

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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May 30, 2023

The Honorable Pete Buttigieg
Secretary
Department of Transportation
1200 New Jersey Ave. SE
Washington, D.C. 20590

Dear Secretary Buttigieg:

In the aftermath of the East Palestine, Ohio, train derailment, numerous concerns have surfaced regarding the safety and integrity of transporting hazardous material by rail. The Department of Transportation (DOT) is charged with working with stakeholders to further the research, development, and technology (RD&T) associated with the safe and effective transport of hazmat by rail.¹ The American people depend on DOT to utilize taxpayer investments wisely and create tangible results. These technological advances keep our communities safe while promoting efficient movement of freight across our nation. Despite the advances from RD&T over the past few years, the recent events in Ohio have highlighted potential reasons for concern. In the interest of transparency, we seek further insight into DOT's rail RD&T agenda, as well as DOT's plans for process adjustments going forward by providing the committee with a briefing and answering the questions below. This will help to ensure federal research investments are translated to operational safety applications on the rail system.

In its preliminary report, the National Transportation Safety Board (NTSB) revealed the recent derailment in East Palestine was due to a compromised wheel bearing that became too hot and failed.² These wheel bearings are a crucial part of the train car's structure, connecting the car's wheel assembly to its body. When they fail, these bearings will overheat and can create fires if the issue is not quickly addressed. While the results of a complete NTSB investigation will take time,

¹ United States Department of Transportation (DOT), *Railroad Safety Fact Sheet*, February 4, 2022, <https://railroads.dot.gov/railroad-safety/safety-fact-sheet>

² National Transportation Safety Board (NTSB), *Norfolk Southern Railway Train Derailment with Subsequent Hazardous Material Release and Fires*, Preliminary Report RRD23MR005, pp. 3-4, February 3, 2023, <https://www.nts.gov/investigations/Documents/RRD23MR005%20East%20Palestine%20OH%20Prelim.pdf>

the preliminary report and damage assessment determined an abnormal temperature rating by a wayside heat detector that required immediate attention.³ As the train came to a stop, the tank car's wheel bearing catastrophically failed causing the train to derail and catch fire.⁴ The preliminary investigation found that the heat from the fire melted the protective housing of the pressure relief device potentially causing the tank's internal pressure and temperature to increase, necessitating a manual release of the chemical inside or face the possibility of an explosion.⁵

DOT has initiated various projects within the RD&T space either because of a Congressional mandate, under the Infrastructure Investment and Jobs Act (IIJA), or through appropriations for other preexisting programs.⁶ The Transportation Technology Center (TTC) is among these programs, established under the High-Speed Ground Transportation (HSGTC) Act of 1965. This facility was designated to advance rail technology development and conduct safety testing in Pueblo, Colorado.⁷ DOT recently recompleted the contract for this facility, awarding the bid to ENSCO – a change from the previous awardee, the Transportation Technology Center, Inc., a wholly-owned subsidiary of the Association of American Railroads.⁸ IIJA authorized the Secretary to provide up to \$3 million each fiscal year over five years for construction and facility maintenance.⁹ The Committee is interested in the RD&T work being conducted at TTC, specifically as it relates to tank car development, way-side detection research, and implementation of automated track inspection technology. The Committee seeks to better understand how the operations transition from one contractor to the other has progressed, the quality of the research being conducted, and the efforts being taken in response to the recent Ohio derailment, as well as other successful projects being conducted by ENSCO at TTC.

Additionally, the most recent omnibus appropriation bill provided \$44 million for Federal Railroad Administration (FRA) RD&T activities during FY 2023 and \$3 million in FY 2023 for the Advanced Research Projects Agency-Infrastructure (ARPA-I) at DOT.¹⁰ ARPA-I is meant to conduct advanced research to develop innovative solutions to persistent problems in infrastructure and transportation, help reach net-zero greenhouse gas (GHG) emissions, and develop components

³ “Wayside Hot-Box Detectors (HBDs) are devices that sit on the side of the rail tracks and use non-contact infrared (IR) sensors to determine the temperature of the train bearings as they roll over these detectors. HBDs are the most common bearing health monitoring system utilized in the U.S. with over 6,000 of these devices spread across the nation's railways. Typically, HBDs are positioned around 24 to 48 km (15 to 30 mi) apart along the track.” Constantine Tarawneh, James Aranda, Veronica Hernandez, Stephen Crown & Joseph Montalvo (2020), *An investigation into wayside hot-box detector efficacy and optimization*, International Journal of Rail Transportation, June 28, 2019, 264-284, at 265-266,

https://www.utrgv.edu/railwaysafety/files/documents/research/mechanical/ijrt_wayside-hbd-investigation.pdf

⁴ Becky Sullivan, *Here's the most thorough explanation yet for the train derailment in East Palestine*, NPR, February 23, 2023, <https://www.npr.org/2023/02/23/1158972561/east-palestine-train-derailment-ntsb-preliminary-report-wheel-bearing>

⁵ NTSB, *NTSB Examines Pressure Relief Devices in East Palestine Derailment*, press release, March 21, 2023, <https://www.nts.gov/news/press-releases/Pages/NR20230321.aspx>

⁶ P.L. 117-58.

⁷ ENSCO About, *Transportation Technology Center (TTC)*, April 2023, <https://www.ensco.com/rail/transportation-technology-center-ttc>

⁸ Marybeth Luczak, *UPDATED: TTC Management Transitioning to 'DOT-Wide' Contract*, Railway Age. March 8, 2021, <https://www.railwayage.com/regulatory/ttc-management-transitioning-to-dot-wide-contract/>

⁹ P.L. 117-58.

¹⁰ P.L. 117-328.

or technologies to create the safest most efficient, climate friendly, and resilient transportation system. The Committee seeks to ensure that ARPA-I is truly investing in practical solutions. President Biden's FY 2024 budget included a request for \$19 million for ARPA-I.¹¹ The Committee would like to understand the initial projects ARPA-I intends to fund. We want to ensure that the tax dollars of the American people are funding solid efforts that will provide real results and mitigate accidents like the recent derailment.

It is the shared goal of this Committee and DOT to ensure the safe, efficient, and reliable movement of people and goods by rail. DOT's various research programs are meant to contribute to the strategic goals of good repair and economic competitiveness through innovative technologies and safety-focused projects. While competitiveness is essential, it cannot come at the expense of Americans' safety. When incidents like the one in East Palestine occur, it requires careful consideration of how current practices, procedures, and efforts are improving effective operability of our transportation systems. To ensure that we are investing our federal research dollars into safe and effective transportation technologies, we ask that you provide a briefing for Committee staff regarding TTC RD&T developments and provide a written response to the following questions by June 20, 2023.

1. What is the state of DOT's efforts to operationalize the ARPA-I program?
2. What intended projects does DOT anticipate ARPA-I will begin in this Congress?
3. What research was the department and industry conducting in relation to tank car development and wayside detection technology, such as hotboxes, before the East Palestine derailment?
4. What specific efforts has DOT been advancing at TTC in Pueblo, CO, in relation to the tank car technology, wayside detection technology, and automatic track inspection?
5. Please provide the breakdown of RD&T funding among each mode of transportation and the three most recent research projects conducted by each.
6. What research are DOT, FRA, or industry conducting in the aftermath of East Palestine, including on HBDs, to improve the transportation of hazardous materials by rail?
7. Does DOT intend to conduct research in cooperation with industry to determine a process or develop a metric for establishing distances between hot bearing wayside detection devices?

¹¹ U.S. Department of Transportation, *Budget Highlights 2024*, March 9, 2023, pp. 5, https://www.transportation.gov/sites/dot.gov/files/2023-03/BudgetHL2024_Mar09_3pm_508.pdf

8. How can DOT better work with industry to coordinate their efforts to research, develop, test, and evaluate new wayside, on-board, or other detector technologies and ensure these technologies improve defect detection?
9. How can DOT coordinate its efforts with industry to ensure these new detector technologies will provide an equivalent or higher level of safety when incorporated into existing defect detection systems?"

We look forward to hearing your responses to these questions. We are interested in understanding the current and future research efforts of DOT and want to ensure safe and effective procedures are in place to ensure effective transportation in the future. If you have any questions, please contact Cate Johnson or Victoria Lombardo of the Committee's Majority staff at (202) 225-6371 or Sara Palasits of the Committee's Minority staff at (202) 225-6375. Thank you for your time and consideration regarding this important matter.

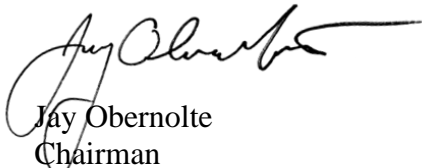
Sincerely,



Frank Lucas
Chairman
House Committee on Space, Science, and
Technology



Zoe Lofgren
Ranking Member
House Committee on Science, Space, and
Technology



Jay Obernolte
Chairman
Subcommittee on
Investigations and Oversight



Haley Stevens
Ranking Member
Subcommittee on Research and Technology



Mike Collins
Chairman
Subcommittee on Research and Technology

cc: The Honorable Eric Soskin, Inspector General, Department of Transportation