December 11, 2025 MIR-25-46

Sinking of *Barge PTC 706* and Subsequent Breakup of *Chad Pregracke* Tow

On March 16, 2024, about 0008 local time, the towing vessel *Chad Pregracke* was transiting southbound on the Lower Mississippi River pushing 34 loaded barges, near mile 260.6, about 5 miles east of New Roads, Louisiana, when a barge, the *PTC 706*, at the head of the tow rapidly sank, causing the tow to break apart (see figure 1 and figure 2).[1] Five barges in the tow were damaged. Damages were estimated at $2 million. There were no injuries, and no pollution was reported.

Figure 1. *Chad Pregracke* after the casualty.

[1] (a) In this report, all times are central daylight time, and all miles are statute miles. Unless otherwise noted, all speeds in this report speed over ground. (b) Visit ntsb.gov to find additional information in the public docket for this NTSB investigation (case no. DCA24FM029). Use the CAROL Query to search investigations.

Casualty Summary	
NSTB casualty category	Flooding/Hull Failure
Location	Lower Mississippi River, mile 260.6, near New Roads, Louisiana 30°42.103′ N, 091°20.825′ W
Date	March 16, 2024
Time	0008 central daylight time (coordinated universal time –5 hrs)
Persons on board	9
Injuries	None
Property damage	$2 million est.
Environmental damage	None reported
Weather	Visibility 10 mi, clear skies, winds 210° at 5 kts, air temperature 63°F, water temperature 56°F, smooth river surface.
Waterway information	River, width 2,000 ft, depth 66 ft, river stage 25.2 ft at St. Francisville, mile 260.3 (record stage 53.5 ft)

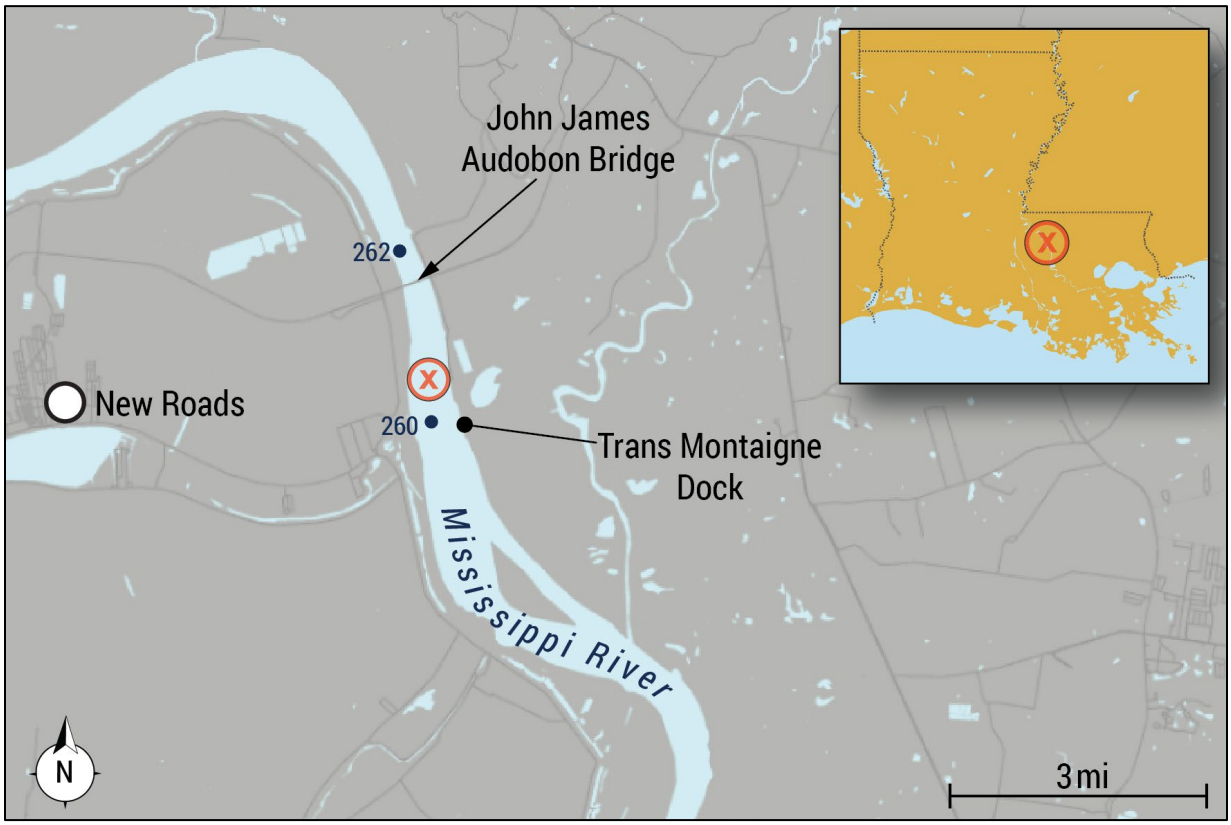

Figure 2. Area where the *Chad Pregracke* tow broke up, as indicated by a red *X*. (Background source: Google Maps)

1 Factual Information

1.1 Background

Owned and operated by Marquette Transportation Company, the 173-foot-long steel hull *Chad Pregracke* was a twin-propeller towing vessel powered by two diesel engines that produced a combined 10,000 horsepower.

The 200-foot-long *PTC 706* was a steel hopper barge built in 2012 and owned by Parker Towing Company. The hull depth of barge *PTC 706* was 11.8 feet. The raked bow of *PTC 706* sloped upward from the forwardmost watertight bulkhead between the rake void and wing tank no. 1 by 2.2 feet (see figure 3).[2] The coamings for the cargo hopper were 3 feet above the main deck. When the *Chad Pregracke* crew picked up the barge, along with other barges, on March 14, per company policy they recorded the *PTC 706*'s drafts on their load draft reading form at 9 feet 5 inches forward and 9 feet 6 inches aft.

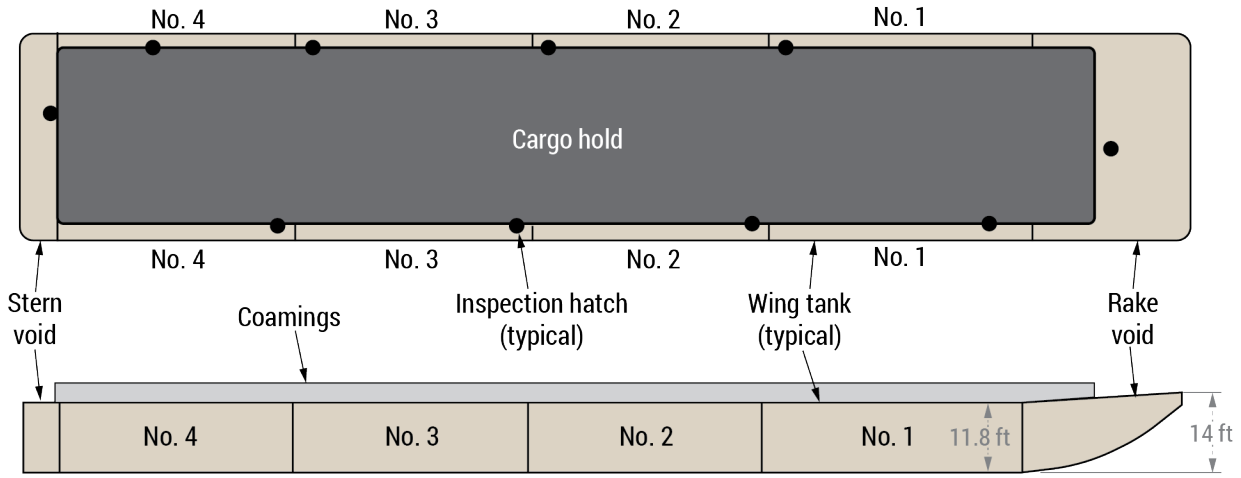

Figure 3. Simplified plan and profile views of hopper barge *PTC 706*.

1.2 Event Sequence

On March 14, about 1844, the *Chad Pregracke* got underway from a fleeting area near mile 586 in Rosedale, Mississippi, pushing 34 loaded barges (all measuring 200 feet long by 35 feet wide) downbound on the Lower Mississippi River to New Orleans, Louisiana. The tow was arranged with six strings of five barges and one string (the outer starboard string) of four barges (see figure 4). The total length of the tow was 1,173 feet by 245 feet wide. The barges had cargoes of soybeans, corn,

[2] A *raked bow* is slanted forward from the bottom of the hull (in the water) to the headlog.

and coal. The barges with soybeans and corn had covers over their cargo hoppers; the coal barges did not. At the head of the tow, the barges' raked ends faced forward, while at the aft end of the tow, the *Chad Pregracke* was faced up to the barges' raked ends. The *PTC 706*'s freeboard was about 30 inches, and the two other uncovered coal barges at the head of the tow had a freeboard of 30–31 inches. The covered barges at the head of the tow had varying freeboards: the port outermost barge (*CH 0121*) had 18 inches, the second tier barge from port (*MTC 1379*) had 30 inches, and the starboard outermost barge (*CH 0132*) had 24 inches.

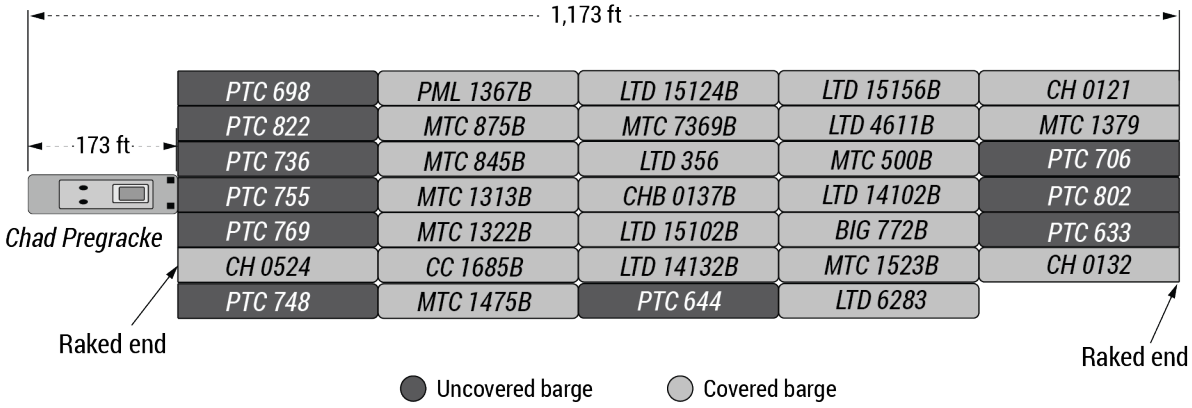

Figure 4. Tow diagram of the *Chad Pregracke*.

Over the next day, the pilot and captain alternated navigational watches. The captain stood watch from 0515 to 1115 and 1715 to 2315, and the pilot stood watch from 1115 to 1715 and 2315 to 0515. The crew would typically go out on the tow each watch to check its rigging and check for water in any holds, voids, or wing tanks. However, the mate said that during their watch on March 15 from 1130 to 1730, the crew could not go out on the tow for safety reasons, because of thunderstorms.

On March 15, at 2315, the tow was near mile 271, with the *Chad Pregracke* at a speed of about 12 mph, when the pilot took over the navigational watch from the captain. The captain told the pilot he had no issues with the tow during his watch. The pilot told investigators that when he relieved the captain, he made no change to the engine rpms, which were near full speed. During the watch relief, the captain turned on the spotlight and illuminated the head of the tow, about 1,000 feet ahead of them, where he and the pilot observed nothing unusual; the pilot recalled the river was "smooth as glass."

At midnight on March 16, the tow was making a speed of 12.9 mph southbound approaching the John James Audubon Bridge (Audubon Bridge), which spanned the Mississippi River at mile 261.8. About 2 minutes later, the head of the *Chad Pregracke* tow began to pass under the Audubon Bridge. By 0005, the speed of

the tow had decreased to 12.5 mph. The pilot, who was familiar with the area the tow was transiting, estimated the current was running about 3 to 4 mph.

Meanwhile, the mate and deckhand went out onto the tow to conduct a round. The mate went to the port side, the deckhand went to the starboard side, and they began to work their way forward.

The pilot made no changes to the engine rpms while the tow was transiting through the bridge. However, the *Chad Pregracke*'s speed continued to decrease; the speed of the tow was 12.2 mph about 0007, and, 30 seconds later, at mile 261, it was 11.7 mph. About 0008, at a speed of 10.8 mph, the tow of the *Chad Pregracke* began to break up. The pilot saw a barge's bow submerged with the stern of the barge sticking up. He pulled the propulsion levers back and saw that the face wires, which connected the towing vessel to the tow, had parted.

While the mate was conducting his round on the tow, on the port side aft, he heard popping sounds about 15 feet away from him. He saw the fore and aft wires snapping, "sparks all over the place," and the center string of barges breaking loose. He announced over the radio, "broke tow." The port string of barges, where the mate was standing, broke loose and spun around before hitting the left descending bank. They drifted downriver toward the Trans Montaigne Partners Baton Rouge dock, located on the left descending bank at mile 260, which had a tug and barge alongside. The deckhand was on the starboard side of the tow, aft, when he noticed the wires breaking, and the barge that he was on broke away from the tow in a group of six barges, which drifted downriver.

The pilot turned the spotlights on and sounded the general alarm. By radio, the deckhand and mate communicated to the pilot that they were not injured but were on barges that were adrift. The captain arrived in the pilothouse shortly after hearing the general alarm and took over at the helm while the pilot called, by radio, for other boats in the area to assist them with recovering the adrift barges. When the spotlight was pointed at the head of the tow, the pilot could see a corner of barge *PTC 706*'s stern sticking out of the water about 10 to15 feet.

Before the port string of barges that had broken away could drift into the Trans Montaigne dock with the mate still aboard, the *Chad Pregracke* crew was able to get a line on those barges, securing them and helping to return the mate to the towing vessel. The *Chad Pregracke* then pushed into the bank with the string of barges it had caught, and it remained there while other vessels assisted in recovering the remainder of the barges. The crew of the towing vessel *Dorella Banta* recovered the deckhand on the remaining barges about 0058, near mile 258.

The *PTC 706* sank (none of the other barges sank). A survey located the barge at mile 260.6 in about 62 feet of water in an inverted position about 750 feet

downriver of where the tow began to break up. The barge was recovered on April 9, 2024, and transported to a scrap yard for disposal.

1.3 Additional Information

1.3.1 Damage

A marine survey company found damage to five barges, including flooding in various compartments, cargo loss and damage, and hull structure damage (see figure 5).

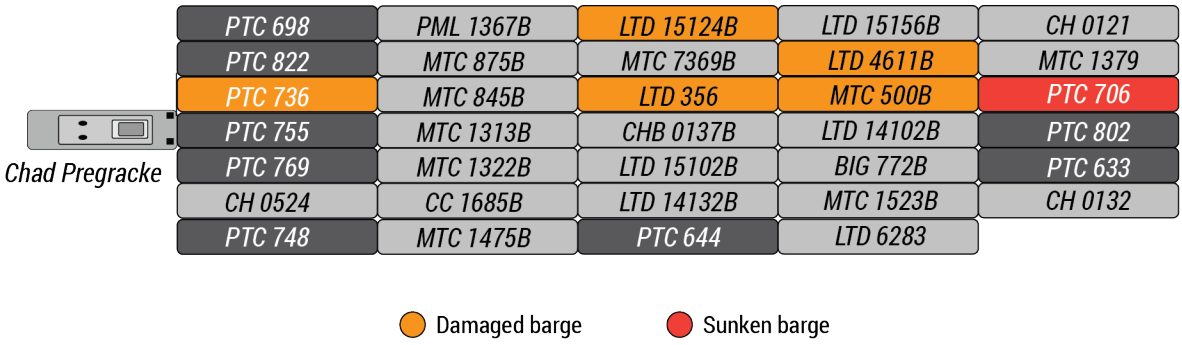

Figure 5. *Chad Pregracke* towing arrangement, showing the location of the damaged barges in orange and the sunken barge *PTC 706* in red.

Of the damaged barges, three of them (*MTC 500B*, *LTD 356*, and *PTC 736*) were in the same string as the *PTC 706* (see figure 6). One of the other damaged barges (*LTD 4611B*) was located on the second string on the port side, second after the lead barge, and partially sank. The other damaged barge (*LTD 15124B*) was located on the outboard port string, third barge from the lead.

Figure 6. *From top:* Damage to the stern area of *MTC 500B*, the barge that was immediately aft of the *PTC 706*, and covered barge *LTD 4611B* partially sunken by its bow to port. (Source: Budwine and Associates, LLC)

The *PTC 706* was a constructive total loss. Investigators examined the *PTC 706* at the recycling yard. The rake section was substantially damaged from contact with the river bottom (see figure 7). It was bent upward from near the watertight bulkhead between the rake void and the no. 1 wing tank. The port side of the barge in the vicinity of the watertight bulkhead between the rake void and the no. 1 wing tank exhibited substantial compressive forces and deformation to its plating.

Figure 7. Barge *PTC 706* after arriving at the recycling yard in Houma, Louisiana, on April 22, 2024, with damaged rake. (Source: Modern American Recycling Services, Inc.)

On the starboard side of *PTC 706*, at the bilge knuckle in the area between the rake void and wing tank no. 1, investigators found a hull fracture, dissimilar to any other damage observed.[3] This starboard side section of the bilge knuckle was cut out of the hull and sent to the National Transportation Safety Board (NTSB) Materials Laboratory for examination.

The NTSB found that the sectioned portion of the hull plating fractured initially along a 2.8-inch length of section of the vertical butt weld.[4] The butt weld exhibited a lack of penetration, with less than a third (0.162 inches) of the 0.5-inch plate thickness joined at the thinnest areas (see figure 8). This portion of the weld also exhibited large pores, some open to the surface, along with weld spatter and flash deposits in the welded areas between the plates.

[3] The *bilge knuckle* is the curvature of a barge where the side plating meets the bottom plating. It is often susceptible to extreme wear and typically requires the use of thicker shell plating.

[4] A *butt weld* is a weld configuration where the two surfaces are on the same plane and are abutted before being joined.

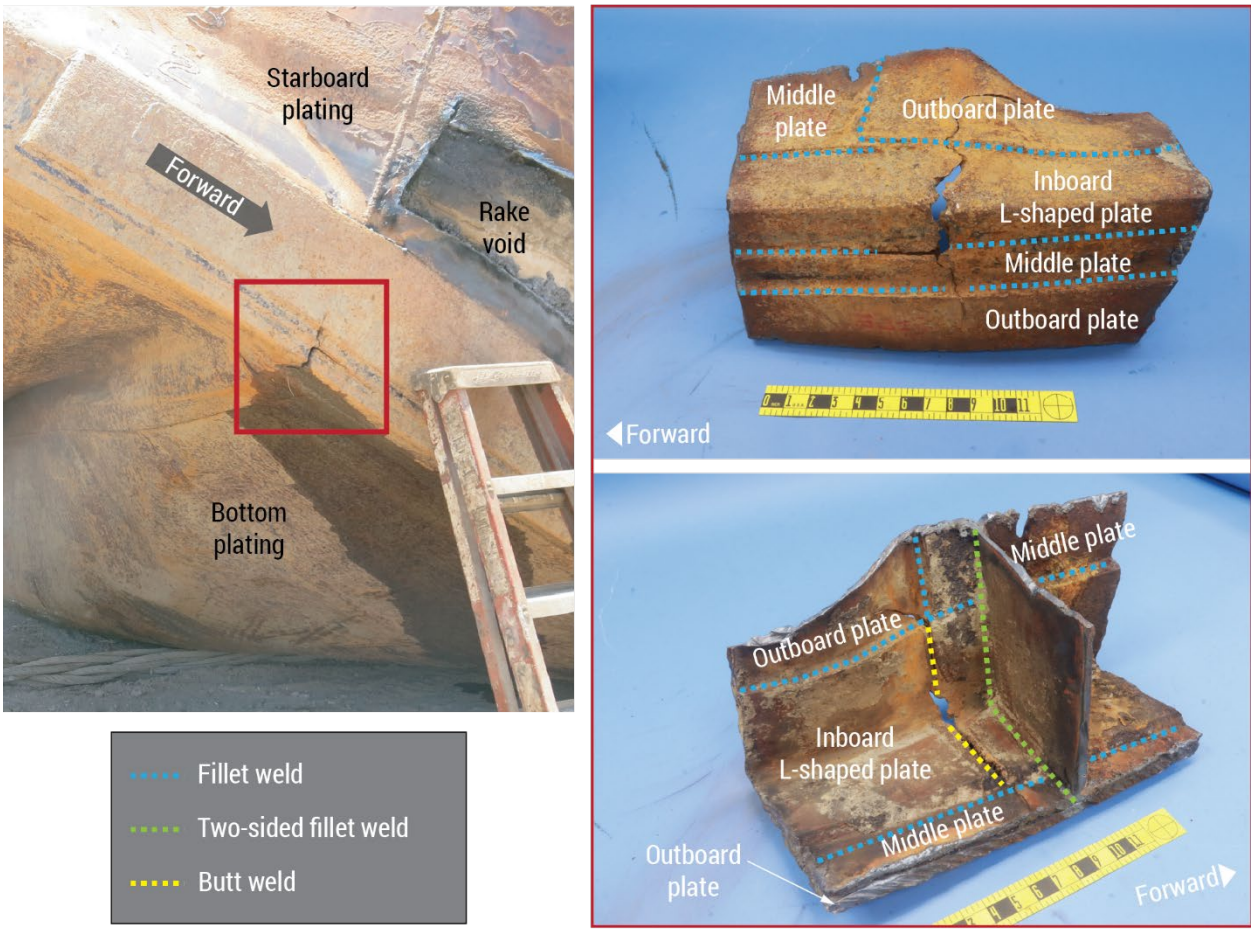

Figure 8. *Clockwise from left*: *PTC 706* starboard-side bilge knuckle before section was cut away on April 22, 2024. Bilge knuckle section cutaway with labeling. Interior of the cutaway section.

1.3.2 Barge Inspections and Examinations

When the *PTC 706* was picked up on March 14 in Cairo, Illinois, the mate checked the barge for water in each of the tanks. He recorded on the void tank sounding chart that the *PTC 706* had 1 inch of water in the bow (rake) void and no water in any wing tank or the cargo hopper. According to the mate, none of the barges in the tow required water to be removed (company policy required removal of water higher than 3 inches). Additionally, the mate told investigators that the crew also checked each barge for damage before placing it into the tow, noting that this is done because once they take a barge into the tow, they are responsible for it. For the *PTC 706*, there was no documented damage at the time it was picked up.

The *PTC 706* was last inspected by company personnel on February 22 and March 3, 2024. No damage or water in any compartment was noted, and all hatches, dogs and gaskets were in "good" condition.

2 Analysis

While the towing vessel *Chad Pregracke* was pushing 34 loaded barges on the Lower Mississippi River southbound towards New Orleans, near mile 260.6, barge *PTC 706* at the head of the tow became partially submerged, causing the tow to break up, and the barge later sank.

Before the *PTC 706* sank, the *Chad Pregracke* pilot saw its stern sticking up, with the bow of the barge submerged. Barges at the head of a tow can be shoved under water. This can occur on barges with low freeboard due to the effect of river current on the tow or a tow pushing too fast. However, in this case, the *PTC 706* (center barge) had more freeboard than the adjacent barges, but the adjacent barges were not submerged. Therefore, it is more likely that the *PTC 706*'s freeboard was reduced by weight forward in the barge. This weight forward could have been caused by water in the rake void, forward wing tanks, or forward in the open hopper/hold (possibly from rainwater accumulation or spray over the bow of its uncovered cargo hopper). When the bow of the barge submerged, the force of the tow's forward momentum would have driven the barge further under water.

After the casualty, investigators found a hull fracture along a butt weld forward on the starboard-side bilge knuckle of the barge, between the rake void and wing tank no. 1, an area susceptible to extreme wear. The weld exhibited a lack of weld penetration, with large pores, weld splatter, and flash deposits in the unwelded areas between the plates. These characteristics would have left the weld unable to accommodate as much load as the plates it was joining. Once the porous area of this butt weld fractured, the resulting crack would have grown into the adjoining plates until it arrested. If the fracture existed before the barge sank, it would have provided an opening for water ingress. Thus, flooding, even at a slow rate, into the rake void or wing tank no. 1, would cause an increase in forward draft of the barge. Continuing to push a barge with an increased forward draft could lead to the bow being submerged. However, the rake area of the barge was severely damaged as a result of the sinking, and investigators could not determine whether the fracture existed before the casualty or was the result of the barge's contact with the river bottom. Therefore, the cause of the *PTC 706* being down by the bow could not be definitively determined.

3 Conclusions

3.1 Probable Cause

The National Transportation Safety Board determines that the probable cause of the sinking of barge *PTC 706* and subsequent breakup of the *Chad Pregracke* tow was the barge *PTC 706*, which was located at the head of the tow, being down by the bow due to an undetermined reason and subsequently being driven under water by the forward momentum of the tow.

Vessel Particulars

Vessel	*Chad Pregracke*	*PTC 706*
NTSB vessel group	Towing/Barge (Towing vessel)	Towing/Barge (Hopper barge)
Owner/Operator	US Bank National Association/Marquette Transportation Company, LLC (Commercial)	Parker Towing Company, Inc (Commercial)
Flag	United States	United States
Port of registry	St. Louis, Missiouri	Tuscaloosa, Alabama
Year built	2016	2012
Official number (US)	1272284	1238528
IMO number	N/A	N/A
Classification society	Towing Vessel Inspection Bureau (Third-party organization)	N/A
Length (overall)	173.0 ft (52.7 m)	200.0 ft (61.0 m)
Breadth (max.)	48.0 ft (14.6 m)	35.0 ft (10.7 m)
Draft (casualty)	11.0 ft (3.4 m)	9.5 ft (2.9 m)
Tonnage	761 GRT/1,053 GT ITC	705 GRT
Engine power; manufacturer	2 x 5,000 hp (3,728 kW); Electro-motive EMD-20-710G7-T3 diesel engines	N/A

NTSB investigators worked closely with our counterparts from **Coast Guard Marine Safety Unit Baton Rouge** throughout this investigation.