2019–2020 NTSB

MOST WANTED LIST OF TRANSPORTATION SAFETY IMPROVEMENTS

MARINE

Reduce Fatigue-Related Accidents

What is the problem?

Operating a marine vessel requires complex human interaction as well as an operator's complete attention and proficient skill. However, marine operators and other individuals performing safety-sensitive functions are all too often impaired by fatigue stemming from insufficient or poor-quality sleep.

Fatigue degrades a person's ability to stay awake, alert, and attentive to the demands of safely controlling a vessel. Marine operators and other individuals performing safety-critical functions may not recognize the effects of fatigue until it's too late.

Fatigue is often the result of insufficient sleep. But even when individuals have enough time to get rest, other issues—such as medical conditions, unpredictable or inverted work schedules, living environment, and personal choices—can affect their ability to obtain quality sleep.

The traveling public can unknowingly and unwillingly be placed at risk because a fatigued operator cannot safely execute his or her duties. Despite wide-ranging research and well-publicized information about the dangers of excessive sleep loss, fatigue continues to be a leading cause of accidents in all modes of transportation. In marine transportation, this is particularly true in high-tempo sectors, such as the fishing industry. Fatigue impacts responsiveness, decision-making ability, judgment, and productivity.

7 **Marine accidents investigated by the NTSB between 2016 and 2017 in which fatigue was a factor**

On January 23, 2010, the oil tankship *Eagle Otome* collided with the cargo vessel *Gull Arrow* in Port Arthur, Texas. A barge, the *Kirby 30406*, which was being pushed by the towboat *Dixie Vengeance*, subsequently collided with the *Eagle Otome*. Contributing to the accident was the *Eagle Otome* first pilot's fatigue, caused by his untreated obstructive sleep apnea and his work schedule, which did not permit adequate sleep.
Photo by U.S. Coast Guard

Related reports:

MAB-18/03: Grounding of Fishing Vessel *St. Dominick*; Unalaska, Alaska; March 6, 2017; Accident ID DCA17FM008

MAB-17/14: Collision and Subsequent Sinking of Towing Vessel *Specialist;* Tarrytown, New York; March 12, 2016; Accident ID DCA16FM033

MAB-17/17: Capsizing and Sinking of Fishing Vessel *Lydia & Maya*; Bar Harbor, Maine; August 17, 2016; Accident ID DCA16FM053

MAR-11/04: Collision of Tankship *Eagle Otome* with Cargo Vessel *Gull Arrow* and Subsequent Collision with the *Dixie Vengeance* Tow; Port Arthur, Texas; January 23, 2010; Accident ID DCA10FM010

For detailed investigation reports, visit www.ntsb.gov

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What can be done?

Fatigue is a manageable threat to transportation safety that can be mitigated by a combination of science-based regulations, comprehensive fatigue risk management programs, and individual responsibility. Vessel owners and operators should adopt policies to mitigate the effects of fatigue and provide crew sufficient time for required rest.

200+
Safety recommendations issued by the NTSB addressing fatigue-related problems across all modes of transportation

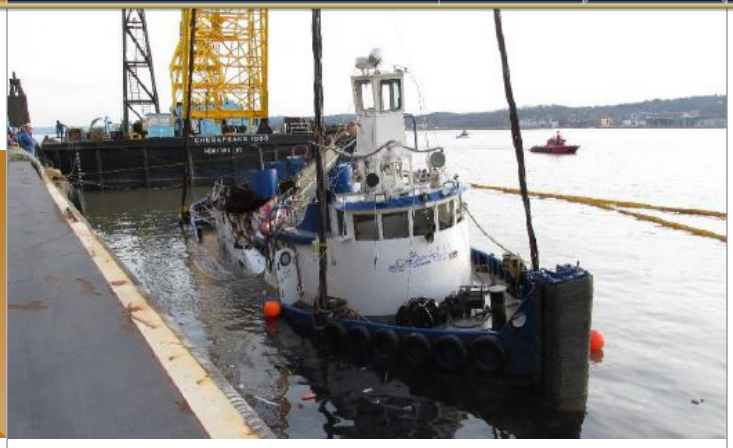
To address the problem of fatigue, the following actions should be taken:

Vessel Operators/Industry

› Establish fatigue risk management programs and continually monitor their success to reduce risks for personnel performing safety-critical tasks. Fatigue risk management programs take a comprehensive, tailored approach to address the problem of fatigue within an industry or workplace. Such programs include policies or practices to address scheduling, attendance, education, medical screening and treatment, personal responsibility during nonwork periods, task/workload issues, rest environments, commuting, and napping.

States and Territories in which State and Local Pilots Operate

› Require local pilot oversight organizations that have not already done so to implement fatigue mitigation and prevention programs that regularly inform mariners of the hazards of fatigue and effective strategies to prevent it, and promulgate hours-of-service rules that prevent fatigue resulting from extended hours of service, insufficient rest within a 24 hour period, and disruption of circadian rhythms.



On March 12, 2016, the towing vessel *Specialist* struck a construction barge on the Hudson River alongside a concrete pier at the new Tappan Zee Bridge construction site near Tarrytown, New York. The *Specialist* subsequently sank, resulting in the deaths of three crewmembers. We determined that the probable cause of the collision and sinking was inadequate manning, resulting in fatigued crewmembers navigating three tugboats with obstructed visibility due to the size of the crane on the barge they were towing and the location of the tugboats alongside the barge. Photo by U.S. Coast Guard

Regulators

› Collect and analyze data regarding fatigue's impact on vessel operations and help vessel operators identify high-risk mariners.

› Require mariners to report to the Coast Guard, in a timely manner, any substantive changes in their medical status or medication use that occur between required medical evaluations.

› Encourage vessel operators and mariners to adhere to the IMO's Guidelines on Fatigue Mitigation and Management (MSC/Circ. 1014).

MWL
MOST WANTED LIST

Critical changes needed to reduce transportation accidents, injuries, and fatalities

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NTSB National Transportation Safety Board

The NTSB **MOST WANTED LIST** highlights safety issues identified from the NTSB's accident investigations to increase awareness about the issues and promote recommended safety solutions.

For more information visit **www.ntsb.gov/mostwanted** or contact **SafetyAdvocacy@ntsb.gov**

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the federal government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

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