

Questions for the Record (Majority)

U.S. Senate Committee on Commerce, Science, and Transportation

“Nomination Hearing of Jennifer Homendy to be Chair of the National Transportation Safety Board, Karen Hedlund to be a Member of the Surface Transportation Board, Dr. Robert Hampshire to be Assistant Secretary for Research and Technology for the Department of Transportation, and Carol (“Annie”) Peterson to be Assistant Secretary for Aviation and International Affairs for the Department of Transportation”

June 24, 2021

Question for the Record from Chair Cantwell to The Honorable Jennifer L. Homendy, to be Chair of the National Transportation Safety Board (NTSB)

Workforce Development and Training. Transportation and transportation-related industries employ over 13 million people in the United States. The transportation workforce is absolutely critical for moving goods and people across the country and driving our economy to be competitive globally. However, when that workforce isn’t appropriately trained the consequences can be dire – a lack of training and situational awareness was one of the contributing factors to the 2017 DuPont derailment, and we have seen similar issues in the aviation context time and time again.

Question 1. In your experience at the NTSB, where are the critical areas we should be enhancing workforce development and training to ensure that transportation workers are equipped to handle new and emerging technologies?

Answer. Thank you for the question, Chair Cantwell. The human-machine interface remains a challenge in the emergence of new technologies. It is critical that entities work with human factors experts to best determine how to address these challenges, which must include workforce training.

In the case of the DuPont derailment, the locomotive engineer was not adequately trained (neither was the conductor). And they were in a new locomotive on a new route. That lack of training was evident to our investigators upon review of the inward-facing camera where we were able to see deficiencies first-hand. However, even with the best training, humans will make errors. It is therefore critical that systems be designed to prevent human error and that measures be taken to ensure safety redundancies are in place if those systems fail. This is why we recommended implementation of positive train control, which would have prevented the DuPont derailment.

It also important to mention that all of those deficiencies in DuPont, including training, would have been identified through a comprehensive safety management system (SMS) where the operators would have been constantly evaluating their risks and proactively addressing them before an accident occurred. Keys to a well-functioning SMS are a “just safety culture” which communicates the importance of safety to the workforce and the commitment of management to

safety, ensures the workforce is well-trained, and implements a reporting process to ensure safety deficiencies are identified and addressed. For example, the National Aeronautics and Space Administration (NASA) in partnership with the Federal Railroad Administration has a program to facilitate one aspect of SMS, the Confidential Close Call Reporting System. See <https://c3rs.arc.nasa.gov>. Currently, no railroad participates in this voluntary program.

Automation. Technology and automation are wonderful tools which supplement, enhance, and magnify the ability of humans to manage complex machines. However, there is a risk that over-reliance on automation can lead to a deterioration of skills and engagement. And as automation plays an increasingly larger role across all of our transportation systems, it is paramount that our workforce – both on the industry and the regulator side – is appropriately trained up to ensure that automation does not compound existing safety issues.

Question 2. What are your views about the potential for over-reliance on automation and how can we best manage this apparent downside to the benefits of automation?

Answer. Thank you for the question, Chair Cantwell. Over-reliance on automation is a serious concern. Industry across all modes of transportation must work with human factors experts to determine how best to introduce automation to an already complex environment and what supplemental safety measures must be in place to ensure safety, including training.

In the road environment, however, the potential solutions are even more complex. Pilots, locomotive engineers, commercial motor vehicle drivers, and captains are supposed to be well-trained and even with that training (and industry testing) accidents occur. However, normal drivers don't have that training, the expertise in dealing with automation, or the awareness of human performance limitations. That's why overselling the capabilities of vehicles is so dangerous. The NTSB has recommended to the National Highway Traffic Safety Administration (NHTSA) to develop a safety framework for automated or partially automated vehicles to include performance standards for monitoring driver engagement and limits on vehicle operations to roadways and conditions for which they were designed. Those recommendations are currently open-unacceptable because NHTSA has not provided a response that supports a positive classification.

If confirmed, I would be pleased to work with you and your Committee to address these serious safety issues across all modes of transportation.

Question 3. What changes do we need to make to ensure that both industry and regulators are appropriately trained on issues facing the transportation sector today and in the future?

Answer. Thank you for the question, Chair Cantwell. I personally feel that it's my duty to ensure, as a Board Member or, if confirmed, as Chair, that I'm adequately trained to address the safety issues facing the transportation sector today. For the Board, if confirmed, one of my priorities is to see what resources and skillsets we need now and 5 or 10 years from now to address new technologies and emerging safety and industry trends. I am happy to work with you

and Congress as needs of the NTSB are identified. I'm hopeful other agencies are doing the same.

Question for the Record from Senator Klobuchar to The Honorable Jennifer L. Homendy, to be Chair of the National Transportation Safety Board (NTSB)

Blocked Rail Crossings. Blocked rail crossings delay emergency vehicles and threaten public safety. In 2020 alone, 203 people were killed at railroad crossings. I've heard first hand from local leaders and emergency responders across Minnesota about the inconvenience and dangerous delays that rail crossings can pose to a community.

Question. What more can be done by passenger railroads to improve these delays and public safety, particularly for rural communities?

Answer. Thank you for the question, Senator Klobuchar. Although the NTSB has not investigated events relating to blocked rail crossings, I am aware of situations where blocked rail crossings have isolated communities and delayed emergency response vehicles which can lead to deadly consequences. I believe it is important for the Federal Railroad Administration to continue to collect information on the extent of blocked crossings in the U.S., and to use that data to analyze the causes of blocked crossings. In the meantime, freight and passenger railroads need to evaluate their make-up of trains, routes, and scheduling to avoid these situations. Railroads should also develop relationships with the communities in which they travel to ensure local concerns are addressed. If confirmed, I'm happy to work with you on this issue.