



FINDINGS OF CONCERN

Marine Safety Unit Chicago

August 13, 2019
Chicago, Illinois

Findings of Concern 011-19

FACTORS INCREASING RISK FOR BRIDGE ALLISIONS

Purpose. The U.S. Coast Guard issues findings of concern to disseminate information related to unsafe conditions that were identified as causal factors in a casualty and could contribute to future incidents. Findings of concern are intended to educate the public, state, or local agencies about the conditions discovered so they may address the findings with an appropriate voluntary action or highlight existing applicable company policies or state/local regulations.

Background of Incidents. 46 CFR Part 140 of Subchapter M, came into effect for existing towing vessels on July 20, 2018. Many of the new regulations implement risk management practices that require crews to identify, communicate, and continually assess conditions that may adversely affect the safety of the vessel or its tow. These new practices were implemented to reduce the risk of collisions and allisions involving towing vessels. However, within the MSU Chicago area of responsibility, inadequate implementation of some of these risk management practices have already contributed to more than 25 bridge allision incidents involving towing vessels, with property damage estimates exceeding \$1,000,000 in less than a year.

Contributing Factors and Analysis. The investigations into these incidents have identified the following causal factors as being common amongst these bridge allisions:

- (1) The Officer in Charge of the Navigational Watch did not properly assess all items required to complete the Navigation Assessment as specified under 46 CFR 140.635.
- (2) The Officer in Charge of the Navigational Watch did not conduct a proper air draft assessment of the towing vessel and/or its tow.
- (3) Companies did not have a procedure in place to assist crews with accurately determining the air draft of vessels outfitted with retractable pilot houses - when the pilot house is partially raised.
- (4) Company procedures for conducting transits under bridges did not include instructions on how to identify the current river stage and perform vertical clearance calculations for bridges along the Illinois Waterway.
- (5) Companies did not provide training to their vessel operators on how to identify the current river stage and perform bridge vertical clearance calculations for bridges along the Illinois Waterway.
- (6) Company voyage plan procedures do not cover all items required to meet the Navigation Assessment regulations under 46 CFR 140.635.
- (7) There are discrepancies between the documented vertical clearances for certain bridges listed in the 2013 Illinois Waterway Chart book published by the U.S. Army Corps of Engineers (USACE), and the vertical clearances for bridges along the Illinois Waterway as documented in the current edition of the U.S. Coast Pilot 6.



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Findings of Concern. Coast Guard investigators have identified the following measures that could be implemented by owners/operators of similar vessels, in similar service, to mitigate the risks associated with the above identified causal factors:

- Officers in charge of standing a navigational watch should take time to read and understand the entirety of 46 CFR Part 140, and the new operational requirements they are now required to adhere to under 46 CFR Subchapter M, including the requirements listed under 46 CFR 140.635 for conducting and recording the required Navigation Assessments throughout each voyage.
- Officers in charge of standing a navigational watch should remember to assess the air draft of both the towing vessel and its tow: 1) prior to getting underway, 2) after cargo operations, 3) whenever there have been changes to the tow, 4) whenever the pilot house or other structures have been raised/lowered, and 5) continually assess potential changes in air draft due to fuel/water consumption.
- Companies which own/operate vessels outfitted with a retractable pilot house should have documentation or written procedures on board to assist the crew in accurately determining the vessel's air draft with the pilot house at any position.
- Companies should update their bridge transit procedures to include steps their crews should follow to identify the current river stage for the section of the Illinois Waterway being transited. Bridge transit procedures should also include methods for calculating bridge vertical clearances, accounting for any reductions due to the current river stage.¹
- Navigation training provided by companies to their crews should incorporate lessons that cover how to properly assess vessel and tow air draft, how to identify current river stage along each transited section of the Illinois Waterway, and how to properly identify any reductions in bridge vertical clearances caused by the current river stage.²
- Companies that require crews to follow company voyage plan procedures as the means to meet the Navigation Assessment requirements of 46 CFR 140.635, should ensure that their voyage plan procedures and forms cover all of the items required to be assessed under the regulation.
- Companies should ensure that all persons in charge of standing a navigational watch on board vessels are notified of potential differences between the documented vertical clearances of some bridges listed in the 2013 USACE Illinois Waterway Chart book versus the bridge vertical clearances listed in the current edition of the U.S. Coast Pilot 6. Crews should be advised to consult both references and use the more conservative value when performing bridge vertical clearance calculations during voyage planning and when conducting the Navigation Assessments required by 46 CFR 140.635.

Closing. These findings of concern are provided for informational purposes only and do not relieve any domestic or international safety, operational, or material requirements. For any

¹ Guidance for calculating bridge vertical clearance reductions due to river stage, can be found on sheet "B" in the 2013 Illinois Waterway Chart book, published by the USACE.

² See note 1.



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questions or comments please contact Coast Guard Marine Safety Unit Chicago, Investigations Division by phone at (630) 986-2155 or by email at ChicagoIO@uscg.mil.