National Transportation Safety Board

Marine Accident Brief

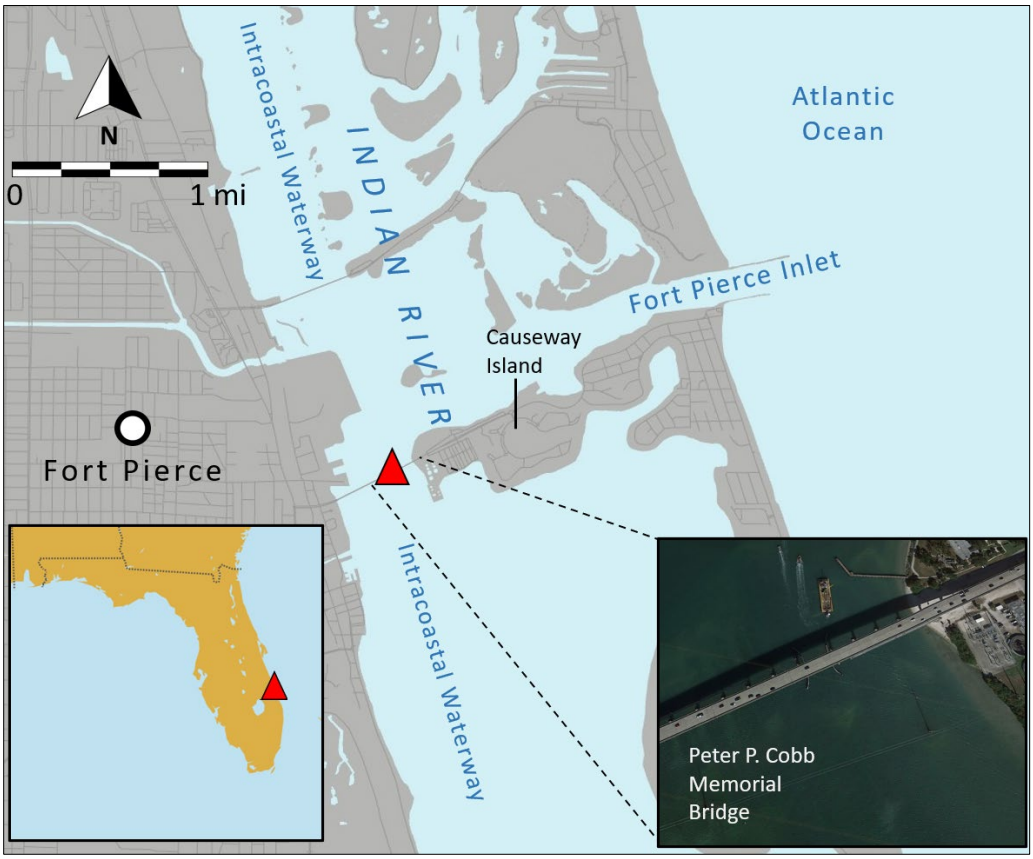
Contact of *Old Glory* Tow with Peter P. Cobb Memorial Bridge

Accident type	Contact	**No.** DCA20FM025
Vessel names	*Old Glory, Cole*	
Location	Intracoastal Waterway, Indian River, mile 965, Fort Pierce, Florida[1] 27°27.46' N, 080°19.01' W	
Date	August 19, 2020	
Time	0251 eastern daylight time (coordinated universal time – 4 hours)	
Injuries	None	
Property damage	$646,000	
Environmental damage	None	
Weather	Visibility 10 miles, clear skies, winds light and variable, air temperature 75°F, water temperature 86°F	
Waterway information	The Intracoastal Waterway is used by commercial light-draft vessels, tows unable to navigate long stretches in the open ocean, and recreational craft. The project depth at the accident site is 10 feet.	

On August 19, 2020, about 0251 local time, the towing vessel *Old Glory,* pushing the loaded hopper barge *Cole* northbound on the Intracoastal Waterway (ICW), struck the protective fendering for the Peter P. Cobb Memorial Bridge at mile 965 near Fort Pierce, Florida. There were no injuries to the four crewmembers on the *Old Glory*, and there was no pollution reported. Damage to the barge was estimated at $5,000. Damage to the protective fendering was $641,000.

***Old Glory* under way. (Source: River Ventures, LLC)**

[1] All miles in this report are statute miles.

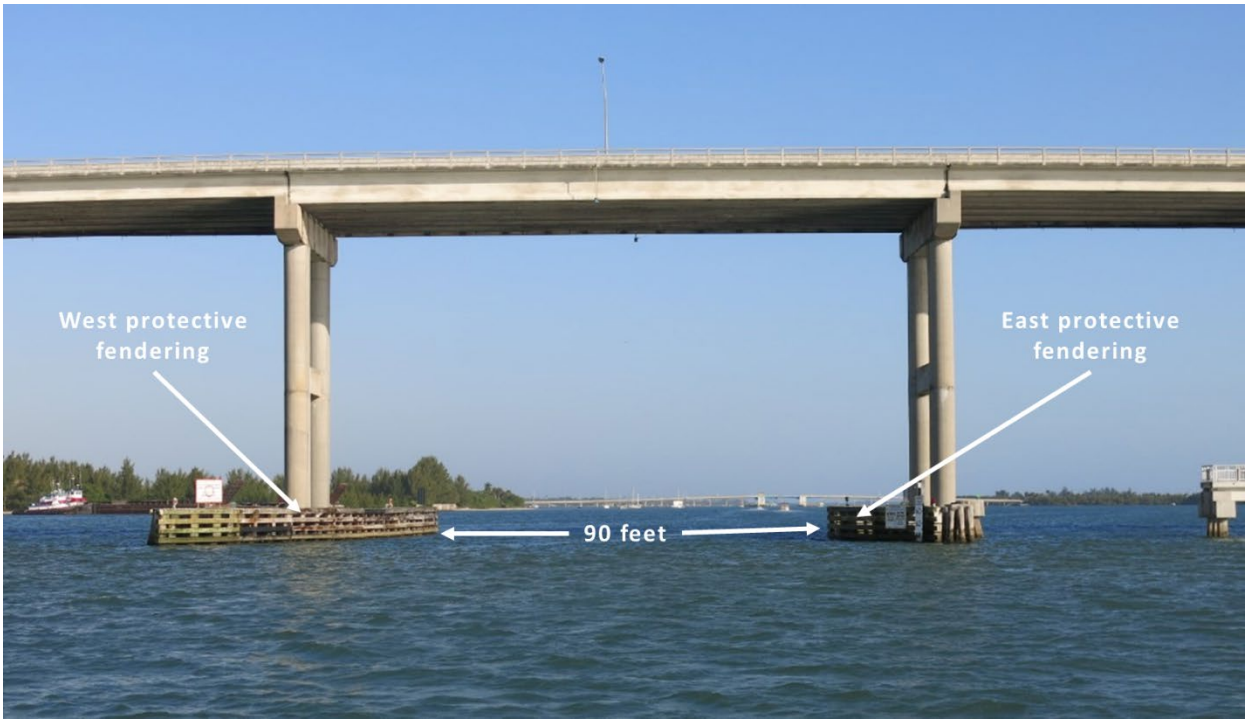


Area of accident where the barge *Cole*, pushed by the towing vessel *Old Glory*, struck the protective fendering of the Peter P. Cobb Memorial Bridge, as indicated by the red triangle. (Background sources: Google Maps and Google Earth)

Background

Built in 1972, the 51-foot-long *Old Glory*, an 800-horsepower, twin-propeller towboat, had a crew of four consisting of a captain, relief captain, and two deckhands. The captain and relief captain worked an 8-hours-on/8-hours-off rotation in the wheelhouse, meaning the captain would work from midnight to 0800, then return to watch from 1600 to midnight, and then be back on watch from 0800 to 1600, with the relief captain working the 8-hour watches in between. The two deckhands worked the same watch rotation to attend to various duties on the vessel and barge.

Built in 1974, the Peter P. Cobb Memorial Bridge (also known as the Fort Pierce South A1A Causeway bridge) spanned from the Florida mainland to Causeway Island. The fixed-span, concrete bridge had a 65-foot vertical clearance over the ICW, also known as the Indian River. A 176-foot-long fendering system consisting of horizontal wood and plastic timbers supported by concrete pilings protected the bridge piers on each side of the channel in a north-south orientation. The protective fendering had reflective signage and red lighting marking the ends and middle. There were green navigation lights marking the center of the span above the navigable channel on the north and south sides of the bridge. The channel width between the fendering was 90 feet, and the ICW channel width approaching the bridge from the south was 165 feet. The course through the bridge was 342° true. The US Army Corps of Engineers supervised the waterway's construction, maintenance, and operation.



The ICW approach to the Peter P. Cobb Memorial Bridge from the south.

Accident Events

The *Old Glory* departed Hillsboro Beach, Florida, at mile 1,052 of the ICW, at 1900 on August 17, 2020, pushing the 230-foot-long, 45-foot-wide barge *Cole* with about 1,600 tons of dredge material northbound for Jacksonville, Florida. The length overall of the tow was 281 feet with a maximum beam of 45 feet. The deepest draft of the tow was the barge *Cole* at about 7 feet.

About midnight on August 19, the relief captain took over the watch from the captain at mile 982 of the ICW. Nothing was out of the ordinary when the relief captain took the watch. The relief captain checked the tides and currents using the electronic chart system (ECS) and saw that low tide for St. Lucie Inlet (about 22 miles south of the accident site) was at 0230.

At 0245, the *Old Glory* was about a half mile south of the Peter P. Cobb Memorial Bridge. In preparation for the northbound approach to the bridge in darkness, the relief captain called the on-watch deckhand up to the wheelhouse as a lookout. The automatic identification system (AIS) track history of the vessel recorded that the ground speed of the *Old Glory* was 5.5 mph with a course over ground of 337°. According to the relief captain, the current started to set the vessel and tow from the center to the west side of the channel. About 0246, the course over ground of the tow was now 333°, and the bow of the barge was outside the western limit of the channel.

At 0248, about a quarter mile from the bridge, the ground speed of the *Old Glory* was 5.9 mph with a course over ground of 331°. Both the *Old Glory* and the *Cole* were now outside the western limit of the channel by about 65 feet, in an area with depths of 7.6–8.6 feet (based on the tidal conditions at that time), according to the most recent survey (October 2009). The relief captain explained that the current took the head of the tow to the west (port), which he was not expecting; he applied rudder correction to starboard. At 0249, the tow had returned to the western

limit of the channel with a speed of 6.1 mph and a course over ground of 336°. Using a searchlight mounted on top of the wheelhouse, the relief captain and deckhand identified the fendering as they approached the bridge. The relief captain observed the current again set the tow to the west just before the vessel reached the bridge. As he approached the bridge, the relief captain said he began to slow the tow, noting that he preferred not to travel fast under bridges.

The tow, still at the western limit of the ICW channel, crossed into the northern approach to the Fort Pierce City Marina channel (a marked channel perpendicular to the ICW with its entrance immediately south of the Peter P. Cobb Memorial Bridge), which was maintained to a depth of 6.5 feet. The relief captain explained that "the boat started bogging down," and he could "not bring the head back up." He tried to "twist" the stern of the *Old Glory* to get the "head [of the tow] in there, as it is, to go through the bridge." At 0250, at a speed of 5.9 mph, the course over ground changed to 358°, and the head of the tow neared the southern end of the west protective fendering. The last time the relief captain checked the vessel's speed, it was 4 mph. He noted that he was "backing down," but was not getting the power that he expected, which he said led him to believe the vessel was either caught on a sand bar and/or the wheel (propeller) wash was going against the barge.

Recognizing that the alignment was poor, the relief captain, believing the tow could not safely pass beneath the bridge, steered the head of the tow into the bridge's east fendering, which he considered the safest place for the barge to strike since it did not affect any of the bridge structures. At 0251, the port side of the barge touched up against the west-side fendering, and its starboard bow struck the eastern fender wall in the middle, damaging a 55-foot section under the bridge. The starboard-side face wire (wire that connects to a barge from the towboat's bow to keep the barge securely against the vessel) also parted during the contact.

Left: **AIS trackline of the *Old Glory* and *Cole* outside of and alongside the western boundary of the ICW. (Source: Portvision)** ***Right:*** **The approximate position of the tow after striking the protective fendering system under the Peter P. Cobb Memorial Bridge. (Source: National Oceanic and Atmospheric Administration [NOAA] electronic navigation chart USFL88M)**

Before the barge struck the fendering, the relief captain rang the general alarm to wake the two sleeping crewmembers. The *Old Glory* and *Cole* tow became wedged under the Peter P. Cobb Memorial Bridge between the east and west fendering. The vessel remained under the bridge while the accident was reported to the US Coast Guard and the vessel owner, and the crew replaced the starboard face wire. According to the relief captain, "when the tide finally changed," the *Old Glory* and *Cole* tow "straightened itself out" under the bridge and floated out to the south with the rising tidal flow. The Coast Guard granted the tow permission to continue its transit to Jacksonville, and, according to the AIS recorded track, the tow was under way and passed through the bridge at 0635.

Additional Information

The relief captain was administered a postaccident alcohol test. Results were negative. He also underwent postaccident drug testing, with negative results. He estimated he had about 7 hours of sleep before taking the watch about midnight and stated that he felt well rested. Although his sleep periods were at different intervals, the relief captain said he preferred the 8-hours-on/8-hours-off watch rotation because it allowed him to have longer-duration sleep, in contrast to the common 6-hours-on/6-hours-off industry practice, in which an operator's longest-duration sleep at any given time on a vessel with only two credentialed operators is about 5 hours.

Damage and Repairs. The barge *Cole* sustained an indentation in the plating on its starboard forward corner that was about 5.5 inches deep, 12 inches high, and 10 inches wide. There were no penetrations to the hull. The total estimated damage to the *Cole* was about $5,000. There was no damage to the *Old Glory*.

The Peter P. Cobb Memorial Bridge structure was inspected and determined to be safe. The east bridge protective fendering system had 4 of its 11 sections either damaged or destroyed and its navigation lighting electrical system damaged. Permanent repairs were completed on the east fendering on January 23, 2021. The total cost of the repairs was $641,000.

Left: **Postaccident damage to the eastern fendering of the bridge looking to the north.** ***Right:*** **Postaccident damage to the eastern fendering of the bridge looking to the south. (Source: Coast Guard)**

The last hydrographic survey for the accident area south of the Peter P. Cobb Memorial Bridge was completed in October 2009 by the Corps of Engineers. The project depth for the channel was 10 feet. On October 7, 2020, a Coast Guard aids-to-navigation team at Fort Pierce conducted soundings from the ends of the fendering on the southeast and southwest sides of the bridge to about 500 yards south of the bridge, about 75 yards west of the channel, and 40 yards east of the channel. All soundings and depths correlated with the charted depths on the navigation charts.

Tidal Conditions and Current. According to the nearest tidal prediction (South Beach Causeway), low tide was predicted at 0340, at 0.19 feet above mean lower low water (MLLW). The tide was ebbing at the time of the accident, with a predicted height of about 0.25 feet above MLLW. The current at the Peter P. Cobb Memorial Bridge at the time of the accident was predicted to be at its maximum velocity, ebbing at about 1.6 mph, with a mean direction of flow at 036° true, with slack water high at 2330 the night before (August 18) and slack water low at 0542.

According to the *United States Coast Pilot*, at the western end of Causeway Island strong cross-currents are encountered with a set to south on the flood and a set to north on the ebb, and there is a strong cross-current at the Peter P. Cobb Memorial Bridge. The publication warned that vessels proceeding north or south should approach the bridge with caution and at all times maintain sufficient headway to avoid being carried against the fender system. It further explained that the currents are influenced by wind and heavy rain runoff or discharge of fresh water from inland areas and warned that extreme caution should be exercised due to strong cross-currents at the approach channel to the Fort Pierce City Marina. When asked if the *United States Coast Pilot* publications were used to prepare for the transit, the relief captain said they have the publications on board, but the main captain was responsible for voyage planning.

On ICW chart 11472, there was a cautionary note for the Peter P. Cobb Memorial Bridge area that warned "an extremely fast current exists in this area." On the *Old Glory* ECS, the caution area related to the extremely fast current was not immediately visible on the chart display, as it was on the paper chart. The ECS required the operator to access a sub-menu within the electronic navigational chart and scroll through a list of seven items of navigational information upon selecting an object or area to query. The extremely fast current caution was the seventh of those items.

The relief captain, who had about 10 years of experience operating towing vessels, anticipated that at the time of approaching the Peter P. Cobb Memorial Bridge, the "water shouldn't be running" in the area. Compared to the high-water periods he encountered while working on the Mississippi River when "the current runs," he said the current he experienced when approaching the Peter P. Cobb Memorial Bridge was the "hardest I've ever seen it run" and was "pretty rough" for the "little opening" through the bridge. Given that he saw the tide was low at 0230, the relief captain "figured low tide was low tide and so there shouldn't be water running." He told investigators that during his present assignment to the *Old Glory*, he had transited through the bridge three times without incident, twice with the barge empty and once with it loaded.

Analysis

There were no reported deficiencies with the *Old Glory*'s propulsion machinery, steering systems, or navigation equipment. The relief captain was tested for drugs and alcohol with negative results. Although the relief captain slept during irregular rest periods, he had about 7 hours of sleep before his watch and said he felt rested while on watch.

At the time the tow was approaching the bridge in darkness, the relief captain said he slowed the vessel, which in turn reduced the maneuverability of the tow while the current pushed the tow to the western limit and then outside of the channel. He said he corrected for the current by steering to starboard to bring the vessel back into the channel, but AIS information showed the tow remaining on the west side of the channel. Just short of the bridge entrance, the relief captain described that the head of the tow "started bogging down" as if it hit a sandbar. This was likely when the stern of the tow crossed into the northern entrance to the 6.5-foot-deep Fort Pierce City Marina channel, a depth less than the tow's reported 7-foot draft. From that point, efforts to line up the tow to pass through the bridge were unsuccessful.

The relief captain checked the ECS to ascertain the tidal conditions and current at the time of the bridge transit. He said he was caught off guard, not expecting the current to be running, considering the time he was passing through the bridge was near low tide (which he understood to be 0230, rather than the nearest location to the accident that had a prediction of 0340). Both the *United States Coast Pilot* and navigational charts had information on "strong cross" and "extremely fast" currents in the area of the Peter P. Cobb Memorial Bridge. Although the relief captain acknowledged the available navigational information on the vessel's ECS and in the *United States Coast Pilot* publication, he did not use all the resources available to him. Towing vessel regulations require the officer of a navigational watch to conduct a navigational assessment, using all resources available to gather information on conditions that could impact the safety of navigation, such as the velocity and direction of currents, bridge transit clearances, and any other special conditions. Had the relief captain been aware of the cautionary note and information contained in the *United States Coast Pilot*, he would have been better prepared to address the risk of strong currents often seen near the Peter P. Cobb Memorial Bridge.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the contact of the towing vessel *Old Glory* and barge *Cole* with the Peter P. Cobb Memorial Bridge protective fendering was an inadequate navigational assessment that did not identify the risk of strong cross-currents in the area of the bridge transit.

Familiarization with Local Information

The *Coast Pilot* and navigational charts are valuable sources to mariners that contain amplifying information on local conditions such as tides and currents, channel characteristics, and bridge descriptions. It is important to check the *Coast Pilot* and charts when developing voyage plans to improve knowledge of an area and prepare for a safe passage.

Vessel Particulars

Vessels	*Old Glory*	*Cole*
Owner/operator	River Ventures, LLC	Brance Diversified Inc.
Port of registry	New Orleans, Louisiana	Jacksonville, Florida
Flag	United States	United States
Type	Towing vessel	Open hopper barge (rake)
Year built	1972	2013
Official number (US)	543077	1249838
IMO number	None	None
Classification society	None	None
Construction	Steel	Steel
Length	51ft (15.7 m)	230 ft (70.1 m)
Beam/width	20 ft (6.0 m)	45 ft (13.7 m)
Draft	7 ft (2.1 m)	7 ft (2.1 m)
Tonnage	77 GRT	952 GRT
Engine power; manufacturer	2 x 400 hp (224 kW); Detroit Diesel 8V-71	None
Persons on board	4	0

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

For more details about this accident, visit www.ntsb.gov and search for NTSB accident ID DCA20FM025.

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