NATIONAL TRANSPORTATION SAFETY BOARD
Public Meeting of June 9, 2015
(Information subject to editing)

Collision between Bulk Carrier *Summer Wind* and the *Miss Susan* Tow Houston Ship Channel, Lower Galveston Bay, Texas March 22, 2014

This is a synopsis from the NTSB's report and does not include the Board's rationale for the conclusions, probable cause, and safety recommendations. NTSB staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing.

Executive Summary

On March 22, 2014, about 1235 central daylight time, the 607-foot-long bulk carrier *Summer Wind* with a Houston pilot on board collided with the 670-foot-long *Miss Susan* tow (a 70-foot-long towing vessel and two 300-foot-long tank barges loaded with fuel oil) in the Houston Ship Channel, Lower Galveston Bay, Texas. The visibility was restricted at the time due to fog. The bulk carrier was inbound to Houston, traveling in a north direction. The tow was bound for Port Bolivar on the east side of the Houston Ship Channel, traveling in an east direction.

The collision breached the hull of the forward tank barge in the *Miss Susan* tow, and about 168,000 gallons of fuel oil spilled into the waterway. Two crewmembers on board the *Miss Susan* sustained minor injuries related to inhalation of fuel vapor. The total estimated damage was nearly $1,378,000 (excluding oil response and recovery efforts).

The National Transportation Safety Board determines that the probable cause of the collision was the *Miss Susan* captain's attempt to cross the Houston Ship Channel ahead of the *Summer Wind*, thereby impeding the passage of the bulk carrier, which could transit only within the confines of the channel. Contributing to the accident was the failure of the Houston pilot and the *Summer Wind* master to set a safe speed given the restricted visibility and nearby towing vessel traffic, and the failure of the *Miss Susan* captain and the Houston pilot to establish early radio communication with one another. Also contributing to the accident was the failure of Vessel Traffic Service Houston/Galveston to interact with the two vessels in a developing risk of collision, and the lack of a Coast Guard vessel separation policy for the Bolivar Roads Precautionary Area.

The report identifies the following safety issues:

- **Lack of vessel separation in Houston Ship Channel precautionary areas with intersecting waterways:** The NTSB has previously noted that insufficient distance between vessels when they turn, pass, and overtake one another near intersections can create unsafe situations. This accident once again highlights the need for separation between vessels in such areas of the Houston Ship Channel.

- **Inadequate oversight and training related to the safety and health of uninspected towing vessel crews responding to hazardous materials releases:** In assessing why two *Miss Susan* crewmembers suffered inhalation injuries when responding to the oil spill, the NTSB found that both federal oversight and company training of personnel exposed to hazardous materials were insufficient.

Findings

1. Vessel propulsion and steering systems, medical conditions and medication use, alcohol and illegal drug use, and distraction from personal electronic devices were not factors in this accident.

2. The *Miss Susan* captain should not have attempted to cross the Houston Ship Channel ahead of the *Summer Wind*'s passage, especially given the restricted visibility and the bulk carrier's ability to navigate only within the confines of the channel.

3. Given the restricted visibility and the towing vessel traffic in the Bolivar Roads Precautionary Area at the time, the pilot on the *Summer Wind* should not have given an order for the bulk carrier to transit at full-ahead speed.

4. The *Summer Wind* master should have questioned the pilot's decision to transit at full-ahead speed given the restricted visibility and nearby towing vessel traffic.

5. Sufficient information existed via radar, automatic identification system, and radio communications from both the *Miss Susan* and the *Summer Wind* for the vessel operators to know of each other's intended passages, but despite the availability of this information neither the *Miss Susan* captain nor the pilot on the *Summer Wind* took early action to avoid the collision.

6. Vessel Traffic Service Houston/Galveston did not effectively follow its own internal operating procedures to guard channel 13.

7. In the minutes leading up to the collision, Vessel Traffic Service Houston/Galveston did not maintain an effective watch, diminishing its ability to recognize a developing risk of collision and to interact with the vessel operators.

8. With several intersecting waterways, high-density vessel traffic, and diverse types of vessels with differing speeds and maneuvering characteristics, the Bolivar Roads Precautionary Area is a high-risk section in Vessel Traffic Service Houston/Galveston's area of responsibility, and the Coast Guard's failure to develop and implement a vessel separation policy for this section contributed to the collision.

9. Consistently entering the complete dimensions of tow configurations for individual transits into automatic identification systems would alleviate misinterpretation and possible confusion from inaccurate information, and thus enhance safety.

10. In response to the oil spill, effective communications and coordination were established and maintained between the responsible parties, the Coast Guard, local and state response agencies, and oil spill removal organizations.

11. The actions taken to recover spilled oil to minimize further environmental damage were timely and appropriate.

12. Because of the *Miss Susan* crewmembers' incomplete assessment of the material safety data sheet, lack of being provided required direct-reading testing equipment, and their assumptions about the nature of the cargo, the *Miss Susan* crewmembers did not fully assess the need for respiratory protection during their emergency response following the collision.

13. The *Miss Susan* crewmember training did not adequately prepare them to safely respond to the hazardous materials release.

14. The inadequate federal oversight of mariner work safety on board uninspected towing vessels places crewmembers at greater risk of injury from exposure to hazardous materials and other safety hazards.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the collision was the *Miss Susan* captain's attempt to cross the Houston Ship Channel ahead of the *Summer Wind*, thereby impeding the passage of the bulk carrier, which could transit only within the confines of the channel. Contributing to the accident was the failure of the Houston pilot and the *Summer Wind* master to set a safe speed given the restricted visibility and nearby towing vessel traffic, and the failure of the *Miss Susan* captain and the Houston pilot to establish early radio communication with one another. Also contributing to the accident was the failure of Vessel Traffic Service Houston/Galveston to interact with the two vessels in a developing risk of collision, and the lack of a Coast Guard vessel separation policy for the Bolivar Roads Precautionary Area.

New Recommendations

To the United States Coast Guard:

1. Include in your new towing vessel inspection regulations requirements for (1) availability and use of personal protective equipment, (2) hazardous materials training, and (3) identification and mitigation of health and safety hazards posed by exposure to hazardous materials. (M-15-XX)

To Kirby Inland Marine:

2. Provide direct-reading air monitoring equipment and applicable training to your towing vessel crews that transport hazardous materials, so that crews can identify combustible or explosive atmospheres, oxygen deficiency, and toxic substances that may present risk of serious injury. (M-15-XX)

3. Revise your initial and refresher Hazardous Waste Operations and Emergency Response training to include demonstration of competence, and ensure that crewmembers complete this training before serving on vessels that transport hazardous materials. (M-15-XX)

To the American Waterways Operators:

4. Inform your members of the circumstances of this accident and the need for towing vessels that transport hazardous materials to carry direct-reading air monitoring equipment, so that crews can identify combustible or explosive atmospheres, oxygen deficiency, and toxic substances that may present risk of serious injury. (M-15-XX)

Previously Issued Recommendation Reiterated in this Report

To the United States Coast Guard:

Finalize and implement the new towing vessel inspection regulations and require the establishment of safety management systems appropriate for the characteristics, methods of operation, and nature of service of towing vessels. (M-07-6)

Previously Issued Recommendations Reiterated and Reclassified in this Report

As a result of this accident investigation, the National Transportation Safety Board reiterates and reclassifies from "Open—Acceptable Response" to "Open—Unacceptable Response" the following two safety recommendations:

To the United States Coast Guard:

Develop and implement a policy to ensure adequate separation between vessels operating in the Bayport Channel and Bolivar Roads Precautionary Areas and any other similarly configured precautionary areas in the Houston Ship Channel. (M-12-6)

Graphically delineate precautionary areas on appropriate Houston Ship Channel nautical charts so they are readily identifiable to mariners. (M-12-7)