



UNITED STATES COAST GUARD

INVESTIGATION INTO THE CIRCUMSTANCES
SURROUNDING THE COLLISION BETWEEN THE
PASSENGER VESSEL
NOORDAM (NA)

AND THE

FREIGHT VESSEL
MOUNT YMITOS (MT)

OFF SOUTHWEST PASS IN THE GULF OF MEXICO ON
NOVEMBER 6, 1993, WITH MINOR INJURIES, NO LOSS
OF LIFE AND NO POLLUTION



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Commandant's Action

on

The Marine Board of Investigation convened to investigate the circumstances surrounding the collision between the passenger vessel NOORDAM (NA) and the freight vessel MOUNT YMITOS (MT) off Southwest Pass in the Gulf of Mexico on November 6, 1993, with minor injuries, no loss of life or pollution.

COMMENTS ON CONCLUSIONS

Conclusion 16: In the past, the Coast Guard has considered establishing a Vessel Traffic System (VTS) in the Southwest Pass location. Had a VTS been in operation, this casualty may have been prevented.

Comment: I concur with this conclusion. The 1991 Port Needs Study (Vessel Traffic Service Benefits) studied those U.S. ports in need of new, expanded, or improved VTS systems. New Orleans ranked first out of 23 ports and zones studied in terms of benefits and cost from a Federally (Coast Guard) operated VTS. As a result, New Orleans is one of two lead ports (along with Los Angeles/Long Beach) for installation of a state-of-the-market VTS 2000 system. The area of the confluence of the Passes and their approaches to the Lower Mississippi River (LMR) are included in the eventual VTS 2000 system coverage area.

Although this casualty might have been prevented, no vessel traffic management system can completely eliminate the risk of collision. This responsibility remains with the master and the pilot.

ACTION ON RECOMMENDATIONS

Recommendation 1: That the International Maritime Organization (IMO) be provided with a copy of this investigation. The Board recommends that the IMO, in its current effort to revise the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), require officers of the watch be trained in Bridge Resource Management (BRM) and other appropriate disciplines that could be used to prevent the situations found by the Board to be contributing to this casualty including:

- a. An inordinate number of watchstanding and non-watchstanding personnel on the bridge;
- b. The preoccupation of watchstanders with port arrival and other shipboard functions that detract from attention to matters that relate directly to the safe navigation of the vessel;
- c. Communication problems caused by language/accident differences between vessels;
- d. Lax radio procedures;
- e. The over reliance on electronic navigation equipment; and
- f. The failure to fully use radar and ARPA, as well as appreciate its limitations.

Recommendation 2: That in the absence of an international standard, consideration be given to pursuing statutory authority to require that officers of the watch on foreign passenger ships entering U.S. waters be trained in BRM and other appropriate disciplines.

Action: I concur with these recommendations. A copy of this report will be forwarded to the IMO. Bridge Resource Management (BRM) training has merit, and to promote this training Commandant (G-MVP) has approved several BRM courses and granted mariners equivalent sea service credit for course completion. The Marine Board of the National Research Council is completing a study to assess the role of shiphandling simulation in the professional development of mariners responsible for vessel navigation and piloting and determine its utility for bridge team management, marine education, training and licensing programs. Upon completion of this simulator study, mandated by section 4111 of the Oil Pollution Act of 1990, Commandant (G-MVP) will be in a better position to propose requiring BRM training.

Internationally, the U.S. has submitted a note to the IMO proposing the development of guidance on the principles and concepts of BRM training. The U.S. is also advocating a new provision in the STCW which will require BRM training. In the meantime, some companies have chosen voluntarily to have their crews trained in BRM. If enough shipping companies follow this lead, there will be little undue hardship placed upon the industry when this training becomes required by regulation. The implementation of BRM training will become easier as training becomes more available and industry acceptance becomes more widespread.

Recommendation 3: That based on this casualty, the Commandant of the Coast Guard consider, through IMO, implementation of a mandatory traffic separation scheme in lieu of the voluntary safety fairways in the area south of the Southwest Pass Entrance Lighted Buoy SW.

Action: I do not concur with this recommendation. Shipping safety fairways have been in place in the Gulf since the 1950's

and serve a similar function to traffic separation schemes. Although they are not separated into opposing traffic lanes, accepted local practice and the Rules of the Road dictate that each vessel keep to the starboard side of the fairway.

In addition, a Coast Guard proposal to IMO for a traffic separation scheme would be an inefficient and premature course of action at the present time. The time frame for such a project, from initiation of the required Port Access Route Study to implementation of the proposed separation scheme would be at least three years, and would be a recommended routing measure only. Work is already in progress at IMO on establishment of procedures to be followed in developing mandatory routing measures. This entails a SOLAS amendment and an amendment to the General Provisions on Ships' Routing, both of which are well underway. Implementation of mandatory routing may be possible as soon as 1998 or 1999. When mandatory routing becomes available as an option, we will consider the feasibility of developing a proposal for the Mississippi River Passes. However, given the lapses in prudent navigational practice that took place prior to the collision, I believe that it is unlikely that a mandatory traffic separation scheme would have prevented this casualty.

Recommendation 4: That the Commandant consider this casualty in the overall assessment of the need for a VTS installation at Southwest Pass. Pending action on a VTS decision or installation, the Board recommends that the Commandant develop an interim method for providing mariners with information regarding inbound and outbound vessels in the vicinity of Southwest Pass.

a. The Board further recommends that the Commandant seek recommendations for interim alternatives from the Captain of the Port New Orleans in conjunction with the American Pilots Association or local waterway users. Alternatives that should be considered include but are not limited to: broadcast or other notifications by the local pilots; notification by local pilots on a request-only basis; and periodic safety signal (SECURITY) calls by vessels transiting the area.

b. The Board also recommends that the National Oceanographic and Atmospheric Administration (NOAA) modify Volume 5 of the U.S. Coast Pilot to advise mariners of any new notification system or safety signal requirements.

Action: I partially concur with this recommendation. This casualty and casualties of this nature (i.e., VTS-addressable casualties) are considered when any port is studied for assessment of VTS benefits. The 1991 Port Needs Study analyzed the nature and causes of several VTS-addressable casualties in the New Orleans study zone in order to quantify navigational risk and VTS benefits and costs for comparison purposes. The study found the area of Southwest Pass and approaches to Southwest Pass to have a concentration of VTS-addressable incidents over the ten year period of case analysis. The determination of navigational

risk in this area was considered during the development of the design of the VTS 2000 system for New Orleans and the Lower Mississippi River. Southwest Pass will be included in a subsequent phase of VTS 2000.

I do not believe that the mariner would be well served by an interim system which, due to resource constraints, might be unable to provide timely, relevant and accurate information. Only a properly staffed, equipped and functioning VTS will gain credibility with the New Orleans users. However, pending implementation of VTS 2000 in 1998/1999, Commandant (G-NVT) will correspond with the Captain of the Port New Orleans to explore interim alternatives for notifying vessels of other shipping traffic in the area.

Recommendation 5: That a copy of this investigation be provided to the governments of the Netherlands Antilles, the Netherlands, and Malta.

Action: I concur. Commandant (G-MMI) will forward a copy of this report to the above noted interested governments.



ROBERT E. KRAMEK
Admiral, U.S. Coast Guard
Commandant

PRELIMINARY STATEMENT

A Marine Board of Investigation was convened by order of the Commandant under the authority of Title 46, United States Code, Section 6301 (46 USC 6301), and the regulations thereunder to determine the cause of the subject collision. Public hearings were conducted on November 11, 16-20, and ~~21~~, 1993 in New Orleans, LA by a Coast Guard panel. Since the casualty occurred beyond the U.S. territorial seas, the owners of the NOORDAM challenged the authority of the National Transportation Safety Board (NTSB) to conduct a joint Coast Guard NTSB investigation. The NTSB was

therefore designated and accorded rights as a Party in Interest, as were both vessels' owners and operators; the chief and third officers of the NOORDAM; and the master of the MOUNT YMITOS. Further, in accordance with International Maritime Organization Assembly Resolution A.637(16), the governments of the Netherlands, Netherlands-Antilles and Malta were offered the opportunity to participate in the investigation. While representatives from the Shipping Directorates of the Netherlands, and the Netherlands-Antilles attended the public hearings, they chose not to actively participate in the proceedings.

FINDINGS OF FACT

SUMMARY

1. At 2042 CST (all times Central Standard Time) on November 6, 1993, the passenger ship NOORDAM, enroute to New Orleans from Cozumel, Mexico, and the loaded bulk carrier MOUNT YMITOS, outbound from the Mississippi River en route to St. Petersburg Russia, collided approximately two miles south of the Southwest Pass Entrance Lighted Buoy SW (LLNR 465/12595) in the Gulf of Mexico. The location according to a Global Positioning System (GPS) reading aboard the NOORDAM was 28 degrees 50.0 minutes North, 89 degrees 25.7 minutes West. The collision damaged both ships but, resulted in no serious personnel injuries or pollution.

WEATHER

2. Weather in the vicinity of the Southwest Pass entrance to the Mississippi River at 2040 hours on November 6, 1993 was dark with cloudy skies, no moonlight and a visibility of 10-12 miles. Winds were from the north-northeast at about 20-30 knots. The prevailing current was setting towards

the west-southwest at between 1-1/2 to 2 knots. Sea were approximately 8 to 9 feet.

DESCRIPTION

3. The M/V MOUNT YMITOS is a Maltese flag gearless bulk carrier built in 1983, 206.7 meters in length (678 feet), 33,186 gross tons, with direct-drive diesel propulsion (17,400 horsepower), and classed by Bureau Veritas. Engine commands are given via engine order telegraph. On the evening of the collision, the MOUNT YMITOS' drafts were 11.0 meters (36'1") forward and 11.3 meters (37'1") aft. The M/V NOORDAM is a passenger vessel built in 1984, with twinscrew controllable-pitch propulsion (29,368 horsepower), Netherlands-Antilles flag, 214.65 meters in length (704 feet), 33,933 gross tons, owned by HA Antillen, N.V. and operated by H.A.L. Westours of Seattle, Washington. Engine commands are by direct bridge control. The M/V NOORDAM's drafts at the time of the collision were 6.8 meters (22'4") forward and 7.9 meters (25'11 ") aft.

4. The MOUNT YMITOS, a conventional aft-hous bulk carrier, was equipped with two VHF radios, three radars, including a "Sperry-Rascar" ARPA (Automated Radar

Plotting Aid) radar, Shipmate's satellite navigation system, and the normal complement of navigation equipment. All equipment was operating properly November 6, 1993 with the exception of the course recorder, which had not been operating for several months. The still water speeds for the MOUNT YMITOS were 40 revolutions per minute (RPM) and 4.8 knots at dead slow; 50 RPM and 5.6 knots slow; 60 RPM and 6.1 knots at half ahead; and 85 RPM and 11.8 knots at full ahead maneuvering speed. The crew were Greek and Romanian nationals.

5. The NOORDAM was equipped with two VHF radios and four radars, of which one was a Krupp-Atlas 10-Centimeter ARPA radar, and a working course recorder. Speed control is exercised directly from the bridge, whereby the throttles adjust propeller pitch while shaft RPM remains relatively constant. Full sea speed was approximately 22 knots. Maneuvering speed full ahead at pitch "6" provides 14 knots; half ahead (pitch "3") is 9 knots; slow ahead (pitch "2") yields 7 knots; and dead slow ahead (pitch "1") yields 4.5 knots. A table on the bridge the NOORDAM at the maneuvering console indicates pitch versus speed from "all stop" through "full maneuvering speed." There is an automatic log program which reduces and increases speed automatically between "maneuvering full" and "sea speed, but does not print out on the engine bell printer. The ARPA radar was last serviced on September 16 and 23, 1993, with satisfactory results as reported by the attending servicing technicians. Testimony from the deck officers of the NOORDAM indicated that all navigation equipment was operating properly on the night of the collision. However, radar repair records and internal correspondence dating back to November of 1992, indicate that there was a continued history of required servicing of the Krupp-Atlas radars on the NOORDAM, with varied results. NOORDAM'S crew were Dutch officers and Indonesian seamen.

6. The MOUNT YMITOS logged the casualty as occurring at 2040. The NOORDAM recorded the time of collision as 2042. Testimony indicated that the timing

device on the NOORDAM's course recorder was approximately two minutes fast. For clarity, the times in this report are based on a collision time of 2042. The times as testified to by the crew of the MOUNT YMITOS have been adjusted in this report to take into account the 2 minute difference.

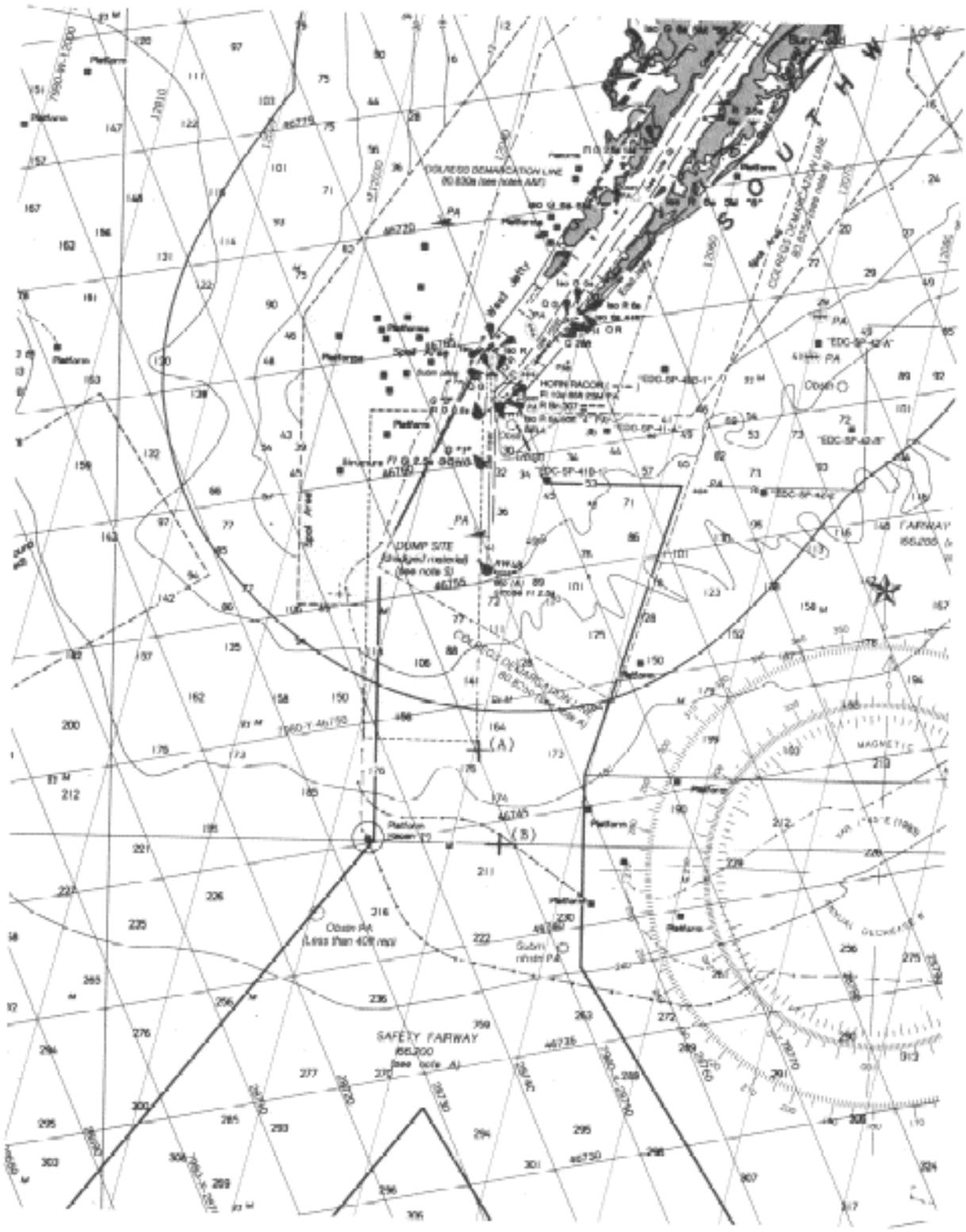
VESSEL APPROACH DETAILS

7. The area off Southwest Pass in the Gulf of Mexico is notable for the number of oil production platforms surrounding the approach. To enable vessels to enter and leaving the Mississippi River to stay clear of these platforms, a Safety Fairway in the shape of an inverted "Y" makes a two-mile-wide platform-free zone. The Safety Fairway is not a traffic separation zone and vessels are not required to use it, but it is typically used by deep-draft vessels on approach and departure from Southwest Pass.

8. The most prominent platforms around the fairway are the Southwest Pass Entrance Racon (LLNR 460/12590), known as the Racon "T" platform at the western corner of the "Y" junction and the five platforms just east of the eastern north-south border known as the "domino" platforms because of their pattern of one platform inside four corner platforms.

9. These platforms and the background platforms in West Bay create an array of fixed lights at night to aid an inbound navigator approaching either fairway leg; however, they are not so extensive as to prevent the lights of outbound ships from being seen visually in conditions of good visibility. The strobe light of the Southwest Pass Entrance Lighted Buoy SW and the flashing light of the Southwest Pass Entrance Light (LLNR 450/12650), known as the "Horn Racon" or Racon "K" platform, are prominent landmarks.

10. There is no traffic separation zone and the International Rules of the Road apply to navigation in this area with regard to meeting, crossing and overtaking situations absent any agreement to the contrary. The Inland Navigation Rules do not apply until vessels are within about 0.5 miles of the Southwest Pass Entrance Lighted Buoy SW.



Approach to Southwest Pass - Gulf of Mexico
 (A) Position plotted by M/V MOUNT YMITOS at the point of collision
 (B) Position recorded by M/V NOORDAM's GPS at the point of collision

11. At the approach to Southwest Pass, there is generally a westerly set to the current, described in Volume 5 of the United States Coast Pilot (USCP) as averaging about 1.7 knots to the southwest. On November 6, the current was about 2 knots, setting westerly with the current diminishing the farther one went south of the river mouth.

PILOTAGE

12. Pilots are required on foreign flag vessels (and U.S. vessels under register) by section 8501 of Title 46 of the United States Code (46 USC 8501). This requirement is spelled out in Volume 5 of the USCP. Specifically, pilotage is compulsory at the bar (mouth or entrance) and on the river for all foreign vessels over 100 tons. The USCP also states that pilots for Southwest Pass board vessels in areas up to 3 miles off the sea buoy, which in this case is the Southwest Pass Entrance Lighted Buoy SW. The USCP notes that the pilots request the pilot ladder be rigged on the lee side of the vessel.

CHRONOLOGY - MOUNT YMITOS

13. The MOUNT YMITOS departed Bunge Grain Elevator with 42,000 metric tons of soybean meal on board at 0925 on November 6th. The MOUNT YMITOS, with Bar Pilot Thomas Ittman on board, exited Southwest Pass at approximately 2008-2010. At 2011, speed was reduced from maneuvering full (11.8 knots) to slow ahead (5.6 knots), followed by dead slow ahead (4.8 knots) at 2015, steering a course to leave the Southwest Pass Entrance Lighted Buoy SW close to starboard. Ship's Officers on the bridge were Captain Georgios Fragoulis and Watch Officer Calin Podasca. Quartermaster Vasili Radu was the helmsman, and the pilot, Captain Ittman, was controlling the movement of the vessel. The chief officer and boatswain were on the forecabin.

14. Captain Ittman advised Captain Fragoulis that there would be several incoming vessels, and several were visible through the "domino" platform lights well out in the southeast fairway leg. One large incoming ship, the ALPHATANK, was close

to the sea buoy, and of immediate concern. Captain Ittman advised Captain Fragoulis that he talked to the vessel and arranged to meet it starboard to starboard, which would enable the MOUNT YMITOS to go slightly to port to make a lee for his disembarkation on the starboard side.

15. After leaving Southwest Pass and reducing speed to slow and dead slow, the MOUNT YMITOS steered a course of 170 degrees (all courses and bearings are "degrees true" unless otherwise noted). This was altered for several minutes to about 150 degrees in order to make a lee for Captain Ittman to depart the MOUNT YMITOS. The speed of the MOUNT YMITOS had been increased to slow ahead (5.6 knots) at 2023 in order to swing the vessel to make a lee, and reduced again to dead slow (4.8 knots) at 2025.

16. Third Officer Podasca first noticed an inbound passenger ship via binoculars prior to Captain Ittman's departure. The inbound passenger ship was the NOORDAM, although the watchstanders on the MOUNT YMITOS did not identify the vessel by name until after the collision. The third officer estimated that the inbound passenger ship was approximately 6 to 6.5 miles from his ship. Third Officer Podasca noted that Captain Fragoulis was busy with Captain Ittman, and did not immediately report the inbound passenger ship. The MOUNT YMITOS' speed was increased to slow ahead at 2027 at the pilot's request. Before disembarking, Captain Ittman entered the inbound vessels into the MOUNT YMITOS' ARPA, although neither Captain Fragoulis nor the third officer were aware that the pilot had entered the vessels. Captain Ittman departed the MOUNT YMITOS about 2 to 3/4 mile southeast of the Southwest Pass Entrance Lighted Buoy SW at approximately 2027. Third Officer Podasca testified that he then advised Captain Fragoulis of the presence of the inbound passenger ship at 2029. Captain Fragoulis testified that he did not recall the third officer reporting the visual contact. As soon as the pilot was off, Captain Fragoulis returned the MOUNT YMITOS to a course of 170 degrees. The MOUNT YMITOS' speed was reduced to

dead slow ahead at 2031 as the MOUNT YMITOS drew abreast of the ALPHATANI

17. Shortly after 2032 when the MOUNT YMITOS had cleared the ALPHATANI, Captain Fragoulis changed course to 190 degrees in order to sail down the west side of the safety fairway to meet inbound traffic. Although the third officer testified that he informed the master of the inbound passenger ship immediately after the pilot disembarked, Captain Fragoulis testified that he did not see the inbound passenger ship visually until the time he changed course from 170 to 190 degrees.

18. The lights of the inbound vessels in the southeast leg of the Safety Fairway - later identified as the PACIFIC TRIDENT, the CAPTAIN VENIAMIS and the NOORDAM - were plainly visible to the watchstanders on the MOUNT YMITOS. The inbound passenger ship was distinguishable among the three vessels and was observed well ahead of the other inbound vessels. The MOUNT YMITOS' watchstanders first began to track this vessel at a distance of about 2 to 2-1/2 miles. The master and the third officer saw the bright white house lights and range lights with the passenger vessel having a steady relative bearing to port of about 20 to 25 degrees. Captain Fragoulis expected the passenger vessel would turn to the north at the fairway junction and pass down the port side of the MOUNT YMITOS and was waiting for this course alteration. During this time, the MOUNT YMITOS remained on dead slow ahead at about 5 knots. Captain Fragoulis had decided that there was a crossing situation with the passenger vessel and the MOUNT YMITOS, as the stand-on vessel under the International Rules of the Road, had to maintain course and speed.

19. The MOUNT YMITOS and the NOORDAM were separated by 2.5 miles at approximately 2036. At that point, the third mate on the MOUNT YMITOS, Calin Podasca, entered the NOORDAM target into the ship's ARPA radar. The NOORDAM contact showed a true bearing 165 degrees, a speed of 17-18 knots, and a true

course of 325 degrees, with a CPA (Closest Point of Approach) of under 600 feet. The MOUNT YMITOS continued on course 190 degrees (making good approximately 200 degrees considering the set of the westerly current). The remaining two inbound contacts were well astern of the NOORDAM. Initially, only the bright white house lights and master range lights of the NOORDAM were visible, but at approximately 1 mile separation distance, the green side light was seen from the MOUNT YMITOS. The master of the MOUNT YMITOS continued to anticipate that the NOORDAM would come to starboard and pass down the MOUNT YMITOS' port side.

20. The watchstanders on the MOUNT YMITOS continued to watch the NOORDAM, which was coming from the southeast leg, but was not making the expected turn to starboard. When the NOORDAM came within 1 mile, Captain Fragoulis attempted to call the NOORDAM on VHF radio Channel 16. This transmission, as recorded by the Coast Guard prior to the collision at approximately 2040:08, was "Passenger Vessel, Passenger Vessel, Go to South Pass." The MOUNT YMITOS received no response to this transmission.

21. When the NOORDAM's bearing remained steady and the ship had not changed course as anticipated, the master of the MOUNT YMITOS again attempted to contact NOORDAM on VHF Channel 16. This transmission was also recorded by the Coast Guard prior to the collision at approximately 2040:50, saying "Passenger Vessel, Going to South Pass, I Turn Hard Starboard." The third officer, at the master's request, then went to the port bridge wing and flashed the Aldis Lamp in the NOORDAM'S direction. No response was obtained from the NOORDAM by radio or any other means, and there was no course change. The master of the MOUNT YMITOS then ordered hard starboard rudder, followed by "all stop" on the engine. The MOUNT YMITOS began to swing to starboard, but relatively slowly owing to the vessel's slow speed and loaded condition.

22. Once the starboard swing was established, the engine of the MOUNT YMITOS was ordered full astern at approximately 2041, approximately 1 minute before the collision. Just before the collision, the master of the MOUNT YMITOS noticed the NOORDAM swinging to port.

23. At the point of collision, which occurred at approximately 2042, the M/V MOUNT YMITOS was making about 3 knots, and had swung starboard from its course of 190 degrees to approximately 220-230 degrees. The MOUNT YMITOS master estimated that the NOORDAM had swung to port to an approximate course of 300 degrees. At approximately 2042, the port bow of the MOUNT YMITOS came into contact with the starboard aft midships of the NOORDAM.

CHRONOLOGY - NOORDAM

24. The NOORDAM entered the southeast leg of the Safety Fairway at 1945 while making a sea speed of approximately 18-19 knots.

25. The NOORDAM's radars were on the 12-mile scale. On watch were Second Officer Vincent Smit; his assistant, Fourth Officer Daniel Kuiper; the helmsman, Quartermaster Harijanto; and the lookout, Quartermaster Sahbran Salyo.

26. At approximately 1835, the NOORDAM had given its ETA (Estimated Time of Arrival) of 20 to the Southwest Pass pilot station. The ETA was the time that the vessel expected to be at the Southwest Pass Entrance Lighted Buoy SW to take on the pilot.

27. From 2008 to 2025, an automatic speed reduction program was in effect on the NOORDAM which gradually reduced the ship's speed from a sea speed of 18 knots to a maneuvering speed of approximately 15 knots.

28. From 1945 to approximately 2002, the NOORDAM steered 327 degrees in the southeast leg of the Safety Fairway:

thereafter, Second Officer Smit brought the NOORDAM to starboard to approximately 333 degrees in preparation for passing the two slow inbound vessels, the CAPTAIN VENIAMIS and the PACIFIC TRIDENT. The NOORDAM began to overtake these vessels on their starboard side at approximately 2010. There was no communication between the NOORDAM and the two vessels during the overtaking situation.

29. At approximately 2000, Second Officer Smit called the pilot station and learned that the ETA of the two ships ahead of the NOORDAM were 2100 and 2115 respectively, and was informed that the NOORDAM would be the first of the inbound ships to pick up the pilot. Neither Smit nor anyone else on the NOORDAM asked about the existence of any outbound vessels, nor were they told of any other vessel traffic.

30. The designated lookout, Sahbran Salyo who had positioned himself next to the starboard bridge window since coming on watch at 2000, departed the bridge shortly thereafter with the permission of Second Officer Smit. Sahbran Salyo was sent to retrieve evening coffee and sandwiches from the galley for the bridge crew as was customary. He returned to the bridge at approximately 2010, and reported in to Second Officer Smit. At approximately 2015, Second Officer Smit ordered the lookout, Sahbran Salyo to unlash the anchors in preparation for entering port. The lookout returned to his position on the starboard side of the bridge at approximately 2020. Quartermaster Salyo indicated that his night vision was slow to return once he arrived back on the bridge. He further indicated that he did not see the MOUNT YMITOS visually prior to the collision until the chief officer ordered the NOORDAM "Hard Port

31. From approximately 2002 to 2015, the NOORDAM steered approximately 333 degrees as shown on the course recorder in order to overtake the two ships on NOORDAM's port side. Of the three vessels, the slower PACIFIC TRIDENT was to the west, the slightly faster CAPTAIN

VENIAMIS in the middle and the NOORDAM to the east.

32. During the overtaking, the CAPTAIN VENIAMIS apparently came to starboard, and NOORDAM, from 2015 to 2021, came to course 340 degrees in order to keep clear of the CAPTAIN VENIAMIS.

33. The course alteration to 340 degrees put the NOORDAM approximately one half mile to the east of its track and slightly outside the eastern boundary of the southeast safety fairway. This caused Second Officer Smit sufficient concern that he ordered Third Officer Veldhoen, who had been on the bridge preparing to take over the navigating watch since approximately 2010, to find the master or chief officer. A few minutes later, Third Officer Veldhoen returned, followed by the chief officer, Arnoldus Broekhoven, at about 2020. At this time, the "domino" platforms were dead ahead of the NOORDAM and the NOORDAM was to the east (right) of its intended track.

34. The NOORDAM's chief officer noted that the overtaken vessels were dropping astern and advised Smit to return to the original course. Second Officer Smit changed course to the left to approximately 325 degrees shortly after 2020. The chief officer then told Smit to come farther left, to resume base course and intended track line. The NOORDAM was then steadied on 325 degrees.

35. NOORDAM was still to the right of track, and the platforms ahead, which are brightly lighted, were closer on the bow than they would have been during a normal approach had no overtaking situation taken place.

36. Before the scheduled watch change at 2030, both Smit and Broekhoven looked in the radars, alternately checking the six and twelve mile scales. They saw platforms ahead, and Smit, before the end of his watch, saw Southwest Pass Entrance Light. However, neither of them saw the MOUNT YMITOS on radar or the inbound vessel, the ALPHATANK. The ALPHATANK, an 815 foot, 105,000 deadweight-ton tankship, was

about 1 mile south of the MOUNT YMITOS in the north-south fairway at about the same time

37. At 2030, the watch changed on the NOORDAM. Third Officer Paul Veldhoen relieved Vincent Smit and Cadet Eelke Hoekstra replaced Fourth Officer Daniel Kuiper. Cadet Hoekstra and Fourth Officer Kuiper were acting as observers and assistants to the designated watch officers. The lookout and helmsman who had come on watch at 2000, Sahbran Salyo and Harijanto, remained on watch. Each watch includes two quartermasters; one serves as a lookout, the second serves as a helmsman. The quartermasters stand eight hours of watch per day in a four hours on eight hours off watch rotation. Due to the number of officers available aboard the NOORDAM, the watch officers are only required to stand six hours' watch per day - four hours in the morning, and two hours in the afternoon/evening.

38. At the 2030 change of watch, as was customary, the mate coming on duty and the mate going off duty exchanged general information about the status of the watch. These discussions were generally in Dutch, the native language of the ship's officers. No information regarding moving radar contacts was passed along since none had been observed. As was customary on the NOORDAM, no announcement or other notification was given to the helmsman or the lookout, who were both Indonesians, regarding the change of the officer in charge of the watch.

39. Between 2030 and 2036, Broekhoven and Veldhoen checked the radars occasionally, using the six mile scale. Broekhoven was planning the turn from 325 degrees to 000 degrees to coincide with bringing the Racon "T" Platform abeam at 1.5 mile to port. Both Veldhoen and Broekhoven used the 10 centimeter and 3 centimeter radars to check the distance of the domino platforms, and particularly the bearing and range of the Racon "T". They were not using the radars for collision avoidance and observation of moving targets, and did not attempt to correlate every fixed target contact in the radar with fixed

platforms observed visually to see if any were underway contacts rather than fixed platforms

40. Although Third Mate Veldhoen assumed control of the bridge watch at 2030, standard procedure called for the master or chief officer to take over the watch at the "end of sea voyage." The declaration of "end of sea voyage" and associated action is a customary procedure on Holland America Lines vessels, and marks the beginning of the approach to rivers or harbors. By prior arrangement with the master, the chief officer was scheduled to take over the bridge watch at the "end of sea voyage" on the evening of November 6th. Chief Officer Broekhoven had observed one arrival from seaward at Southwest Pass, that being on the NOORDAM in October 1998. Chief Officer Broekhoven, who had remained on the bridge since 2018, took over the watch at 2036, the time declared "end of sea voyage." "End of sea voyage" is a point of convenience determined by the watch officer. On this voyage it corresponded to a position 1.5 to 1.7 mile from the RACON "T" platform, and was determined by the chief officer, consistent with his taking over in-port arrival maneuvering watch. Arrival at this voyage juncture requires the watch officer to fix the vessel's position, complete his log entries and notify the engine room. Third Officer Veldhoen was occupied with these tasks for the several minutes surrounding 2036. Again, as was customary on the NOORDAM, no announcement or other notification was given to the helmsman or the lookout regarding the change of the officer in charge of the watch at "end of sea voyage."

41. As the NOORDAM approached the "Junction" east of the Racon platform, Chief Officer Broekhoven announced that he would make the turn to the north. He ordered ten degrees right rudder at about 2037 and the NOORDAM began swinging to starboard from 325 degrees, intending to come to course 000 degrees. There were seven other persons on the bridge of the NOORDAM at this time in addition to the chief officer, who was in control of the vessel - three other licensed officers (one on duty, and two on duty), one cadet, two

quartermasters and the chief officer's wife. Despite the number of personnel on the bridge at this time, no one had seen the MOUNT YMITC visually or on radar.

42. As the NOORDAM was swinging to the right, Fourth Officer Daniel Kuiper, who was not on duty, was the first to notice the lights of a vessel off the starboard side of the NOORDAM. This was between one and two minutes before the time of collision. He saw a red light that he estimated was approximately 2-3 points off the NOORDAM'S starboard bow - a point being 11.25 degrees of arc. Fourth Officer Kuiper immediately uttered a curse word which attracted the attention of others on the bridge. Third Officer Veldhoen, upon looking to starboard, also saw the light and estimated it was 2-3 points off the NOORDAM starboard bow. Chief Officer Broekhoven estimated 3-4 points.

43. Upon seeing the lights on the starboard side of the vessel, the chief officer ordered the helmsman to steady the vessel's swing to starboard and steady the vessel's course. The NOORDAM had already started to swing from course 325 degrees to course 000 degrees. The helmsman stopped the swing as ordered and steadied the NOORDAM on course 340 degrees. Chief Officer Broekhoven saw a collection of white lights off the starboard bow. The chief officer and Third Officer Veldhoen at first thought the lights might be the lights of a platform. When the chief officer quickly viewed the lights with binoculars, he testified that he saw a green light among the white lights. He did not distinguish any range lights. His quick evaluation was that there was a vessel on his starboard side and since he saw a green light, the vessels would safely pass starboard to starboard.

44. Chief Officer Broekhoven asked Third Officer Veldhoen to take a quick bearing on the lights off the starboard bow. Third Officer Veldhoen, who was on duty, moved towards the center of the bridge, took a few steps to starboard to better view the lights. After observing them for 5-15 seconds, he told the chief officer that the lights appeared to be moving slightly to the right. He based this

on his viewing of the lights visually without the aid of an azimuth circle or other bearing finder type of device. Chief Officer Broekhoven looked at the light again and saw a red light among the white lights. This was approximately 1 minute before the collision. The chief officer quickly decided to turn away from the danger and ordered left full rudder. A few seconds later, he placed the port throttle at stop, in order to accentuate the NOORDAM's turn to port.

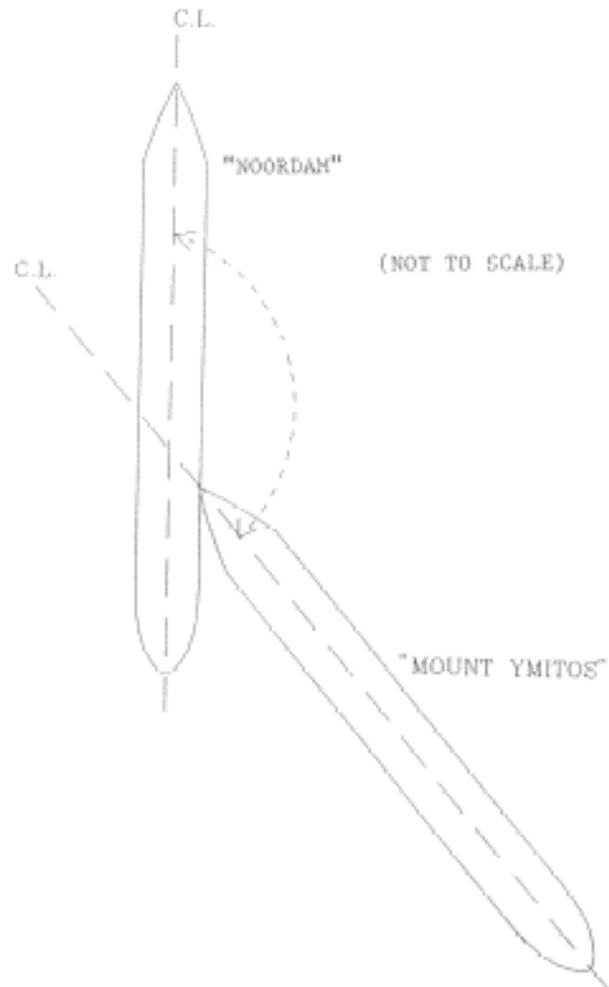
the collision by radio and Aldis lamp. Personnel on the NOORDAM, who did not see the MOUNT YMITOS until about two minutes before the collision, did not attempt to contact the MOUNT YMITOS and did not hear radio calls from the MOUNT YMITOS on Channel 16, nor did the watchstanders on the NOORDAM see the Aldis Lamp flashes from the MOUNT YMITOS.

EVENTS AT COLLISION

45. The NOORDAM began to swing left from course 340 degrees. Several of NOORDAM's officers ran the starboard bridge wing and saw the bow of the MOUNT YMITOS pass the bridge wing. One of those on the bridge wing, off-duty Third Officer Tammeling, yelled "starboard" when he realized that the vessels were going to collide. He felt that turning the NOORDAM to starboard once the MOUNT YMITOS' bow was nearer the NOORDAM's stern would kick the NOORDAM's stern to port in time possibly avoid the collision. The chief officer, upon hearing the shouted "starboard," ordered the helm hard starboard but the collision occurred just seconds later before the helmsman had time to react to the helm order.

46. The collision took place at approximately 2042 with the MOUNT YMITOS' port bow impacting the NOORDAM in the starboard aft midships area. The NOORDAM was still swinging to port and making approximately 14 knots. The MOUNT YMITOS, having backed for about two minutes, was making approximately 3 knots. The NOORDAM was heading approximately 300 degrees when the collision occurred and the MOUNT YMITOS was heading approximately 230 degrees. The approximate angle of collision was 110 degrees measured from forward, and 70 degrees measured from aft.

47. Neither vessel sounded whistle signals. The watchstanders on the MOUNT YMITOS attempted to contact the NOORDAM prior to



Angle between the vessels at the time of collision

EVENTS AFTER COLLISION

48. Following the collision, the vessels separated rapidly with both vessels heading approximately north and northwest, drifting westerly across the Safety Fairway just north of the Racon "T" platform. The master of the NOORDAM was on his vessel's bridge within one minute of the collision. Within five minutes, he had received reports from the crew quarters where the damage had occurred. Although there was water from a ruptured fire main in the crew cabin spaces and passageways, the initial and subsequent assessments indicated that the damage was above the water line and localized. One crew member was trapped in her cabin when the door to the cabin became jammed due to the force of the collision. Crew members responding to the casualty used a fire axe to dislodge the door and rescue the trapped crew member. No passengers were injured or affected by the impact. Several announcements were made over the public address system from the bridge regarding the nature of the casualty.

49. The NOORDAM sustained impact damage on its aft starboard side in way of frames 9-1/2 to 41-1/2 extending over four strakes. All of the damage was above the waterline. The MOUNT YMITOS suffered damage to its port bow and bulwarks well above the waterline.

50. The master of the MOUNT YMITOS plotted the position of the collision at latitude 28 degrees 50.9 minutes North, longitude 89 degrees 25.95 minutes West, about 1.8 miles directly south of the Southwest Pass Entrance Lighted Buoy SW in the middle of the north-south safety fairway. The NOORDAM recorded the position of the collision via GPS as latitude 28 degrees 50.0 minutes North longitude 89 degrees 25.7 minutes West, about 2.0 miles directly south of the Southwest Pass Entrance Lighted Buoy SW in the middle of the north-south Safety Fairway.

51. There was no pollution as a result of this collision and no injuries on the MOUNT YMITOS. Aboard the NOORDAM, nine crew members suffered slight injuries (cuts,

scratches and bruises) which were treated by the ship's doctor. There were no serious injuries.

52. Following the collision, both vessels proceeded toward the Southwest Pass anchorage. Between approximately 2115 and 2130, the ships were heading westerly close to each other and had to communicate as to how each would pass. NOORDAM was without its starboard engine after the collision but later reached the Southwest Pass anchorage under power from its port engine. The starboard shaft controllable pitch propeller (cpp) hydraulic piping runs outboard along the hull of the NOORDAM and was damaged as a result of the collision. The starboard engine was purposely shut down when it failed in the ahead pitch position, and could not be controlled.

53. Both ships reported the collision to the Coast Guard via VHF. The NOORDAM proceeded inbound with tug escort the following morning followed a few hours later by the MOUNT YMITOS.

54. Temporary repairs were performed to the bow of the MOUNT YMITOS with the approval of Bureau Veritas in order to proceed with its cargo to Russia.

55. Permanent repairs were performed to the NOORDAM at Avondale Shipyard renewing the side shell plating and internals. Interior finish work was deferred for completion by a riding repair crew. The NOORDAM's propulsion train was not damaged by the collision; the starboard shaft was stopped immediately following the collision because a controllable pitch propeller (cpp) hydraulic line was severed in the area of collision damage.

56. The collision was witnessed by the CAPTAIN VENIAMIS and the PACIFIC TRIDENT; these observers were about 2 miles south of the collision at the time of the casualty. Both observed the NOORDAM heading northerly after overtaking them, and observed the MOUNT YMITOS heading southerly, then swinging southwesterly just before the collision, as NOORDAM swung to port at the time of collision.



Starboard quarter of the M/V NOORDAM



Damaged bow of the M/V MOUNT YMITOS

CONCLUSIONS

1. The proximate cause of the casualty was the failure of Chief Officer Broekhoven, the person in charge of the watch on the NOORDAM at the time of the casualty, to maintain a vigilant watch in that he did not detect the presence of the MOUNT YMITOS visually or on radar until the MOUNT YMITOS was less than 1 mile away, less than 2 minutes before the collision.

2. Contributing to the cause of the casualty was the failure of Second Officer Smit, the person in charge of the 1630 to 2030 watch on the NOORDAM and Fourth Officer Kuiper, his assistant watch officer to maintain a vigilant watch in that they did not detect the presence of the MOUNT YMITOS visually or on radar during their watch and therefore could not report same when relieved at 2030.

3. Contributing to the cause of the casualty was the failure of Third Officer Veldhoen on the NOORDAM to maintain a vigilant watch in that he did not see the MOUNT YMITOS visually or on radar during his watches. Third Officer Veldhoen was the person in charge of the watch from 2030 to 2036 and was the assistant watch officer from 2036 until the time of collision at 2042.

4. Contributing to the cause of the casualty was the preoccupation of the bridge watchstanders on the NOORDAM with the activities and required paperwork related to the vessel's arrival at Southwest Pass and eventually New Orleans.

5. The number of personnel (both watchstanding and non-watchstanding) on the bridge of the NOORDAM between 2020 and the time of the collision may have raised the complacency level and lowered the attentiveness of the bridge watchstanders with regard to maintaining a dedicated visual and radar watch.

6. The presence of shoreside lights and lights from platforms in the vicinity of the entrance Southwest Pass made it more

difficult for inbound vessels to visually distinguish the presence of other vessels in the vicinity of Southwest Pass. A more vigilant watch was called for on the inbound NOORDAM. A more vigilant watch on the NOORDAM may have detected the presence of the MOUNT YMITOS in time to have avoided this casualty.

7. The presence of platforms made it more difficult to readily distinguish the presence of vessel targets on the NOORDAM's radar. A dedicated radar observer on the NOORDAM with no other duties could have distinguished vessel targets from the platforms and buoys on the radar screen. Such an observer may have acquired the MOUNT YMITOS on radar in time to prevent this casualty.

8. The relief of the person in charge of the watch on the NOORDAM twice - once at 2030 and again at 2036 - at a critical point in the navigation of the vessel, i.e., the approach to the Southwest Pass Entrance Lighted Buoy SW in a busy vessel traffic area, detracted from the situational awareness of the bridge watchstanders and may have contributed to the cause of the casualty.

9. The reliefs of the persons in charge of the watch on the NOORDAM were not made known to the lookout and to the helmsman at 2030 and 2036 and was common practice on the NOORDAM. However, this did not contribute to the cause of the casualty.

10. There is evidence of violations of the following International Rules of the Road:

a. M/V NOORDAM.

(1) Rule S in that the persons in charge of the watch on the NOORDAM failed to ensure that a dedicated lookout was on watch during the forty-five minutes preceding the casualty. Although the person assigned as lookout was on the bridge up to 22 minutes (based on a 2020 time of return to the bridge) before the casualty occurred, his night vision

had been compromised when he left the bridge to remove the anchor lashings. The failure of the NOORDAM to have a proper, dedicated and fully functional lookout contributed to the cause of this casualty.

(2) Rule 6 in that the NOORDAM was proceeding at excessive speed given the visual conditions (dark with shoreside background lights and multiple platform lights) and the inexperience of the chief officer with the approach to Southwest Pass. However, any professional, attentive bridge watch on the NOORDAM should have been capable of detecting the MOUNT YMITOS visually and/or on radar in ample time to prevent the casualty even at maneuvering speed.

(3) Rule 7(b) in that the NOORDAM bridge watchstanders failed to properly use radar and ARPA to detect the MOUNT YMITOS. Had the NOORDAM detected and tracked the MOUNT YMITOS on radar, this casualty may have been prevented.

(4) Rule 34(d) in that the NOORDAM failed to sound the danger signal just prior to the casualty. The failure of the NOORDAM to sound the danger signal did not contribute to the cause of this casualty.

b. M/V MOUNT YMITOS.

(1) Rule 5 in that the MOUNT YMITOS failed to have a dedicated lookout on watch. The failure of the MOUNT YMITOS to have a proper, dedicated lookout did not contribute to the cause of this casualty.

(2) Rule 7(b) in that the MOUNT YMITOS failed to properly utilize the full capabilities of the installed ARPA radar system to determine course speed and CPA of the NOORDAM. Moreover, the master or the third officer on the MOUNT YMITOS inadvertently removed the ARPA information that the pilot had entered prior to his departing the MOUNT YMITOS regarding inbound vessels including the NOORDAM. The fact that the bridge watchstanders on the MOUNT YMITOS did not use all radar and ARPA capabilities available to them did not contribute to the

cause of this casualty in that the master and third officer observed the close quarters situation with NOORDAM visually and reacted accordingly.

(3) Rule 17 in that the MOUNT YMITOS was required to maintain speed at course 170 or attempt to make other passing arrangements with the NOORDAM. The MOUNT YMITOS' master was advised early on by the pilot that there was inbound traffic. Despite the master's testimony that he didn't recall, the MOUNT YMITOS's third officer advised the master of the visual presence of the NOORDAM several minutes before the turn from 170 to 190. Once the MOUNT YMITOS passed the inbound ALPHATANK starboard to starboard, the master of the MOUNT YMITOS should have determined the situational status of his vessel with regard to the NOORDAM prior to changing course from 170 to 190. The master of the MOUNT YMITOS visually determined that there was a crossing situation with the NOORDAM after he came to course 190. Had this assessment been made before the turn from 170 to 190, this casualty may have been prevented.

(4) Rule 34(d) in that the MOUNT YMITOS failed to sound the danger signal just prior to the casualty. Had the MOUNT YMITOS sounded the danger signal, the NOORDAM may have been alerted to the presence of the MOUNT YMITOS in time to take actions to prevent the casualty.

11. The use of improper radio procedures by the master of the MOUNT YMITOS in calling the NOORDAM may have contributed to the cause of the casualty. Additionally, the heavy accent of the master of the MOUNT YMITOS may also have caused the bridge watchstanders on the NOORDAM to fail to recognize the master's radio calls as being directed at a passenger vessel. The master of the MOUNT YMITOS incorrectly calling to the "passenger vessel going South Pass" may also have contributed to the NOORDAM's failure to recognize or actively listen to the radio transmissions of the MOUNT YMITOS. South Pass is approximately 20 miles east of Southwest Pass.

12. During the overtaking situation with the M/ CAPTAIN VENIAMIS as the NOORDAM approached Southwest Pass, it would have been prudent for the NOORDAM to contact the CAPTAIN VENIAMIS via radio, especially when the CAPTAIN VENIAMIS came to starboard. Any such radio transmission by the NOORDAM could have been overheard by the MOUNT YMITOS. It is possible that this would have allowed the MOUNT YMITOS to call the NOORDAM by name when the vessels were approaching their "in extremis" situation which may have alerted the NOORDAM to the presence of the MOUNT YMITOS in time to prevent the casualty.

13. The actions of the chief officer of the NOORDAM in coming hard to port just prior to the collision may have prevented more serious damage to the two vessels.

14. Had the master of the MOUNT YMITOS come hard left instead of hard right when the vessels were "in extremis", this casualty may have been prevented assuming that the NOORDAM's detection of, and reaction to the presence of, the MOUNT YMITOS remained the same.

15. Although not required, had the pilot station or pilot on the MOUNT YMITOS advised inbound vessels, including the NOORDAM, of the presence of the outbound MOUNT YMITOS, this casualty may have been prevented.

16. In the past, the Coast Guard has considered establishing a Vessel Traffic System (VTS) in the Southwest Pass location. Had a VTS been in operation, this casualty may have been prevented.

RECOMMENDATIONS

1. That the International Maritime Organization (IMO) be provided with a copy of this investigation. The Board recommends that the IMO, in its current effort to revise the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), require officers of the watch be trained in Bridge Resource Management (BRM) and other appropriate disciplines that could be used to prevent the situations found by the Board to be contributing to this casualty including:

a. An inordinate number of watchstanding and non-watchstanding personnel on the bridge;

b. The preoccupation of watchstanders with port arrival and other shipboard functions that detract from attention to matters that relate directly to the safe navigation of the vessel;

c. Communication problems caused by language/accents differences between vessels;

d. Lax radio procedures;

e. The overreliance on electronic navigation equipment; and

f. The failure to fully use radar and ARPA, as well as appreciate its limitations.

2. That in the absence of an international standard consideration be given to pursuing statutory authority to require that officers of the watch on foreign passenger ships entering U.S. waters be trained in BRM and other appropriate disciplines.

3. That based on this casualty, the Commandant of the Coast Guard consider,

through IMO, implementation of a mandatory traffic separation scheme in lieu of the voluntary safety fairways in the area south of the Southwest Pass Entrance Lighted Buoy SW.

4. That the Commandant consider this casualty in the overall assessment of the need for a VTS installation at Southwest Pass. Pending action on VTS decision or installation, the Board recommends that the Commandant develop an interim method for providing mariners with information regarding inbound and outbound vessels in the vicinity of Southwest Pass.

a. The Board further recommends that the Commandant seek recommendations for interim alternatives from the Captain of the Port New Orleans in conjunction with the American Pilots Association and local waterway users. Alternatives that should be considered include but are not limited to: broadcast or other notifications by the local pilots; notification by local pilots on a request-only basis; and periodic safety signal (SECURITY) calls by vessels transiting the area.

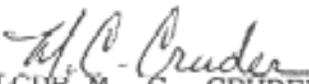
b. The Board also recommends that NOAA (the National Oceanographic and Atmospheric Administration) modify Volume 5 of the U.S. Coast Pilot to advise mariners of any new notification system or safety signal requirements.

5. That a copy of this investigation be provided to the governments of the Netherlands Antilles, the Netherlands and Malta.

6. That this investigation be closed.


CAPT P. A. TURLO, USCG
Chairman


LCDR MATTHEW G. WILLIAMS, USCG
Member


LCDR M. C. CRUDER, USCG
Member and Recorder