March 19, 2024 MIR-24-06

# Contact of *Susan K* Tow with Natchez-Vidalia Bridge

On April 23, 2023, about 2242 local time, the towing vessel *Susan K* was pushing 25 barges downbound on the Lower Mississippi River when the tow struck the center bridge pier on the Natchez-Vidalia Bridge, which connects the cities of Natchez, Mississippi, and Vidalia, Louisiana.[1] One barge sank, and two other barges were damaged; the *Susan K* was undamaged. No pollution or injuries were reported. Damage to the barges and cargo was estimated at $2 million.

**Figure 1.** *Susan K* after the contact.

[1] (a) In this report, all times are central daylight time, and all miles are statute miles. (b) Visit ntsb.gov to find additional information in the public docket for this NTSB investigation (case no. DCA23FM030). Use the CAROL Query to search investigations.

| | |
|---|---|
| **Casualty type** | Contact |
| **Location** | Lower Mississippi River, mile 363, Natchez, Mississippi<br>31°33.5′ N, 91°25.2′ W |
| **Date** | April 23, 2023 |
| **Time** | 2242 central daylight time<br>(coordinated universal time –5 hrs) |
| **Persons on board** | 9 |
| **Injuries** | None |
| **Property damage** | $2 million est. |
| **Environmental damage** | None |
| **Weather** | Overcast, visibility 10 mi, winds north 6 kts, air temperature 56°F, water temperature 64°F, sunset 1932, evening civil twilight 2005 |
| **Waterway information** | Channel, width 2,450 ft (848 ft between bridge piers), depth about 42 ft (flood stage 48 ft) |


**Figure 2.** Area where the *Susan K* tow contacted the Natchez-Vidalia Bridge, as indicated by a red *X*. (Background source: Google Maps)

# 1 Factual Information

## 1.1 Background

The 160-foot-long towing vessel *Susan K* was constructed of welded steel by Jeffboat Inc. in Jeffersonville, Indiana, in 1982 (see figure 1). The vessel was owned by the Commerce Bank and operated by SCF Towing. Two 3,125-hp diesel engines, each driving a nozzled propeller, provided propulsion power. Blade-type rudders behind each propeller, as well as flanking rudders forward of the propellers, provided directional control.

At the time of the contact, the *Susan K* was pushing 25 barges, each 200 feet long by 35 feet wide, carrying various agricultural products. The tow comprised five strings of five barges and had an overall length of 1,260 feet (see figure 3).

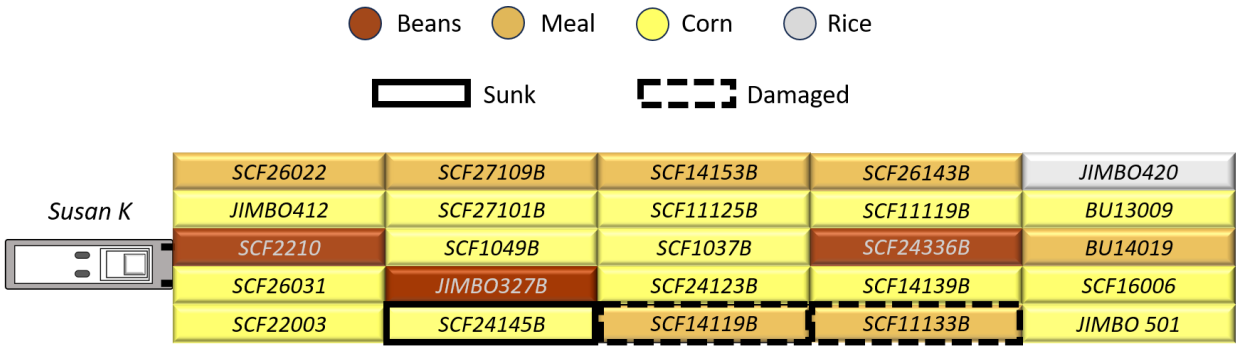


**Figure 3.** *Susan K* tow arrangement and cargoes, with outlines indicating barges damaged or sunk in the casualty.

## 1.2 Event Sequence

On April 19, 2023, at 1830, the *Susan K* departed St. Louis, Missouri, pushing 20 barges downbound on the Mississippi River en route to St. Rose, Louisiana. As the tow proceeded down the river, it stopped near Cairo, Illinois, and New Madrid, Missouri, picking up five additional barges. During the transit, the captain and pilot followed a 6-on, 6-off watch rotation at the helm of the *Susan K*, with the captain standing watch from 0500–1100 and 1700–2300.

Near the cities of Natchez, Mississippi, and Vidalia, Louisiana, the Mississippi River makes a gradual bend to the southwest (see figure 2). The Natchez-Vidalia Bridge crosses the river after the bend. The bridge has twin cantilever-style bridges that connect the two cities. The upriver span is for westbound vehicular traffic, and the downriver span is for eastbound traffic. Both spans have six concrete piers—structures designed to support the spans—as pictured in figure 4. Three of the piers

on each span form two main channels for vessels to navigate, the left descending channel and the right descending channel. The US Army Corps of Engineers chart for the Lower Mississippi River lists the horizontal distance between the main channel piers as 848 feet.

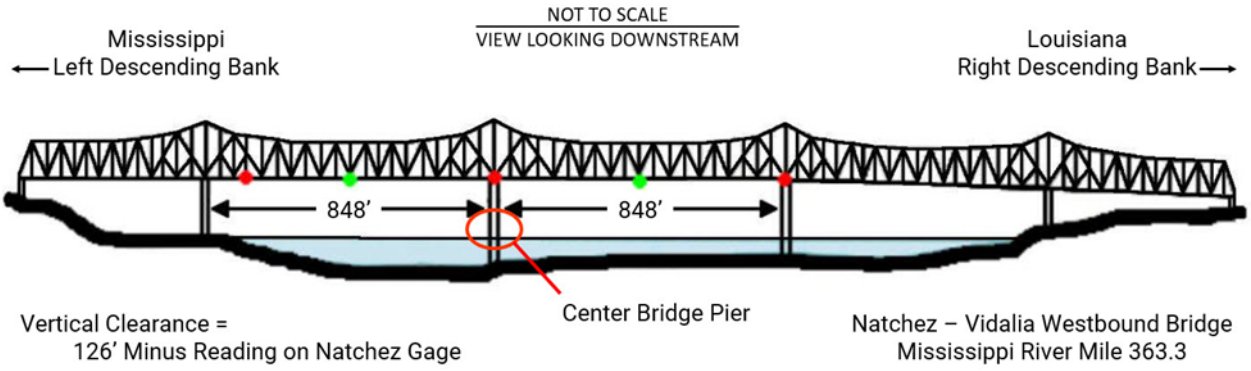


**Figure 4.** Natchez-Vidalia Bridge. (Background source: US Army Corps of Engineers)

In the evening on April 23, the captain had the watch as the tow approached the bend above the Natchez-Vidalia Bridge. The captain maneuvered the tow around the bend at 2/3 to 3/4 power on the *Susan K*'s main engines. The water level on the river, at 41.6 feet, was below the flood stage of 48 feet. The captain stated that the water level that evening resulted in "a little swifter current," but it was not unusual. Automatic identification system (AIS) data showed that the tow's speed as it rounded the bend was 10.4 knots.

After the bend, the captain intended to take the tow through the western (right-descending-bank side) channel under the bridge, which was the recommended track on the navigation chart.[2] However, he told investigators that he "wasn't paying attention to what I was doing … and by the time I was looking for my marks [visual references] to make the bridge, I realized that I was way off my marks." At 2238:47, the AIS position of the *Susan K* was 390 feet left of the sailing line (the sailing line on inland navigational charts is the preferred or recommended route within the reaches of a navigable channel).[3]

The captain said, "I wasn't going to be able to get back on those marks and get through the bridge without sliding into the left-hand [center] pier." Consequently, he

[2] The inland towing industry refers to the shorelines of Western Rivers as the left and right banks when traveling (facing) downriver. The left bank is called the *left descending bank*, and the right bank is called the *right descending bank*.

[3] Due to a lack of receivers in the area, AIS position data for the *Susan K* was limited to a few points.

made a "judgment call" to attempt to steer the tow through the eastern (left-descending-bank side) channel under the bridge (see figure 5).

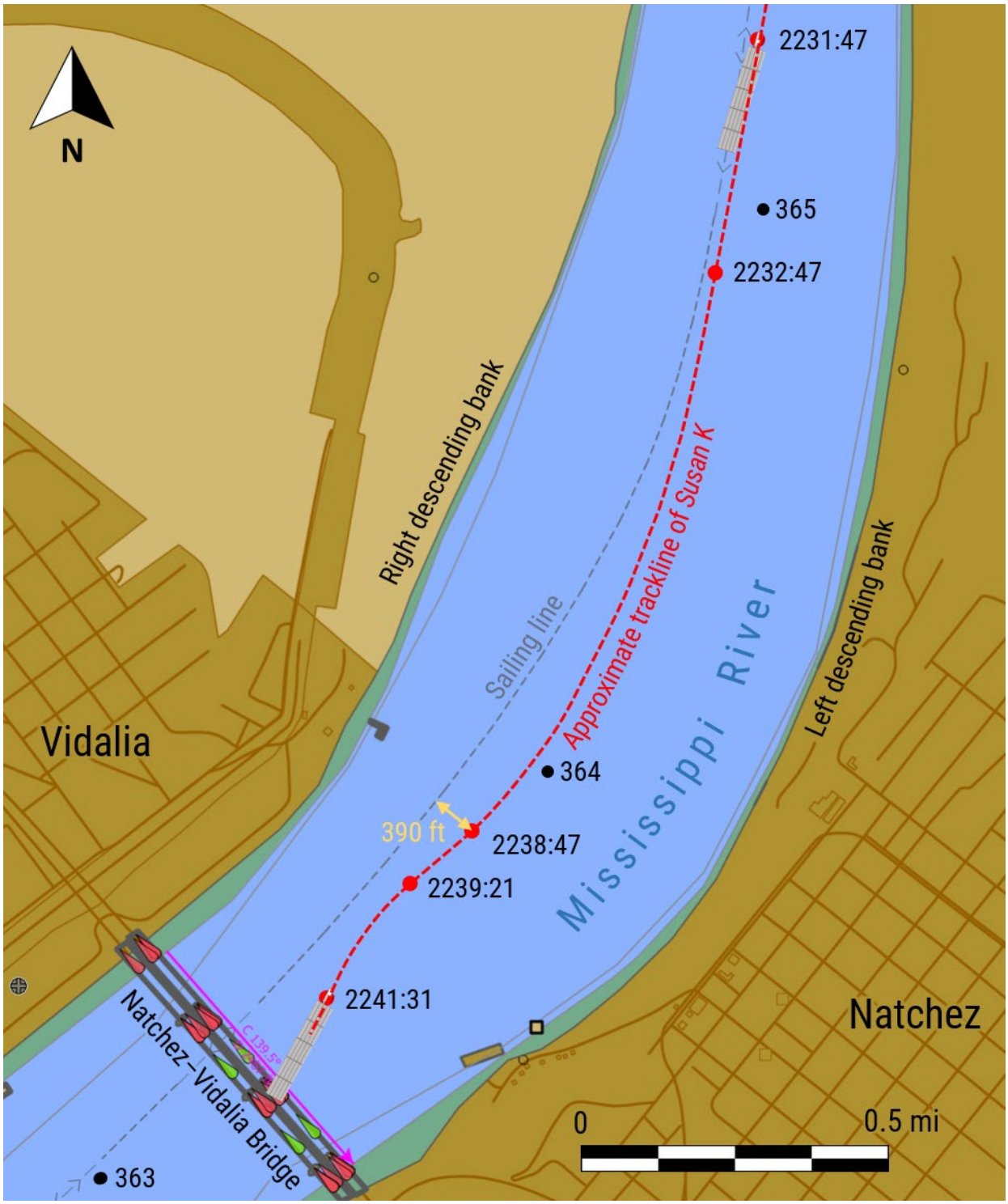


**Figure 5.** AIS positions of the *Susan K*, as indicated by red dots. The NTSB approximated the trackline of the *Susan K* due to limited AIS data. (Background source: Rose Point electronic chart system)

The captain increased the *Susan K*'s engine speed to full power and used various rudder movements to maneuver the tow, but he was unable to avoid hitting the bridge with the tow. At 2242, the second barge in the starboard string of the tow, *SCF1133B*, struck the center pier of the bridge. Two more barges in the starboard string, *SCF14119B* and *SCF24145B*, also contacted the bridge, and the tow broke apart. The barges drifted downriver while the *Susan K* and other towing vessels worked to recover them.

## 1.3 Additional Information

### 1.3.1 Damage

Deck plating and bulkheads on the second and third barges in the starboard string, *SCF11133B* and *SCF14119B*, were dented or deformed when the barges made contact with the bridge pier. The hull of the fourth barge, *SCF24145B* (which was carrying corn) was breached; after drifting downriver about 6 miles, the barge partially sank (see figure 6). The barge was later salvaged.


**Figure 6.** Left, hull indentation on barge *SCF14119B*. (Source: NTSB) Right, partially sunken barge *SCF24145B*. (Source: US Coast Guard)

### 1.3.2 *Susan K* Captain

The captain of the *Susan K* had over 45 years' experience in the towing industry, with 33 years as a captain of towing vessels. He had transited tows downbound through the Natchez-Vidalia Bridge over 200 times throughout his

career. The captain had worked for SCF Towing for 13 years as a pilot and captain, and he had been the captain of the *Susan K* for 2.5 years at the time of the casualty.

In each of the 4 days before the casualty, the captain got over 9 hours of sleep, split between his two off-watch periods. He said that during his watch on the evening of the casualty, he did not feel fatigued.

The results of postcasualty tests for alcohol and other drugs were negative. He stated that he was not using his cell phone (confirmed by cell phone records), computer, or other distractors. He attributed the casualty to not "paying attention" and complacency, telling investigators, "You get complacent sometimes when you do something so many times and you're sloppy."

# 2 Analysis

After maneuvering the *Susan K* tow through a gradual bend in the Mississippi River, the captain of the towing vessel intended to steer the tow through the western (right-descending-bank side) channel under the Natchez-Vidalia Bridge. However, he told investigators that he "wasn't paying attention" to what he was doing, and, consequently, the tow was too far toward the left descending bank to transit through the western channel. The captain attempted to steer the tow through the eastern channel, but the tow struck the bridge pier dividing the channels.

There was no evidence that the captain was fatigued, impaired, or distracted before or during the casualty. The captain had decades of experience captaining towing vessels and maneuvering tows, and he had steered tows through the Natchez-Vidalia Bridge hundreds of times. There was nothing unusual about the transit or approach that would have heightened the captain's awareness or vigilance, such as adverse weather or river conditions, vessel traffic, or mechanical issues with the vessel.

Reflecting on the casualty, the captain said, "You get complacent sometimes when you do something so many times." Complacency can cause attention lapses that arise from repetition, familiarity, or comfort with a particular task. Repetition and familiarity reduce the required level of cognitive effort required to execute such tasks—even complex, skill-based tasks—increasing the susceptibility to attention lapses or distraction. Attention lapses can delay the detection of subtle abnormalities, affecting an operator's reaction time to and identification of developing hazards. Due to complacency, the *Susan K* captain was inattentive as the tow approached the bridge, which resulted in the tow being out of position for his intended route under the bridge. His awareness of the situation came too late to avoid striking the bridge pier.

# 3 Conclusions

## 3.1 Probable Cause

The National Transportation Safety Board determines that the probable cause of the contact of the *Susan K* tow with the Natchez-Vidalia Bridge was the captain's complacency, which resulted in his inattention to the tow's position as it approached the bridge.

## 3.2 Lessons Learned

### Fighting Complacency

Repetition and monotony can cause even the most experienced and skilled mariner to become complacent and lose situational awareness. Developing strategies that help maintain focus is a good practice. These strategies may include continuous scanning of instruments and surroundings outside the wheelhouse, strict adherence to procedures, eliminating distractions, changing position or moving (standing up or walking around), and getting enough sleep and exercise.

| Vessel | *Susan K* |
|---|---|
| **Type** | Towing/Barge (Towing vessel) |
| **Owner/Operator** | Commerce Bank/SCF Towing LLC (Commercial) |
| **Flag** | United States |
| **Port of registry** | Greenville, Mississippi |
| **Year built** | 1982 |
| **Official number (US)** | 648357 |
| **IMO number** | N/A |
| **Classification society** | Towing Vessel Inspection Bureau (third-party organization) |
| **Length (overall)** | 160.0 ft (48.8 m) |
| **Breadth (max.)** | 48.0 ft (14.6 m) |
| **Draft (casualty)** | 12.1 ft (3.7 m) |
| **Tonnage** | 883 GRT |
| **Engine power; manufacturer** | 2 x 3,125 hp (2,330 kW); EMD 16-645E7B diesel engines |

NTSB investigators worked closely with our counterparts from **Coast Guard Marine Safety Detachment Vicksburg** throughout this investigation.