National Transportation Safety Board

Marine Accident Brief

Collision of Bulk Carrier *Aris T* with Tank Barge *WTC 3019*, Towing Vessel *Pedernales*, and Shoreside Structures

Accident no.	DCA16FM022
Vessel names	*Aris T*, *WTC 3019*, and *Pedernales*
Accident type	Collision
Location	Lower Mississippi River, mile marker 125.2, Norco, Louisiana
Date	January 31, 2016
Time	1953 central standard time (coordinated universal time – 6 hours)
Injuries	Two minor
Property damage	>$60 million est.
Environmental damage	None reported
Weather	Visibility 8 miles, winds south-southeast at 9 mph with gusts to 24 mph, air temperature 65°F, water temperature 44°F, some local surface fog.
Waterway information	Mississippi River near New Orleans, Louisiana: river stage 15.03 feet and falling, current at 3–4 knots, discharge (flow) rate 955,000 cubic feet per second.

On January 31, 2016, at 1953 local time, bulk carrier *Aris T* collided with tank barge *WTC 3019*, towing vessel *Pedernales*, and two facility structures, all of which were located on the left descending bank of the Mississippi River between mile marker (mm) 125.2 and mm 126.0 at Norco, Louisiana. Also damaged during the collision were one additional shoreside structure, another towing vessel, and two other tank barges, bringing the total damage cost to more than $60 million. No pollution resulted from the accident; however, two dock workers reported injuries.

Postaccident image of the *Aris T* anchored on the Mississippi River at Grand View Reach Anchorage, mm 147.0, near Gramercy, Louisiana. (Photo by US Coast Guard)

* Unless otherwise noted, the miles in this report are statute miles.

Note: This report was reissued on April 3, 2017, with corrections to page 12.

Accident Events

On January 24, 2016, at 1701, bulk carrier *Aris T* arrived from the Port of Amsterdam in the Netherlands at the Lower 12 Mile Anchorage (a designated anchorage on the right descending bank of the Lower Mississippi River between mm 78.6 and mm 80.8) in Poydras, Louisiana. Berthing at the vessel's intended destination (the Archer Daniels Midland/Growmark [ADM] grain facility located at mm 139.2 in Reserve, Louisiana) was unavailable at that time, so the *Aris T* anchored to await further instructions.

A week later, on the afternoon of January 31, the *Aris T* crew began preparing to continue upriver to the ADM grain facility. About 1350, pilot boat *James Henry* arrived at the anchorage with a pilot from the Crescent River Port Pilots' Association, who boarded the *Aris T* to provide navigational assistance during the transit. At 1450, the *Aris T* departed the anchorage and began its transit with both the port and starboard anchors made ready to let go. The ship's navigational team consisted of the master, a second officer, a helmsman, and three able-bodied seamen (AB). One of the ABs was stationed on the bow to serve as lookout. Once under way, the pilot ordered the vessel's speed to full ahead and maintained that setting through 1540. The vessel's speed over ground upriver during that period ranged from 8.9 to 10.3 knots.

At 1540, near mm 88.0, the pilot reduced the *Aris T*'s speed to slow ahead to accommodate the arrival of pilot boat *Klien K* and the safe underway transfer of a second pilot, this time from the New Orleans–Baton Rouge Steamship Pilots Association (NOBRA). At 1554, after conducting a pilot-to-pilot briefing, the NOBRA pilot relieved the first pilot, who then departed the *Aris T* on the pilot boat.

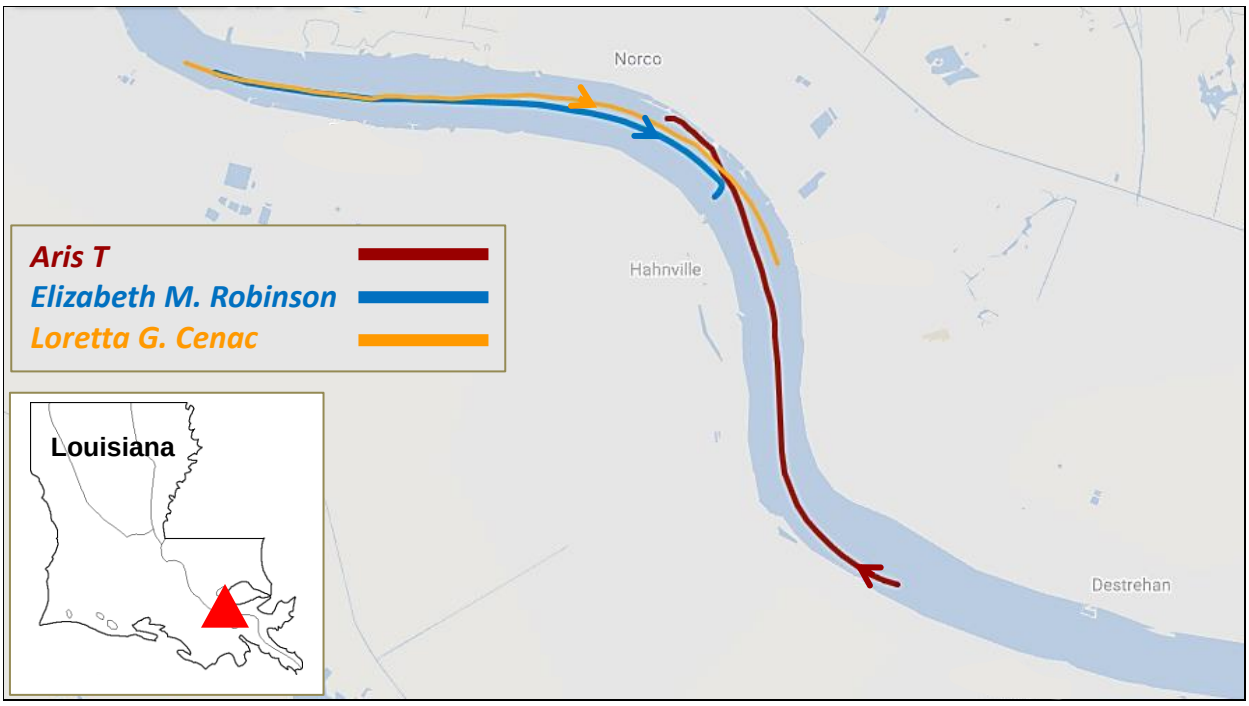
Because the Mississippi River was experiencing a period of high water at the time, Coast Guard Vessel Traffic Service (VTS) Lower Mississippi River was enforcing vessel traffic control measures in the Algiers Point Special Area (see Title 33 *Code of Federal Regulations* 161.65).[1] Accordingly, the NOBRA pilot (hereafter referred to only as "the pilot") awaited VTS permission to continue upriver. At 1609, near mm 92, the pilot obtained the permission and ordered the *Aris T*'s speed to full ahead to navigate around Algiers Point. According to the vessel's voyage data recorder (VDR), that speed setting was maintained up to the time of the accident.

The pilot, who was using his own portable pilot unit (PPU, a laptop computer with navigation software), had the ship's radars set to a range of three-quarters of a nautical mile. At 1638, the *Aris T* passed underneath the Crescent City Connection Bridge, which spans the Mississippi River at mm 95.7, and then, at 1743, passed underneath the Huey P. Long Bridge at mm 106.1. The vessel's speed upriver during that period ranged from 8.7 to 9.7 knots.

[1] VTS Lower Mississippi River's area of responsibility extends from Port Hudson Light at mm 254.5 about 20 miles above Baton Rouge, Louisiana, to 12 miles off Southwest Pass Light into the Gulf of Mexico. VTS controllers monitor three geographical sectors of the river within that area: from the mouth of the river (Southwest Pass Entrance Light) to mm 86.0 (VHF channel 11), from mm 86.0 to mm 109.0 (VHF channel 12), and then from mm 109.0 to mm 254.5 (VHF channel 5A). The local bridge-to-bridge radio frequency, VHF channel 67, is also monitored by VTS. Vessels are required to check in and out of the traffic system in two areas where their movement is actively monitored. The first area of the river is known as New Orleans Harbor, which runs from mm 90.5 to mm 106.1 (VHF channel 12), and the second area of the river is known as Eight Mile Point, which runs from mm 167.5 to mm 187.9 (VHF channel 5A). The accident happened between these two areas where vessel traffic is actively monitored.

At 1928, at a speed of 8.1 knots, the *Aris T* passed underneath the Hale Boggs Memorial Bridge, which spans the river at mm 121.6. At that time upriver, two downbound towing vessels were rounding a bend near mm 130.0. The lead vessel, the *Elizabeth M. Robinson*, was pushing ahead three loaded tank barges, each 300 feet long by 54 feet wide, configured in a single, linear string. The *Elizabeth M. Robinson* was being operated by the vessel captain and making a speed of 8.4 knots. The vessel's intended destination was Bayou Fleet Moorings, a barge fleeting area located at mm 125.5 in Hahnville, Louisiana.

Aft of the *Elizabeth M. Robinson* was towing vessel *Loretta G. Cenac*, which was also pushing ahead three loaded tank barges, each 300 feet long and 54 feet wide. In this case, they were configured two wide, or "hipped" to each other, and made fast to the tow, with the third barge made fast to the bow of the starboard barge in a linear string. The *Loretta G. Cenac* was being operated by the vessel captain and, like the *Elizabeth M. Robinson*, was making a speed of 8.4 knots at the time. The vessel's intended destination was Magnolia Marine's barge fleeting area located at mm 122.0 in Destrehan, Louisiana.



Tracklines based on automatic identification system (AIS) data of the three vessels in the half hour leading up to the accident. (Background by Google Maps)

Near mm 130, the captain on the *Loretta G. Cenac* radioed the *Elizabeth M. Robinson* and proposed to overtake the *Elizabeth M. Robinson* near Thirty-Five Mile Point.[2] The captain on the *Elizabeth M. Robinson* told investigators that he declined the overtaking proposal because he was concerned about the slide (lateral or side-to-side movement) of both vessels in the river currents and he was also nearing his intended destination. The captain on the *Loretta G. Cenac* agreed not to overtake and continued downriver positioned off the stern of the *Elizabeth M. Robinson*.

[2] Unless otherwise noted, all VHF radio communications discussed in this report took place on VHF channel 67.

About 1940, the captain on the *Elizabeth M. Robinson* radioed the captain on the *Loretta G. Cenac* and asked, "Loretta, you wanna go ahead and try and get on by me there? I don't really see anything else coming up this way, except, uh, that I can tell, if you want to try it . . . I'll be backing, you know, stopping and backing up here at, uh, at just below, um, Bayou Fleet." The captain on the *Loretta G. Cenac* responded, "All right, I'll shoot around you then, two's better," which proposed that the maneuver take place on the *Elizabeth M. Robinson*'s port side. The captain on the *Elizabeth M. Robinson* agreed, and both vessels began setting up for the maneuver. At the time, the *Loretta G. Cenac* was making 8.8 knots near mm 127.8, and the *Elizabeth M. Robinson* was making 9.5 knots near mm 127.4. Meanwhile, the *Aris T* was making 9.5 knots near mm 123.6.

After the two towing vessels completed those radio communications, about 1941, the captain on the *Elizabeth M. Robinson* initiated a "callout," or general broadcast via VHF radio, stating his vessel's direction of travel, current position, and maneuvering intentions at Bayou Fleet. Both the radio callout and the overtaking agreement between the towing vessels were captured by VDR audio microphones located on the *Aris T* navigation bridge. However, investigators' review of the VDR data revealed no discussion between the pilot and the *Aris T* bridge team related to the *Loretta G. Cenac* overtaking the *Elizabeth M. Robinson*, nor was the pilot of the *Aris T* heard attempting to contact either towing vessel at that time.

At 1946, the captain on the *Elizabeth M. Robinson* radioed the pilot on the *Aris T* and informed him of his vessel's position, his navigational intentions, and the overtaking situation with the *Loretta G. Cenac*. The pilot on the *Aris T* asked the captain on the *Elizabeth M. Robinson* which side would be best for meeting. The captain responded, "On the one," or port to port, adding, "Not sure what side you're gonna get him on," in reference to the *Loretta G. Cenac*. The pilot agreed to this meeting arrangement.

Shortly after those communications, at 1947, the captain on the *Loretta G. Cenac* followed up with the pilot on the *Aris T*, stating, "He's [referring to the *Elizabeth M. Robinson*] kind of out in the middle. I don't know what you want me to do for you. I'm all the way out in the middle right now trying to overtake him. Let me know how you want to shape up for you." The pilot responded, "All right, just, uh, I'll meet you on one [indicating a port-to-port meeting of the vessels]. Just try and get over there as far as you can with him." That proposed meeting arrangement was accepted by the captain on the *Loretta G. Cenac*. In reviewing the VDR audio, investigators did not hear any discussion between the pilot and the *Aris T* bridge team related to the meeting situation developing with the *Loretta G. Cenac* or the *Elizabeth M. Robinson.* The *Aris T* was making 8.9 knots in the vicinity of mm 124.5 at the time.

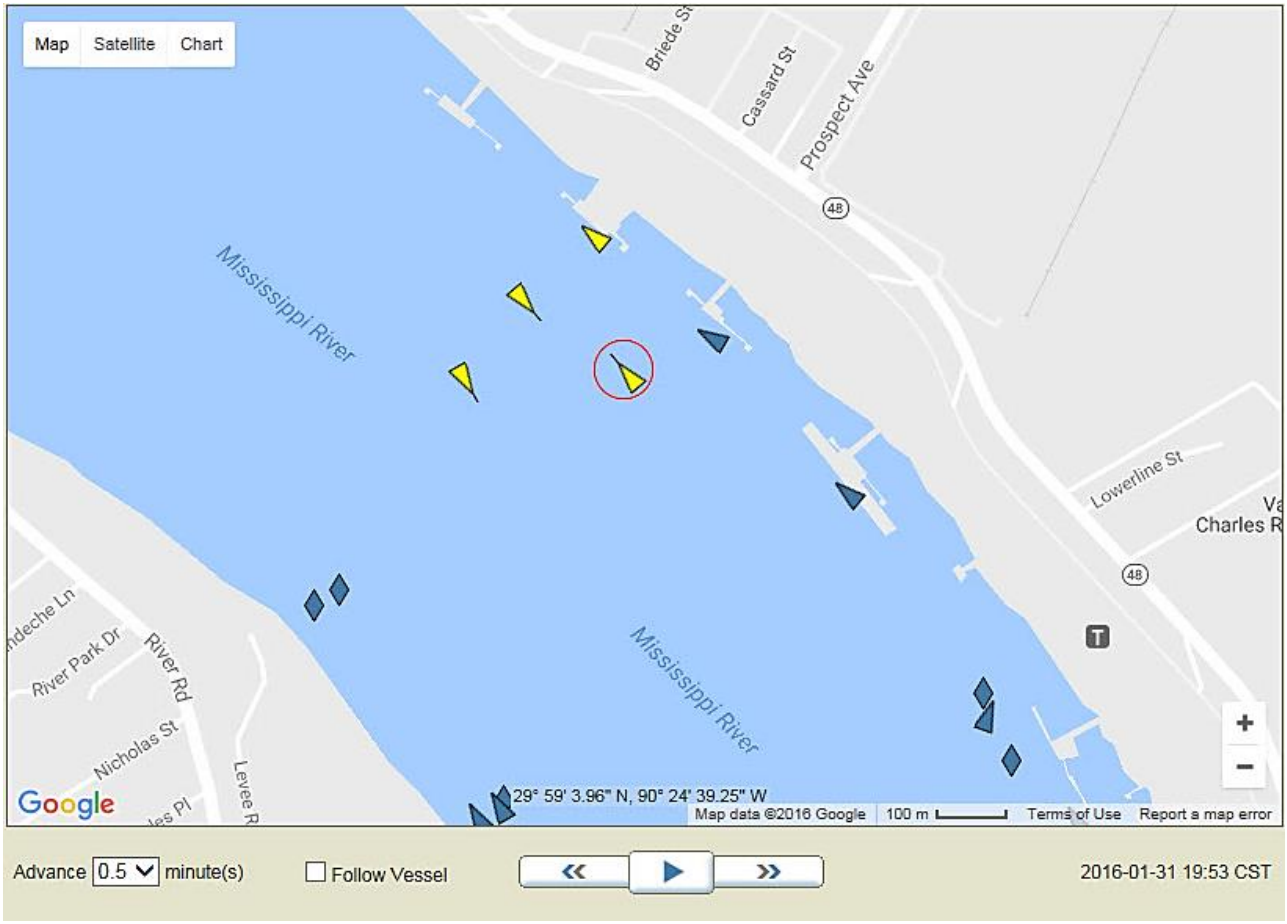
At 1949, the captain on the *Loretta G. Cenac* radioed the pilot on the *Aris T* stating his intentions to abort the overtaking of the *Elizabeth M. Robinson* and attempt to drop back behind that vessel. He said, "I'll just try and back down ninety-one and get behind him 'cause I'm going to be all up on the docks with you," referring to the facilities and structures on the left descending bank in the area. The pilot responded, "All right, uh, do you want me to pull for the two [starboard-to-starboard meeting arrangement]?" The captain on the *Loretta G. Cenac* responded, "No, I mean, I could try the two and drop down all the way on the docks, give you more room," to which the pilot replied, "Tell you what, let's keep it on the one," indicating he still preferred the earlier agreed-on port-to-port meeting arrangement. The captain on the *Loretta G. Cenac* acknowledged the pilot's request and informed him that he was backing down and trying to line

up behind the *Elizabeth M. Robinson*'s stern. The pilot suggested, "You might want to keep some headway so you don't fall down on me," in light of the possibility that the *Loretta G. Cenac* might experience some lateral sway because of the strong river current. The captain on the *Loretta G. Cenac* responded, "I won't fall down."

Video footage captured from the *Elizabeth M. Robinson* shows astern propeller wash at 1950. About the same time, the pilot on the *Aris T* radioed the captain on the *Loretta G. Cenac* and stated, "We got plenty of room. Come on, come on with it." Then at 1951, the pilot on the *Aris T* asked the captain on the *Loretta G. Cenac* if he was "backing on it" (applying astern propulsion), to which the captain on the *Loretta G. Cenac* replied, "No, he, he's right by me, sliding, still sliding down on me. I'm just trying to hold him, I'm about twenty foot off of him." The pilot told the captain on the *Loretta G. Cenac*, "All right, just keep driving on her. You gonna fall on me if you don't." Meanwhile, the *Loretta G. Cenac* was making 8.9 knots near mm 125.8, and the *Elizabeth M. Robinson* was making 8.2 knots near mm 125.7. The *Aris T* was making 8.9 knots near mm 125.2.

At 1952, the pilot issued helm commands that he told investigators were intended to increase the distance between the port sides of the *Aris T* and the *Loretta G. Cenac* tow. From midship, he ordered starboard 5-degree rudder and, after the helmsman acknowledged that command, the pilot ordered starboard 10-degree rudder. He then radioed the captain on the *Loretta G. Cenac* and said, "Cenac drive on it," to which the captain on the *Loretta G. Cenac* replied, "I'm driving and I'm turning." Next, the pilot ordered the helm back to midship and radioed the captain on the *Loretta G. Cenac*, stating, "Hard left rudder." The pilot then ordered port 10-degree rudder and, after the helmsman acknowledged that command, the pilot ordered port 20-degree rudder, then hard to port. The *Aris T* was making 8.4 knots at the time, and the *Loretta G. Cenac* was making 6.9 knots.

As the *Aris T* turned to port and cleared the *Loretta G. Cenac* and the *Elizabeth M. Robinson*, its stern approached two tank barges and a towing vessel that were moored on the left descending bank at the Valero dock at mm 125.2. From hard port, the pilot ordered the rudder to midship, then to starboard 20 degrees. After the helmsman acknowledged that last command, the pilot ordered hard starboard, then midship, then hard port. An unidentified member of the *Aris T* bridge team asked the pilot, "I stop engine?" to which the pilot responded, "No," and ordered the rudder to midship and then hard to starboard. At 1953, the aft starboard quarter of the *Aris T* struck the port side of the empty tank barge *WTC 3019*; the *Aris T* was making 8 knots at the time of contact. Tank barge *WTC 3019* was moored outboard of another empty tank barge, *SCF 1201*, and both tank barges were connected by the stern to the bow of towing vessel *SCF Vision* moored at the Valero dock. When the *Aris T* struck *WTC 3019*, the tank barge was pushed into *SCF 1201*, which in turn was pressed into the facility structure. Both tank barges, the facility dock, and the *SCF Vision* sustained damage.



Screen capture, based on AIS data, of the vessels' positions just before the accident. The *Aris T* is the yellow triangle circled in red. The two down-pointing yellow triangles represent the *Elizabeth M. Robinson* (at left in this image) and the *Loretta G. Cenac*. The uppermost yellow triangle (closest to shore) represents the moored towing vessel *SCF Vision*, to which the two tank barges were connected.

The pilot then ordered the engine stopped, the rudder to midship, and the port anchor released. The deck crew forward on the *Aris T* let go the port anchor with one shackle of the anchor chain (15 fathoms, or 90 feet).[3] After those commands, the pilot ordered "stop engine" again, and an unidentified crewmember responded, "Stop engine already, sir," followed by the pilot's order of full astern.

At 1954, the pilot radioed the captain on the *Loretta G. Cenac* and said, "Appreciate it there, Loretta." In response, the captain on the *Loretta G. Cenac* said, "Yeah, I'm, I tried everything, I had a cable come undone," referring to a broken wire or "face" cable, which connected between the vessel's forward deck winches and the tow bitts on the aft end of the barges in the tow. The pilot said, "Huh, you just caused an accident." At 1955, the starboard hull of the *Aris T* struck Shell Motiva berth no. 4 on the left descending bank at mm 125.7; the speed of the *Aris T* had decreased to 6.9 knots.

[3] The water depth in the area was about 67 feet.

The operators aboard the nearby assist tugboats *Baton Rouge* and *Alabama* radioed the pilot on the *Aris T* and offered assistance. The pilot accepted both offers and asked the vessels to come alongside.

At 1957, the starboard hull of the *Aris T* struck Shell Motiva berth no. 2 on the left descending bank at mm 126.0. Then, at 1958, the *Aris T*, which was still moving upriver, although at decreasing speed, collided with the port side of towing vessel *Pedernales*, which was under way and adjacent to moored tank barge *Kirby 28080* at the Shell Motiva berth no. 2. The *Aris T* was making 3.3 knots at the time and pushed the *Pedernales*' starboard side into the portside stern of *Kirby 28080.* The tank barge, in turn, was pressed into the facility structure. *Kirby 28080*, the facility structure, and the *Pedernales* all sustained damage.

In the minutes before the collision between the *Aris T* and the *Pedernales*, the tankerman on the *Pedernales* realized the events unfolding downriver and alerted the other crewmembers. In an attempt to clear the area, the *Pedernales* crew managed to disconnect the vessel's tow wires from the stern of *Kirby 28080*. The crewmembers had begun to make way upriver when the *Aris T* struck the vessel. *Kirby 28080*, with its bow facing upriver, remained tied directly to the dock with both the vapor recovery hose and the cargo transfer hose still connected to the facility.

After the collision with the *Pedernales*, the pilot on the *Aris T* ordered "stop engine"; the bulk carrier's speed at that time was 2.3 knots. The captain on the *Pedernales* pushed on the starboard side of the *Aris T* in an effort to prevent further contact with the facility or other tank barges. The *Aris T* crew began assessing the damage and determined that none of the voids and tanks on the starboard side of the bulk carrier were flooded and that no fuel or other pollution emanated from the vessel. The pilot then ordered the port anchor heaved, or raised, and he issued a series of throttle and rudder commands to maneuver away from Shell Motiva berth no. 2 and toward the center of the river where he held position until about 2023. During that period, the *Aris T* crew continued the damage assessment, including confirming that no visible fuel sheen or other pollution emanated from the bulk carrier. The pilot notified VTS of the accident.

By 2023, the tugboat *Baton Rouge* arrived on scene. The pilot requested that its crew conduct an external survey of the *Aris T* starboard-side hull using the tugboat's lighting system to visually assess the damage. Shortly thereafter, the vessels *Alabama*, *David J. Cooper*, *Capt. Bud Bisso*, and *Michael Turecamo* also arrived on scene to assist as directed. At 2026, the *Baton Rouge* crew informed the pilot that there was no sign of fuel oil or other pollution in the water but confirmed that the entire starboard-side hull of the *Aris T* was damaged. The pilot updated the *Aris T* master about the hull damage and, to the extent he was aware, the assessments taking place on the other vessels and ashore at the facilities.

As directed by VTS, the pilot continued upriver with the *Aris T*, escorted by the *Alabama* and the *David J. Cooper*. At 2134, the pilot was relieved by NOBRA pilot no. 6 and then taken ashore by a small boat for postaccident toxicological testing, which was later determined to be negative for the presence of drugs and alcohol. Under the navigational direction of the relief pilot, the *Aris T* arrived at Grand View Reach Anchorage at mm 147.0 shortly after midnight on February 1, 2016, where the vessel anchored and awaited the arrival of Coast Guard investigators. The *Aris T* master, second officer, and helmsman were also tested for drugs and alcohol: all results were negative. The crewmembers from the *Elizabeth M. Robinson* and the *Loretta G. Cenac* were not tested at that time; however, once Cenac (the operating company of the *Loretta G. Cenac*)

realized that the situation was considered to be a reportable marine casualty, testing was conducted on the captain: the results were negative for the presence of drugs and alcohol.

Based on information from the involved parties, investigators concluded that the navigational equipment, steering, propulsion, and other vital systems on the *Aris T*, *Elizabeth M. Robinson*, and *Loretta G. Cenac* operated satisfactorily at the time of the accident.

During the field investigation, both the pilot on the *Aris T* and the captain on the *Loretta G. Cenac* told investigators that they had used their personal cell phones leading up to the accident. The pilot on the *Aris T* said that he had received and responded to text messages at an unknown time from family members who sent photos from a Mardi Gras parade they were attending. He had also checked the weather and the availability of assist tugboats for docking. The captain on the *Loretta G. Cenac* told investigators that he was talking with his girlfriend at the time he began the overtaking maneuver of the *Elizabeth M. Robinson*. He said that when the upcoming meeting with the *Aris T* began to deteriorate, he told his girlfriend to hold on and then he put the phone down on the steering console with the call remaining connected.

Investigators examined the cell phone records of the pilot on the *Aris T* and the captain on the *Loretta G. Cenac* from 1800 through the time of the accident. Only the captain on the *Loretta G. Cenac* had used his device for personal, nonoperational purposes. During that period, he called his girlfriend at 1854, a call that lasted approximately 36 minutes until 1930. Within that time, at 1921, the captain also received and responded to a text message from a deckhand serving on another towing vessel. Then, at 1947, the captain's girlfriend called him, and that call lasted until 2104. The call began 7 minutes before the accident and remained active for 77 minutes, throughout the accident and the postaccident maneuvering of the *Loretta G. Cenac*. Investigators determined that the phone calls between the captain and his girlfriend were neither operational in nature nor related directly to the safe movement of the *Loretta G. Cenac*.

The pilot on the *Aris T* used his cell phone to call a local towing company at 1809 regarding tugboat availability, a connection that lasted about 2 minutes. The pilot also accepted an inbound call on his cell phone at 1902 from an individual regarding weather; that connection lasted about 3 minutes. Next, the pilot called a second local towing at 1906 regarding tugboat availability; that connection lasted about 1 minute. No further activity took place on his cell phone until after the accident, at 2005, when he called the NOBRA office. Investigators determined that the pilot's incoming and outgoing voice calls were operational in nature.

In response to Safety Recommendation M-10-3, in which the NTSB expressed concern about the use of cell phones and other wireless devices for nonoperational purposes by individuals in safety-related positions, the Coast Guard issued Marine Safety Advisory 01-10—*DISTRACTED OPERATIONS; Don't let it be you!*—on October 29, 2010. That advisory warned mariners of the danger and potential distraction while using cell phones and other wireless devices for purposes unrelated to vessel operation. The advisory also specifically mentioned the risk of using these devices when navigating alone, such as the captain on the *Loretta G. Cenac* did on the day of the accident. In this instance, Cenac had a policy in place prohibiting the use of personal cell phones by crew on watch; per that policy, the captain and relief captain were responsible for enforcing this policy on board. NOBRA did not have an existing policy to address the use of cellular and wireless devices while on watch. Today, distracted operations remains a concern of the NTSB and the issue is included on the agency's Most Wanted List of Transportation Safety Improvements.

Analysis

Inland navigation rules apply to all vessels traveling upon the inland waters and western rivers of the United States. These rules provide mariners with well-established regulations outlining specific actions to be taken to prevent a collision. All vessel operators, regardless of the waterway on which they transited, have the fundamental responsibility to take all actions necessary to avoid collision and to avoid impeding the safe passage of other vessels. On the Mississippi River and its tributaries, downbound power-driven vessels with a following current, such as the *Elizabeth M. Robinson* and the *Loretta G. Cenac*, have the right of way over power-driven vessels that are either upbound in the river, such as the *Aris T*, or vessels crossing the river. Downbound vessels are provided this priority because the river's current and decreased flow of water across the vessels' rudders reduces steering responsiveness and overall maneuverability.

The inland navigation rules also address actions expected to be taken during an overtaking situation. In the case of the *Loretta G. Cenac*, the overtaking maneuver should not have been initiated until such time as it could be safely executed. It would have been prudent for the *Elizabeth M. Robinson* to have maneuvered toward the right descending bank of the river to provide more maneuvering room for the *Loretta G. Cenac*. When investigators reviewed the electronic data from the three accident vessels and from VTS, the information revealed that all three vessels were maneuvered in a manner that contradicted the good order and predictability established in the collision-prevention rules.

When the captain on the *Elizabeth M. Robinson* radioed the captain on the *Loretta G. Cenac* at 1940 to inquire whether he wanted to overtake the *Elizabeth M. Robinson*, he provided misinformation, albeit unintentional, that the river below the two vessels was free of traffic that could potentially interfere with the maneuver. The captain on the *Loretta G. Cenac* apparently did not attempt to validate the information provided by the *Elizabeth M. Robinson* and instead initiated the overtaking maneuver shortly thereafter, at 1941. During the overtaking, the *Elizabeth M. Robinson* did not hold its position relative to the right descending bank and slowly shifted from just right of the center of the river toward a position closer to the left descending bank and the facilities located there. This shift resulted most likely from the captain's steering and throttle inputs to back and position the *Elizabeth M. Robinson* and tow to approach the fleeting area, as well as the vessel and its tow sliding toward that direction in the stronger-than-normal current. The captain on the *Loretta G. Cenac*, who had begun overtaking the *Elizabeth M. Robinson* on its port side, in turn continued to set closer toward the left descending bank and the associated facility structures in order to maintain separation from the stern of the *Elizabeth M. Robinson*.

The captain on the *Loretta G. Cenac* was likely distracted while using his cell phone and therefore inattentive to his navigational duties. The captain acknowledged that leading up to the accident he was on the phone with his girlfriend, including the time during his first VHF radio conversation with the pilot on the *Aris T* to discuss meeting arrangements. The captain on the *Loretta G. Cenac* spent a significant amount of time on nonoperational communication when he should have been focused on safely navigating the vessel. The company policy prohibiting the use of cell phones while on watch, which was to be enforced by the captain himself, was clearly not successfully implemented.

Had the captain on the *Loretta G. Cenac* been focused on his navigational duties instead of on the communication with his girlfriend at 1947, the images on the vessel's radar and electronic chart would likely have raised his awareness of the dangerous traffic situation that was developing. The captain then could have aborted his attempted overtaking of the *Elizabeth M. Robinson* earlier than he did, or possibly recommended to the pilot on the *Aris T* that he slow the bulk carrier's upriver speed to allow sufficient time for the overtaking maneuver to be safely completed. However, despite the fact that the captain on the *Loretta G. Cenac* openly expressed concern both about the position of the *Elizabeth M. Robinson* and about his own vessel being out in the middle of the river during that radio conversation, he did not abort the overtaking maneuver or suggest that any action be taken on the *Aris T* to defuse the situation. Instead, he relied on the pilot on the *Aris T* to tell him how he wanted the *Loretta G. Cenac* "to shape up" for the meeting situation.

Aboard the *Aris T*, the pilot had the opportunity as early as 1940 to identify the traffic situation developing upriver and assess the potential need for action on his part when the two downbound towing vessels discussed and agreed via radio to the overtaking arrangement. However, investigators found no evidence that the pilot and *Aris T* bridge team discussed the situation or that the pilot attempted to contact either towing vessel at that time. At 1947, the captain on the *Loretta G. Cenac* expressed concern to the pilot on the *Aris T* that the *Elizabeth M. Robinson* was in the middle of the river; 2 minutes later, at 1949, he said he was going to terminate the overtaking attempt because of his vessel's proximity to the structures on the left descending bank. However, the pilot may still not have perceived the risk of collision, given that he did not reduce his upriver speed and that he also told the captain on the *Loretta G. Cenac*, "We got plenty of room. Come on, come on with it."

Given the direction of the current, the *Aris T* could have slowed or stopped in a much shorter distance than could the *Elizabeth M. Robinson* and the *Loretta G. Cenac*, both of which had the current pushing them from astern. A speed reduction aboard the *Aris T*, if applied early enough, would have allowed the pilot and the bridge team to further assess the traffic situation with the two towing vessels and to take action necessary for safe passage.

The NTSB also believes that the extent of damage in this accident could have been limited to the *SCF Vision,* tank barges *WTC 3019* and *SCF 1201*, and the Valero dock, had the pilot on the *Aris T* maintained appropriate focus on his navigational responsibilities after the initial collision with *WTC 3019* at 1953. After that first collision, the pilot ordered the *Aris T*'s rudder to midship, the engine to stop and then to full astern, and the port anchor to be released. He did not sound a warning signal, which may have alerted the crewmembers aboard towing vessel *Pedernales* and allowed them to take earlier evasive action. He also did not issue further helm commands to the *Aris T* helmsman until roughly 5 minutes later, at 1958, which was well after the bulk carrier struck Shell Motiva berths nos. 4 and 2 and the *Pedernales*, all of which were upriver from the site of the initial contact with *WTC 3019* at the Valero dock.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the collision of bulk carrier *Aris T* with tank barge *WTC 3019*, towing vessel *Pedernales*, and shoreside structures was the failure of the pilot on the *Aris T* to take early and effective action to mitigate the risk presented by the developing upriver traffic situation, and the distraction of the captain on the *Loretta G. Cenac* from safety-critical navigational functions as a result of his cell phone use.

Cell Phone Use

Using cellular telephones and other wireless electronic devices has been demonstrated to be visually, manually, and cognitively distracting.[4] Talking on cell phones can have serious consequences in safety-critical situations, and sending or reading text messages is potentially even more distracting than talking because texting requires visual attention to the display screen of the device.

Cell phone use has been a factor in accidents in all transportation modes. In the marine industry, the NTSB has previously recommended that the Coast Guard—

> Regulate and enforce the restriction on nonoperational use of cell phones and other wireless electronic devices by on-duty crewmembers in safety-critical positions so that such use does not adversely affect vessel operational safety. (Safety Recommendation M-11-3; Status: Open—Unacceptable Response. The Coast Guard did not implement the recommendation.)

and

> Until [the Coast Guard] can develop regulations governing nonoperational use of cell phones and other wireless electronic devices by on-duty crewmembers in safety-critical positions, continue [its] outreach program of information and education to the maritime industry on this issue. (Safety Recommendation M-11-4; Status: Open—Acceptable Response. The Coast Guard agreed to promulgate information about cell phone distraction.)

The status of regulations notwithstanding, it is important for shipping companies and pilot associations to establish protocols regarding cell phone use and to make sure that their personnel are following them.

[4] For research information, see the US Department of Transportation's website on distracted driving at www.distraction.gov (visited October 25, 2016).

Vessel Particulars

Vessels	*Aris T*	*Pedernales*	*WTC 3019*
Owner/operator	Aris T Special Maritime Enterprise/ Marmaras Navigation Limited	Kirby Corporation	Kirby Corporation
Port of registry	Piraeus, Greece	Wilmington, Delaware	St. Louis, Missouri
Flag	Greece	United States	United States
Type	Bulk carrier	Towing vessel	Tank barge
Year built/builder	2007/Sangdong Shipbuilding & Marine Engineering, South Korea	1981/Crumpler's Shipbuilding, Texas	2008/Trinity Marine, Louisiana
Official number (US)	N/A	641798	1215685
IMO number	9343895	N/A	N/A
Construction	Welded steel	Welded steel	Welded steel
Length	753 ft (229.5 m)	66.8 ft (20.4 m)	297 ft (90.5 m)
Draft	37 ft (11.21 m)	9 ft (2.7 m)	12 ft (3.6 m)
Beam	121 ft (36.92 m)	28 ft (8.5 m)	54 ft (16.4 m)
Gross/net tonnage	49,973/30,679	180/122	1,619/1,619
Engine power; manufacturer	15,050 hp (11,060 kW); STX Man B&W 7S50MC-C Mark VII	1,200 hp (894 kW) 2 - GM 12V-71 Detroit Diesel	N/A
Persons on board	20 crew & 1 pilot	5 crew	N/A

For more details about this accident, visit www.ntsb.gov and search for NTSB accident ID DCA16FM022.

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NTSB investigators worked closely with our counterparts from Coast Guard Sector New Orleans throughout this investigation.