwood Canal			
Light 12; Encountered Patchy Fog	0450		
Light 16; Fog, Vis ¾ to 1 mile (3/8. P 75 – 76)		0510: Abeam "Buoy 16" & Fog; could not see beyond bow	Fog increased, could only see out to bow, 140 meters away.
Light 18; Heavy Fog, vis was less than distance to bow	0510-0515		
Collision, Lat 29-02.97, Lon 089-18.92 in Bell Book		0520	

20. The third general broadcast made by the LEE III on Channel 67 was at 04:53:30, 27 minutes prior to the collision. The LEE III said, "M/V LEE III, southbound Southwest Pass just passed Buoy 27, checking on any concerned traffic. LEE III." This is the first time that the operator of the LEE III stated that he had passed a "buoy" on Southwest Pass. This was an error on his part because there are no buoys on Southwest Pass, but there are lights. The navigation aid he was referring to was actually Southwest Pass Light 27 (see Table 9, which covers the LEE III's transit down the river). When the LEE III made its broadcast the ZIM MEXICO III was at Southwest Pass Light 11, which is 10 miles south of the LEE's position, and was traveling at 12.1 knots over the ground. The Pilot testified that he did not recall hearing this LEE III transmission (Transcript 3/8/04, p. 52). The LEE III did not make any more general broadcasts on VHF Channel 67 until after the ZIM MEXICO III passed Light 18 as discussed below in section G of this report.

21. There are gaps and conflicts in the times and information provided by the AIS data, the Electronic Bell Logger data, the Bell Book, and the witnesses that testified at the Coast Guard Hearing. Most of these are minor in nature and do not effect the key events that led up to the collision.

22. The Pilot testified that the ZIM MEXICO III passed several vessels while in bound as listed in Table 7. These were the SOUTHGATE, APJ SHALIN, AMBERJACK, UBC BREMEN, the Dredge BAYPORT, and the CARLI BAY. He also said that he used VHF Channel 67 on his portable radio to make passing arrangements. The AIS data, however, shows that the ZIM MEXICO III passed the vessels COAST RANGE, AMBERJACK, VALDA, BAYPORT, BREMEN and the CARLI BAY. After passing the CARLI BAY at 04:45:38, the ZIM MEXICO III does not meet any other vessels until it collides with the LEE III 35 minutes later at 05:20:16. These are not significant discrepancies since the ZIM MEXICO III passed the last of these vessels approximately 35 minutes prior to the collision.

23. The witnesses had different opinions as to when the fog set in and as to what the visibility conditions were. The Chief Mate of the ZIM MEXICO III testified that he filled out the Bell Book as the vessel transited up Southwest Pass. He logged that the vessel first encountered fog at 0445 while abeam of "Buoy 8." He testified (transcript, 3/10/04, p. 113-115) that at that location the vessel started to encounter "foggy patches." He described that fog as "...very low. Few meters on top of the water. And alternate with clear visibility. And it was not dense."

Table 6: ZIM MEXICO III Transit; AIS Data Extract from Pilot On Board to Light 16

AIS Time (Note 1)	Event	AIS Heading	AIS Speed
03:46:05	M/V ZIM MEXICO III Data at 0346 (Pilot Boarding Time)	023.8	4.1
03:54:55	Passed M/V COAST RANGE (Per AIS)	356.6	3.7
04:16:15	Passed Sea Buoy	355.6	12.6
04:23:28	Passed Southwest Pass Entry Light / Lighthouse	022.7	12.7
04:29:45	Slowed to pass Pilot Station Construction Site	034.6	11.0
04:32:28	Called by AMBERJACK on Channel 67 & agreed to 1 Whistle Pass ²	039.3	7.1
04:32:33	Crossed out of Charted Channel to East	042.3	7.0
04:34:15	Speed increased after passing Pilot Station Construction Site	030.1	6.1
04:36:40	Passed Light 5 & M/V VALDA at same time	032.6	8.0
04:37:00	Reentered East Edge of Charted Channel	027.4	8.5
04:38:18	Passed Light 6 & Called Dredge BAYPORT on Channel 67 to arrange 1 Whistle Pass	030.2	9.9
04:38:25	LEE III Broadcasts on Channel 67 that it is just South of Head of Passes and will be Entering Southwest Pass shortly	030.2	9.9
04:41:06	Passed Light 7	034.4	11.0
04:41:40	Passed UBC BREMEN	031.9	11.0
04:43:44	Passed Light 8	033.2	11.3
04:44:19	LEE III Broadcast on Channel 67 that it was southbound at Entrance to Southwest Pass and checking on any concerned traffic	032.2	11.4
04:45:38	Passed CARLI BAY	033.7	11.5
04:48:17	Passed Light 9	030.5	11.9
04:53:00	Passed Light 10	038.6	12.1
04:53:30	LEE III Broadcast on Channel 67 that it was southbound in Southwest Pass at "Buoy 27" and checking on any concerned traffic	038.6	12.1
04:53:43	Passed Light 11	036.1	12.0
04:58:20	Passed Light 12	038.2	11.6
05:02:45	Passed Light 14	035.2	11.7
05:06:40	Passed Light 16	033.1	11.7

Note 1: The information and times for vessels' positions and movements are based on AIS data received by VTS. The times shown for VHF transmissions were derived from IO Exhibit # 44, the Transcript of VHF Transmissions.

Note 2: M/V AMBERJACK tracking data does not show up on VTS track, but audio transmissions were recorded.

24. The Master also testified that there was patchy fog at "Buoy 8" (transcript pp.47-48). He estimated that visibility was 1 to 1-1/2 miles. He did not order the vessel's speed to be reduced, nor did he order the vessel to start sounding fog signals at that time.

25. Both the Master and the Chief Mate referred to "Buoy 8." As indicated earlier, there are no buoys on Southwest Pass. According to the AIS data, however, the ZIM MEXICO III did pass Light 8 at 04:43:44. This agrees with the Chief Mate's time of 0445 at "Buoy 8." This placed the vessel approximately 8.5 nautical miles south of where the collision

occurred. It was traveling at a speed of 11.3 knots over the ground.

26. According to the Pilot's testimony the ZIM MEXICO III did not encounter fog until 0450 when he said it passed Light 12 (transcript 3/8/04, p. 31). He described the fog as a little haze on the water. The AIS data shows that the vessel passed Light 12 at 04:58:20. At this position the ZIM MEXICO III was five nautical miles south of the collision point and was traveling at a speed of 11.6 knots over the ground.

27. Despite these minor inconsistencies the ZIM MEXICO III's transit up the river, until it reached Light 16, appeared to be normal in most respects and the major testimony and evidence generally agreed. After passing Light 16, however, visibility conditions changed dramatically, the LEE III made several more radio broadcasts that were not heard by the bridge team on the ZIM MEXICO III, and decisions were made aboard the ZIM MEXICO III that helped set the stage for the collision.

I. M/V ZIM MEXICO III Voyage, Southwest Pass Light 16 to Collision

1. The Chief Mate entered into the Bell Book that at 0510 the vessel was abeam of "Buoy 16" and that there was fog. He testified that at 0510 the fog got thicker than it had been at Light 8 and that visibility was reduced to less than one cable, which is 1/10th of a mile (transcript 3/10/04, p. 116). He could see out to the bow of the ZIM MEXICO III, but not beyond the bow. AIS data shows that the vessel passed Light 16 at 05:06:40—which matches to within a few minutes of when the Chief Mate logged the vessel as passing "Buoy" 16. When the vessel passed Light 16 it was traveling at 11.7 knots over the ground and was just over three nautical miles from where it would collide with the LEE III.

2. The Master also testified that the fog increased in density at "Buoy 16." He said that at that point he could not see past the bow of the ship, which was 140 meters (about 460 feet) forward of the bridge. He said that he considered the speed the ZIM MEXICO III was making when it entered the thick fog at Light 16, 11.5 knots, to be moderate and safe since there was no traffic in the area (transcript, 3/4/04, pp.49-50).

3. The ZIM MEXICO III has an International Safety Management (ISM) Shipboard Manual (IO Exhibit # 22) that contains procedures for operating in reduced visibility. Standing Company Order # 7 in Section 4.1.2 "Watch Keeping Underway," states, "...if visibility is suddenly reduced and traffic close, slow to moderate speed, call the Master and comply with the rules of the road..." Under "Navigation in thick weather" in that same section, the manual states, "In fog or thick weather the Master shall navigate the vessel in strict accordance with the International and Inland Rules of the Road. Attention of masters and deck officers is particularly directed to the rules governing radar use, speed in fog, sound signals, and maneuvers."

4. The vessel's ISM manual clearly required the Master to slow the vessel down to a "moderate" speed in dense fog if traffic was close. After turning on the fog signal, the Master did begin the process of slowing the vessel down. Right after this he looked at his radar and saw the LEE III--approximately two minutes prior to the collision (transcript 3/4/04, p. 51; 3/5/04, p. 28). This was at approximately the same time that the AIS data shows that he slowed the vessel down.

5. The Pilot, however, testified that between Lights 16 and 18 it was "hazy" and that visibility was $\frac{3}{4}$ to 1 mile (transcript 3/8/04, pp. 75-76). He said that his visibility estimates were for seeing the navigation aids in the channel and that he might not see a vessel at that distance.

6. The Pilot testified that just above Light 18 the fog began to be "socked-in." It was so thick that he could not even see as far forward as the bow of the ZIM MEXICO III. The AIS data shows that the ZIM MEXICO III passed Light 18 at 05:10:36 and was traveling at 11.8 knots over the ground. It passed the 10-mile mark on Southwest Pass at 05:11:22 while making 11.7 knots. When asked, the Pilot said that he considered the speed that the ZIM MEXICO III was making in that area to be safe under those conditions (transcript, 3/8/04, p. 77), considering that there was no traffic in the area. At Light 18 the ZIM MEXICO III was two nautical miles from where it would collide with the LEE III less than 10 minutes later.

7. Inland Rule 6 of the Rules of the Road addresses "Safe Speed." Paragraph (a) of the rule lists several factors that all vessels must take into account, the first of which is visibility. In addition, paragraph (b)(iii) of the rule states that vessels with operational radar must take into account "the effect on radar detection of the sea state, weather, and *other sources of interference* (emphasis added)." Paragraph (b)(iv) also requires the vessel to take into account the possibility that small vessels may not be detected at adequate range.

8. Shortly before 0515, but well after the vessel entered heavy fog, the Master informed the Pilot that he was going to slow the vessel down. The Pilot stated that there was no traffic ahead, but that the Master could adjust the vessel's speed if he wanted to (transcript 3/4/04, p.51). This was five minutes before the collision.

9. Prior to adjusting the vessel's speed the Master turned on the vessel's automatic fog signal. He remained at the fog signal's control switch and listened to the signal for two blasts to ensure that it was sounding correctly. The cycle time on the fog signal is 95 seconds from the beginning of one prolonged blast until the beginning of the next prolonged blast. The Master testified that it was about 0515 when he turned on the fog signal (transcript 3/4/04, p. 56).

Table 7: ZIM MEXICO III Transit; AIS Data Extract from Light 16 to Collision

AIS Time (Note 1)	Event	AIS Heading	AIS Speed
05:06:40	Passed Light 16	033.1	11.7
05:09:15	Passed Light 17	035.3	11.8
05:10:36	Passed Light 18	036.0	11.8
05:11:22	Passed Southwest Pass 10-mile mark	035.4	11.7
05:13:11	LEE III Broadcast on Channel 67 that it was southbound in Southwest Pass just past “Buoy 22” & checking on any concerned traffic	040.9	11.7
05:15:50	Passed Mile Marker 9; ZIM MEXICO III near mid-channel	043.1	11.8
05:16:55	LEE III Broadcast on Channel 67 that it was southbound in Southwest Pass coming up on “Buoy 21” & checking on any northbound traffic; at time ZIM MEXICO III was in center of Northbound side of channel less than 1 mile from the point of the collision	041.3	12.1
05:17:39	LEE III called “this northbound” on Channel 67 & stated LEE III was coming up on “21”; at time ZIM MEXICO III was negotiating slight left turn in river & had shifted closer to east edge of channel	039.2	12.0
05:18:30	Dredge BAYPORT calls LEE III; ZIM MEXICO III near East edge of channel.	033.8	11.7
05:19:12	Passed Light 19; ZIM MEXICO III on East edge of channel	029.8	11.3
05:19:14	LEE III on Channel 67 “Calling that vessel on Southwest Pass”; ZIM MEXICO III on East edge of channel	028.6	11.2
05:19:25	ZIM MEXICO III Makes heading change from 028.6 to 021.8	028.6	11.2
05:19:39	ZIM MEXICO III calls “southbound vessel at Shell facility in Southwest Pass” on Ch. 67	021.8	11.0
05:19:45	LEE III responds he has been calling “you” on 67 for 5 minutes.	022.6	11.0
05:19:50	ZIM MEXICO III Stated “I just heard you.” Proposes 2 whistle pass & asks if LEE III can “get to that east side”	022.6	11.0
05:20:01	LEE III replies that he is already “right off your bow.”	021.6	11.1
05:20:09	ZIM MEXICO III “I’m coming to port.”	021.6	11.1
05:20:16	LEE III “You just hit us.”(This was LEE III’s last transmission)	020.2	11.2

Note 1: The information and times for vessels’ positions and movements are based on AIS data received by VTS. The times shown for VHF transmissions were derived from IO Exhibit # 44, the Transcript of VHF Transmissions. The position data is accurate to within 10 Meters.

10. After the fog signal sounded twice, the Mater returned to his seat at the starboard radar and adjusted the setting on the Engine Order Telegraph (EOT). He moved the EOT from Full Maneuvering to half the distance between Full Maneuvering and Half Ahead. The Chief Mate testified that he saw the Master adjust the EOT to slow the vessel down a few minutes before the collision (transcript, 3/10/04, p. 189). This gave the computer the “10 minutes notice” to start the process of changing the pitch of the vessel’s propeller. The Master testified that it would take the computer six to seven minutes to finish making the adjustment to the pitch. The Electronic Bell Logger (IO Exhibit # 6), however, does not show any change in the pitch of the vessel’s propeller at that time or at any point after

that time until the moment of the collision when the Master cancelled the program. When asked why the Electronic Bell Logger does not show any changes to the pitch of the propeller, the Master stated that it does not record pitch changes that are less than 2-3%.

11. Between 05:06:40, when the ZIM MEXICO III passed Light 16 at 11.7 knots, and 05:17:25 it reached a speed of 12.2 knots according to the AIS data. The vessel began a steady decrease in speed over the ground, however, from 12.2 knots at 05:17:25 to 11.0 knots at 05:19:15.

12. The Lookouts testified that they continued to stand their watch on the forecastle as the vessel made its way up the river. They said that at one point, however, the fog got so thick that they could no longer see beyond the vessel's bow. At that point they stepped down off of their platforms and stopped looking out into the fog. They did not notify the bridge they were no longer maintaining an active visual lookout.

13. They remained on the forecastle and stood by the anchor windlass. They continued to listen for any sound signals that might indicate there was a vessel nearby. They did not hear any fog signals or whistles of any kind from any other vessels. Both Lookouts testified that they heard the ZIM MEXICO III's fog signal sound a total of three times before the collision.

14. Rule 5 of the Inland Rules of the Road addresses the requirements to maintain a lookout. It states, "Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision. The Chief Mate testified that even in restricted visibility, the Lookouts are supposed to maintain a watch for both sounds and lights (transcript, 3/10/04, p. 233).

15. The key disagreement in testimony regards where the ZIM MEXICO III was when it first encountered the heavy fog. The Master and Chief Mate testified that this occurred at Light 16 and the Pilot testified that it occurred at Light 18.

16. The Master testified that he started the fog signal at about 0515, listened to until it sounded two blasts (for over 95 seconds), and then returned to his seat. Once at his seat he decreased the pitch of the vessel's propeller. The AIS data shows that at 05:17:25 the vessel began to reduce speed from 12.2 knots to 11.0 knots.

17. Both the Master and Chief Mate testified that at Light 16 the vessel entered fog so thick that they could not see beyond the bow of the vessel. The AIS data shows that the ZIM MEXICO III passed Light 16 at 05:06:40 and was traveling at a speed of 11.7 knots over the ground. The AIS data also shows that the vessel's speed did not start to reduce until 05:17:25. If their testimony is correct, it means that the vessel was traveling in a river at night, through dense fog, at a speed of at least 11.7 knots, for approximately 11 minutes before the Master slowed the vessel down. They were also in dense fog for over seven minutes before the Master turned on the fog signal. By the time the Master started

to slow the vessel at 05:17:25, the ZIM MEXICO III had accelerated to 12.2 knots according to the AIS data. The vessel began a steady decrease in speed over the ground, however, from 12.2 knots at 05:17:25 to 11.0 knots at 05:19:15.

18. The Pilot's testimony did not agree with the Master's and Chief Mate's regarding where the vessel was when it first encountered thick fog. The Pilot said that it was not until approximately Light 18 where the fog became so thick that he could not see the vessel's bow. The AIS data shows that the vessel passed Light 18 at 05:10:36 while traveling at a speed of 11.8 knots over the ground. If the Pilot is correct, it would mean that the vessel was operating in thick fog for approximately seven minutes before the Master slowed the vessel and for almost five minutes without a fog signal sounding.

19. A timeline based on the Pilot's testimony, starting at the point the ZIM MEXICO III passed Light 18 at 05:10:36, still allowed sufficient time for events to have transpired as testified to by the witnesses. The Master would still have had time to start the fog signal at about 0515, listen to it for at least 95 seconds as it sounded two blasts, return to his seat, adjust the EOT to begin slowing the vessel at 05:17:25, and then spot the LEE III on radar.

20. In the final analysis, regardless of whether the ZIM MEXICO III encountered thick fog at Light 16 or at Light 18, the bridge team had sufficient time afterwards to take appropriate actions to slow the vessel and sound fog signals. Table 7 shows that even as late as Light 18 the ZIM MEXICO III was still approximately 10 minutes from the point of the collision. Had the bridge team acted in a timely fashion and immediately reduced the vessel's speed when it entered the fog at Light 18, the computer controlling the propulsion plant would have had more than the six-seven minutes the Master said it needed to complete the process of slowing the vessel down.

21. At 05:13:11, after the ZIM MEXICO III had passed Light 18, the LEE III made a general broadcast on channel 67. The LEE III said, "M/V LEE III, southbound in Southwest Pass, uh, just passed Buoy 22, checking on any concerned traffic. LEE III." The ZIM MEXICO III failed to respond to this broadcast. At that time the ZIM MEXICO III was slightly less than ½ mile north of mile marker 10—which is just north of Light 18. It was approximately in the center of the channel on a heading of 040.9 and traveling at a speed of 11.7 knots over the ground. The ZIM MEXICO III was just over 2.5 miles from Light 22, which the LEE III said it had just passed, and was slightly over 1.5 miles from the point of the collision. A tape recording of this transmission was played at the Coast Guard Hearing for the Pilot to listen to. He testified that he did not hear the LEE III's broadcast on the morning of the collision.

22. Table 8, Analysis of Fog Signal Timing, was developed in an attempt to determine an accurate time that the vessel began sounding its fog signal. The table was constructed based on five pieces of evidence:

- a) The collision occurred at 05:20:16;
- b) The fog signal sounded only three Blasts prior to the collision;

- c) The cycle time between each blast of the fog signal is 95 seconds;
- d) The Master began slowing the vessel down after the 2nd blast; and
- e) The vessel began slowing at 05:17:25.

Table 8: Analysis of Fog Signal Timing

Fog Signal Blast #	Cycle Time Interval (Note 1)	Events in Sequential Order
1st Blast	285 – 190 Seconds before Collision: 05:15:31 - 05:17:06	1. Master activates signal 2. 1 st Blast Sounds 3. Master & Lookouts hear 1 st Blast 4. Master stays at switch and waits for 2 nd Blast
2nd Blast	190 – 95 Seconds before Collision: 05:17:06 - 05:18:41	1. 2 nd Blast Sounds 2. Master & Lookouts hear 2 nd Blast 3. Master returns to seat and adjusts vessel speed 4. Vessel begins to slow at 05:17:25
3rd Blast	95 – 0 Seconds before Collision: 05:18:41 – 05:20:16	1. 3 rd Blast Sounds 2. Lookouts Hear 3 rd Blast 3. Collision Occurs at 05:20:16

Note 1: The Master testified that the cycle time of the fog signal was 95 seconds from the start of one blast to the start of the next blast (transcript, 3/4/04, p. 73). 3 blasts at 95 seconds each is a maximum of 285 seconds elapsed time and a minimum of 190 (if the signal sounded immediately when turned on), 2 blasts is a maximum of 190 seconds elapsed time and a minimum of 95, and 1 blast is a maximum of 95 seconds elapsed time and a minimum of 0 seconds.

23. Working backwards from the time of the collision, knowing that the fog signal only sounded three blasts before that, the time that the Master turned on the fog signal fell between 05:15:31 and 05:17:06 (285 – 190 seconds before impact). The Master testified that he listened to the 2nd blast of the signal and then adjusted the pitch of the propeller to slow the vessel. The 2nd blast followed by the reduction in pitch/speed would have to have occurred between 05:17:06 and 05:18:41. This is determined by subtracting the elapsed time between each blast from the time of the collision. The collision time of 05:20:16 less 190 seconds for two blasts would put the time as far back as 05:17:06; the collision time less 95 seconds for one blast would put the time at 05:18:41. This fits with the AIS data, which shows that the vessel actually did begin to slow from 12.2 knots to 11.0 knots at 05:17:25.

24. Based on this analysis, the earliest point that the Master could have turned on the fog signal is 05:15:31. At that time the ZIM MEXICO III was mile marker 9 and was one mile from the point of the collision according to the AIS data. If the Master had started the fog signal any earlier than this, it would have sounded a 4th blast before the collision and the Lookouts on the bow would have heard it. As it was they both only heard three blasts. Had he started the signal any later than 05:15:50 it would not have had time to sound two blasts before the Master adjusted the pitch of the vessel's propeller and for the vessel to start slowing at 05:17:25. This means that the Master did not turn on the fog signal until between the times 05:15:31 and 05:15:50. Hence, the vessel was traveling for between five and seven minutes at 11.5 knots in dense fog at night without a fog signal

sounding. It did turn on its fog signal, however, about 4-1/2 minutes before the collision.

25. Inland Rule 35 (a) of the Rules of the Road states, "In or near an area of restricted visibility, whether by day or night, the signals prescribed in this Rule shall be used as follows: A power-driven vessel making way through the water shall sound at intervals of not more than two minutes one prolonged blast."

26. As the ZIM MEXICO III continued to make its way northward, it came around a slight bend in the river. For a vessel heading northbound, the river begins to make a slight bend to the west just south of Light 19. The ZIM MEXICO III began to negotiate this bend at 05:16:45. At that time it was just east of the channel's center.

27. The LEE III made another broadcast on Channel 67 at 05:16:55 that said, "LEE III, southbound in Southwest Pass, uh, coming up on Buoy (Light) 21, checking on any northbound traffic. LEE III." At that moment the ZIM MEXICO III had just passed mile marker 9 and was in the center of the northbound side of the channel. It was 1.4 miles south of Light 21 and approximately 0.9 miles from the point of the collision. It was on a heading of 041.3 and traveling at 12.1 knots over the ground. The Pilot testified that he did not hear this transmission from the LEE III.

28. At 05:17:39 the LEE III called on the radio, "LEE III, calling this northbound, I'm southbound just coming up on 21, LEE III Southwest Pass." This transmission is significantly different than the previous ones in that the LEE III is now calling "...*this northbound*..." which implies it is hailing a specific vessel, rather than making a general broadcast. Two minutes prior to this transmission the Master of the ZIM MEXICO III had turned on the vessel's fog signal. It is likely that the LEE III was now hearing the ZIM MEXICO III's fog signal and was specifically attempting to hail it. It is also possible that the LEE III had detected the ZIM MEXICO III on radar. The Pilot on the ZIM MEXICO III testified that he did not hear this transmission.

29. At the time of this hailing, the ZIM MEXICO III was transiting northbound on a heading of 039.2 at a speed of 12.0 knots. It was still negotiating the slight bend in the river and had moved closer to the eastern edge of the channel than it had been at before. Based on AIS data, the ZIM MEXICO III was at position 29-02.5N, 089-19.2W.

30. It was at approximately that location that the Pilot first detected the LEE III on radar. The Pilot testified that when he first detected the LEE III, it appeared as an "anomaly" located at the Shell Docks on the East Bank (see IO Exhibit #57 for the Pilot's plot of ZIM MEXICO III & LEE III locations when he first detected LEE III on radar, transcript 3/8/04, pp. 42-44). The vessels were one mile apart at this time according to the Pilot. He plotted that point on IO Exhibit #57. He marked the location of the ZIM MEXICO III at that moment on the chart just south of Southwest Pass Light 19 with a blue marker and labeled it "Zim 3." He used a red marker to indicate the location where the LEE III was at that same time and labeled it "Lee 3." He also plotted the position of the collision and labeled it "collision." Based on the AIS data, however, the collision occurred 1/4 mile

31. At 05:18:30 the dredge BAYPORT hailed the LEE III, but the LEE III did not respond to the radio call. No information was available as to why the LEE III failed to respond to the BAYPORT's hail. At this time the ZIM MEXICO III was about 0.1 miles south of Light 19.

32. At 05:18:30 when the dredge BAYPORT called the LEE III, based on the AIS data from the ZIM MEXICO III, vice the Pilot's plotted position for the collision, the ZIM MEXICO III was 0.1 miles south of Light 19 and 0.35 miles south of the collision location. Its heading was 033.7 and it was traveling at 11.6 knots over the ground. The collision occurred approximately one minute and 50 seconds later.

33. The Master testified that he first saw the LEE III on the radar two minutes prior to the collision. When he saw it he pointed at and touched the Pilot's radar screen with his finger and asked the Pilot if the Pilot had seen the target. The Pilot responded that he had seen it. The Pilot testified, at that point, he was not even sure if it was a vessel. It appeared so close to the Shell docks on the east bank of the river that he described the target as an "anomaly." He determined that it was a vessel, however, after a few sweeps of the radar (transcript, 3/8/03, p.88).

34. At 05:19:14 the LEE III called on the radio and said, "LEE III calling that vessel on Southwest Pass." The only vessel in the area was the ZIM MEXICO III. This is the first transmission from the LEE III that the Pilot heard. When asked if he could explain why he heard that one and not the other transmissions from the LEE III, the Pilot stated that that was when he realized that the "anomaly" on his radar was a vessel and that it was calling him. At the time of the transmission the ZIM MEXICO III was on the eastern edge of the channel and passing Light 19. It was traveling at 11.2 knots and had a heading of 028.6. The LEE III was still on the east bank. Had it maintained its course, the LEE III would have passed by the ZIM MEXICO III with a lateral separation of approximately 1/10th of a mile (transcript 3/8/04, p. 78) according to the Pilot.

35. At 05:19:25 the ZIM MEXICO III made a change in its heading to 021.8 degrees according to the AIS data and began to move away from the eastern edge of the channel towards the center of the channel. The Pilot said that he made heading changes in order to keep the vessel heading up the river. At 05:19:39, a mere 37 seconds before collision, the Pilot called the LEE III on channel 67 for the first time. The Pilot said he called the LEE III because the vessel had made two slight deviations away from the east bank of the river that were bringing it closer to the ZIM MEXICO III. The two heading changes made by the LEE III were each about five degrees to starboard—away from the riverbank. The Pilot and Master both testified, however, that the LEE III would still have crossed astern of the ZIM MEXICO III despite the LEE III's course changes.

36. The LEE III responded to the ZIM MEXICO III's radio call immediately. The operator of the LEE III said that he had been trying to call "you" on 67 for five minutes. At 05:19:50 the Pilot aboard the ZIM MEXICO III responds, "Okay, I just heard you.

Uh, Meet you on two. Can you get over to that east side for me?" The Pilot said that when he first made this call, the LEE III was still well outside of the channel. The LEE III responded at 05:20:01, "Uh, I'm, uh, already pretty much right off your bow. Uh, um, oh shit, we're, I'm right off your bow, right off your bow."

37. At this point it appeared to the Pilot and the Master of the ZIM MEXICO III that the LEE III made a sharp turn to starboard and cut across the bow of the ZIM MEXICO III. The Pilot testified that the LEE III made this sharp turn at the same time it said on the radio that it was right off of the ZIM MEXICO III's bow. The Master testified that the LEE III made the sharp turn to starboard a matter of seconds before the collision. As that was happening the Pilot realized that there was a risk of collision and ordered "Port 10" degrees rudder followed immediately by "Port 20" degrees rudder. The Pilot saw white lights from the LEE III cut in front of the ZIM MEXICO III's bow seconds before impact.

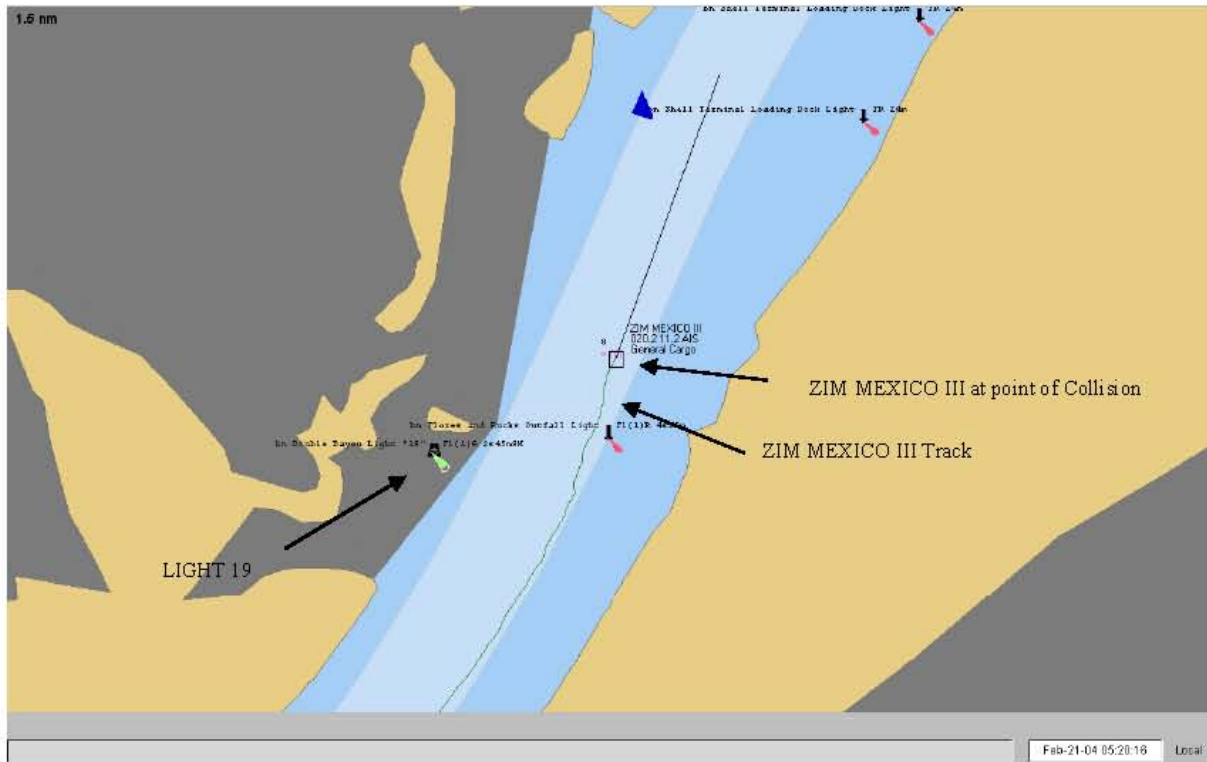
38. Inland Rule 19(d)(i) of the Rules of the Road states, "A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing or risk of collision exists. If so, she shall take avoiding action in ample time, provided that when such action consists of an alteration of course, so far as is possible the following shall be avoided: an alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken." The point of the collision was near the center of the river, which is just about 1700 feet wide at that point. The collision took place 750 feet from the 30-foot depth curve off of the ZIM MEXICO III's port side and 400 feet from the 30-foot depth curve off of the starboard side (IO Exhibit # 81). The collision was also 900 feet from the west bank and 800 feet from the east bank. The ZIM MEXICO III was drawing 21 feet 3 inches forward and 24 feet 7 inches aft.

39. The Chief Mate also saw the lights of the LEE III a few seconds before impact. They moved from starboard to port and then "disappeared under the bow" of the ZIM MEXICO III. He testified that the lights he saw looked like the masthead lights of a vessel, with one above the other. He also saw some stronger white lights that may have been the vessel's deck lights (transcript, 3/10/04, p.128 & 156ff). Figure 3 is a sketch of the relative position of the lights drawn by the Chief Mate. Figure 4 was also drawn by the Chief Mate and shows the relative positions of the two vessels at the moment of impact.

40. At 05:20:09, after the LEE III announced "I'm right off your bow," the Pilot on the ZIM MEXICO III radioed back, "I'm coming to port." Seven seconds after that, at 05:20:16, the LEE III makes its last transmission, "He (you) just hit us." The collision occurred between those two transmissions. At 05:20:09, the ZIM MEXICO III was traveling at 11.1 knots over the ground and was on a heading of 021.6 degrees according to the AIS. It had been on a steady course of about 022 degrees since 05:19:39. The fact that the vessel had been on a course of approximately 022 for 30 seconds prior to the collision indicates that the ZIM MEXICO III had not begun to respond to the Pilot's rudder commands of "Port 10" and "Port 20" before impact. Figure 2 shows that

location of the ZIM MEXICO III at the moment of the collision.

Figure 2: ZIM MEXICO III AIS Track at Moment of Collision (05:20:16)



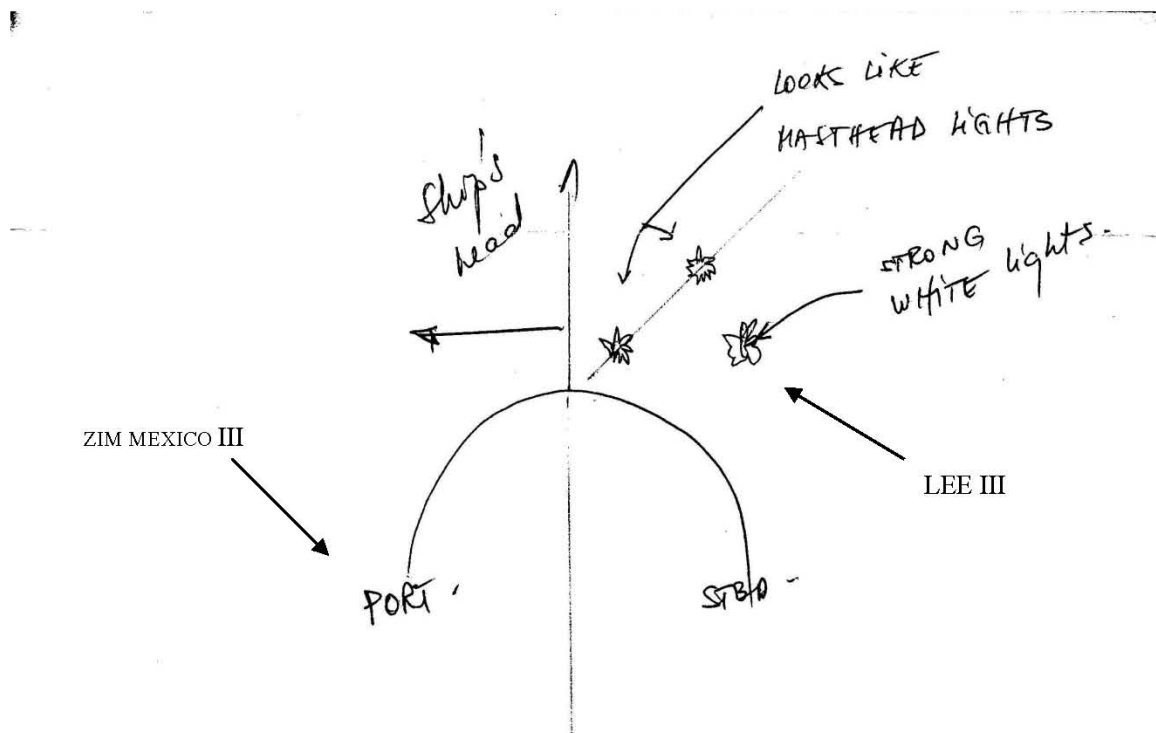
41. The AIS position for the collision, 29-02.96N and 089-18.94 W, is based on the location where the vessel made a dramatic reduction in speed—from 11.2 knots to 8.4 knots in a matter of seconds. The data also shows that the 2.8 knot speed reduction was followed 20 seconds later by a 40-degree heading change and a further speed reduction to 1.6 knots. Clearly, the AIS data accurately fixes the time and position of the collision. It also matches the position the Chief Mate wrote down in the Bell Log of 29-02.97N, 089-18.92W immediately after the accident.

42. Immediately after the collision the Master hit the button on the console to override the 10-minute notice for propeller pitch changes and put the engine to full astern. He said that he did this in order to reduce the speed of the ZIM MEXICO III. He also ordered the Chief Mate to record the latitude and longitude of the collision. The Chief Mate immediately wrote the information from the GPS into the Bell Book. Shortly after the accident the Master ordered the Chief Mate to the bow.

43. On the bow, the two Lookouts were standing by the anchor windlass at the moment of impact. They were not maintaining a visual lookout. They did not see any lights from the LEE III nor did they hear its fog signal. They said that when they felt the impact of the collision they ran from the forecastle to hold number one. After about two minutes they went back to the forecastle. Mr. [REDACTED] looked over the port bow and saw what

appeared to be a capsized tank lying in the water. It was 2-3 meters from the ZIM MEXICO III's port side and parallel to the ZIM MEXICO III. He said that he heard the sounds of water being sucked into the hull. He later realized that it was the capsized hull of the M/V LEE III. Neither he nor the other Lookout heard anyone in the water nor did they see anyone in the water after the collision.

Figure 3: Sketch of LEE III Lights at Time of Collision, As Drawn by Chief Mate

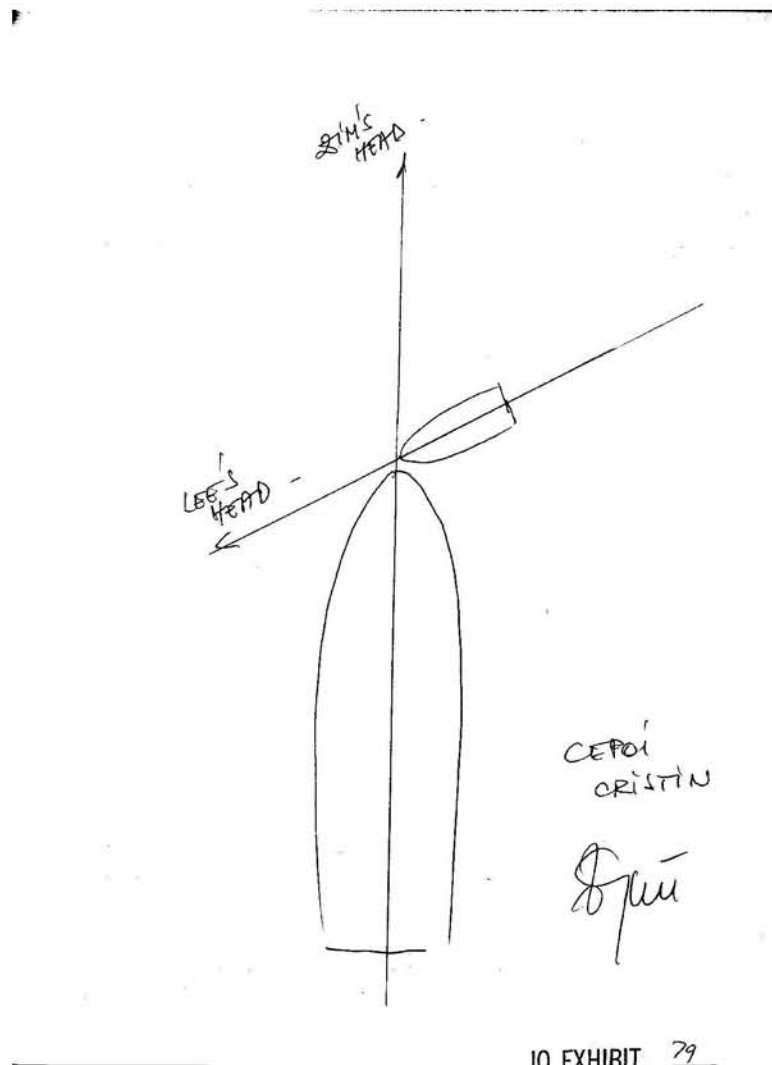


44. When the Chief Mate arrived at the bow he and the Lookouts used flashlights to look over the side of the ZIM MEXICO III to see if they could spot anything or anyone in the water. The crew of the ZIM MEXICO III did not attempt to render any other form of assistance because they did not see anyone in the water that could be helped. When asked if he launched the ZIM MEXICO III's rescue boat, the Master said that he did not. He was concerned that in the swift river current it could get washed downstream and lost. When asked if he threw any ring buoys into the water he stated that he did not because they were expensive, and also because he might need them later if anyone were spotted in the water.

45. The LEE III rolled over and sank immediately upon impact, blocking the shipping channel. The U. S. Coast Guard Captain of The Port (COTP) at Marine Safety Office (MSO) New Orleans, LA, closed the shipping channel for 5 days as a Search And Rescue

(SAR) case was conducted and as the LEE III was removed from the channel. Divers found the bodies of three of the crewmembers deceased in their staterooms. They were the Master, Captain Villarreal, the Engineer, Mr. Joseph Brown, and a deckhand, Mr. Lawrence Glass. The body of the vessel's Mate, Mr. Daniel Lopez was found at the mouth of Southwest Pass several days later. The body of the second Deckhand, Mr. Ramon Norwood, was found almost one month later near the location of the collision.

Figure 4: Sketch Showing Relative Positions of the Vessels at Moment of Impact; Drawn by Chief Mate



46. The Coroner's reports for all five crewmen from the LEE III indicated that they had all died from asphyxia due to drowning. Toxicology reports for all five crewmen showed no signs of drug or alcohol use (Enclosure # 9).

47. The Pilot and the crewmembers that were on watch on board the ZIM MEXICO III were all administered drug and alcohol tests. The results of all of the tests were [REDACTED]

48. VHF Tapes were played at the hearing and witnesses identified the voice of the operator of the LEE III at the time of the casualty as that of Mr. Daniel Lopez, the vessel's Mate.

J. M/V LEE III Grounding at Baptiste Collette, February 20, 2004

1. On Friday, February 20, 2004, at approximately 1915 the M/V LEE III ran aground near the Gulf entrance to Baptiste Collette Bayou while heading back to Venice, LA from out in the Gulf of Mexico. The vessel had been working offshore bringing personnel and equipment to platforms located in Block Viosca Knoll 780 (VK 780).

2. Mr. [REDACTED] works for Abbeville Offshore Living Quarters as an Air Conditioning Technician and an Electrician. He is not a mariner and does not hold any Coast Guard issued licenses or documents. He was on board the LEE III sitting with the Engineer, Mr. Joseph Brown, between 1915 and 1930 on February 20, 2004, when the vessel went hard aground. The force of the grounding was such that Mr. [REDACTED] almost fell out of his seat. The engineer told him that they had just run aground.

3. Immediately after the grounding Mr. [REDACTED] went up to the wheelhouse. The Master had been driving the vessel and told him that they had run aground. The Master said that they had missed the entrance to the channel in Baptiste Collette Bayou by about 100 yards. The Master also told him that they did not have charts on board that showed the depth of the water in that area. Other members of the crew also told him that and said they would need to get a chart when they got to back Venice, LA.

4. According to Mr. [REDACTED], while they were aground the Master called someone on the radio and asked for assistance. The Master asked for help in figuring out where they were on the chart, how deep the water was, and how far off the vessel was from the channel. Mr. [REDACTED] thought the Master had called the Coast Guard. A check of all Coast Guard stations in the area by Coast Guard investigators showed that the LEE III had not contacted any of them.

5. They refloated the vessel after 2000 by pumping off saltwater previously loaded while offshore. They continued into Baptiste Collette Bayou and went to Venice, LA, without further incident. Mr. [REDACTED] remained on the bridge after the grounding until they arrived at the Newman II dock in Venice. He said that the vessel's equipment seemed to be working normally. In particular, the Master showed Mr. [REDACTED] how the radars worked—they were functioning without problems as far as Mr. [REDACTED] could tell.

6. The vessel encountered fog while inside Baptiste Collette Bayou. The Master navigated the vessel though the fog using the radars. When asked, Mr. [REDACTED] said that the vessel was not sounding its fog signal when it was in the fog. They arrived in Venice,

LA, at 2215 and Mr. ██████ went home.

K. M/V LEE III February 21, 2004 Voyage in Southwest Pass, Venice to Collision

1. The LEE III arrived in Venice, LA, at approximately 2215 on the evening of Friday, February 20, 2004. At around midnight that same evening Captain Villarreal called ██████ the Operations Manager for Ocean Runner. Captain Villarreal informed him that the vessel had come off of its last job, that it was in Venice, LA, and that it had already taken on fuel. Captain Villarreal asked for orders as to where they were to take the vessel next. Mr. ██████ told him that they might be getting a job in Fourchon, LA, on Sunday and that they should take the vessel there and “just hang out” until Mr. ██████ got back to them.

2. Mr. ██████ testified that he did not give Captain Villarreal any particular arrival time at Fourchon and left it to the Captain to decide when to arrive there. The job they were hoping to get was supposed to begin on Sunday, so Mr. ██████ said he wanted the LEE III there prior to that. Captain Villarreal told Mr. ██████ that the vessel would finish up in Venice soon and then they would leave for Fourchon. Mr. ██████ approved the plan. The Captain did not ask for any charts to be brought to the vessel.

3. Captain Villarreal informed Mr. ██████ that they had run aground on their way in from the Gulf. Mr. ██████ asked him how the boat was running and if there were any problems with it. Captain Villarreal said there were no problems with the vessel and that everything was fine.

4. Mr. ██████ holds a Coast Guard license that authorizes him to serve as Master on vessels of up to 100 gross tons out to 200 miles offshore. He has been sailing in the Gulf of Mexico since 1979 and has held a Coast Guard license for about seven years. He is currently employed by Mitchell Marine as the Second Captain aboard the M/V CAPTAIN NICK—a 135-foot long utility boat. On the morning of February 21, 2004, the CAPTAIN NICK was tied up at the ASCO dock in Venice, LA, and Mr. ██████ was standing the midnight to noon watch. Even though the vessel was tied up at ASCO, he was up in the wheelhouse working. He was monitoring the company radio frequency as well as VHF Channel 16. It was foggy with visibility limited to about 100-150 feet.

5. Mr. ██████ testified that at approximately 0300 that morning the LEE III called the CAPTAIN NICK on Channel 16. The conversation he had with the operator of the LEE III lasted about a minute long. At the time of the call the LEE III was passing the CAPTAIN NICK at a distance of about 50 feet and appeared to have just gotten underway. Mr. ██████ could barely see the LEE III through the fog, but said he could see its masthead lights and its red running light—they appeared normal.

6. The operator of the LEE III asked Mr. ██████ if he knew what channel ship traffic stood by on. Mr. ██████ told him that they stood by on Channel 67. The operator of the LEE III also told Mr. ██████ that he was not familiar with that area of the river and asked if

he should monitor Channel 67 or go back to Channel 16. Mr. [REDACTED] told him to stay on Channel 67 because that was the channel the ships used, but that the LEE III could put its other radio on Channel 16.

7. The LEE III made three broadcasts on VHF Channel 67 as it was pulling out of “The Jump” near Venice, LA, and into the river. After the 3rd broadcast the Coast Guard Vessel Traffic Service’s (VTS) radar detected the vessel. Each broadcast announced that it was pulling out of The Jump and turning southbound in the Mississippi River. These were at 03:47:20, 03:48:04 and 03:50:27.

8. At present the area of the Mississippi River covered by the VTS in New Orleans does extend as far south as Venice, LA. The VTS has plans to expand into that area in the future, however, and it has already installed radars in Venice, LA, and Pilottown, LA. The radars are not monitored at this time, but they can still detect and track vessels. The data from the radars is recorded. The VTS provided copies of the LEE III’s track as recorded by both radars in the form of digital animations that can be watched on a computer. The radar in Venice designates targets in red on the animation and the Pilottown radar designates targets in blue. The files are included with this report on CD-ROMs (Enclosure # 10).

9. At 03:50:44 the Venice radar picked up the LEE III as a contact when the vessel entered the Mississippi River from Venice, LA. The radar designated it with the number 165 and tracked it until 04:13:21, when the Pilottown radar picked up the track. The Pilottown radar designated the LEE III target # 191 and maintained its track on it until 05:54:40 when the LEE III passed Southwest Pass Light 27. According to a VTS technician that testified at the Coast Guard’s Formal Hearing, the radar tracks are accurate to within a distance of 80 meters.

10. Table 9 was developed to show the times the LEE III reached various geographic points and the average speed that it was traveling over the ground between those points. The “Average Speed” was computed between charted Lights and between Mile Markers. The LEE III was not equipped with AIS, so no real-time information on its heading and speed was available. Not listed in Table 9, but included in the radar animations, is the direction the vessel is tracking, computed based on its track from one radar return to the next. The animation also shows the vessels computed speed.

11. The actual heading and speed of the LEE III at any one moment cannot be determined by looking at the radar images. The radar simply plots the location of the target at the time of the last radar sweep and cannot tell which direction the bow is pointing. The radar track behind the vessel shows the positions of the vessel during past radar sweeps, and the vector that extends out in front of it simply predicts the vessel’s direction of travel based upon the target’s track. When the vector changes to a new direction, it does not necessarily mean that that is the actual direction the bow of the vessel is pointing—it simply indicates the overall direction of movement of the radar target. This is key to understanding the radar images and their limitations.

12. As the LEE III worked its way down river, it encountered the sea-going tug COLUMBIA, which was pushing the barge OCEAN 210. The operator of the tug was Captain [REDACTED]. He is licensed by the Coast Guard as a First Class Pilot, Any Gross Tons, on the Mississippi River from the Southwest Pass sea buoy to Mile 243 Above Head of Passes. He is a member of the Associated Federal Coast Pilots and Docking Masters of Louisiana. His designator is "Federal 9."

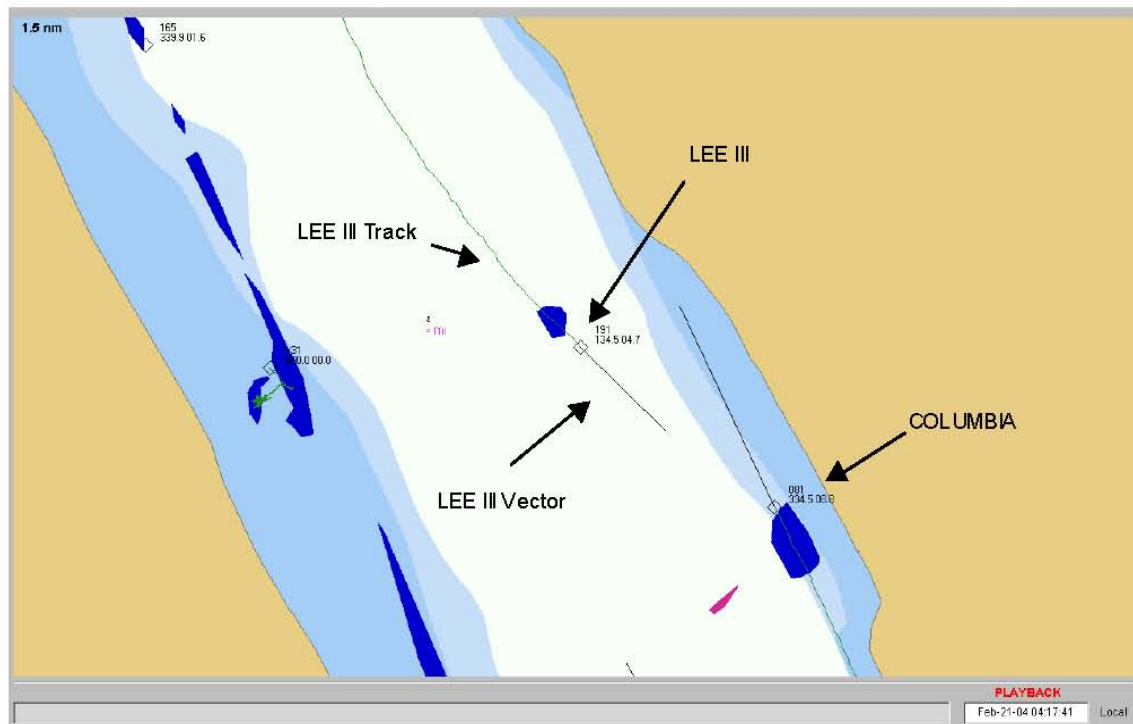
13. Captain [REDACTED] testified that when he was about 4 – 4.5 miles above the head of Southwest Pass he picked up the LEE III on radar. The LEE III was about three miles up river from the COLUMBIA and above "Old Quarantine" at the time. At 04:13:05 he initiated contact with the LEE III on VHF Channel 67, identified himself as "Federal 9," said he was on the east bank, and proposed a one-whistle pass (port-to-port). The LEE III agreed to the one-whistle pass (port-to-port) (see IO Exhibit # 44). The Pilottown radar had already designated the COLUMBIA with the number "081" as shown on the radar animation.

14. Immediately after the LEE III and the tug COLUMBIA agreed to a port-to-port pass, the STONE BUCCANEER called the LEE III on VHF Channel 67. The operator of the STONE BUCCANEER was [REDACTED]. He holds a U. S. Coast Guard issued license as Third Mate, Any Gross Tons, with an Oceans route. He was sailing as the Chief Mate on the coastal tanker STONE BUCCANEER.

15. The STONE BUCCANEER, designated "115" by the Pilottown radar, was astern of the COLUMBIA and on the west side of the river. The STONE BUCCANEER called the LEE III at 04:13:32, told the LEE III that the STONE BUCCANEER was favoring the west bank, and offered to widen out a bit so that the two vessels could have a one-whistle pass. The STONE BUCCANEER also suggested that the LEE III could "split us." The LEE III then offered to move over to the east bank to make room for the STONE BUCCANEER.

16. The STONE BUCCANEER responded, "I'm slowly overtaking a tow that's northbound, he just agreed to meet you on one. And I'd like to see you on the two if that's all right. If you could go down between us that would be great." The tow that the LEE III had just arranged a one-whistle pass with was the COLUMBIA, Piloted by Captain [REDACTED] "Federal 9." The STONE BUCCANEER was requesting a two-whistle pass (starboard-to-starboard) with the LEE III. The LEE III agreed to the two-whistle pass at 04:14:06. The STONE BUCCANEER clearly reiterated the agreement at 04:14:11, "Roger, okay. You take the middle, I'll take the west bank and Federal 9 is on the east bank. I'll see you on two." The LEE III agreed a second time.

Figure 5: LEE III at 04:17:40; Hails “That Tow,” & Heading Towards COLUMBIA



17. At 04:17:40 the LEE III called on Channel 67, “LEE III calling that tow,” but received no response. At that time the LEE III was making its way over to the east side of the channel as shown in Figure 5. Captain [REDACTED] stated that he spotted the LEE III visually $\frac{3}{4}$ miles away and that the LEE III was heading towards the COLUMBIA at the time. After calling “that tow,” and not receiving an answer, the LEE III then began to turn slightly to starboard and headed down river to pass the COLUMBIA port-to-port as agreed upon earlier.

18. At 04:18:06, the LEE III called on the VHF, “LEE III calling both these northbound.” At that time the LEE III had continued to turn slowly to the right as shown in Figure 6.

19. The STONE BUCCANEER responded at 04:18:11, and asked if the LEE III was trying to call the STONE BUCCANEER. He told the LEE III that the STONE BUCCANEER was on the west bank. The LEE III replied, “Yea, I’m kinda like in a situation here, uh, I’m not pretty sure where who’s who and what’s what here. Uh, I mean, you are on the west bank right off my port beam here, over?” At the time the LEE III finished this statement it was 04:18:27 and the only vessel off of its port beam was the COLUMBIA, as Figure 7 shows—and the COLUMBIA was on the east bank, not the west bank. The vessel’s track and vector continued to shift slightly to starboard and closer to the center of the channel.

Figure 6: LEE III at 04:18:06; Turning to Starboard

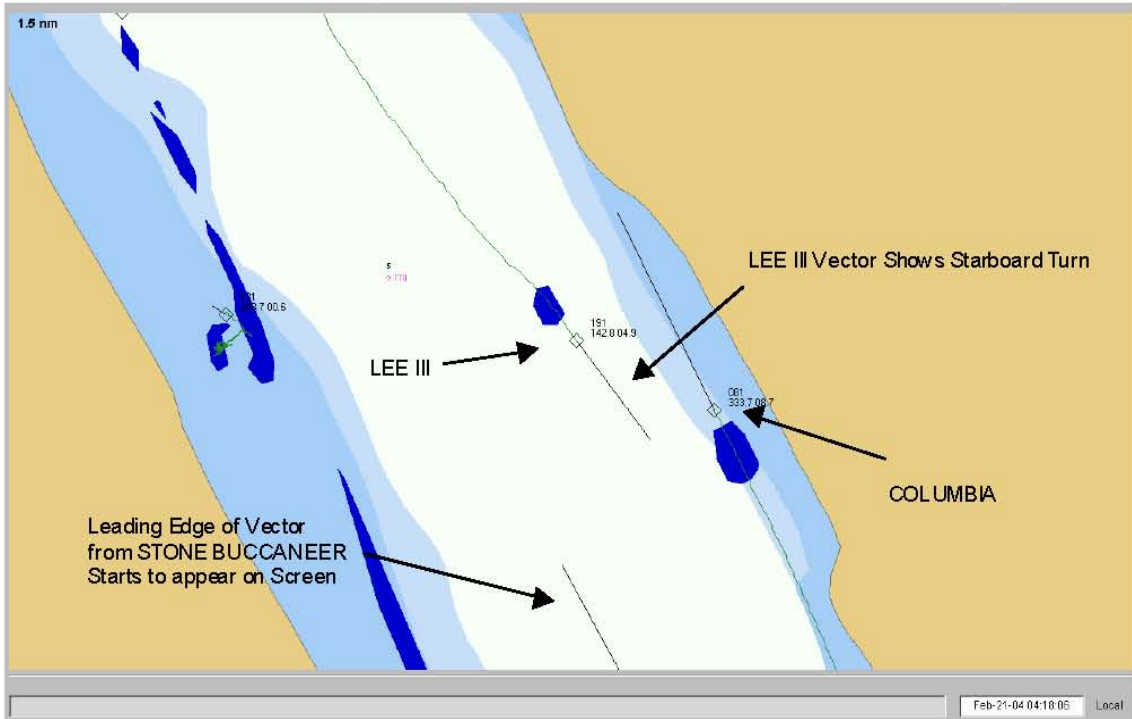
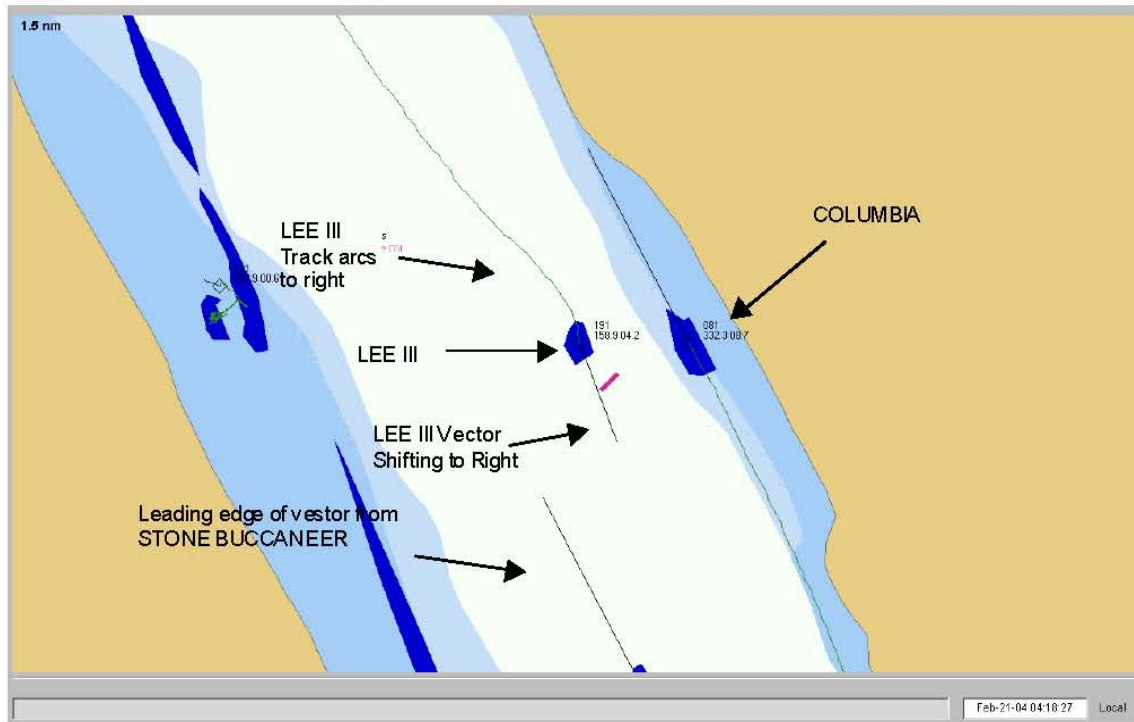


Figure 7: LEE III at 04:18:27; Passing COLUMBIA



20. The operator of STONE BUCCANEER answered the LEE III, “No Captain, that’s the east bank. I’m on your starboard bow; you just keep the way you are going. You’re meeting a tow right now on one. You’re going to meet me on two. I’m on the west bank.” Basically, he had to explain that the vessel off of the LEE III’s port beam was not the STONE BUCCANEER but that it was a towing vessel and that the LEE III was passing it port-to-port. It is possible that the LEE III’s operator may have been confused about which side of the river is the west bank and which is the east bank, although this is unlikely. Because of the way the Mississippi River winds through New Orleans there are some areas where you can be on the eastern side of the waterway geographically, but still on the “west bank.” This is not one of those areas—the river here is fairly straight and heads in a southerly direction. So it is not likely that the LEE III was confused about which was the east bank and which was the west bank.

21. ██████████ testified that when the LEE III was abeam of the COLUMBIA’s port side, the LEE III was 800 – 1000 feet away. He could see the LEE III’s red running light as it passed by. He watched the LEE III as it passed astern of his vessel and then saw its range light open up and its green running light appear. It looked to Captain ██████████ like the LEE III had come around and made at least a 180-degree turn to port after the COLUMBIA had gone by. He stopped watching the vessel at that point since he was already past the LEE III.

22. It was at approximately the time of the 04:18:11 – 04:18:27 conversation that the LEE III executed this turn to port. It is likely that the LEE III turned a full 360-degrees to port in the process. If it had stopped at a 180-degree turn, it would have been on a northerly heading back up the river—the opposite direction it ultimately went. Assuming that the LEE III continued its turn to port past 180-degrees and to a full 360-degrees, this would have momentarily put the STONE BUCCANEER off of the LEE III’s port bow as the LEE III continued to come around. At 04:18:53 the LEE III told the STONE BUCCANEER, “Ya, you’re actually right now, you’re on my port bow. I kind of got nervous here and slowed down and swung around here, over.” See Figure 7.

23. Regardless of the actual nature of the “situation” that the operator of the LEE III felt that he was in, it is clear that he was in doubt as to “who’s who and what’s what” while passing these two vessels. One can only speculate as to why this happened. Figure 8 shows the track of the LEE III as it passed the STONE BUCCANEER. It clearly shows that the LEE III performed a series of maneuvers while passing the COLUMBIA and the STONE BUCCANEER despite the fact that there was ample room for it to pass between both vessels without having to maneuver as it did.

24. There was no clear explanation as to why the operator of the LEE III was confused. It is the opinion of the Investigating Officer that he was unsure about which vessel Federal 9 was aboard and which one was the STONE BUCCANEER. This was a critical issue since the LEE III had agreed to a port-to-port passage with Federal 9 and a starboard-to-starboard passage with the STONE BUCCANEER. In order to safely pass by these vessels, the operator of the LEE III would first have to resolve any doubts he had about which vessel was which.

Figure 8: LEE III at 04:18:53; Astern of COLUMBIA; STONE BUCCANEER off Port Bow

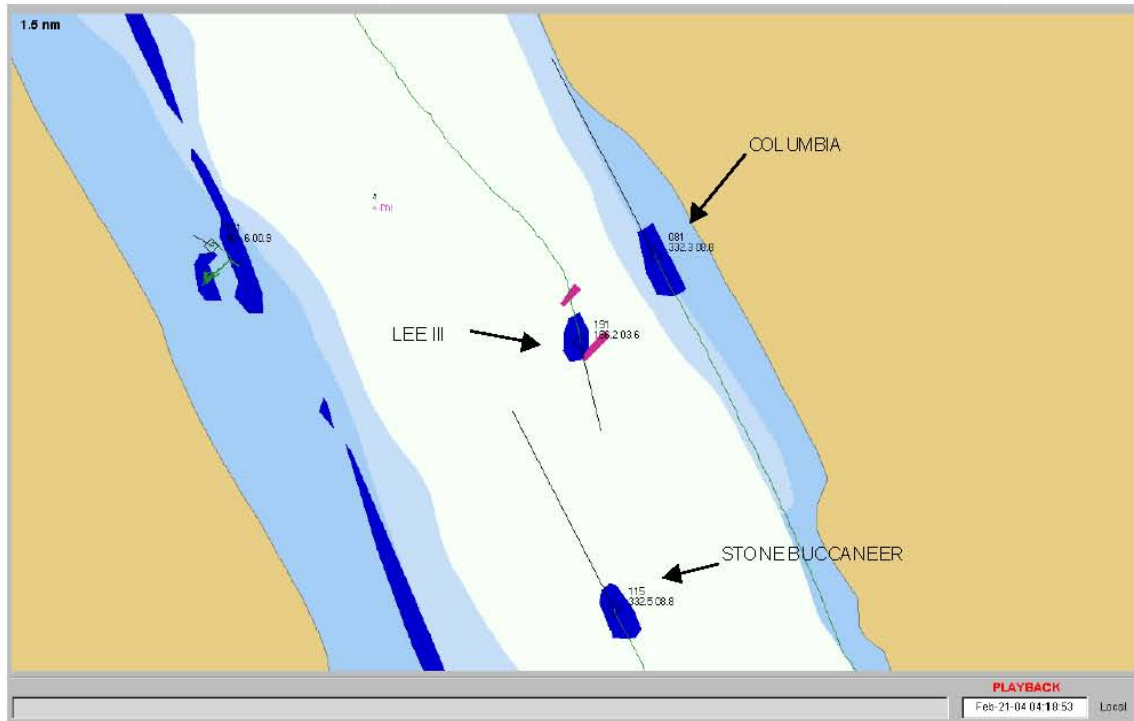


Figure 9: LEE III at 04:20:19; Abeam of STONE BUCCANEER

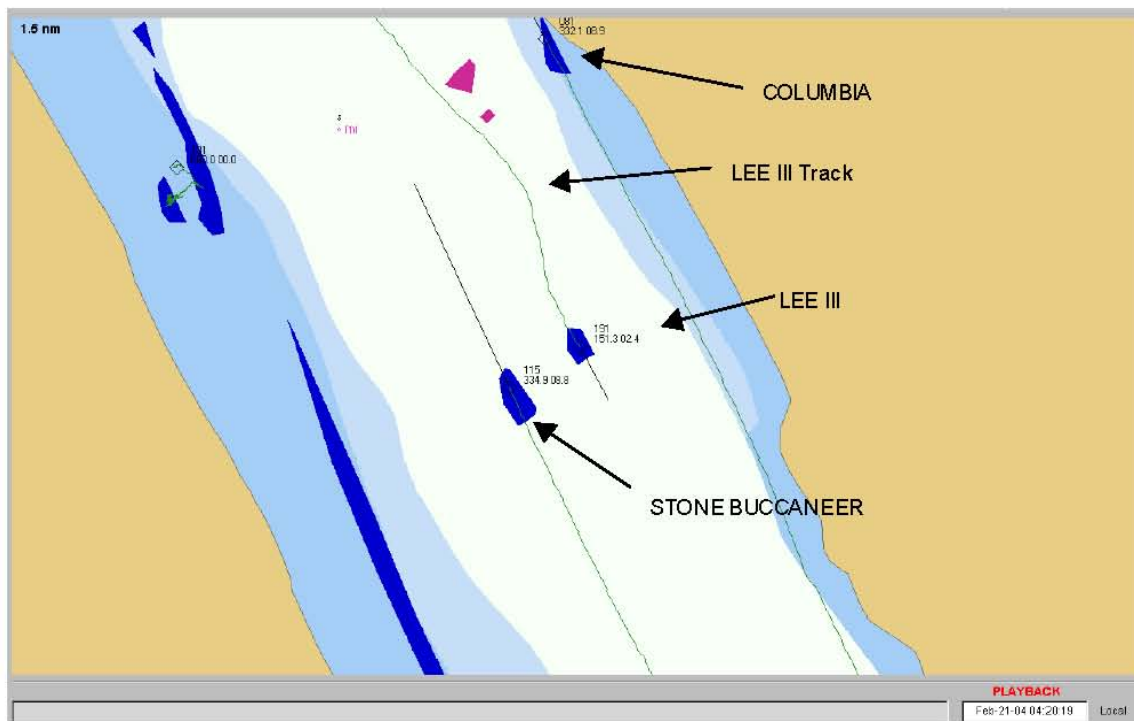


Table 9: VTS Radar Information for LEE III from The Jump to Southwest Pass Light 27

Time	Event (Note 1)	Average Speed (Note 2)
03:50:44	LEE III leaves The Jump and entered Southwest Pass; picked up and tracked by Venice radar as target #161	
03:52:52	Passed Mile Marker 10 Above Head of Passes (MM 10 AHP)	
03:54:30	Passed Light 9	
03:57:51	Passed MM 9 AHP; Broadcasts on Ch. 67 it is north of anchorage. (Average Speed MM 10 to MM 9 AHP)	10.6 kts
04:02:50	Passed MM 8 AHP (Average Speed MM 9 to 8 AHP)	10.6
04:03:30	Passed Light 7 (Average Speed Lt 9 to Lt 7)	10.3
04:07:10	Passed MM 7 AHP (Average Speed MM 8 to 7 AHP)	12.2
04:11:45	Passes MM 6 AHP (Computed Speed MM 7 to 6 AHP)	11.5
04:13:05	Fed Pilot # 9 initiates contact w/LEE III & arranges 1 Whistle Pass	
04:13:21	Venice Radar Loses Track, Pilottown Radar Acquires Track	
04:16:50	Passed MM 5 AHP (Computed Speed MM 6 to 5 AHP)	10.4
04:23:27	Passed MM 4 AHP (Computed Speed MM 5 to 4 AHP); Passed COLUMBIA & STONE BUCCANEER btwn MM 4 & 5 AHP.	8.0
04:24:55	Passed Old Quarantine Light 6 (Computed Speed Light 7 to Light 6)	10.1
04:28:27	Passed MM 3 AHP & Light 4 (Computed Speed MM 4 to 3 AHP)	10.6
04:29:02	LEE III broadcasts position as just south of Pilottown	
04:33:32	Passed MM 2 AHP (Computed Speed MM 3 to 2 AHP)	10.4
04:38:11	Passed MM 1 AHP (Computed Speed MM 2 to 1 AHP)	11.4
04:38:25	LEE III Broadcasts on Channel 67 that it is just South of Head of Passes and will be Entering Southwest Pass shortly	
04:42:49	Passed MM 0 AHP (Computed Speed 1 MM to 0 AHP)	11.4
04:43:53	Across from Head of Passes Junction Light (Computed Speed from Light 4 to HP Junction Light)	10.7
04:47:59	Passed MM 1 Below Head of Passes (MM 1 BHP) (Computed Speed MM 0 AHP to MM 1 BHP)	10.2
04:52:49	Passed MM 2 BHP (Computed Speed MM 1 to 2 BHP)	10.9
04:53:30	LEE III Broadcast on Channel 67 that it was southbound in Southwest Pass at "Buoy 27" and checking on any concerned traffic. LEE III actually located halfway between MM 2 BHP and Southwest Pass Light 27	
04:53:58	Passed Southwest Pass Light 27 (Computed Speed from HP Junction Light to Light 27)	11.0
04:54:40	Pilottown Radar Loses Track on LEE III	

Note 1: Positions determined by VTS radar are accurate to within 80 meters from the radar itself.

Note 2: "Average Speed" computed by Investigating Officer based on time and distance traveled between points. Mile Markers are in Statute Miles, but speeds computed in knots.

25. When Federal 9 first made contact with the LEE III, he identified himself only as "Federal 9" and did not indicate the name of the vessel he was aboard. This is a common and accepted practice used by Pilots on the river, but it may have left the operator of the LEE III unsure as to which vessel Federal 9 was actually on. Federal 9 did tell the LEE III that he was up-bound at Old Quarantine (04:13:05) and that he was the vessel closest to the east bank (04:13:20). That information should have been sufficient for a mariner familiar with the waterway to determine which vessel was Federal 9's and, hence, which vessel he had agreed to have a port-to-port passage. While the full cause of the doubt expressed by the LEE III is undetermined, confusion on the part of the operator of the

LEE III about the passing agreements was likely a part of it.

26. Both [REDACTED] the Pilot on board the COLUMBIA, and [REDACTED] the Mate on board the STONE BUCCANEER, testified that by talking to the LEE III on VHF Channel 67 they were able to arrange for the safe passage of their vessels.

27. After passing both vessels, the LEE III continued its transit down the Mississippi River and passed Pilottown. It entered Southwest Pass at approximately 04:43:53. The radar at Pilottown continued to track the vessel until it passed Southwest Pass Light 27 at 04:53:58. Shortly after the LEE III passed Light 27 it went out of range of the radar. The time the LEE III passed Light 27 is the last known data point available for the vessel. The only other approximate position information available on the LEE III after it passed light 27 was derived from its transmissions on Channel 67 as detailed in Table 9 above and in IO Exhibit # 44.

28. None of the crewmembers aboard the LEE III survived this accident. As a result, there is no information available from the perspective of the LEE III that would help shed further light on the events surrounding this collision or its causes. The only information available regarding the vessel's movements immediately prior to the collision came from the testimony of the ZIM MEXICO III's Master, Chief Mate, and Pilot.

L. Ocean Runner, Inc.

1. The Investigating Officer called three witnesses from Ocean Runner to testify at the Hearing. [REDACTED], [REDACTED], and [REDACTED] is the Operation Manager for Ocean Runner. Mr. [REDACTED] is a Charter Representative for Ocean Runner. Mr. [REDACTED] is one of Ocean Runner's licensed Mates. Both Mr. [REDACTED] and Mr. [REDACTED] testified about Ocean Runner's policies on navigating the company's vessels in fog and about the work experience of Baldemar Villarreal and Daniel Lopez, the Master and Mate of the LEE III, while they were in the employ of Ocean Runner.

2. Ocean Runner did not have any written policies instructing its Masters and Mates how to operate the company's vessels in conditions of restricted visibility. Both Mr. [REDACTED] and Mr. [REDACTED] repeatedly stated that Ocean Runner relied on the fact that the Master and Mate both held Coast Guard issued licenses. They also said that the Masters and Mates of all of their vessels are required to follow all Coast Guard regulations when it comes to navigating the vessels. Ocean Runner relies on its Masters and Mates to determine when it is safe to get a vessel underway. Both Mr. [REDACTED] and Mr. [REDACTED] testified that they and the company support the decisions made by the Masters and Mates in this regard.

3. When questioned about Mr. Lopez's experience sailing on Southwest Pass, Mr. [REDACTED] said he did not know if Mr. Lopez had ever sailed on Southwest Pass before (Transcript, 3/9/04, pp. 253, 284, & 292). He did state, however, that Ocean Runner

required its Masters and Mates to possess the appropriate Coast Guard issued license that authorizes them to navigate the company's vessels on the navigable waters of the United States (Transcript 3/9/04, pp. 270 & 292). When asked if Ocean Runner had any documents that would indicate the experience of Mr. Villarreal or Mr. Lopez on Southwest Pass, Mr. ██████ replied that the company had nothing other than the copies of their Coast Guard issued licenses. He testified later that Ocean Runner would not normally ask its Masters and Mates if they had experience in Southwest Pass. He said, "We would assume the Captains could navigate through any of these waters with the licenses they have." (Transcript, 3/10/04, p. 47).

4. Mr. ██████ was asked if Ocean Runner ever considered hiring a Pilot to go aboard a vessel to assist and advise a Master if that Master expressed uncertainty or unfamiliarity with a particular area. Mr. ██████ responded that that situation had never come up. He said that they would try to find another Master that could run the vessel in that area. When asked, he said that it was possible that a Master that was unfamiliar with the area might be replaced for a period of time by someone else that was familiar with the area (Transcript, 3/10/04, P. 55).

5. Mr. ██████ testified that, based on his recollections, he believed Mr. Villarreal had sailed for over 28 days straight on Southwest Pass about a year prior to the collision. He said that Mr. Lopez's only experience operating on the Mississippi River while in the employ of Ocean Runner was from February 18-21, 2004 (Transcript, 3/2/04, pp. 39 & 126). He said that the only time Mr. Lopez had been in Southwest Pass during the entire four years that Ocean Runner had employed Mr. Lopez was on the morning of February 21, 2004—the morning of the collision.

6. Mr. ██████ is a licensed mariner that works for Ocean Runner. He holds a U. S. Coast Guard license that authorizes him to serve as Mate on vessels of up to 1600 Gross Tons. He testified that he brought the LEE III from Morgan City, LA, to Venice, LA before Mr. Lopez signed aboard. Mr. Lopez met the vessel at the dock in Venice and relieved Mr. ██████ as Mate on February 18, 2004. He testified that during the relief process, Mr. Lopez had told him that Mr. Lopez was familiar with Southwest Pass. Mr. Lopez offered no specifics and Mr. ██████ did not enquire further. When asked, Mr. ██████ said that all of the vessel's equipment worked properly during the 24-hour trip between Morgan City and Venice.

7. Ocean Runner produced copies of the log entries for every Ocean Runner vessel that Mr. Villarreal and Mr. Lopez had sailed on while in the employ of the company. None of these logs indicated that either Mr. Villarreal or Mr. Lopez had sailed on Southwest Pass aboard an Ocean Runner vessel. Ocean Runner did not call any witnesses of its own, nor did it present any documentary evidence indicating that the Master and/or Mate had sailed on Southwest Pass while in the employ of Ocean Runner.

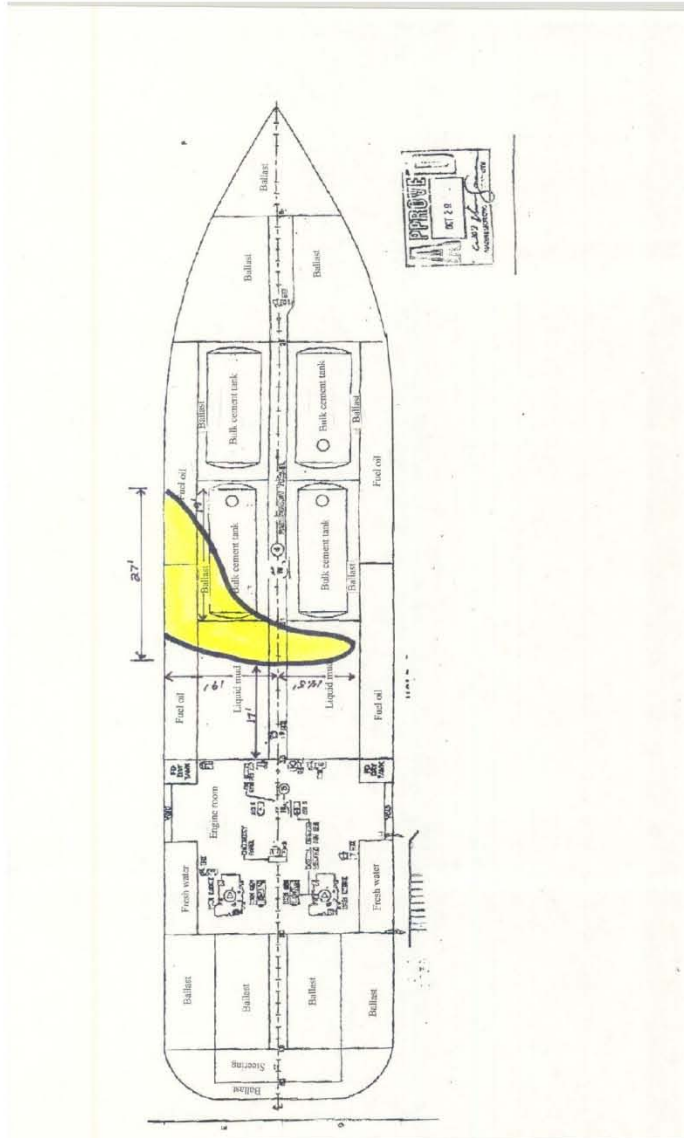
M. Post Casualty Damage Surveys

1. Post casualty damage surveys were completed on both vessels. The ZIM MEXICO III experienced minor damage to its forepeak and bulbous bow as a result of the incident. The vessel's bulbous bow was holed and fractures were found in the bow stem. Two sections of shell plating measuring 2500mm x 3200mm and 4000mm x 300mm were cropped out and replaced on the bulbous bow. The fractures in the stem were gouged out and welded (see IO Exhibit # 71).

2. After the LEE III was removed from the channel, it was placed on a barge and transported to Amelia, LA. The vessel was secured and no personnel were allowed to go on board until authorized by the Coast Guard. The divers that had searched the vessel while it was still in the water had not gone down below decks to look for crewmembers due to the hazardous diving conditions. Lieutenant Commander (LCDR) [REDACTED] from the U. S. Coast Guard Marine Safety Office in Morgan City, LA, was the first person to go aboard the vessel while it was secured in Amelia, LA. He conducted a search for the last missing crewman, Mr. Ramon Norwood, with negative results—Mr. Norwood's remains were recovered later in Southwest Pass. During the search, LCDR [REDACTED] noted that both the forward and aft engine room watertight doors were open (Enclosure # 11). He did not move the doors, nor did he upset any of the vessel's machinery or navigation equipment during his search.

3. The Coast Guard hired United Marine Surveying, out of Destrehan, LA, to complete a damage survey on the LEE III (Enclosure # 12). The surveyor found that the vessel's port side and bottom were split open starting at approximately 80 feet from the bow stem. The split moved aft 27 feet, centered on the Plimsoll mark, going inboard approximately 33.5 feet to within six feet of the starboard side. The split in the hull is V-shaped, is 27 feet wide on the port side and tapers down to three feet wide on the starboard side. The centerline passageway and longitudinal bulkheads were heavily distorted and/or crushed. The internal framing in way of the port #1 and #2 fuel oil tanks, port bulk cement tank compartment, centerline passageway, and port and starboard liquid mud tanks are crushed and distorted. The collision breached or destroyed the port # 2 fuel tank, port liquid mud tank, and port #2 cement tank bulkheads, the centerline passageway longitudinal bulkheads on each side of the liquid mud tanks, and the forward port and starboard liquid mud tank bulkheads. The main deck was split open centered at the Plimsoll mark over a 10 foot long area going inboard approximately 16 feet. See Figure 10.

Figure 10: Schematic Showing Location of Damage to LEE III



4. The surveyor recorded the settings of the electrical switches in the switch boxes. The switches for the Port and Starboard Searchlights and for the Aft Deck lights on the 2nd level were in the ON position. The switch for the navigation light panel was also ON. The full follow-up steering lever in the wheelhouse was positioned for a 15-20 degree turn to starboard. The hydraulic steering system in the rudder compartment was inspected. Everything was found to be intact and appeared functional. The rudders were also in satisfactory condition and free of discrepancies.

Figure 11: LEE III; On barge in Amelia, LA, Port side Profile View



Figure 12: LEE III, On Barge in Amelia, LA; Close Up of Center of Damaged area on Port Side



IV Conclusions

1. The primary cause of this casualty was that the Pilot of the ZIM MEXICO III and the Mate of the LEE III failed to recognize that a risk of collision existed until a matter of seconds before impact. In addition, the Master of the ZIM MEXICO III had recognized that there was a risk of collision when the LEE III was 2/10th of a mile away from the ZIM MEXICO III, but failed to take appropriate action (Transcript 3/4/04, p. 63, 86, & 136).
2. All of the causes of this casualty cannot be determined since the entire crew aboard the LEE III died as a result of the accident. The Investigating Officer was not able to determine with certainty what actions the LEE III took in the 25 minutes leading up to the collision nor, most importantly, what actions the LEE III took in the two minutes immediately preceding the collision. The only available testimony regarding the movements of the LEE III in the two minutes prior to the collision came solely from the Bridge Team that was aboard the ZIM MEXICO III.
3. The Mate on the LEE III, Mr. Daniel Lopez, was operating the vessel at the time of the collision. Recordings of VHF Channel 67 transmissions that the operator of the LEE III made at various stages of its transit were played during the Coast Guard Hearing for witnesses to hear. Those witnesses were familiar with the voices of the Master and/or Mate and testified that the voice of the person making the transmissions from the LEE III was that of Mr. Daniel Lopez.
4. The Master of the LEE III was not in the Pilothouse at the time of the collision. He was down below in his stateroom as evidenced by the fact that that was where the divers recovered his remains.
5. Based solely on the actions taken by the Mate on the LEE III, it was clear that he was unfamiliar with the area of the Lower Mississippi River that he was operating the LEE III on. This is evidenced by four main facts:
 - When he got underway in Venice he had to ask the CAPTAIN NICK what frequency he was supposed to monitor;
 - He told the CAPTAIN NICK that he was not familiar with the waterway;
 - While transiting above Head of Passes he apparently got nervous/confused/expressed doubt and even turned around in the channel while meeting the COLUMBIA and the STONE BUCCANEER; and
 - He apparently did not know that the navigation aids in Southwest Pass were Lights. Instead he thought that they were buoys and erroneously referred to them as such.
6. The LEE III was required by regulation to have a U. S. Coast Guard licensed First Class Pilot on board when operating on the Lower Mississippi in accordance with 46 CFR 15.812. It did not have a pilot on board. In lieu of having a First Class Pilot, the

Master or Mate would have been eligible to serve as the pilot and navigate the vessel on the Lower Mississippi River above Head of Passes and in Southwest Pass if they had the proper number of round trips on those waterways.

7. There is evidence of negligence on the part of the Mate of the LEE III in that he operated the LEE III on the Lower Mississippi River above Head of Passes and in Southwest Pass without having a First Class Pilot on board and without holding a First Class Pilot's license himself. Nor did he possess the required number of round trips on those sections of the river that would have allowed him to serve as a pilot. This is a potential violation of 46 CFR 15.401 & 15.812(a).

8. There is evidence of negligence on the part of the Master of the LEE III in that he permitted Mr. Lopez to serve as a pilot and navigate the vessel on those sections of the Lower Mississippi River despite the fact that Mr. Lopez was not qualified to do so. This is a potential violation of 46 CFR 15.401 & 15.812(a).

9. The Master did not hold a First Class Pilot's license, nor did he have the required number of round trips on the Lower Mississippi River above Head of Passes or on Southwest Pass to allow him to serve as a pilot and navigate a vessel on either of those waterways. Coast Guard Investigators determined that Mr. Villarreal did appear to have up to 16 trips on Southwest Pass while working for employers other than Ocean Runner. The employers could not confirm the details of those trips. Assuming that four of those were "round trips" as a watchstander or observer in the wheelhouse as required by 15.812(b)(2)(iii), he still did not qualify to serve as a pilot because all of the trips were made over five years prior to the date of the collision. 46 CFR 15.812(b)(2)(ii) & 46 CFR 10.713 state that his authority to serve as a pilot would have been invalid on those waters unless he had first made at least one re-familiarization round trip over the route within the previous five years.

10. The documentary evidence available indicates that Mr. Villarreal's last trips in Southwest Pass were prior to June 1997. On June 6, 1997 he wrote a letter to his employer at that time, Candy Fleet (Enclosure # 3), stating that for eight days he had "...navigated through Southwest Pass, South Pass, Tiger Pass and Baptiste Collette." Assuming that one of these days involved a round trip in Southwest Pass and above Head of Passes, this would only have kept him in compliance with the re-familiarization requirements of 46 CFR 15.812(b)(2)(ii) & 46 CFR 10.713 for another five years—until June 6, 2002. The first of any trips made after that date would have to have been a re-familiarization trip as an observer or watchstander in the wheelhouse in order to re-qualify to navigate a vessel in Southwest Pass again.

11. During the Coast Guard Hearing, Mr. ██████ testified that his recollection was that approximately one year before the collision Mr. Villarreal had sailed for 28 days on Southwest Pass. The company possessed no documentary evidence to support this recollection. Even if Mr. Villarreal had made trips on the Lower Mississippi River over a year ago, the first trip would have to have been a round trip as an observer or watchstander in the wheelhouse since it had been over five years since he had been on

those waters. Had he simply navigated the LEE III, or another vessel that required a pilot, down the River without being under the immediate supervision of a licensed mariner qualified to serve as a Pilot on those waters, he would not have been qualified to make the trip as the Pilot. Finally, even if Mr. Villarreal had met all of the requirements to serve as a pilot, for the sake of argument, it would not change the fact that there is evidence of negligence on his part as discussed in paragraph 8 above.

12. There is evidence of negligence on the part of Ocean Runner for operating the LEE III on the Lower Mississippi River without a First Class Pilot on board and without the Master or Mate being qualified to serve as a pilot on those waters. This is a violation of 46 CFR 15.401 & 15.812(a).

13. There is evidence of negligence on the part of the Mate on board the LEE III in that he failed to properly use the radar on board the vessel to avoid the collision as required by Inland Rule 7(b). He failed to determine the location of the ZIM MEXICO III in the channel as the two vessels approached in a near head on meeting situation. The fact that he did not take evasive action until the vessels were in extremis likely indicates that he saw the lights of the ZIM MEXICO III at the last moment and that only at that moment did he first realize that the two vessels were about to collide. Since the Pilot and Chief Mate on board the ZIM MEXICO III had spotted the lights of the LEE III moments before impact, and the bridge of the ZIM MEXICO III is about 460 feet aft of the vessel's bow, that would mean that visibility was just over 460 feet. That would imply that the LEE III likely saw the forward Masthead light of the ZIM MEXICO III when the LEE III was slightly more than 460 feet from that light. It would have been at that moment that the Mate on the LEE III first realized that he was right off of the bow of the ZIM MEXICO III, was in extremis, and came hard to starboard. Had the Mate on board the LEE III been using the vessel's radar properly, he would have detected the position of the ZIM MEXICO III earlier and had ample time to avoid a collision, to avoid a close quarters situation, and to avoid coming anywhere near the ZIM MEXICO III.

14. There is evidence of negligence on the part of the Mate on board the LEE III in that he failed to sound the appropriate fog signals as required by Rule 35(a) of the Inland Rules of the Road. Both Lookouts on the bow of the ZIM MEXICO III testified that they had maintained a continuous lookout for sounds. Neither heard the sound of the LEE III's fog signal. Mr. [REDACTED] was aboard the LEE III the evening prior to the collision as the LEE III transited through fog in Baptiste Collette. He testified that the LEE III was not sounding fog signals at that time either.

15. Rule 9 of the Inland Rules of the Road applies in this collision. Both vessels were operating in a narrow channel in Southwest Pass at the time of the collision. The LEE III had been heading downbound in the river, operating near the eastern bank of the river, and then moved into the channel shortly before the collision according to the Pilot's testimony. The ZIM MEXICO III had come around a slight bend in the river and was on the eastern edge of the channel. It came off of the channel's eastern edge and was moving back towards the center of the channel at the time of the collision.

16. There is evidence of negligence on the part of the Mate on board the LEE III in that he was heading southbound on the northbound side of a narrow channel at the time of the collision. Rule 9(a)(i) of the Inland Rules of the Road requires that a vessel proceeding along the course of a narrow channel shall keep as near to the outer limit of the channel which lies on her starboard side as is safe and practicable. At the time of the collision the LEE III was nearer to the outer limit of the channel off of her port side.

17. The Pilot and the Master of the ZIM MEXICO III testified that when they first spotted the LEE III on the radar it appeared that it would pass the ZIM MEXICO III's starboard side at a lateral distance of $1/10^{\text{th}}$ of a mile. When the LEE III was $2/10^{\text{th}}$ of a mile ahead of the ZIM MEXICO III, the LEE III began to make one or two slight heading changes to the LEE III's starboard. The Pilot said that it looked on the radar like these were five-degree heading changes (Transcript, 3/4/04, p. 63, 86 & 136; 3/8/04, p. 80). The Pilot and the Master both said that after the LEE III made these slight heading changes it still would have passed astern of the ZIM MEXICO III. The Master testified that at this point that it was clear to him that something was wrong and that he felt that there was a risk of collision. When the LEE III made these turns to starboard, the Pilot stood up from his radar and began talking on the VHF to the LEE III for the first time. That conversation began at 05:19:39, less than one minute prior to the collision. The Pilot testified that he did not realize that there was a risk of collision (transcript, 3/8/04, pp. 66-67) until the operator of the LEE III told him on the VHF that the LEE III was off of the ZIM MEXICO III's bow. The LEE III began the transmission in which he told the Pilot that the LEE III was right off of the ZIM MEXICO III's bow at 05:20:01. The Pilot reacted by ordering port 10 degrees rudder and then port 20 degrees rudder in quick succession. At the same time that the Pilot ordered port 20 degrees rudder, the Master saw on radar that the LEE III make a hard turn to starboard, which put the LEE III on a heading towards the bow of the ZIM MEXICO III. The vessels collided a few seconds later.

18. There is evidence of negligence on the part of the Pilot in that he failed to recognize that a risk of collision existed until a few seconds before the vessels collided. He made this realization only after the Mate on the LEE III began a transmission at 05:20:01 that said, "Uh, I'm, uh, already pretty much right off your bow. Uh, um, oh shit, we're, I'm right off your bow, right off your bow."

19. The Pilot should have realized that a risk of collision existed from the moment the LEE III made its slight turns to starboard while it was still $2/10^{\text{ths}}$ of a mile forward of the ZIM MEXICO III. At a minimum, those slight turns set up a close quarters situation. Rule 7 of the Inland Rules of the Road states that if there is any doubt about whether a risk of collision exists, then such risk shall be deemed to exist. The Pilot should have assumed that a risk of collision existed at that time. The Master of the ZIM MEXICO III, a Master Mariner with an unlimited tonnage Master's license that had been sailing for 25 years recognized that a risk of collision existed at that moment. The Pilot stood up from his radar and called the LEE III at that same moment (see IO Exhibit 44, VHF Transcript at 05:19:39). Yet the Pilot testified that he did not recognize the risk of collision existed until almost 30 seconds later when the Mate on the LEE III told him that the LEE III was

right off of the ZIM MEXICO III's bow.

20. Rule 7 also states that assumptions shall not be made based on scanty radar information. The Pilot testified that when he first detected the LEE III it was an "anomaly" on the radar at the Shell docks one mile ahead. It appeared to him that the Shell Docks were moving (transcript, 3/8/04, p. 42). He also stated that later on he detected on the radar that the LEE III made two slight turns to starboard of approximately five degrees each. Based on this limited radar information, the Pilot should have deemed that a risk of collision existed.

21. There is evidence of negligence on the part of the Master of ZIM MEXICO III in that he failed to properly monitor VHF Channel 67 as required by 33 CFR 26.03(e)(1), 26.04(d) and 26.05. These regulations state that the Master, or the person he assigns, must monitor 67 when in Southwest Pass. The Master did not set the ship's radios to Channel 67, did not assign anyone to monitor channel 67, and he failed to monitor it himself. When the Pilot came aboard the ZIM MEXICO III, the Master advised the Pilot that the ship's radios were set to Channels 9 and 16. The Pilot told him that that was fine since the Pilot had his own handheld radio. The Master did not direct the Pilot or anyone else on board the vessel to monitor Channel 67. The Master did not know what channel the Pilot had his handheld radio set on because the Pilot did not tell him. As a result, the Master did not know if any radio on the vessel was set to Channel 67, nor did he know if any person on board was monitoring Channel 67.

22. There is evidence of negligence on the part of the Pilot in that he failed to monitor VHF channel 67 as required by 33 CFR 26.03(e)(1) and 26.04(d). He was the only person on the vessel with a radio set to Channel 67, yet he did not hear numerous blind broadcasts made by the LEE III announcing its location in Southwest, that it was heading southbound, and that it was checking on "concerned traffic." The Pilot also failed to recognize two calls from the LEE III that could only have been directed at the ZIM MEXICO III shortly before the collision since there were no other vessels in the vicinity. These last two hails were at 05:17:39 when the LEE III called for "this northbound," and at 05:19:14 when the LEE III called "that vessel on Southwest Pass" (see IO Exhibit 44, VHF Transcripts). When the Pilot finally did establish contact with the LEE III, it was less than one minute prior to the collision. At that point, he stated that he had only just heard the LEE III. It was as a direct result of the Pilot's failure to properly monitor channel 67 that the LEE III was unable to make timely radio contact with the ZIM MEXICO III and to make passing arrangements.

23. There is evidence of negligence on the part of the Mate of the LEE III in that when the ZIM MEXICO III failed to respond to his Channel 67 VHF transmissions, the Mate failed to hail the ZIM MEXICO III on channel 16. Channel 16 is reserved for Distress, Safety, and Calling (47 CFR 80.956(a)(1)). Had the LEE III used Channel 16 it is likely that someone else on the bridge of the ZIM MEXICO III other than the Pilot would have been able to hear the LEE III's attempts to communicate.

24. The question that remains unanswered with regards to the LEE III is why did it enter the channel and set itself on a near head on course with the ZIM MEXICO III that put it in risk of a collision. A definitive answer could not be determined.

25. It is possible, but unlikely, that the LEE III made the slight course changes to starboard, entered the channel, and then continued to head downbound in the channel in order to go around a private aid to navigation that had been charted as being in the channel. This private aid is charted at approximately 2/10th of a mile south of Southwest Pass Light 19 and on the east side of the channel (Fl R 4s 15ft). This private aid is shown on the chart to be inside the eastern edge of the channel. It is possible that the Mate on the LEE III, being unfamiliar with the waterway, may have seen the charted location of this aid and moved into the channel in order to go around the aid. While this is possible, it is also unlikely in the opinion of the Investigating Officer because the aid is approximately ½ mile south of the location where the collision took place. It would have been too far away for the Mate on the LEE III to see due to heavy fog in the area. He also could not have detected it on radar, or he would surely have seen the ZIM MEXICO III, which was a bigger and closer target, at the same time as well.

26. There is evidence of negligence on the part of the Pilot in that he turned to port when he realized that there was a risk of collision with the LEE III, which was forward of the ZIM MEXICO III's beam. This was an apparent violation of Rule 19(d)(i), which states that a vessel that detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing or risk of collision exists and then take avoiding action in ample time. It further states that when such action consists of an alteration of course, that an alteration of course to port shall be avoided for a vessel forward of the beam.

27. There is evidence of negligence on the part of the Pilot in that he did not reduce the speed of the ZIM MEXICO III "to the minimum at which she can be kept on course," as required by Rule 19(e). The ZIM MEXICO III was at risk of collision with the LEE III the moment the LEE III first began to make its slight turns to starboard as the vessels approached. The Chief Mate said the vessel can maintain steerage at three to six knots. At the moment of impact the ZIM MEXICO III was making 11.0 knots over the ground and more than 14 knots through the water.

28. There is evidence of negligence on the part of the Pilot in that he failed to operate the ZIM MEXICO III at a safe speed once the vessel entered thick fog. This would be a violation of Rule 6(a)(i), (b)(iii), and Rule 19(b). The vessel had been traveling at an average of about 11.5 knots before it entered the fog and did not begin to slow down until 7 to 11 minutes later—depending on whether it encountered the thick fog at Light 18 or Light 16, respectively. The vessel did not begin to reduce its speed until 3 minutes before the collision and, at the point of impact, had only reduced speed from 12.2 knots to 11.0 knots. In addition, when setting the vessel's speed the Pilot did not properly take into account the fact that the riverbank or obstructions along it, such as the Shell Docks, could interfere with the radar's ability to detect targets. The Pilot had his radar set to 1.5 miles with an offset, which extended the range ahead to 2.25 miles. Despite this the Pilot failed

to detect the LEE III on radar until it was only one mile away, and even at that point it first appeared as an “anomaly.” He could not tell it was a vessel until a short time after that.

29. There is evidence of negligence on the part of the Pilot in that he operated the ZIM MEXICO III in thick fog without sounding fog signal as required by Rule 35. The vessel entered fog so thick that the bridge team could not see beyond the bow of the vessel at either Light 16 (05:06:40) or Light 18 (05:10:36) according to the Master and the Pilot, respectively. Since the Master did not turn on the vessel’s fog signal until 05:15:31, this means the vessel was operating in those conditions for five to eight minutes without its fog signal sounding. This did not contribute to the casualty since the Master turned on the fog signal five minutes before the collision and it sounded three times before impact. It does reflect, however, on the Pilot’s and Master’s consideration for the safety of other vessels operating on Southwest Pass and on the timeliness of the decisions they made.

30. The Pilot on the ZIM MEXICO III was acting under the authority of his State License/Commission. The Pilot is the holder of a U. S. Coast Guard issued license as Master of vessels of up to 100 Gross Tons, and as an Unlimited First Class Pilot.

31. Due to the current laws of the United States and the referenced court cases discussed in this report, the Coast Guard has no authority to take remedial Suspension and Revocation action against the Coast Guard issued First Class Pilot’s License held by the Pilot of the ZIM MEXICO III. Regardless of any action that the State of Louisiana’s Pilot Board of Examiners may take, even up to revocation of his State License/Commission, he can continue to sail under the authority of his U. S. Coast Guard issued First Class Pilot’s license. He can continue to sail as a Federal Pilot on the exact same navigable waters and on similar vessels without regard to any action taken by the state.

32. Had the Pilot been convicted of driving a car recklessly anywhere in the country, the Coast Guard would have the authority to initiate remedial Suspension and Revocation proceedings against his First Class Pilot’s license, even though he would not have been acting under the authority of the license. But when there is evidence that he negligently operated a vessel as a State Pilot, something that clearly reflects directly on his skills and ability to serve as a Federal Pilot, the Coast Guard can take no action.

33. This is a serious incongruity in the laws of the United States that goes directly to the heart of the nation’s efforts at ensuring safety on its navigable waterways. The Pilot’s actions contributed to the deaths of five mariners and the total loss of a U. S. documented and inspected vessel. In addition, this casualty caused a significant adverse impact on the nation’s economy. Southwest Pass had to be closed and over 100 vessels were delayed entering and exiting the Port of New Orleans until the LEE III could be removed from the shipping channel. This collision prevented any vessel from entering or exiting the Mississippi River, regardless of how far north the destinations of those vessels were.

34. The Coast Guard needs authority over all First Class Pilot's licenses that it issues, including those held by State Pilots, in order to prevent recurrences of casualties like the collision between the ZIM MEXICO III and the LEE III. Not only does the current situation undermine the Coast Guard's efforts to safeguard the public, the economy, and the nation's waterways, it also undermines the efforts of the states as well. Even if a state takes action against a State Pilot, the pilot can turn around the next day and sail on his Federal First Class Pilot's license on the exact same waterways and on the same or similar vessels. This is true regardless of the gravity of the act of negligence or misconduct the Pilot committed. As a result, the states' efforts at safeguarding its waterways are undermined by the current situation.

35. The evidence of negligence on the part of the Pilot listed in the above paragraphs also applies to the Master of the ZIM MEXICO III since he was on the bridge during the entire transit and remained in command of the vessel at all times.

36. There is evidence of negligence on the part of the Lookouts on the ZIM MEXICO III in that they did not maintain a proper lookout by sight in accordance with Rule 5. The bridge team could see the lights from the LEE III from over 460 feet away moments before impact. Had the Lookouts been maintaining a proper visual lookout they may have seen the lights of the LEE III that same distance forward of the bow of the ZIM MEXICO III. There would have been little time, however, for them to relay the sighting to the bridge and for the bridge to react effectively considering the speed that the ZIM MEXICO III was making.

37. The speed of the LEE III at the moment of the casualty is not known. There is some information available, though, that helps shed light on this issue. The LEE III's speed after leaving Venice, LA, while transiting above Head of Passes ranged from an average of 12.2 knots between mile markers 8 and 7 Above Head of Passes (AHP), and a low of 8.0 knots between mile markers 5 and 4 AHP. It was between mile markers 5 and 4 AHP that the LEE III passed the COLUMBIA. While passing the COLUMBIA the LEE III expressed uncertainty over the situation and told the STONE BUCCANEER that he had slowed down.

38. The LEE III continued southbound in the channel and into Southwest Pass. It passed mile marker 2 Below Head of Passes at 04:52:49 and the collision occurred at mile marker 8 at 05:20:16. This means that the LEE III traveled the six statutory miles between mile markers 2 and 8 Below Head of Passes in 27 minute and 27 seconds. This works out to an average speed of 11.5 knots.

39. During the Hearing the Master estimated that the LEE III was traveling at 15 knots when he first saw it on radar. The Pilot estimated that it was going the same speed as the ZIM MEXICO III. The Pilot plotted the relative positions of the LEE III and the ZIM MEXICO III when he first spotted it on radar. He was also asked to plot the point of the collision (See IO Exhibit 57). At that moment in time, when the Pilot first spotted the LEE III on the radar, according to the Pilot's indicated positions on IO Exhibit 57, the ZIM MEXICO III was approximately twice the distance from the point of the collision

than the LEE III was.

40. It is the opinion of the Investigating Officer that the LEE III had significantly reduced its speed about one minute before the collision in accordance with Inland Rule 6(a)(ii), Rule 19(b) & (e), and Rule 8(e). The persuasive points are:

- The relative positions of the vessels, as plotted by the Pilot on IO Exhibit 57, showed that in the final two minutes before impact the ZIM MEXICO III traveled twice the distance over the ground than the LEE III did. This indicates that shortly before impact, the ZIM MEXICO III was traveling at twice the rate of speed over the ground that the LEE III was making, and
- Earlier that morning the LEE III slowed the vessel down when he was in doubt as he passed the COLUMBIA between mile markers 4 & 5 AHP. The Mate had agreed to a port-to-port pass, then hailed the COLUMBIA again but did not receive a response. The Mate expressed doubt/nervousness, and reduced the vessel's speed from an average of 10.4 knots to 8.0 knots.

The ZIM MEXICO III was known to be making 11.0 knots over the ground at the moment of impact, so the LEE III likely was making between five and six knots over the ground at the moment of impact.

41. There is evidence of negligence on the part of the Master of the LEE III in that the watertight doors on the LEE III were in the open position at the time of the collision. This is a violation of 46 CFR 174.210(e) and of the requirements outlined in the LEE III's Stability Letter dated September 16, 1998 (IO Exhibit # 12) which requires the doors to remain closed.

42. There appears to be a practice on the Lower Mississippi River whereby Pilots often use their Pilot designators to identify themselves when communicating with other vessels rather than the name of the vessel they are piloting. This does not appear to comply with FCC regulations at 47 CFR 80.331. This was not a factor in the collision between the LEE III and the ZIM MEXICO III, but it was noted during the investigation.

V. Recommendations

1. That the U. S. Coast Guard seek a change to the United States Code that would give the Coast Guard jurisdiction over First Class Pilot's licenses held by State Pilots. This jurisdiction should apply when the holder of U. S. Coast Guard issued First Class Pilot's license performs an act of negligence, misconduct, or violates a navigation law or regulation of the United States while serving as a State Pilot. The law should grant the Coast Guard jurisdiction over the license regardless of whether the license is required as a prerequisite for a State Pilot's License/Commission by any particular state.
2. That the Eighth Coast Guard District (m) issue a Safety Bulletin regarding the requirement that watertight doors are to be kept closed when a vessel is underway.
3. That the OCMi New Orleans, LA, open a civil penalty investigation to determine whether the Pilot or the Master of the ZIM MEXICO III violated any laws or regulations as noted in this report.
4. That the OCMi in New Orleans, LA, open a civil penalty investigation to determine whether the owners and operators of the ZIM MEXICO III violated any laws or regulations as noted in this report.
5. That the OCMi in New Orleans, LA, open a civil penalty investigation to determine whether the owner/operator of the LEE III violated any laws or regulations as noted in this report.
6. That the Coast Guard discuss pilotage issues with area industry organizations and send out an Information Bulletin regarding pilotage requirements for inspected vessels under 1600 gross tons as detailed in 46 CFR 15.812.
7. That the Coast Guard establish a policy guidance for the field regarding verification that operators of inspected vessels of less than 1600 gross tons sailing on pilotage waters have the required number of trips to serve as pilot. 46 CFR 15.812(d) requires Masters and Mates to provide the Coast Guard with documentation of proving compliance with pilotage trip requirements when asked.
8. That the various Pilot's associations and the Pilot Board of Examiners require all pilots to comply with the requirements of 47 CFR 80.331 in that all pilots should identify themselves by the name of the vessel they are piloting, rather than by their pilot designation. Failure to use the name of the vessel being piloted can create doubt in the mind of other vessel operators as to which vessel the Pilot is on.
9. That the Eighth Coast Guard District work with the FCC to conduct a study of VHF usage on the Lower Mississippi River to ensure industry compliance with 47 CFR 80.331, 33 CFR 26.03(e)(1) and 26.04(d). The study should include the use of handheld radios and their ability to receive and transmit effectively in Southwest Pass.

10. That the U. S. Coast Guard considers making a change to the regulations to prohibit the use of handheld radios on the Lower Mississippi River.
11. That the Pilot Associations and Board of Examiners attempt to identify any new technologies that would allow both the vessel and the Pilot to have their radios on Channel 67 at the same time without the two radios interfering with one another.
12. That the Board of Examiners identify and require Pilots to utilize portable radios that a pilot can easily retain on his or her person throughout a long transit up the river—one that will not have to be held in the hand at all times.
13. That both the Master and the Pilot of the ZIM MEXICO III attend Bridge Resource Management training.
14. That the Eighth Coast Guard District (m) send a chart change in to NOAA to move the private aid to navigation that is currently charted as being in the navigation channel across from LT 19 (Fl R 4s 15ft), out of the channel.
15. That the Eighth Coast Guard District (l) review this report for possible criminal action against the ZIM MEXICO III Master and Pilot and against Ocean Runner under 18 USC 1115 and other laws.
16. That the U. S. Coast Guard District review its licensing regulations for First Class Pilot's licenses and considers developing a tiered tonnage system for pilotage endorsements. The tonnage of the vessels that a Pilot is authorized to serve on as a pilot should directly reflect the tonnage of the vessels that the pilot has gained both his qualifying sea service on and his required round trips on.