



# National Transportation Safety Board

## Marine Accident Brief

### Sinking of Towing Vessel *Jim Marko*

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<b>Accident no.</b>	DCA14LM011
<b>Vessel name</b>	<i>Jim Marko</i>
<b>Accident type</b>	Sinking
<b>Location</b>	Upper Mississippi River, mile marker 181.6, near St. Louis, Missouri
<b>Date</b>	July 1, 2014
<b>Time</b>	About noon central daylight time (coordinated universal time – 5 hours)
<b>Injuries</b>	None
<b>Damage</b>	Repairs (not attempted) were estimated to exceed the vessel's insured value of \$800,000
<b>Environmental damage</b>	Undetermined amount of diesel and lube oil released into the waterway
<b>Weather</b>	Mostly cloudy, 82°F, visibility 10 miles, west winds at 8 mph
<b>Waterway information</b>	The Mississippi River stage was 24.85 feet on the St. Louis gage of the day of the accident (high water is 20 feet and flood stage is 30 feet). The current was about 7–8 knots.

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About 1200 on Tuesday, July 1, the uninspected towing vessel *Jim Marko* sank at mile marker 181.6 on the Upper Mississippi River, near St. Louis, Missouri. At the time, the vessel was transiting upriver with a crew of four to a barge fleeting area near Venice, Illinois, immediately northeast across the river from St. Louis. No one was injured in the accident; however, the sinking resulted in damage exceeding the insured value of the vessel, and an undetermined amount of oil was released into the river.



Photo of the *Jim Marko* under way (by Capt. Ted, [www.shipspotting.com](http://www.shipspotting.com)).

## Sinking of Towing Vessel *Jim Marko*



Satellite image of a section of the Midwest, including the states of Missouri and Illinois. The sinking occurred on the Mississippi River between St. Louis, Missouri, and Venice, Illinois.

The *Jim Marko*, a twin-screw-propeller inland towing vessel, worked in the fleeting trade. Fleeting towboats are used primarily to build or reconfigure large tows (up to 45 barges) and to shift (move) barges within fleeting areas (barge parking lots).



Photo of the Mississippi River just south of St. Louis, near mile marker 172. Several barge fleeting areas are visible along the river banks. (Photo by the St. Louis Port Authority)



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About 0600 on the morning of the accident, the crew of the *Jim Marko* arrived at the vessel, which was moored at Osage Marine Services (the vessel operator, located at mile marker 178.7), and prepared to get under way for a 12-hour shift. The crew consisted of four people – a captain (pilot), a mate (unlicensed senior deckhand), and two deckhands. The captain was properly credentialed and the vessel was appropriately manned in accordance with Coast Guard requirements for its operation. The mate, using a company checklist, conducted pre-departure checks, which included a deck walk and examining navigational equipment, steering, and machinery. He noted no discrepancies. Crewmembers told investigators that they regularly had to pump water out of the vessel's void spaces due to leaks. The *Jim Marko* had a bow void, located immediately aft of the collision bulkhead, and a stern void. According to crewmembers, the stern void needed to be pumped frequently, sometimes twice a day. The mate told investigators that he checked the voids that morning and that they were “pretty empty.”

Between 0600 and 1030, the *Jim Marko* and its crew carried out normal operations at two fleeting areas. First, the vessel worked at the East Side fleeting area at mile marker 176.7 and moved 15–20 barges to build a tow. The vessel then traveled upriver to the A&D fleeting area at mile marker 178.8 to move barges.



Aerial view of the Mississippi River near St. Louis. The image shows the two fleeting areas, separated by a couple of miles, where the *Jim Marko* worked on the morning of the sinking. The vessel was headed upriver to a fleeting area in Venice when it sank (location marked by a red triangle).

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Crewmembers told investigators that, about 1030 at the A&D fleeting area, one of the deckhands noticed a hole on the *Jim Marko*'s starboard side below the rub rail and about 3 feet aft of the turn of the bow. The captain, who was operating the vessel at that time, asked the mate to photograph the hole with his cellphone so that he could see it. The captain looked at the photo, told the mate he would report the hole to the company, and continued operations.



Cellphone photo, taken by one of the *Jim Marko*'s deckhands, showing the hull breach on the vessel's forward starboard side.

The mate told investigators that he checked the bow void and no water was entering from the hole at that time. The vessel then went to the KMI fleeting area at mile marker 178.5 to top (turn) around a barge. After turning the barge, the *Jim Marko* (without any barges, or "light boat") began to travel upriver toward the Venice fleeting area. According to the captain, the vessel developed a slight list to port as it continued toward Venice. About 1115, while still under way, the deckhand began pumping out the stern void to level the vessel out. After the stern void was pumped, the crewmembers noticed that the vessel felt like it was down by the bow. About 1130, they opened the bow hatch to check the bow void and found it quickly filling with water. They attempted to pump the void but were unable to keep up with the flooding. Water was soon coming over the bow and the vessel began listing to starboard.

The crew of a nearby towboat, the *Miranda Paige*, noticed that the *Jim Marko* was in distress. The *Miranda Paige* was about 0.75 miles behind the *Jim Marko* and pushing a barge upriver. The *Miranda Paige* captain readied his crew as they approached the rapidly sinking towboat. He had his deck crewmembers position themselves on their barge with life rings at the ready in case the *Jim Marko*'s crew had to abandon ship. As they approached, they saw that the *Jim Marko* had a large starboard heel and the port propeller was visible above the water. The *Miranda Paige* tow came alongside the sinking vessel's port bow, and the *Jim Marko* crew was able to abandon the vessel directly onto the barge. The *Miranda Paige* captain noted that two of the *Jim Marko* crewmembers were not wearing shoes and one did not have a life jacket.



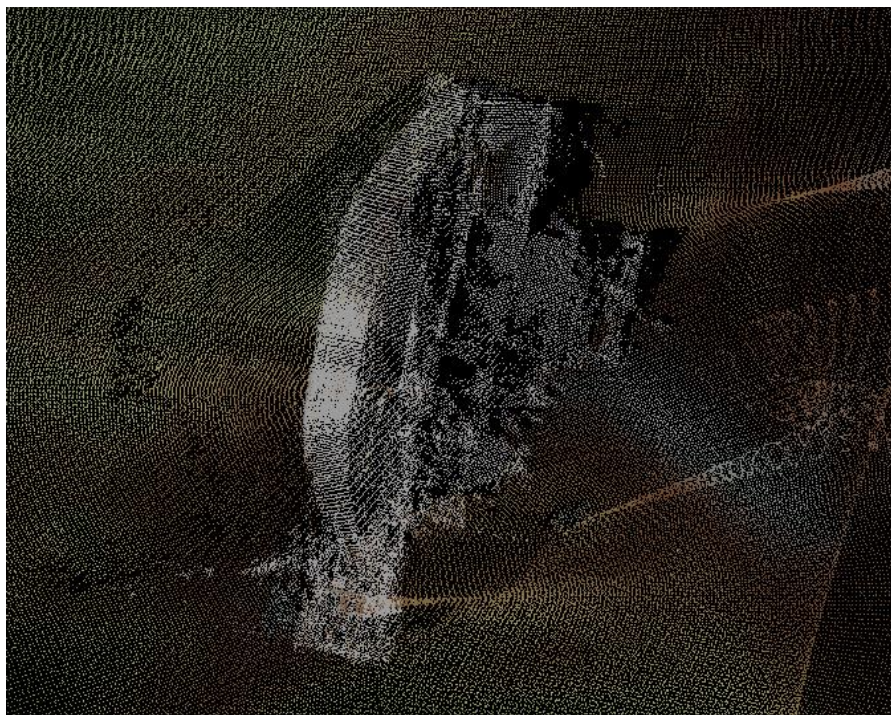
### Sinking of Towing Vessel *Jim Marko*

The *Miranda Paige* captain told investigators that he did not keep a line on the *Jim Marko* because it was sinking so quickly and he was afraid it would pull down the *Miranda Paige*'s barge or damage it. Within minutes, the *Jim Marko* sank completely.



Photo of the *Jim Marko* (left) sinking. The *Miranda Paige* and a section of its barge are visible in the background. (Photo by KMOV St. Louis)

Side scan sonar images taken after the accident showed the towboat resting on its starboard side on the bottom of the river.

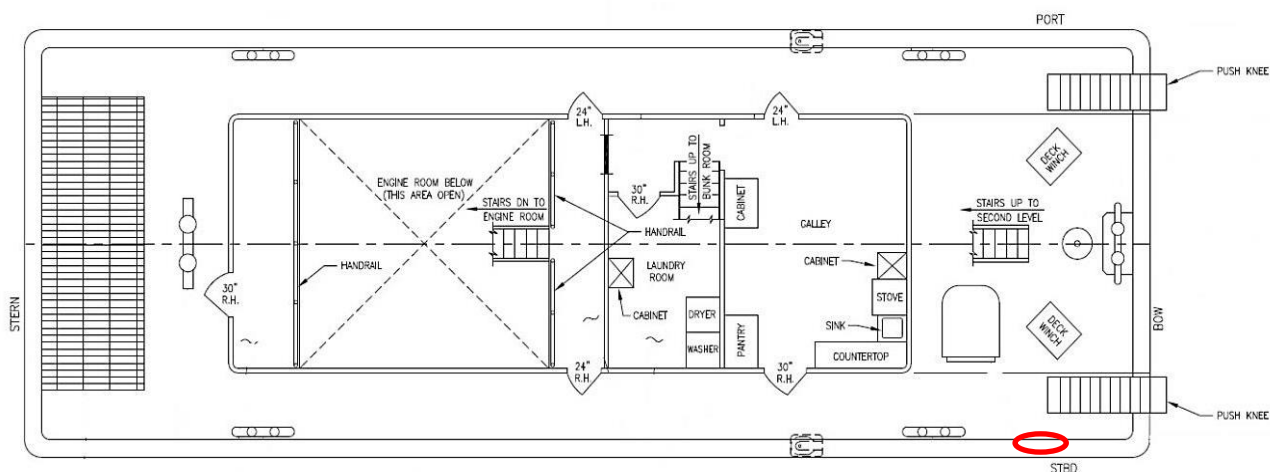


Side scan sonar image of the *Jim Marko*. (Photo by the US Army Corps of Engineers)

## Sinking of Towing Vessel *Jim Marko*

Postaccident drug and alcohol testing was conducted on the *Jim Marko* crew; all results were negative.

Due to high water conditions in the river producing a fast-moving current, the vessel owners were unable to attempt salvage for over a month. Salvage operations took place August 5–15. The salvage report indicated that “at a point approximately 3 [feet] aft [of] the forward bulkhead of the bow void compartment and 36” below the deck, the starboard side plate in way of a triangular gusset bracket (which would normally be found on the end of a laminated rubber fender) was found to have been ‘swiveled’ and pushed into the compartment to create an 8” x 16” hole.” In addition, the report noted pinhole leaks on the port side of the bow void and a leak where potable water piping penetrated the forward engine room bulkhead.



**Drawing of the main deck layout on board the *Jim Marko*'s sister vessel *John G*. The bow is located on the right side of the image; the stern on the left. A red oval shows the approximate location of the *Jim Marko*'s hull breach. (Image provided by McDonough Marine Services)**

The damage survey also noted that a number of watertight doors were found open, including the starboard and aft galley doors on the main deck. Open watertight doors on the main deck allowed water to travel directly into the engine room once the bow was submerged. The rapid nature of the sinking indicates that water was able to quickly fill the spaces below deck. The president of Osage Marine Services told investigators that company policy required the watertight doors to be closed when the vessel was under way.



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Postsalvage photo of the starboard bow area. The hole created by the gusset bracket is circled in red. (Photo by the Coast Guard)

Salvage costs were \$290,500 and repairs were estimated to exceed the *Jim Marko*'s reported insured value of \$800,000. Rather than repair the damaged vessel, Osage Marine Services sold it. The salvage report indicated that about 2,500 gallons of fuel/water mixture were recovered from the vessel's fuel tanks.

## Probable Cause

The National Transportation Safety Board determines that the probable cause of the sinking of towing vessel *Jim Marko* was the captain's decision to continue operations with a known hull breach in the vicinity of the vessel's waterline. Contributing to the rapid sinking was a lack of watertight integrity due to watertight doors on the main deck left open while under way.

### Safety Issues

- **Abandoning Ship:** Crewmembers should wear appropriate personal protection equipment for their operations under way and should always wear personal flotation devices when abandoning ship. Two crewmembers on the *Jim Marko* were barefoot and one did not wear a personal flotation device. The Mississippi River was experiencing high water conditions, which would have posed a heightened risk had crewmembers been forced to abandon ship into the water.
- **Watertight Integrity:** A hole in the side shell of a vessel, especially a large one near the waterline, poses a serious risk. When a potential hull breach has been identified, operations should be halted until repairs can be made or the crew can determine that the damage does not affect seaworthiness.
- **Watertight Doors:** Water- and weathertight doors should be kept closed when a vessel is under way, unless the crew must pass through them. These doors are critical for preventing ingress of water or stopping its spread if a hull breach and/or flooding occurs.



## Sinking of Towing Vessel *Jim Marko*

### Vessel Particulars

Vessel	<i>Jim Marko</i>
Owner/operator	Osage Marine Services, Inc.
Port of registry	St. Louis, Missouri
Flag	United States
Type	Towing vessel
Year built	1976
Official number (US)	571708
IMO number	N/A
Construction	Steel
Length	66.4 ft (20.2 m)
Beam/width	24 ft (7.3 m)
Gross and/or ITC tonnage	158 gross tons
Engine power; manufacturer	1,350 hp (1,005 kW); two General Motors 12V-149 diesel engines
Persons on board	4

For more details about this accident, visit [www.nts.gov](http://www.nts.gov) and search for NTSB accident ID DCA14LM011.

**Adopted: July 9, 2015**

The NTSB has authority to investigate and establish the probable cause of any major marine casualty or any marine casualty involving both public and nonpublic vessels under 49 *United States Code* 1131. This report is based on factual information either gathered by NTSB investigators or provided by the Coast Guard from its informal investigation of the accident.

The NTSB does not assign fault or blame for a marine casualty; rather, as specified by NTSB regulation, “[NTSB] investigations are fact-finding proceedings with no formal issues and no adverse parties . . . and are not conducted for the purpose of determining the rights or liabilities of any person.” 49 *Code of Federal Regulations*, Section 831.4.

Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by conducting investigations and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report. 49 *United States Code*, Section 1154(b).