

## MEMORANDUM

**TO:** Republican Commerce Committee LAs  
**FROM:** Senator JD Vance Legislative Staff  
**DATE:** March 20, 2023  
**RE:** Railway Safety Hearing Questions (3.22.23)

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**Executive Summary:** In anticipation of witness panel #2's testimony at Wednesday's hearing, we propose the following lines of questioning to outline the substantive changes the Railway Safety Act of 2023 makes to address the causes of the East Palestine train derailment.

**Introduction:** On February 3rd in East Palestine, Ohio, at about eleven o'clock, 38 rail cars in a 149-car train derailed. Eleven of the cars contained hazardous materials, including nearly 800,000 pounds of vinyl chloride, a carcinogenic, flammable gas. These vinyl chloride cars were deliberately breached, and vented into the environment as a result of a controlled explosion some hours after the derailment. Breaches in other derailed tank cars released additional hazardous chemicals, around another 700,000 pounds. These chemicals entered the air and water of the surrounding residential areas, the closest of which is only 1,000 feet from the site of the accident.<sup>1</sup>

**The Railway Safety Act of 2023:** Introduced by Senators Vance, Brown, Hawley, Casey, Fetterman and Rubio, the bill is predicated on the idea that an efficient safety margin for an individual firm or industry may not be efficient for the nation as a whole. Government action is at times required to rectify these market failures. It addresses specific issues known to be related to the East Palestine disaster.

In brief, the bill:

- applies elements of the current regime for High Hazard Flammable Trains, such as restrictions on train length, routing and notification requirements, to other hazardous material trains. (Sec. 3)
- creates minimum time requirements for human inspections as well as an auditing regime for inspections to be conducted by the Department of Transportation, while protecting the right of the Department to run pilot programs on automated track and rolling stock inspection systems. (Sec. 4)
- requires wayside bearing defect detectors (bearing failure was the cause of the derailment) every ten miles. (Sec. 5)
- requires a two-man crew on trains operated by Class I freight railroads, with some exceptions. (Sec. 6)
- increases in the civil penalties for violations of rail safety regulations (Sec. 7)
- speeds up the deployment of more durable tank cars from 2029 to 2025 (Sec. 8)
- provides additional hazmat training for first responders (sec. 9)

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<sup>1</sup> UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONS 3 AND 5 UNILATERAL ADMINISTRATIVE ORDER FOR REMOVAL ACTIONS, February 21, 2023, url: <https://www.epa.gov/oh/east-palestine-ohio-train-derailment-emergency-response>; accessed 3/19/23

- funds research and training for first responders, as well as research into rail safety (Sec. 10-11)

{Additional explanation and lines of questioning begin on the following page}

**Sec. 3. Advanced Notification of HHFTs & Gas Discharge Plans:** In early February, Governor Mike DeWine (R-OH) stated, “I learned today...that this train was not, was not considered high hazardous material train. Let me repeat this. This train apparently was not considered a high hazardous material train.” He went on to call for a requirement for notification for first responders to be applied for this type of train.

**Legal Authority to Regulate:** Presently, there is no federal requirement for notification of first responders for train consist information for trains carrying PHMSA class 2 division 1 hazardous materials, or flammable gases. Vinyl Chloride comprises a clear plurality of the chemicals spilled in the East Palestine Derailment and is a class 2.1. There are nine classes of hazardous material, each with their own regulatory structure, which stems largely from the underlying hazardous materials law. Section 5103(b) of the federal hazmat law authorizes the Secretary of Transportation to “prescribe regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce.” Section 5103(a) of the federal hazmat law provides, that “The Secretary shall designate material (including an explosive, radioactive material, infectious substance, flammable or combustible liquid, solid, or gas, toxic, oxidizing, or corrosive material, and compressed gas) or a group or class of material as hazardous.” From these legal authorities and others have come a broad array of regulations on different types of hazardous materials.

**Origin of High-Hazard Flammable Train Designation:** The first two decades of the twenty-first century saw an explosion in American oil production.<sup>2</sup> In particular, the Bakken oil formation in Montana and North Dakota saw a large increase in long trains transporting large amounts of crude oil, a flammable liquid, or class 3 substance, after production from the field outstripped pipeline capacity.<sup>3</sup> In 2013, an explosive derailment of one of these trains at Lac-Mégantic in Canada, near Maine, killed 47 people leveled buildings out to a kilometer from the explosion, further concentrating public attention on this type of freight. Other accidents involving these large, heavy trains generated rulemakings and at least one emergency order from the Department of Transportation, culminating in a May 2015 final rulemaking adding a raft of additional requirements on trains carrying at least 20 railcars of flammable liquid in a continuous block or 35 railcars dispersed throughout a train.<sup>4</sup> In September 2015, Congress codified the main points of this rulemaking into the FAST Act, which ordered an additional directed rulemaking which was finalized on October 30, 2019.<sup>5</sup>

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<sup>2</sup> Weekly U.S. Field Production of Crude Oil (thousands of barrels per day), Energy Information Administration, url: <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WCRFPUS2&f=W>, accessed 3/19/23

<sup>3</sup> New Drilling Method Opens Vast U.S. Oil Fields, Associated Press via FoxNews.com, November 17, 2014, url: <https://www.foxnews.com/us/new-drilling-method-opens-vast-u-s-oil-fields>, accessed 3/19/23

<sup>4</sup> “Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains” Final Rulemaking Summary, Federal Rail Administration, url: [https://railroads.dot.gov/elibrary/summary-enhanced-tank-car-standards-and-operational-controls-high-hazard-flammable-trains#p1\\_z5\\_gD](https://railroads.dot.gov/elibrary/summary-enhanced-tank-car-standards-and-operational-controls-high-hazard-flammable-trains#p1_z5_gD); Accessed 3/19/23

<sup>5</sup> U.S. DOT/PHMSA - Final Rule - Oil Spill Response Plans and Information Sharing for High-Hazard Flammable Trains, url: <https://www.regulations.gov/document/PHMSA-2014-0105-0381>, Accessed 3/19/23

Documents produced by the railroad industry have claimed that notification is already a federal requirement because of the FAST Act, stating “This is already done by the FAST Act...” This claim is at best deceptive. The following table is reproduced from the 2019 rulemaking, which is the current regulation:

TABLE 3—INFORMATION SHARING NOTIFICATION FOR EMERGENCY RESPONSE PLANNING

Topic	FAST Act (advanced notification) Section 7302(a)(3), (4), (6)	Final rule HM-251B (information sharing) 49 CFR 174.312
<i>Who is subject?</i>	Class I railroads transporting HHFT (20 cars in a block, 35 in consist carrying ANY Class 3 flammable liquid).	All railroads transporting HHFT (20 cars in a block, 35 in consist carrying ANY Class 3 flammable liquid).
<i>Who must the railroads notify?</i>	Railroads must notify State Emergency Response Commissions (SERCs), who must provide the notification information (and updates) to any political subdivision of a State or public agency responsible for emergency response or law enforcement, upon request of the political subdivision or public agency.	Railroads must notify SERCs, Tribal Emergency Response Commissions (TERCs), or other appropriate State designated entities who share information with appropriate local authorities, upon their request.

This 2019 notification requirement clearly does not apply to trains carrying flammable gases, the substance at issue in the East Palestine derailment. The American Association of Railroads issued a public comment critical of this rulemaking.<sup>6</sup>

**The Necessary Expansion of HHFT:** Similar concerns exist for trains carrying large amounts of flammable gases, which, when burned, can turn into dangerous toxic chemicals or present explosion risk, which is what happened in the East Palestine derailment. This section currently applies to shippers and railroads for trains, although it is likely to change to exclude shippers from the regulation because they do not supervise railcars after they leave their facilities. However, applying the broad parameters of HHFT trains to trains carrying large amounts of flammable gas is a sensible policy. They present similar dangers of widespread destruction, and they should have similar regulatory structure similar to current HHFTs because they present similar, but not identical risk to nearby populations.

This is not merely supposition. On August 8, 2014, the NTSB issued a report on a 20,000 gallon breach of vinyl chloride in Paulsboro, New Jersey.<sup>7</sup> The report states, “Damage estimates were \$451,000 for equipment and about \$30 million for emergency response and remediation.” This figure does not include major economic losses due to the release, which were borne by the town and the state. This estimate was for a single breached railcar of vinyl chloride, one-fifth the number of breached Vinyl Chloride cars in the East Palestine Derailment.<sup>8</sup> A September 27, 2016 comment from the NTSB stated:

“The FAST Act notification requirements do not address large numbers of highly hazardous gases (flammable, nonflammable, and toxic), other flammable liquids and substances, oxidizing substances, toxic substances, and corrosive materials. For instance,

6 DOCKET NO. PHMSA-2014-0105 (HM-251B): Hazardous Materials: Oil Spill Response Plans and Information Sharing for High-Hazard Flammable Train Evelyn Nackman, American Association of Railroads url: <https://www.regulations.gov/comment/PHMSA-2014-0105-0351>

<sup>7</sup> Conrail Freight Derailment with Vinyl Chloride Release; Paulsboro, New Jersey, November 30, 2012, Adopted July 29, 2014, url: <https://www.nts.gov/investigations/AccidentReports/Reports/RAR1401.pdf> accessed 3/19/23

<sup>8</sup> National Transportation Safety Board, NTSB Issues Investigative Update on Ohio Train Derailment, 2/14/23, url: <https://www.nts.gov/news/press-releases/Pages/NR20230214.aspx>, accessed 3/19/23

the FAST Act notification requirements do not include such materials as the Class 2.1 vinyl chloride that was carried by Conrail (not a Class I railroad) and released in the Paulsboro, New Jersey, accident, from which this safety recommendation was derived. We urge PHMSA to require all railroads to provide advanced notification to communities for all hazardous materials transported on a given route.”<sup>9</sup>

Policymakers who are requested by industry advocates to wait for the final NTSB report for East Palestine to take action should take into account the facts that:

1. A derailment has already occurred in 2012 with respect to vinyl chloride.
2. The vulnerabilities identified in the current rulemaking by the NTSB were already elucidated in a 2014 final report built upon by a 2016 regulatory comment.
3. Those vulnerabilities in the notification regime overlap with section 3 of the Rail Safety Act.

In another comment on another phase of the current HHFT regulation, the NTSB stated:

We are concerned that 1 million gallons is significantly above a reasonable risk threshold. At that value, notification would apply only to trains with more than about 35 tank car loads. **Yet catastrophic derailment failure involving even a single tank car loaded with flammable liquid can cause extensive destruction and loss of life** [emphasis added]. Therefore, we believe that the notification threshold should be significantly lower. In addition, the threshold should be based on the worst-case consequences of a derailment resulting in fire.

In the East Palestine derailment, 17 of the tank cars were loaded with combustible liquids, flammable liquids, or flammable gas, including vinyl chloride, and three contained residue only.<sup>10</sup> A high-hazard flammable train designation is triggered at 1 million gallons of class three material. It is reasonable to suggest that a similar designation be devised to apply to a train carrying 1.5 million pounds of flammable gas and other chemicals.

### **Advised Questions:**

Addressed to Chair Homendy (NTSB)—

(General questions)

Why shouldn't state and local first responders be notified that trains carrying hazardous materials—sometimes miles long—are being transported through their jurisdiction?

Is there any good reason that emergency personnel should not be notified of how to handle hazard chemical gas discharges in the event of a derailment?

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<sup>9</sup> Comment by the NTSB, Docket No. PHMSA-2014-0105, September 27, 2016, <https://www.regulations.gov/comment/PHMSA-2014-0105-0326>

<sup>10</sup> NTSB Issues Investigative Update on Ohio Train Derailment, 2/14/23 url: <https://www.nts.gov/news/press-releases/Pages/NR20230214.aspx>, accessed 3/19/23

In your judgment, are there any barriers at the Department of Transportation which would make adding this notification requirement difficult?

What steps should be taken to ensure that first responders are notified and adequately prepared to handle potential derailments?

Do you believe that additional trainings, as included in the Railway Safety Act, have the potential to increase safety?

(Chemical spill ramifications):

Does the NTSB believe that a single tank car of hazardous material derailing and exploding presents a serious danger to humans and loss of life?

Has the NTSB opined on this question before?

Has vinyl chloride been spilled into the environment previously?

What were the costs of the previous vinyl chloride spill?

Was the spill at East Palestine greater or less than the size of the previous vinyl chloride spill?

Can we predict additional cleanup costs as a result?

Do you believe that no additional action should be taken by the Congress or the regulators until your report on East Palestine is complete, or are there recommendations that are already in existence that can address the dangers of hazardous materials transportation that should be acted upon?

(HHFTs)

Is the current HHFT rule sufficient to ensure that first responders are aware of all hazardous materials

Is there overlap between section 3 of the Railway Safety Act and previous NTSB recommendations?

Is the AskRail app sufficient notification for emergency responders or should there be a mandatory notification in place?

Does the FAST Act require notification for all hazardous materials transported or does it require notification for trains carrying class three materials, flammable liquids only?

Has the NTSB made multiple recommendations in this regard?

Is the final report on East Palestine expected to revoke these recommendations?

#### **Sec. 4. Inspections:**

**Background:** Railroad employees are responsible for all aspects of a freight rail network—from building and operating trains to installing, inspecting, and maintaining railroad assets, such as tracks, yards, locomotives, cars, and signal equipment. A railcar maintenance employee—referred to as a “carman”—is responsible for ensuring the safe operation of railcars by conducting pre-departure checks of cars in railyards to identify and repair defects. But this is not the norm in many cases.

After transitioning to PSR, railroads are compensating for having fewer maintenance employees by requiring train conductors to perform pre-departure inspections. The Government Accountability Office recently found that this could lead to deferred maintenance, resulting in more accidents and injuries.

There are as many as ninety points of inspection on each side of a railcar. That inspection currently occurs in thirty seconds per side under current railroad practice. The voluntary requirements of the railroad do not provide enough time for a carman to actually review a railcar with sufficient care. Failing journal bearings, such as what happened in East Palestine, show signs of leaking oil or grease. These signs can be missed when the railcar is being inspected too rapidly.

#### **Advised Questions:**

Mr. Whittaker (SMART-TD)—

(Inspection Timelines):

How long should a railway employee take in inspecting a consist of more than 50 cars carrying hazardous materials?

90 seconds per car? More? Why?

How many points of inspection are there on a railcar?

How often do abbreviated pre-departure inspections occur relative to full inspections?  
The majority of the time?

Have the abbreviated departure inspections increased in prevalence with the change in business practices of the railroads in recent years?

Are carmen now penalized for taking too long during an inspection?

Does the amount of time a railcar is inspected improve the quality of inspections?

(to Ian Jeffries, American Association of Railroads)

(GAO Report on Inspections)

Mr. Jeffries—are you aware that the Government Accountability Office found last year that precision scheduling railroading has led to railroads overcompensating for a lack of mechanical staff by having other staff, such as train conductors, complete pre-departure checks of trains *on a regular basis*?<sup>11</sup>

That same report from the government accountability office found that (emphasis added):

Rail employees and inspectors said that the *combination of fewer maintenance employees and a focus on moving trains out of yards as quickly as possible* has **resulted in railroads deferring maintenance on tracks and equipment.**

Some FRA and state inspectors said that as a *result of this deferred maintenance*, in some locations, **they have seen an increase in certain types of defects in equipment and track, such as broken wheels, which could lead to accidents and injuries.**

Further, a variety of stakeholders—including rail workers, inspectors, and a rail customer—stated that **using longer trains causes increased wear and tear on car couplings and track due to factors such as the increased train weight, which could cause derailments or other accidents if maintenance is deferred.**<sup>12</sup>

How do you respond to that?

How often do you believe railroad firms should be audited on their rail car inspection programs?

To Clyde Whittaker (Smart-TD) (Qualified Mechanical Inspectors):

Can you explain the difference between the training that a carman receives and a conductor?

Do you believe that the mostly online education of a conductor is an adequate training course for inspecting railcars?

What about utility crews? What is these individuals' role in the process, what training do they receive?

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<sup>11</sup> Pg. 27. <https://www.gao.gov/assets/820/814068.pdf>.

<sup>12</sup> Id.

Do the current regulations provide sufficient safety margin, or have industry practices necessitated an alteration in what is permissible for railroads?

## Sec. 5. Wayside Bearing Defect Detectors

**Background:** Presently, there is no federal regulation requiring the installation of sensors for overheating parts on railway lines. The most common of these sensors detect the difference between the outside temperature and the wheel and axle assembly of a railcar as it passes by. If there is a failure in this equipment, wheels lock up, and friction between the metal wheel and metal track creates heat and sparks. If there is enough heat for long enough the car's wheel and axle assembly will fail, and the train will derail. This is what caused the disaster at East Palestine. From the NTSB Preliminary Report:

Train 32N passed three HBD systems on its trip before the derailment. At MP 79.9, the suspect bearing from the 23rd car had a recorded temperature of 38°F above ambient temperature. When train 32N passed the next HBD, at MP 69.01, the bearing's recorded temperature was 103°F above ambient. The third HBD, at MP 49.81, recorded the suspect bearing's temperature at 253°F above ambient.<sup>13</sup>

Had there been another hot bearing detector at milepost 59, the train would have stopped in time. This is a clear conclusion from the NTSB preliminary report. On March 6, Norfolk Southern itself announced that it was installing additional sensors on its rails.<sup>14</sup> Their announcement included phrasing like “develop a plan,” “anticipates adding,” and “where practical.” Railroads through their lobbying arm have announced, “All Class I railroads have now agreed to go further and are immediately beginning to install additional HBDs across their key routes, with the goal of achieving average spacing of 15 miles.” This is, in effect, a concession that the previous voluntary hot bearing detector standard was insufficient.

The railroads have said in documents circulated on the Hill that this section does not “provide appropriate flexibility” and that it is a “prescriptive safety mandate.” They have stated they are “determining what improvements should be made.” This provision is indisputably directly connected to the East Palestine Derailment.

The frequency of detectors is one element of this provision. The other is at what temperature reading the trains should stop. Outside of East Palestine, the train registered a reading of 103 degrees Fahrenheit above ambient temperature. The train did not actually stop until the bearing was registered at 253 degrees above ambient, at which point the train had derailed. Norfolk Southern claimed in the Washington Post that its stopping requirements are “among the lowest in the industry.”<sup>15</sup>

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<sup>13</sup> Norfolk Southern Railway Train Derailment with Subsequent Hazardous Materials Release and Fires, East Palestine, Ohio, February 3, 2023, Issued February 23, 2023, url:

<https://www.nts.gov/investigations/Documents/RRD23MR005%20East%20Palestine%20OH%20Prelim.pdf>

<sup>14</sup> Norfolk Southern Announces Six-Point Safety Plan, Press Release, March 6, 2023, url:

<https://nscorp.mediaroom.com/2023-03-06-Norfolk-Southern-announces-six-point-safety-plan>, accessed 3/20/23

<sup>15</sup> Washington Post, “Here’s What Norfolk Southern’s CEO Has to Say About the Ohio Derailment”

[https://www.washingtonpost.com/business/heres-what-norfolk-southern-ceo-has-to-say-about-theohio-derailment/2023/02/27/76f93bc4-b6cb-11ed-b0df-8ca14de679ad\\_story.html](https://www.washingtonpost.com/business/heres-what-norfolk-southern-ceo-has-to-say-about-theohio-derailment/2023/02/27/76f93bc4-b6cb-11ed-b0df-8ca14de679ad_story.html) 2/28/23 Accessed: 3/20/23



### Suggested Questions:

Mr. Whittaker (SMART-TD)—

Do wayside defect detectors enhance safety, in your view?

What is the current federal standard for wayside defect detectors?

Do you know about how far apart these detectors are on most rail networks?

Is this spacing enough to prevent catastrophic accidents?

How hot should a wheel bearing be able to get before the train is stopped?

Is there any reason the United States shouldn't have more wayside detectors on routes that transport highly hazardous freight?

Should railroad lines that serve hazardous materials have increased standards for detection equipment in general?

**Sec. 7. Civil Penalties for Railroads:** The highest statutory penalty for safety violations is about \$225,000. According to the Fiscal Year 21 Enforcement Report from the FRA, the railroads were assessed about \$17 million in civil penalties over the reporting period.<sup>16</sup>

Mr. Shaw—

Here's some of what we've learned so far about the conditions surrounding the derailment and cleanup in East Palestine:

- Norfolk Southern did not implement a unified plan in the aftermath of the derailment, forcing first responders and local officials to react rather than working together to manage the situation.
- Norfolk Southern gave inaccurate information and conflicting modeling about the impact of the controlled release of chemicals.
- Norfolk Southern was unwilling to consider alternatives to the controlled burn and burned the chemicals without warning government officials.

As of Tuesday, February 21—two weeks after the train derailment—Norfolk Southern reported the chemical spill contaminated at least 15,000 pounds of soil and 1.1 million gallons of water.

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<sup>16</sup> FRA FY21 Enforcement Report, <https://railroads.dot.gov/elibrary/fiscal-year-2021-enforcement-report> accessed 3/20/23

Last Friday, EPA Administrator Regan estimated that the cleanup in East Palestine will take at least 3 months to complete. Regan also commented that Norfolk Southern could be working faster to remove contaminated soil.

It's a long road ahead for the people of East Palestine. They are being exposed, on a daily basis, to toxins. Their ecosystem has been permanently contaminated.

My only question would be, is 1 percent of annual operating income (\$48 million for Norfolk Southern in 2022) too much to ask when a railroad company poisons an entire community?<sup>17</sup>

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<sup>17</sup> Pg. 2. [http://www.nscorp.com/content/dam/QuarterlyEventFiles/4q-2022/4q2022\\_earnings\\_release.pdf](http://www.nscorp.com/content/dam/QuarterlyEventFiles/4q-2022/4q2022_earnings_release.pdf).