



# National Transportation Safety Board

## Marine Accident Brief

### Collision of Bulk Carrier *Flag Gangos* with Oil Tanker *Pamisos* and Floating Pier

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<b>Accident no.</b>	DCA14FM015
<b>Vessel names</b>	<i>Flag Gangos</i> , <i>Pamisos</i> , <i>WEB235</i>
<b>Accident type</b>	Collision and allision
<b>Location</b>	Mississippi River, Gretna, Louisiana, 29°55.2' N 90°04.1' W (immediately across the river from New Orleans, Louisiana)
<b>Date</b>	August 12, 2014
<b>Time</b>	2215 central daylight time (coordinated universal time – 5 hours)
<b>Injuries</b>	None
<b>Property damage</b>	About \$17.5 million
<b>Environmental damage</b>	About 1,200 gallons of oil spilled onto vessel decks and into the river
<b>Weather</b>	Clear; 10-mile visibility; calm winds; air temperature about 79°F
<b>Waterway information</b>	Mississippi River near New Orleans, Louisiana. The current was moving at 1.5 knots.

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At 2215 local time on August 12, 2014, the outbound bulk carrier *Flag Gangos* collided with the berthed oil tanker *Pamisos* on the Mississippi River at Gretna, Louisiana. The *Flag Gangos* subsequently allided with a pier at the facility where the *Pamisos* was berthed, and the pier struck and damaged a fuel barge, *WEB235*, berthed behind the *Pamisos*. No one was injured, but about 1,200 gallons of oil that was being transferred at the time spilled from the transfer lines, and some of the oil entered the river. Damage amounts were reported as \$16 million for the terminal, more than \$500,000 each for the *Flag Gangos* and the *Pamisos*, and about \$418,000 for the fuel barge.



The *Flag Gangos* before the accident (File photo by Golden Union Shipping Co.)

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

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About 4 hours before the accident, the *Flag Gangos* departed the Cargill dock in Reserve, Louisiana, with a cargo of grain and corn. A pilot from the New Orleans Baton Rouge Steamship Pilots Association (NOBRA) was on board. Before the bulk carrier left the berth, the pilot requested that the steering system be tested by moving the rudder between hard (about 35 degrees) port and hard starboard. The full rudder movement took about 13 seconds, and the pilot was satisfied with the rudder's responsiveness.



Satellite image of a section of Louisiana, including the start of the *Flag Gangos*' transit at Cargill and the accident site about 36 miles downriver. (Background by Google Earth)

About 2212, when the *Flag Gangos* was near mile marker 98 with the city of New Orleans on the left descending bank of the river, the pilot ordered a 2-degree heading change to starboard (from a course of 058 degrees to 060 degrees). To effect this change, the helmsman applied 15 degrees of starboard rudder, and the rudder responded correctly. However, when the helmsman turned the wheel to port to ease the rudder input, the rudder did not respond, which the pilot saw on the rudder angle indicator (an instrument on the bridge panel). The pilot immediately noticed that the ship's heading continued to swing to starboard, and he asked the helmsman, "Where are you going, man?" The pilot then ordered 20 degrees to port to correct the heading. The helmsman turned the wheel accordingly, but again the rudder did not respond. The pilot promptly told the bridge team, "We've got a steering problem. Stop the engine, switch your steering pumps, and stand by the anchor." He also notified the US Coast Guard's vessel traffic service about the ship's loss of steering.

The pilot ordered the main engine full astern and then emergency full astern, to which the chief engineer responded by performing several astern starts of the engine. Doing so made the engine act as a brake, using the propeller to slow the forward movement of the vessel. The pilot then ordered the crew to drop the portside anchor and hold the brake on the anchor. (Holding the brake on the anchor prevents the chain from "running" after the dropped anchor has hit bottom, and thus increases the likelihood of arresting the ship's forward movement.) At this time, the vessel's speed was about 8.8 knots and the heading was about 092 degrees, more than 30 degrees to the right of the intended course of 060. The pilot repeated his command to hold the brake on the anchor. He then

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began sounding short blasts of the ship's whistle to warn dockside personnel and crews on nearby moored vessels. The pilot sounded the whistle more than 70 times.

On the right descending riverbank was the International-Matex Tank Terminals (IMTT) facility in Gretna, Louisiana. The 750-foot-long oil tanker *Pamisos* was berthed bow upriver at the facility, loading a cargo of slurry oil.



The *Pamisos* before the accident. (Photo by Arjan Elmendorp, [www.shipspotting.com](http://www.shipspotting.com))

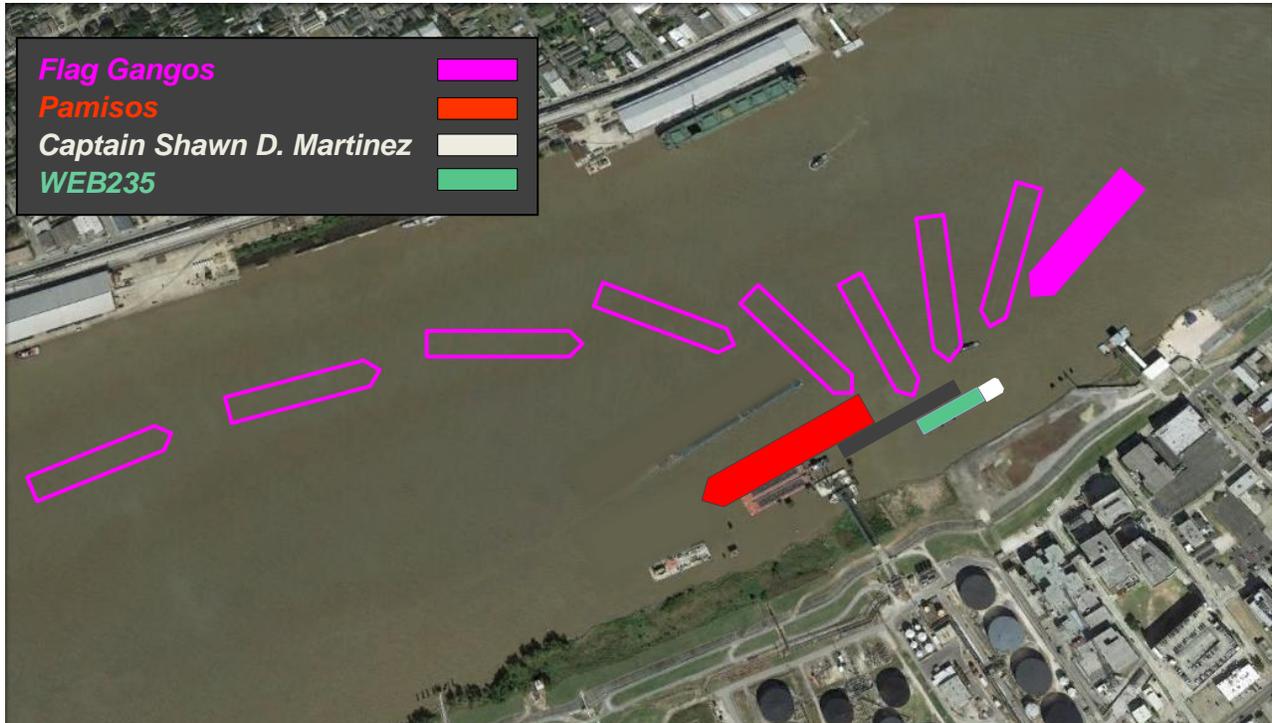
Aft of the *Pamisos* and shoreside of a floating pier was towing vessel *Captain Shawn D. Martinez*. Its crew was transferring fuel oil to the pier from barge *WEB235*, which was made up (configured) to the towing vessel. When the crew and the dockworkers heard the whistle blasts, they activated the emergency shutdowns for their respective oil transfers and prepared for impact. These actions helped prevent a potentially large oil spill from happening.



Postaccident photo of towing vessel *Captain Shawn D. Martinez*, made up to fuel barge *WEB235*.

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The *Flag Gangos* continued turning to starboard until the ship was nearly sideways in the river and almost perpendicular to its intended course. As a result of the astern engine starts and dropping the portside anchor, the bulk carrier's speed was reduced to about 2 knots; however, these efforts could not stop the ship in time. At 2215, the bow of the *Flag Gangos* struck the starboard quarter of the *Pamisos*. The *Flag Gangos* then allided with the floating pier before coming to a stop, and the floating pier subsequently made contact with the WEB235 barge. The 1.5-knot downriver current, which was pushing on the *Flag Gangos*' starboard side, began turning the bulk carrier in the waterway. The pilot ordered the starboard anchor dropped to counteract the effect of the current, and three nearby tugboats assisted with holding the ship.



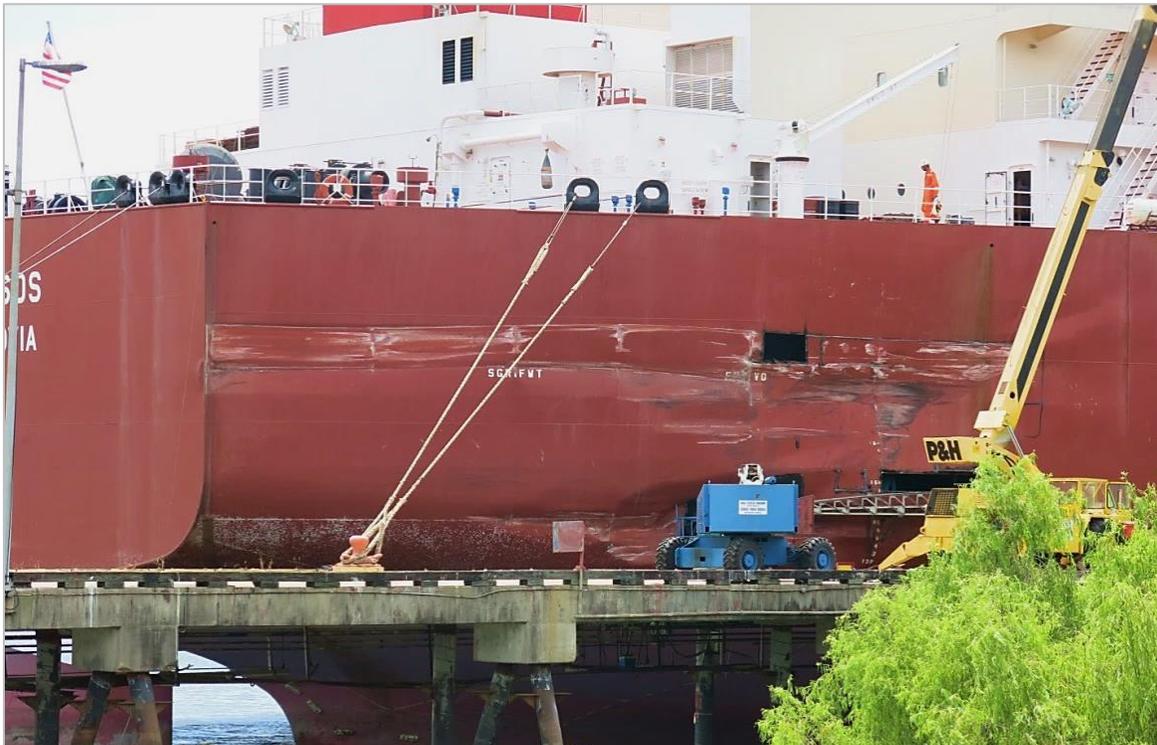
Aerial view depicting the approximate trajectory of the *Flag Gangos* as it approached the IMTT facility, struck the starboard quarter of the *Pamisos* and the floating pier, which then struck barge WEB235. Ultimately, the *Flag Gangos* turned around in the river due to the effect of the current. Overlaid symbols depicting the vessels and their positions are approximate. (Background by Bing Maps)

Damage to the *Flag Gangos* totaled more than \$500,000 to the starboard bow section at the main deck and the steering system. The *Pamisos* sustained more than \$500,000 dollars in damage to its starboard quarter. The IMTT terminal sustained about \$16 million in damage to the floating pier, loading arms, piping systems, and dolphins (clusters of closely driven piles for mooring). Barge WEB235 sustained about \$418,000 in damage to the no. 4 portside wing tank deck, side shell, and knuckle (a point where two surfaces meet at an angle), as well as to the no. 3 portside longitudinal bulkhead. The *Captain Shawn D. Martinez*, to which the WEB235 was made up, was not damaged.

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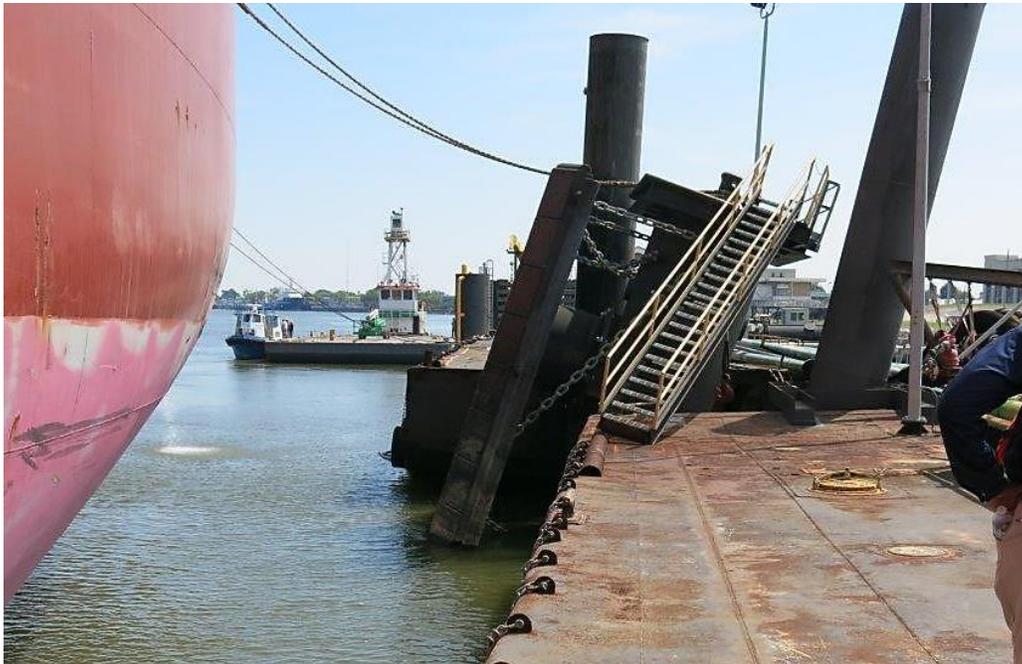


**Damage to the upper starboard side and bulwark of the *Flag Gangos* near the bow.**

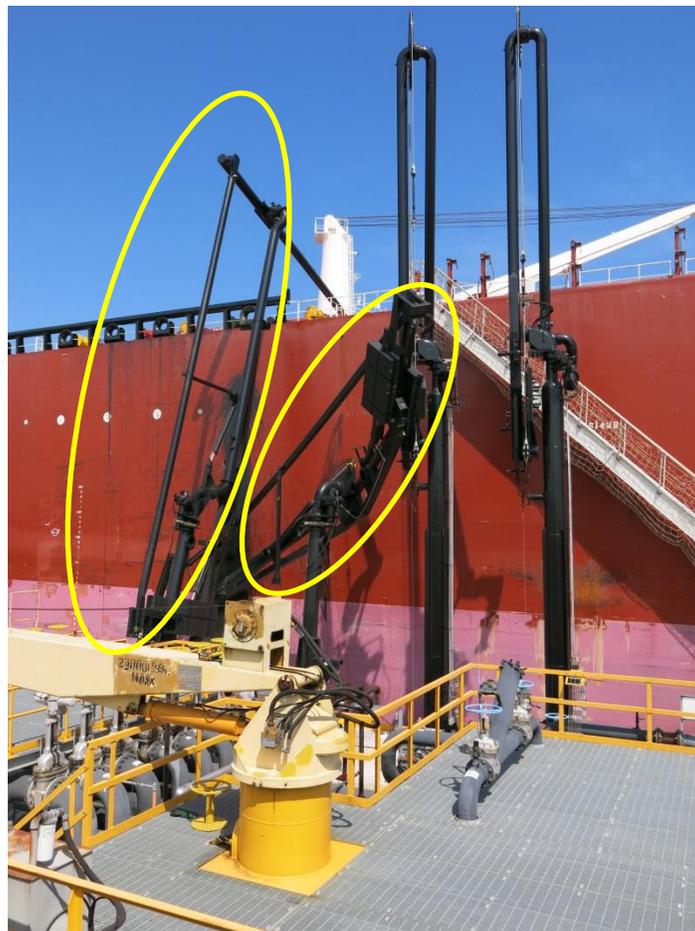


**Damage to the starboard quarter of the *Pamisos*.**

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**Damage to the pilings at the IMTT facility pier.**



**Damage to the loading arms at the IMTT facility pier. The loading arm on the right is undamaged; the middle arm shows moderate damage, and the left arm is extensively damaged.**

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During postaccident examination, after extensive testing and inspections, investigators discovered that a hydraulic solenoid valve and coil had failed in the port side of the hydraulic control block of the *Flag Gangos*' steering system (SV850-3 FCP400 rotary vane steering gear system). The hydraulic valve was jammed with debris and unable to move properly. The coil failed electrically and was unable to actuate the hydraulic solenoid valve as designed. Nearly 1 year earlier, the steering system manufacturer, Rolls-Royce, emailed a service letter to the vessel's operating company, Golden Union Shipping Co., warning about possible failures of this model of coil, which was also installed in the starboard side of the steering system. At that time, in October 2013, the *Flag Gangos* was being delivered by the Cosco Guangdong Shipyard in Guangdong, China, where the ship was built. The service letter stated in red print, "MANDATED ACTION REQUIRED":

It has become apparent that solenoids installed on some of our steering gears may fail prematurely which can impact the steering gear's performance. In order to resolve the reliability issue, Rolls-Royce will modify the hydraulic isolation drive circuit for Rolls-Royce frequency controlled steering gears with 230V AC solenoid coils, type: Eaton-Vickers 230V.

Rolls-Royce further stated that its technicians would need 1 day on board the vessel to complete the upgrade, which entailed replacing the 230-volt AC (alternating current) solenoid coils with new 24-volt DC (direct current) solenoid coils and external 24-volt DC power supplies. The upgrade would also include an automatic coil failure alarm and an automatic start/stop function, designed to detect an emerging malfunction of the coil. If only one of the steering pumps were running, the monitoring feature would activate an alarm, automatically start the standby pump, and stop the affected pump. If both steering pumps were running, the malfunctioning pump would be shut off and the other pump would continue to operate, maintaining steering control.

The service letter stated that, during the vessel's next scheduled class survey, the vessel's classification society would verify that the mandated solenoid upgrade had been completed. The service letter also stated that Rolls-Royce would contact Golden Union to schedule the upgrade. Seven months later, in May 2014, Rolls-Royce contacted Golden Union about upgrading three of the four Golden Union vessels with affected steering systems, but did not mention the *Flag Gangos*. In June 2014, Golden Union provided Rolls-Royce with three possible dates during which the *Flag Gangos* would be in port in Central America and could have the upgrade completed. Rolls-Royce replied that it would send the parts for the upgrade to the local agent, and requested a 3-day window to complete the solenoid upgrade and two other upgrades. However, because of the bulk carrier's operating schedule, the upgrades were postponed to after the *Flag Gangos*' port call in New Orleans (they were to be completed in Japan in July 2014). The accident occurred before the upgrades could be completed; the *Flag Gangos*' steering system was upgraded shortly after the accident. As of the date of this report, the mandated solenoid upgrade was nearly 100 percent completed on board vessels equipped with this type of Rolls-Royce steering system.

In addition, soon after the newly-built *Flag Gangos* left the Guangdong shipyard, onboard alarms indicating clogged steering system filters began to activate repeatedly. From October 2013 through April 2014, the alarms activated as frequently as 48 times per month. In response to the filter alarms, the engineering crew would open, inspect, and clean the filter inserts—although the filters reportedly looked clean—and put them back in service. After the chief engineer sent a guarantee claim to the Guangdong shipyard, new and larger filters and housings were sent out but took nearly 8 months to reach the *Flag Gangos* due to the bulk carrier's operating schedule. Once

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the new filters were installed in June 2014, the filter alarms no longer activated. However, the crew did not send samples of the hydraulic oil ashore for analysis to determine the cause of the filter alarms at any time after the alarms activated. The steering system's operating instructions stated that the oil should be analyzed every 6 months (this would have placed the first of such analyses in March 2014, about 5 months before the accident). Despite multiple requests from investigators, Golden Union produced no evidence indicating that the steering system oil had been analyzed. After the accident, in March 2015, investigators obtained oil samples from the steering system and filters and sent them for laboratory analysis, and the results were "critical" (in a possible range of "good," "caution," and "critical") for the port side. This oil, which should be clear and light yellow in color, was dark yellow and turbid with visible debris. Microscopic examination showed ferrous particles, oxides, sand, and silt. The results from the portside filter were also "critical," with very high levels of ferrous particles, sand, plastic particles, and dust.

The oil analysis from the starboard side revealed clear oil without visual foreign matter; nevertheless, the oil was dark yellow in color and the overall diagnosis was "caution." The oil from the starboard-side filter was also diagnosed "caution"; it contained ferrous particles, sand, dust, silt, and lube degradation products.

It was unclear how the debris entered the steering system oil. The contaminated oil was replaced after the accident.

## Probable Cause

The National Transportation Safety Board determines that the probable cause of the accident was the delay by the *Flag Gangos*' operating company in completing a mandatory upgrade to the vessel's steering system, and failure to routinely test the steering system's hydraulic fluid for debris as required by the manufacturer. Contributing was the failure of the steering system manufacturer to schedule and complete the mandatory upgrade.

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Vessel Particulars

Vessels	<i>Flag Gangos</i>	<i>Pamisos</i>	<i>Captain Shawn D. Martinez and WEB 235</i>
<b>Owner</b>	Southport Wave SA	Pleiades Shipping Agents SA	Blessey Enterprises Inc.
<b>Operator</b>	Golden Union Shipping Co.	Pleiades Shipping Agents SA	Blessey Enterprises Inc.
<b>Port of registry</b>	Valletta	Monrovia	New Orleans
<b>Flag</b>	Malta	Liberia	United States
<b>Type</b>	Bulk carrier	Tanker	Towing vessel Barge (black oil/asphalt)
<b>Year built</b>	2013	2011	Vessel: 2012 Barge: 2002
<b>Official number (US)</b>	N/A	N/A	1238920
<b>IMO number</b>	9643908	9460576	
<b>Construction</b>	Steel	Steel double hull	Steel
<b>Length</b>	623 ft (189 m)	750 ft (228.6 m)	Vessel: 80.9 ft (24.7 m) Barge: 297.5 ft (90.7 m)
<b>Draft</b>	59.1 ft (18 m)	48.9 ft (14.9 m)	Vessel: 10.5 ft (3.2 m) Barge: 13 ft (4 m)
<b>Beam/width</b>	105.9 ft (32.3 m)	137.8 ft (42 m)	Vessel: 30 ft (9.1 m) Barge: 54 ft (16.5 m)
<b>Tonnage</b>	32,983 gross tons, 19,119 ITC tons	55,909 gross tons	263 gross tons
<b>Engine power; manufacturer</b>	15,279 hp (11,394 kW) DMD MAN B&W 65S0 MC-C MK8	16,555 hp (12,345 kW) Mitsui 6S60MC-C	Vessel: 2,000 hp ( kW) Cummins KTA 38-M2 (2)
<b>Persons on board</b>	23 (22 crew and 1 pilot)	22	5

For more details about this accident, visit [www.nts.gov](http://www.nts.gov) and search for NTSB accident ID DCA14FM015.

Adopted: December 22, 2015

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

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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 Title 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.” Title 49 *Code of Federal Regulations*, 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. Title 49 *United States Code*, 1154(b).

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