

Testimony of Jeremy R. Ferguson
President - Transportation Division of the International
Sheet Metal, Air, Rail, and Transportation Workers Union
(SMART-TD)

Submitted to the Ohio House of Representatives,
Transportation and Public Safety Committee.

December 10, 2019

Ohio HB 186, regarding rail yard walkway safety and illumination, two-person freight train crews, and public roadway obstruction that delays emergency vehicles.

On behalf of SMART Transportation Division, I want to thank Chairperson Green, Vice Chairperson McClain, Ranking Member Sheehy, and all members of the Transportation and Public Safety Committee for today's hearing. Due to prior commitments and the relatively short notice of this hearing, I am unable to provide my testimony firsthand. Nonetheless, I am grateful for the opportunity to weigh in on this important issue.

As the President of SMART-TD, I am honored to represent more than 40,000 Rail and Transportation professionals across our great Nation, of which more than 2,000 freight rail professionals work and reside in this great State of Ohio. It is our hope that this committee will understand that the passage of HB 186 would serve to benefit and protect not just these members, their families, and their loved ones, but also the general public.

In addressing HB 186, one must also understand that Wall Street has become obsessed with a concept known as "Precision Scheduled Railroading" (PSR), although there has been no convincing evidence to indicate its end result is a more "scheduled" railroad operation that is more "precise" in nature. In essence, so-called PSR employs hedge-fund style business tactics that are designed to greatly benefit investors and shareholders, at a commensurate cost to safety, its employees, and the general public.

Former President of Canadian National Railway, E. Hunter Harrison, introduced PSR to the United States in 2017 during his tenure as CEO of CSX Corporation. Due to the capitalistic and highly competitive nature of our nation's railroads, the other carriers

were forced to fall in line and adopt its reckless and short-sighted business practices. The downstream effects of PSR serve as the most recent of many examples that demonstrate the well-proven fact that the railroads are simply incapable of responsible self-regulation.

If passed, HB 186 would help to protect the general public from some of PSR's most detrimental, and potentially catastrophic, effects. We believe the following issues to be worthy of congressional intervention:

1. Railroad Illumination and Walkway Requirements

One of the key elements of PSR is to defer, or in some cases discontinue, regular upkeep and maintenance of infrastructure that the railroads deem to be non-essential. As this relates to HB 186, the railroads often deem the installation of lights and maintenance of walkways in high-traffic areas to be too costly, when compared to the common practice of distributing flashlights and issuing bulletins reminding employees to watch out for hazardous walking conditions.

On the evening of December 3, 2019, only 1 week ago today, Conductor Chris Seidl of Wichita, Kan., was struck and killed by the rear end of a moving train while performing service in a yard in North Wichita. While the investigation into this tragic accident is ongoing, 2 facts are immediately clear; it was dark outside, and Seidl was found trapped underneath a train that was moving on a track adjacent to the track that his train occupied. This is the most recent example, of many, where a fatality may have

been avoided if adequate lighting and safer or alternative walking conditions were available.

If passed, HB 186 would not only require railroads to adhere to reasonable standards for lighting and safety - it would provide railroad employees a viable avenue for filing complaints directly with the Public Utilities Commission of Ohio and impose reasonable fines for violations. This is common sense legislation.

2. Obstruction of Emergency Vehicles

Another way the carriers have thrown caution to the wind in order to boost profits is by doubling up shipments, building trains that exceed two (2) miles in length. This practice results in a myriad of logistical and mechanical issues, such as an inability to maintain adequate brake pipe pressure and an inability to maintain federally mandated 2-way telemetry between the head-end and rear-end of a train. Trains of this size are much more likely to break down and/or separate while en route, which requires a second crew member to walk back and repair - often on uneven terrain, and in all hours of the day under all types of weather conditions.

As my colleagues have expressed to this Committee several times already, trains are not immune to similar sorts of traffic patterns we experience on our roadways and in our airways. Across the country, it is becoming the norm for these extra-long trains to block road and pedestrian crossings, causing our communities to endure inconveniences and safety problems, including the obstruction of emergency responders. The time has come for our communities and our legislators to stand up to

the railroads and impose reasonable regulations to ensure that their profits are not taking precedent over our quality of life and, more importantly, our safety.

3. Two-Person Crews

“The Volpe Center has continued enabling safety and innovation. It has worked to reduce rail-grade crossing accidents, improve vehicle safety, and better manage the airspace...”

“The Volpe Center continues to provide important contributions to our national transportation system. Especially now, when we have entered a historic period of transportation innovation that promises to boost economic growth and improve quality of life. These innovations are occurring in all modes of transportation, including roads, rail, maritime, and aerospace...”

“All these innovations are exciting, but they can be disruptive. This is where Volpe’s contribution plays an important role. Volpe’s data and analysis provides trustworthy information that helps us distinguish between “High” and “Hype” performance innovations. Volpe’s data helps build confidence among stakeholders, including the public whose acceptance is critical to realizing the potential of ground-breaking innovations.”

- Elaine L. Chao, U.S. Secretary of Transportation

Volpe Center Groundbreaking in Cambridge, Mass.

Wednesday, October 30, 2019

Task Saturation of Engineers

In May 2013, the Volpe Center issued its final report on a Federal Railroad Administration (FRA) funded research effort titled *Using Cognitive Task Analysis to Inform Issues in Human Systems Integration in Railroad Operations*. This report draws on examples from Cognitive Task Analyses (CTAs) previously conducted by FRA for railroad employees in various crafts. With respect to locomotive engineers, its findings include determinations that:

- Introduction of new technology does not necessarily guarantee improved human-machine system performance. Poor use of technology can create additional workload for system users, can result in systems that are difficult to learn or use, or, in the extreme, can result in systems that are more likely to lead to catastrophic errors.
- While PTC technologies have the potential to improve the safety and efficiency of railroad operations, they also have the potential to create new failure modes and impose new cognitive demands on locomotive engineers who need to monitor PTC displays and provide inputs to the system.
- Increased information and alerts provided by the in-cab displays require locomotive engineers to focus more attention on displays, as opposed to

immediate hazards seen out the cab windows, such as trespassers, motor vehicles approaching grade crossings, and objects fouling the track.

- PTC would not provide all of the cognitive support functions the conductor currently provides to the locomotive engineer.

Subsequently, in October 2013, the Volpe Center issued its final report on another FRA sponsored research effort titled *A Job Analysis Design for the Rail Industry: Description and Model Analysis of the Job of Freight Conductor*. The analysis determined that freight conductors carry out forty-two (42) unique tasks that they categorize into five (5) distinct areas: crew communication; crew supervision; forms and records management; train inspection, troubleshooting, and repair; and train makeup and handling.

As we understand the carriers' arguments in support of single-person operations, they claim PTC and other advances in technology will serve to fulfil a handful of the conductors' tasks related crew communication and forms and records management. With respect to certain tasks related to train inspection, makeup, troubleshooting, and repairs, the carriers claim that strategically placed ground/utility conductors would fulfil several of these tasks.

In situations where the carriers cannot contrive an argument that certain tasks will be safely attributed to technology or ground service conductors, they have already

begun implementing unilateral policy/rule changes that require the engineer to handle certain tasks identified by the Volpe Center, such as (but not limited to):

- Call out signals as they are encountered when operating in signal territory and as job activities change.
- Contact the designated employee in charge concerning train movements on tracks that are under construction, out-of-service, and/or occupied by maintenance workers and equipment.
- Receive, copy, repeat, and comply with mandatory directives issued by train dispatchers or control operators, such as track authorities/warrants, bulletins, and temporary speed restrictions.
- Call for and release foul time as requested by foremen, contractors, and flagmen.
- Direct other crew members during switching or train operations.

Volpe Center's Findings on a Second Crew Member

In December 2013, the Volpe Center issued its final report on yet another FRA sponsored research effort pertaining to the cognitive and collaborative demands of freight conductors. Key findings of that report include the following:

- The locomotive engineer and conductor function as a joint cognitive system, meaning that conductors and locomotive engineers jointly contribute to the set of cognitive activities required to operate the train safely and efficiently.
- While each crew member has a distinct set of formal responsibilities, in practice they operate as an integrated team, contributing knowledge and backing each other up as necessary.
- When operating on the mainline conductors not only serve as a ‘second pair of eyes’, alerting the locomotive engineer to upcoming signals and potential hazards (e.g., activity at grade crossings; people working on or around the track), they also contribute knowledge and decision-making judgment.
- Conductors also serve an important, redundant check and backup role, reminding locomotive engineers of upcoming work zones and speed restrictions.
- If necessary, they will also handle unanticipated situations and activate the emergency brake, in cases where the locomotive engineer has not responded quickly enough.
- Conductors have developed a variety of skills and strategies that enable them to handle non-routine situations safely and efficiently.

In addition to the above, the SMART-TD has obtained a PowerPoint presentation prepared by Alion Science and Technology titled *Investigating Human-Automation Interaction and Human Error in the Locomotive Cab*, which reports the findings of a human error evaluation under three (3) operating scenarios, on a simulated seventeen (17) mile run.

First, the crew traversed the 17-mile segment of track in manual mode under relatively low workload conditions. This was intended to train and familiarize the crew with the simulated territory. Next, the crew traversed the simulated terrain using automation (PTC and/or Trip Optimizer) under the same working conditions as their first run. Finally, the simulation was conducted using automation and high workload conditions, which included three additional events: a work zone, an unplanned temporary speed restriction, and a defective grade crossing that required the crew to stop-and-protect.

According to the summary of results, the following three (3) errors were noted, two (2) of which occurred during the high workload automated condition:

- Failure to notice Trip Optimizer's request for information and switch to idle/manual mode.
- Failure to stop before the grade crossing for the stop-and-protect condition.
- Sustained overspeed by fifteen (15) miles per hour.

With respect to the failure to stop before the stop-and-protect condition, the findings note that a visual representation of the grade was shown on PTC's display, and the conductor reminded the engineer of the stop and protect.

With respect to the overspeed event, there was an incorrect understanding of the speed restriction and automated indications did not trigger recognition of the overspeed event as it was happening.

In summary, the report acknowledges the potential for errors to occur when interacting with automation, including distractions having a negative impact, and it found concerns to investigate further experiments.

Conclusion

We are confounded by the Association of American Railroads' (AAR's) continued claims that there is no data showing two-person crews are safer than one-person crews. Even more astonishing are their claims that a legislative crew size mandate lacks justification, and that congress must turn a blind eye to this issue and allow Wall Street to determine optimal crew staffing and safety standards

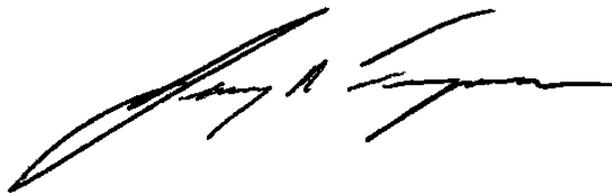
The carriers have chosen to ignore research and studies that do not align with their pursuit of record-breaking profits. Rather than rely on reputable organizations such as the Volpe Center, they choose to follow their confirmation bias and point to the opinions of individuals, some of whom are affiliated with conservative and libertarian think-tanks such as the R Street Institute and the Competitive Enterprise Institute. With

the FRA now being led by Ronald L. Batory, a former railroad executive, America's railroads feel more empowered than ever to cloak their greed as innovation and pursue dangerous and short-sighted practices that endanger our workforce and our citizens.

It is important for us to remember that the implementation of Positive Train Control was mandated by congressional intervention, as a part of the Rail Safety Improvement Act of 2008. The carriers now point to such technology and claim it as modernization, while speaking as though they have adopted its use as an altruistic act to provide safer and more efficient operations. This is simply a farce.

In closing, I once again thank you for the opportunity to submit my written testimony before this Committee. For the safety of our members and the people of the great State of Ohio, we urge you to move forward with HB 186.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy R. Ferguson', with a long horizontal flourish extending to the right.

Jeremy R. Ferguson
President - Transportation Division