



# National Transportation Safety Board

Washington, D.C. 20594

## Marine Accident Brief

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**Accident No.:** DCA-09-MM-013

**Vessel No. 1:** Unnamed recreational vessel (state registration FL 8258 MN), 22.5 feet long

**Vessel No. 2:** Uninspected towing vessel (push boat) *Little Man II* (state registration FL 5101 JB), 25.9 feet long

**Accident Type:** Allision

**Location:** Atlantic Intracoastal Waterway, near mile 757, Ponte Vedra Beach, Florida, 30° 9.164' north, 81° 23.769' west

**Date:** April 12, 2009

**Time:** 1915 eastern daylight time<sup>1</sup>

**Property Damage:** Recreational boat: \$14,500  
*Little Man II*: \$35,000

**Injuries:** Recreational boat: 5 dead, 9 injured  
*Little Man II*: none

**Complement:** Recreational boat: 14  
*Little Man II*: none

## Synopsis

About 1915 eastern daylight time on Sunday, April 12, 2009, an unnamed 22.5-foot recreational boat carrying 14 persons allided with the *Little Man II*, a 25.9-foot push boat (a type of towboat) moored near Ponte Vedra Beach in St. Johns County, Florida. An hour earlier, the recreational boat had departed a marina/restaurant in St. Augustine, Florida, and was northbound in the Intracoastal Waterway (ICW) to a marina in Jacksonville Beach, Florida, a distance of about 30 miles (figure 1). Five persons on the boat died at the accident scene. The remaining nine persons were injured, seven seriously.

Parties to the National Transportation Safety Board (NTSB) investigation of the accident were the U.S. Coast Guard and the Florida Fish and Wildlife Conservation Commission (FWC). The FWC's Division of Law Enforcement is responsible for enforcing the state's boating safety laws in addition to protecting its fish and wildlife resources.

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<sup>1</sup> Times are given according to the 24-hour clock.



**Figure 1.** Map of central Florida highlighting Jacksonville Beach, Ponte Veda Beach, and St. Augustine.

## Accident Description

About noon on the day of the accident, 12 people gathered at a marina in the Jacksonville Beach area for an afternoon’s boating trip to a restaurant/marina in St. Augustine. The group consisted of five men and seven women ranging in age from 18 to 51, with most in their late teens or early 20s. The boat used for the trip had been purchased about 8 months before the accident. It was jointly owned by three people—a 23-year-old man, who had regularly operated the boat during 30 or 40 previous outings, including trips to St. Augustine along the ICW; a 37-year-old man,

who held the boat's title<sup>2</sup>; and another 23-year-old man. All three owners were on board the day of the accident.

Sometime before 1300, the boat refueled at the marina's fuel dock, and personal effects and beverages (including liquor, beer, and drink mixers) were loaded on board. About 1300, after all 12 members of the group had arrived at the marina, the boat departed for St. Augustine. The boat's rated capacity was 12 persons, or 1,725 pounds. During the trip, the 23-year-old owner who regularly operated the boat was in charge. He told investigators that he ran the boat at speeds of up to 38 mph, as measured by the vessel's speedometer.

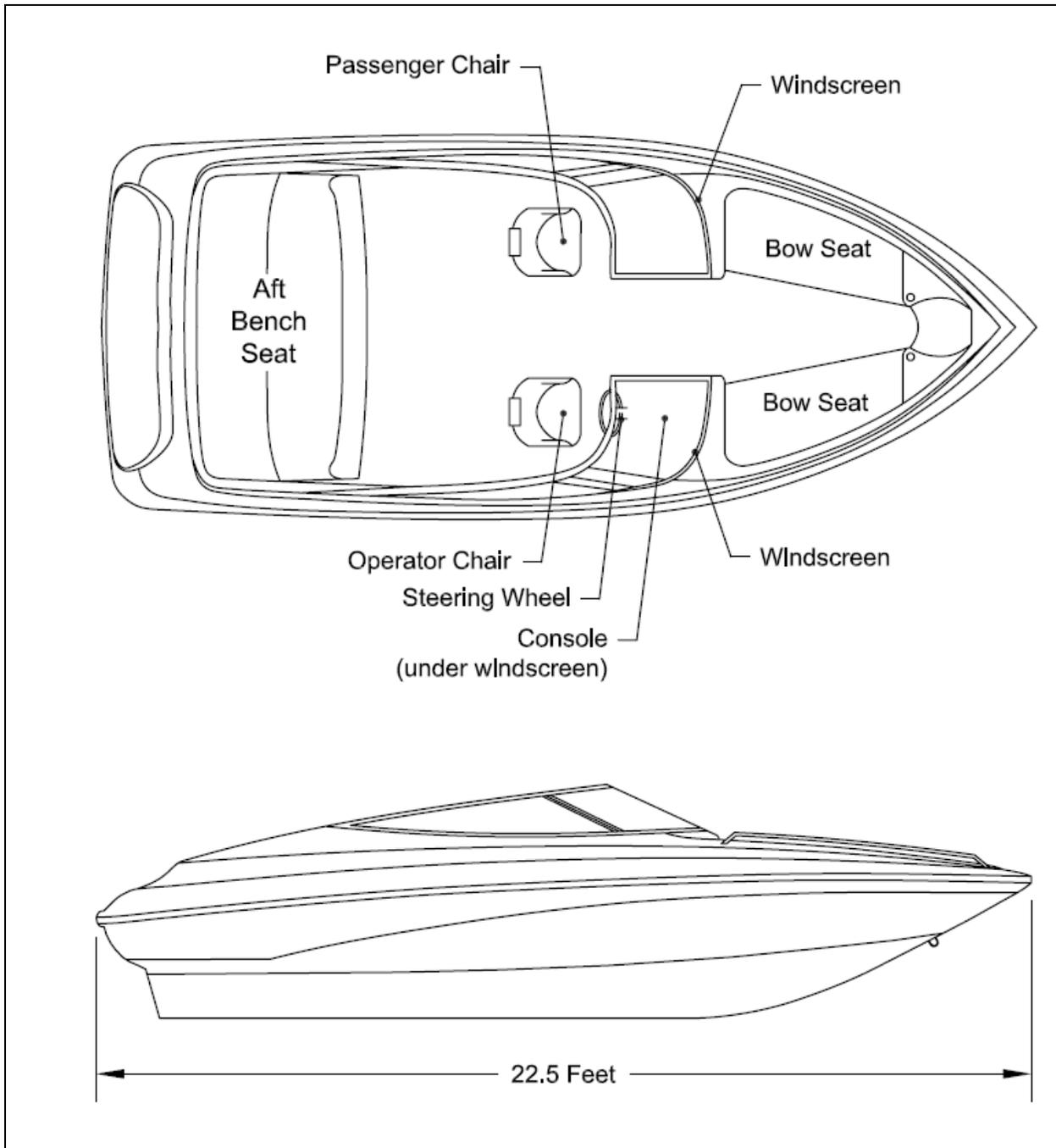
Shortly after 1400, the group arrived at its destination and tied the boat to one of the marina's piers. During an afternoon of drinking, socializing, and musical entertainment, the boat operator invited two women, ages 44 and 42, to join the group for the return trip to Jacksonville Beach. Around 1800, the group began preparing to depart for the return trip north. Some members of the original group objected that with the two invited passengers, the number on board would exceed the boat's rated capacity. Nevertheless, the additional passengers were allowed to board. Thus, during the accident trip, the boat was carrying 14 persons, with a combined weight of 2,233 pounds, according to hospital and autopsy records.

Because the regular boat operator showed signs of alcohol impairment, several group members objected to his operating the boat. The operator agreed to allow one of the two invited passengers to take his place. After being designated as the operator, the 44-year-old invited woman passenger sat in the operator's chair on the starboard side of the boat, just aft of the walk-through console (figure 2). Across the walk-through console from her was another chair, intended for a passenger. According to survivors, the regular operator stood next to the designated operator and helped her get the boat under way from the dock. The boat was configured as a "bowrider," meaning that, as shown in figure 2, it had a V-shaped open seating area in the bow, forward of the console, in addition to bench seating near the stern. Thus, passengers seated in front of the console could have obstructed the designated operator's forward view, giving the standing, regular operator a better view of the waterway ahead.

Sometime before 1830, as the boat proceeded north in the ICW, two witnesses saw it run aground on a shoal just west of the channel, near day beacon 36 (about 11 miles south of the accident site). Although the witness did not see who was at the helm when the vessel grounded, he observed one of the male occupants in the water pushing on the hull, another male occupant at the helm position, and the remaining occupants shifting position in an apparent attempt to redistribute their weight and facilitate the refloating effort. Within a few minutes, the vessel refloated and resumed its voyage northward. Sometime after this incident, according to survivors, the designated operator resumed her position at the helm while the regular operator stood between the operator's chair and the passenger chair.

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<sup>2</sup> The registered owner told investigators that the owners believed the 23-year-old owner who regularly operated the boat could not hold title because California had suspended his motor vehicle driver's license.



**Figure 2.** Layout view (above) and side view (below) of recreational boat.

About 1915, while the boat was traveling north at 25 to 35 mph outside the east side of the ICW's designated channel (unmarked in the area of the accident), it struck the starboard side of the *Little Man II*, which was moored to a deck-spud barge<sup>3</sup> being used in constructing a pri-

<sup>3</sup> A deck-spud barge is a manned or unmanned barge that has a continuous, flat main deck and is held in place by spuds—vertical steel shafts that are dropped through a well in the bottom to moor the barge. In general, a deck barge has a reinforced deck suitable for carrying heavy loads.

vate dock. According to measurements made after the accident, the outboard end of the push boat was approximately 23 feet from the east boundary of the unmarked channel. In the seconds before the collision, several witnesses who lived along the waterway south of the accident site noticed a boat carrying a large number of people pass at high speed. Some residents reported hearing a loud noise that led them to investigate further and call 911 to report an accident.

## **Emergency Response**

### ***Medical Services***

The St. Johns County communications unit logged the first of several 911 calls at 1917, and by 1927 the first emergency medical service (EMS) unit from St. Johns County had arrived at the accident scene. Because of the number of injured persons on the boat, surrounding jurisdictions dispatched additional EMS units. A command structure coordinated the efforts of the various responders. Triage by EMS personnel determined that five passengers were dead and that three passengers had extremely critical injuries. Air ambulances were launched to transport the critically injured passengers from the accident site, and by 2054, all survivors had been taken to either of two hospitals (Shands Medical Center, Mayo Clinic) in Jacksonville, Florida. By 2214, the St. Johns County medical examiner had removed the five bodies from the boat. At 2246, the on-scene response was terminated.

### ***Coast Guard***

At 1939, the St. Johns County communications unit notified Coast Guard Sector Jacksonville of the accident. About 1940, the Coast Guard launched two 25-foot small boats to the accident site to assist with search and rescue and waterways management. At 1944, the Coast Guard began broadcasting an urgent marine information broadcast (UMIB) over very-high-frequency (VHF) radio to alert waterway users of the situation on the waterway. At 2012, the 25-foot Coast Guard boats reached the accident site. The Coast Guard then established a minimum wake zone around the accident site and began broadcasting a safety marine information broadcast (SMIB) to inform waterway users of the enforcement action. About 2245, the Coast Guard ended broadcast of the UMIB and SMIB and recalled both 25-foot boats to Station Jacksonville.

## **Injuries**

The injuries to the occupants of the recreational boat are listed in the table. Investigators obtained medical records of the nine survivors from the two Jacksonville hospitals and autopsy reports on the five fatalities from the county medical examiner.

All survivors met the definition of seriously injured, according to 49 *Code of Federal Regulations* (CFR) 830.2. Injuries included skull fractures, concussions, eye damage, fractured jaws, broken teeth, neck fractures, spinal fractures, multiple rib fractures, bruising and lacerations to internal organs, leg fractures, lacerations, and contusions. The common cause of death for those fatally injured was blunt force head trauma. Other injuries listed as fatal were trauma to neck, chest, and abdomen.

**Table.** Injuries suffered by occupants of recreational vessel.

Type of Injury	Crew	Passengers	Total
Fatal	NA	5	5
Serious	NA	9	9
Minor	NA	0	0
None	NA	0	0
Total	NA	14	14

Note: Title 49 CFR 830.2 defines a fatal injury as any injury that results in death within 30 days of an accident. It defines serious injury as that which requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; results in a fracture of any bone (except simple fractures of fingers, toes, or nose); causes severe hemorrhages, nerve, muscle, or tendon damage; involves any internal organ; or involves second- or third- degree burns, or any burn affecting more than 5 percent of the body surface.

## Postaccident Drug and Alcohol Tests

Although Florida law permits consumption of alcoholic beverages on recreational vessels by anyone at least 21 years old, it is a violation of Florida law to operate a vessel while impaired by alcohol or drugs.<sup>4</sup> Vessel operators are presumed to be impaired and under the influence of alcohol if their blood alcohol content (BAC) or breath alcohol content (BrAC) is 0.08 or above. For persons under 21 years of age, it is a violation of Florida law to have a BrAC of 0.02 or higher and to operate or be in physical control of a vessel.<sup>5</sup>

Postaccident drug and alcohol tests results revealed that 11 of the boat's occupants, including the regular operator, had a BAC above 0.08 (the regular operator's BAC was 0.204). The BAC of the designated operator, who died in the accident, was 0.035. Three occupants tested positive for marijuana, including the regular operator, and four others tested positive for cocaine. Other drugs such as benzodiazepine were also detected. A small amount of marijuana was found in the boat after the accident.

## Operator Information

### *Designated Operator*

The designated operator, age 44, lived in Jacksonville and worked as a fitness instructor and personal trainer at a local community health club. According to her husband of 25 years, she had no formal boating safety training and no previous experience with boat operation.

At the time of the accident, the designated operator was not required by Florida law to have completed a boating safety course. The law required all boat operators ages 21 and under to complete an approved safe-boating course, and also mandated education for persons convicted of

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<sup>4</sup> Florida Statutes, Title XXIV, chapter 327, section 327.35.

<sup>5</sup> Florida Statutes, Title XXIV, chapter 327, section 327.355(1)(a).

violating boating safety laws. In May 2009, Florida revised its laws (effective January 1, 2010) to require persons born on or after January 1, 1988, to complete a safe-boating course in order to operate a boat. The revised law phases in mandatory education for all boat operators.

## **Regular Operator**

The 23-year-old who normally operated the vessel lived in Jacksonville, having moved to the area from Lakeport, California. At the time of the accident, he was unemployed and had last worked as food preparation cook and dishwasher at a local restaurant. The regular operator claimed to have previous boat operating experience on an inland lake in California, beginning around the age of 12. He stated that he had never attended a formal boating safety training course and had never worked in the maritime industry.

The regular operator stated that drinking alcohol and operating the vessel was a normal weekend event, and that he felt that he could operate the boat while drinking. He also stated that he smoked a small amount of marijuana the afternoon of the accident. Several witnesses said that he was in charge of the boat when the accident occurred, although evidence indicates that the designated operator (deceased) was sitting at the boat's control console.

## **Weather**

According to National Weather Service observations from Craig Municipal Airport in Jacksonville, 12.4 nautical miles from the accident site, skies were mostly cloudy at the time of the accident, visibility was 10 miles, the temperature was 68° F, and winds were from the east-northeast at 8 mph, with gusts to 17 mph. Data from the U.S. Naval Observatory show that at the time and place of the accident, the sun was at an elevation of 7.0° and at an azimuth of 276.4°. The sun set at 1951, about 40 minutes after the accident.

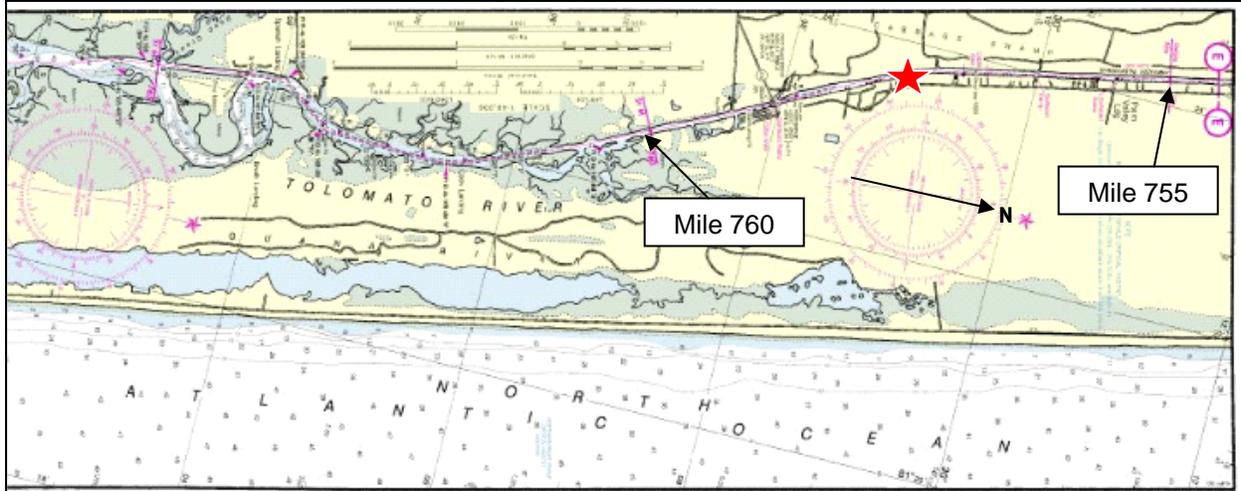
## **Waterway Information**

The ICW is part of a 1,243-mile protected passage extending from Norfolk, Virginia, to Key West, Florida.<sup>6</sup> The ICW consists of both natural waterways, such as bays and sounds, and man-made channels, or cuts. In the area of the accident, a cut extends north and south for about 11 miles between mile 750.1 and mile 760.9 (figure 3). Just south of the accident site, the waterway changes direction about 15°. According to the U.S. Army Corps of Engineers, the channel in the area of the accident is 125 feet wide and is dredged to a depth of 12 feet.<sup>7</sup> The channel boundaries are not marked by buoys or other navigation aids in the section of the ICW where the accident occurred.

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<sup>6</sup> *United States Coast Pilot*, vol. 4, *Atlantic Coast: Cape Henry, VA, to Key West, FL*, chapter 12 (U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, 2009 <[http://www.nauticalcharts.noaa.gov/nsd/coastpilot/files/cp4/CP4-41ed-Ch12\\_4.pdf](http://www.nauticalcharts.noaa.gov/nsd/coastpilot/files/cp4/CP4-41ed-Ch12_4.pdf)>).

<sup>7</sup> U.S. Army Corps of Engineers, "Intracoastal Waterway Cuts SJ-1 Thru SJ-9, St. Johns County, Florida, Project Condition Survey" <<http://www.saj.usace.army.mil/Divisions/Operations/Branches/HydroSurvey/survey/03-166.pdf>>. The *Coast Pilot*, vol. 4 (page 393), notes that the federal project for the ICW provides for a least depth of 12 feet from mile 0.0 (Norfolk, Virginia) to mile 965.6, thence 10 feet to mile 1,089.0, and thence 7 feet to mile 1,243.8.



**Figure 3.** Portion of National Oceanic and Atmospheric Administration chart 11489 in area of accident, between miles 755 and 760. Red star shows approximate accident location.

On the east side of the cut, the shore is developed private property, while on the west side, the shore is mostly wooded and undeveloped. Many of the residences on the eastern shore have private docks that extend into the waterway (but not into the designated channel), similar to the dock under construction at the accident site (figure 4). The aerial photograph in figure 5 shows other docks extending into the waterway near the accident location, but because the photograph was taken before construction began at the accident site, the dock involved in the accident is not shown.



**Figure 4.** Photo of ICW looking north, showing residences with docks extending into east side of waterway. Arrow points to accident site and to push boat struck by recreational boat. At low tide, mudflats form along both shorelines. Two miles south of accident site, low tide was at 1909 on April 12.



**Figure 5.** Aerial photograph of accident area in 2006. Shown are channel (light blue) and right-of-way (red) boundaries. Address printed on photograph (183 S. Roscoe Blvd.) is that of accident site. (Photo courtesy Florida Inland Navigation District)

## Vessel Information

### *Recreational Boat*

**Construction.** The recreational boat was a 22.5-foot-long, model 225BR run-about/sportboat built in March 2000 by Crownline Boats of Frankfort, Illinois. The hull was

constructed of fiberglass encapsulating a wooden stringer system (frame). The boat was powered by an 8-cylinder, 300-horsepower Mercury Marine Mercruiser 350 Magnum gasoline engine with an inboard-outboard stern drive and a 19-inch progressive-pitch propeller. According to a performance test conducted by the boat's builder, the boat had a maximum speed of 52 mph.<sup>8</sup>

The boat's steering wheel was fitted at the starboard side of the console and connected by cables to a hydraulic system that positioned the drive unit. A separate hydraulic system, manually controlled by a switch on the operator's console, adjusted the vertical angle of the stern drive for optimum propulsive efficiency under different speeds and loads.

**Damage.** The recreational boat came to rest with its bow out of the water and extending about 3 feet into the starboard side of the push boat's deckhouse (see next section). The boat sustained major structural damage to the stem of its bow just below the waterline and about 6 feet aft of the nose (figure 6). The damage extended to the wooden stringer system. Other hull damage consisted of scrapes and chips in the bow area.



**Figure 6.** Photo of recreational boat after accident, showing structural damage to bow area.

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<sup>8</sup> The test report, dated November 2, 2001, indicated that at wide-open throttle, a 19-inch pitch propeller, and a 1.47:1 drive ratio, the boat achieved 52 mph at 5,100 rpm engine speed. The higher load on the boat at the time of the accident would have reduced its maximum achievable speed.

Damage to the boat's interior consisted of detached operator's and passenger's chairs, impact damage to the passenger side of the console, damage to and detachment of the wind-screens, damage to the portside grab rail in the bow seating area, and damage to the steering wheel and console. According to the FWC, the throttle was found in the full or nearly full position after the accident. The electrical system's 12-volt battery was found on the boat's deck about 6 feet forward of its mounting on the starboard side.

Investigators tested the recreational boat's propulsion and steering systems during their on-scene examination of the vessel. The propulsion system's throttle and control linkages from the helm to the engine were connected and fully functional. The steering wheel operated freely and could be turned three turns, from hard port to hard starboard and from hard starboard to hard port. The stern drive unit turned through its full angular rating. Investigators also removed two gauges—the speedometer and the engine tachometer—from the boat's console and shipped them to the NTSB materials laboratory in Washington, DC, for examination. No marks or paint transfers were found on the dials of the gauges that might have indicated the vessel's speed at the time of impact.

## **Push Boat**

**Construction.** The *Little Man II*, built in 1996 by Mobro Marine of Jacksonville, was a 25.9-foot-long by 12-foot-wide push boat, classified as an uninspected towing vessel by the Coast Guard.<sup>9</sup> The boat was fitted with twin propellers and rudders and was powered by two 200-horsepower diesel engines, which gave it an estimated top speed of 6 mph. The *Little Man II* was of welded steel construction, had a square bow and stern, and had two rubber-capped vertical push rails (posts) fitted at the port and starboard sides of the bow. Also fitted on the main deck in the bow were two hand-operated winches used for handling the boat's 5/8-inch mooring wires.

At the time of the accident, the *Little Man II* was unmanned and made fast by its mooring wires to a deck-spud barge.<sup>10</sup> The push boat primarily served to transport the deck-spud barge, which was not self-propelled, to construction sites. A 4-foot-square, 20-foot-tall tower was situated just forward of midships. The tower contained a storage area at the main deck level, an out-of-use pilothouse on the second level, and a covered (but otherwise open) piloting station at the third level (on top of the original enclosed pilothouse). Aft of the tower was a 52-inch-high steel structure that enclosed the engine space. At the stern of the boat was a raised work platform on which a battery-operated, dusk-to-dawn flashing white light had been temporarily mounted. Wooden rub rails were fitted along the port and starboard sides of the hull to protect the vessel from rubbing against piles, docks, and so forth.

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<sup>9</sup> As a commercial uninspected towing vessel, the push boat was not subject to Coast Guard inspection. In addition, because the vessel measured less than 5 net tons, it was excluded from federal regulations requiring vessels to be documented (46 CFR 67.9[a]).

<sup>10</sup> According to interviews and information from the Internet (<<http://www.famarine.net/equipment.htm>> (accessed July 17, 2009), the deck-spud barge was 60 feet long by 30 feet wide and had two spuds at its port side for securing the barge at a work site. The deck-spud barge had a tracked "crawler" crane loaded on its deck and was being used to drive piles for the dock-construction project and to position construction materials. The crane was a 597-C model, year 1968, with a 35-ton capacity and an 80-foot boom.

**Damage.** The *Little Man II* sustained damage to the starboard side of the hull and the enclosure for the engine space (figure 7). The initial point of impact by the recreational boat was about 15 feet aft of the push boat's bow. The damaged area on the starboard side of the push boat began about 10 feet aft of the bow and extended for about 15 feet. The hull sideshell was set in a maximum of about 10 inches over the length of the damaged area, and the deck in the area of the damaged sideshell was buckled upward. The 1/4-inch steel plating at the starboard side bulkhead of the deckhouse was buckled inward and torn loose where the bow of the recreational boat had entered the engine space, and several welded areas of vertical and horizontal joints of the plating were fractured. The vertical section of the exhaust pipe from the starboard propulsion engine was crushed and pushed aft several inches.



**Figure 7.** Photo of *Little Man II* after accident, showing damage to hull and deckhouse.

## Probable Cause

The National Transportation Safety Board determines that the probable cause of the collision of the recreational boat with the push boat *Little Man II* was the inattention of the boat operators, most likely the result of alcohol impairment on the part of the regular operator and inexperience on the part of the designated operator.

**Adopted: February 24, 2010**