



*Testimony of*

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Chair  
National Transportation Safety Board

*Before the*

Railroads, Pipelines, and Hazardous Materials Subcommittee  
Committee on Transportation and Infrastructure  
United States House of Representatives

*– On –*

Examining the State of Rail Safety in the Aftermath of the Derailment in East  
Palestine, Ohio

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Washington, DC • July 23, 2024



*An Independent Federal Agency*

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Good afternoon, Chairman Nehls, Ranking Member Wilson, and members of the subcommittee. Thank you for inviting the National Transportation Safety Board (NTSB) to testify before you today regarding rail safety following our investigation into the Norfolk Southern Railway (NS) derailment and hazardous materials release in East Palestine, Ohio.<sup>1</sup>

As you know, the NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and the US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not have authority to promulgate operating standards, nor do we certificate organizations, individuals, or equipment. Instead, we advance safety through our investigations and recommendations, which are issued to any entity that can improve safety. Our goal is to identify issues and advocate for safety improvements that, if implemented, would prevent injuries and save lives.

Since 1967, the NTSB has been at the forefront of railroad safety. We have a long record of highlighting numerous safety issues on our railways, including the need for an aggressive phase-out of DOT-111 tank cars in hazardous materials service.

I believe it is important, as we have this discussion today, to keep in mind that rail passenger and freight transportation in the United States is far safer than road transportation. The United States confronts an ongoing public health crisis on our roadways in every corner of this country, losing over 40,000 lives annually in crashes on our roadways.<sup>2</sup> I would never want to see traffic shift away from railways to roadways—particularly hazardous materials traffic. What we should strive for is to shift passenger and freight transportation from our deadly roadways to far safer modes of transportation, like rail. However, as I testified before this committee in January and now reiterate, we must also be clear that the only acceptable number of accidents

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<sup>1</sup> National Transportation Safety Board. [Norfolk Southern Railway Train Derailment with Subsequent Hazardous Material Release and Fires, East Palestine, Ohio, February 3, 2023](#). Washington, DC: NTSB 2024; Rpt. No. RIR 24/05.

<sup>2</sup> US Department of Transportation, National Highway Traffic Safety Administration. [Traffic Safety Facts: Early Estimate of Motor Vehicle Traffic Fatalities for the First Quarter of 2024](#). Washington, DC: NHTSA, 2024.

and injuries—fatal and nonfatal—is zero, and although rail transportation is comparatively safe in contrast to highway transportation, we must still work to ensure that no lives are lost in rail transportation and no communities are impacted by hazardous materials releases. There is much work left to be done.

In total, the NTSB currently has over 215 open rail safety recommendations.<sup>3</sup> These include 5 recommendations to the US Department of Transportation (DOT), 98 recommendations to the Federal Railroad Administration (FRA), and 15 recommendations to the Pipeline and Hazardous Materials Safety Administration (PHMSA). There are also 116 recommendations to the FRA that are closed with unacceptable action.<sup>4</sup> In addition, NS has 17 open recommendations and 3 recommendations classified Closed—Unacceptable Action. Finally, eight recommendations are currently open to all the Class I railroads. The collisions and derailments we see in our investigations are tragic because they are preventable, and we believe the safety issues we identify in these investigations should be acted on swiftly.

As examples, I'd like to highlight just three investigations we launched following the completion of our East Palestine investigation.

This past Friday, July 19, 2024, at about 12:38 p.m., a NS conductor sustained severe injuries during switching operations at Lambert's Point Yard in Norfolk, Virginia. This follows our investigation of a March 7, 2023, incident where a NS conductor was killed when the train he was riding collided with a dump truck as they entered a private grade crossing in the Cleveland-Cliffs Incorporated steel plant in Cleveland, Ohio.<sup>5</sup> The conductor was riding on the end platform of the lead railcar during a shoving movement when he was pinned between the railcar and the dump truck during the collision, a procedure that is authorized by railroad operating rules.

This also follows the July 6, 2024, incident where a Union Pacific employee was killed in a rail yard in Melrose Park, Illinois, when he was riding on a tank car during a shoving movement and was pinched between it and another passing train.<sup>6</sup> The NTSB has issued multiple recommendations aimed at ensuring employees are not riding train cars through certain shoving movements, and we intend to continue investigating and advocating on this issue.<sup>7</sup> I want to emphasize that over half—12 out of 23—of our open investigations in rail involve employee fatalities. Accidents on yard

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<sup>3</sup> A report of all open safety recommendations related to rail (nontransit) can be accessed here: <https://data.nts.gov/carol-main-public/query-builder/route/?t=published&n=28>.

<sup>4</sup> A report of all closed—unacceptable safety recommendations related to the FRA can be accessed here: <https://data.nts.gov/carol-main-public/query-builder/route/?t=published&n=33>.

<sup>5</sup> NTSB. *Norfolk Southern Conductor Fatality, Cleveland, Ohio, March 7, 2023*.

<sup>6</sup> A shoving movement is the process of pushing railcars or a train from the rear with a locomotive.

<sup>7</sup> Safety Recommendations R-23-19 and -20.

track, in particular, are increasing, and I urge this committee to exercise robust oversight for employee safety.

In the early morning of July 5, 2024, a Canadian Pacific Kansas City Railroad train derailed 29 cars near the town of Bordulac, North Dakota. The 8,850-foot train consisted of one headend locomotive, one rear distributed power locomotive, 126 loaded cars, and 25 empty cars. Preliminary information indicates that the derailed cars included 6 methanol, 11 anhydrous ammonia, and 12 propylene pellet cars. There was a postaccident fire involving methanol and propylene pellets, and at least four anhydrous ammonia cars were leaking, three of which are believed to be breached. There are no initial reports of injuries, but there was a voluntary evacuation of two houses. Due to ongoing work to mitigate the hazmat on scene, our investigators have not been able to visually inspect the tank cars, and some of the tank cars have not yet been identified due to their condition. One of the tank cars transporting methanol, a flammable liquid, was reportedly a DOT-111 tank car. Investigators will confirm car types when they are able to perform detailed damage assessments of all the tank cars involved in the accident. Underlining our recommendations coming out of the East Palestine investigation, though, I wanted to note the presence of a possible DOT-111 tank car in this accident. As part of this investigation, we will assess the performance of all the tank cars involved.

All information on these three investigations is still preliminary, but more will be forthcoming, and I am happy to discuss as much as I can at this point.

### **East Palestine Findings and Recommendations**

Turning to East Palestine, on February 3, 2023, about 8:54 p.m., eastbound NS train 32N derailed 38 mixed freight railcars at milepost 49.5 on the NS Fort Wayne Line of the Keystone Division in East Palestine, Ohio. Three tank cars carrying flammable and combustible hazardous materials were mechanically breached during the derailment. A fire ignited during the derailment and grew to involve lading released from these three mechanically breached tank cars, additional derailed tank cars carrying both hazardous and nonhazardous materials, and freight cars. Emergency responders established a 1-mile evacuation zone that affected about 2,000 residents. The derailed equipment included five hazardous materials tank cars carrying vinyl chloride monomer (VCM), a compressed liquified flammable gas offered for shipment as "UN1086 vinyl chloride, stabilized, 2.1." The five VCM tank cars were not mechanically breached during the derailment, but over the next day, four of those tank cars were exposed to fires and released material from pressure relief devices. These releases ceased on the afternoon of February 4. Acting on information provided by NS and its contractors that a dangerous chemical reaction was occurring within a VCM tank car, the incident commander managing the response chose to expand the evacuation zone and perform a vent and burn (a

deliberate breach of a tank car) on all five derailed VCM tank cars. The incident commander was not aware of dissenting opinions the VCM shipper had provided to NS and its contractors. A contractor hired by NS breached the VCM tank cars at 4:37 p.m. on February 6, releasing and igniting their lading. No injuries were reported during the derailment or emergency response.

### What We Found

The NTSB determined the derailment occurred because a bearing on a hopper car overheated and caused an axle to separate. There was not enough evidence to determine if a mechanical inspection conducted before the derailment failed to identify signs of bearing failure; the bearing may not have been showing visible problems at the time of the inspection.

A hot bearing detector traversed by train 32N detected an elevated temperature on the overheating bearing, but the low priority alert it transmitted to railroad personnel did not reflect the true condition of the failing bearing. Because of design constraints, hot bearing detectors are likely to indicate misleadingly low bearing temperatures. This limit on detector performance, combined with NS's standard operating procedures and the spacing between detectors, meant that the train's crew did not have adequate warning to stop the train before the derailment.

Research will be necessary to determine if changes to wayside bearing defect detection systems—such as lower alert and alarm thresholds—would produce a significant safety improvement. Research is also necessary to determine what operational responses to bearing alerts and alarms are sufficient to prevent derailments.

Our investigation also found that the state of Ohio's laws regarding volunteer firefighter training were insufficient to support a safe emergency response to the derailment. Further, the emergency response lacked efficient coordination because the responding agencies did not have common radio channels. Also hampering efforts was the illegibility of the railcar placards after they were exposed to fire. Delays in NS transmitting train consist information to emergency responders also increased responders' and the public's exposure to postderailment hazards.

The postderailment fires likely began because of hazardous materials released from a punctured DOT-111 tank car. The subsequent release of VCM from mechanically intact DOT-105 tank cars likely would not have occurred if the DOT-111 tank cars in the consist had survived the derailment. Since 1991, the NTSB has raised concerns about DOT-111 tank cars. We have repeatedly stated that the presence of DOT-111 tank cars carrying hazardous materials in a train can increase the risk of more resilient tank cars releasing hazardous materials following a derailment; the Association of American Railroads' (AAR's) definition of key train does not account for this. Although voluntary phase out of the remaining DOT-111 tank cars in hazardous

materials service is technically possible, it is unlikely because of economic and business disincentives.

The VCM in the derailed DOT-105 tank cars in East Palestine remained in a stabilized environment (that is, was unable to undergo polymerization, a potentially dangerous chemical reaction) until those tank cars were deliberately breached with explosives (the vent and burn procedure). On-scene temperature trends did not indicate that a polymerization reaction was occurring, and postaccident examinations confirmed this. The vent and burn procedure was not necessary to prevent a polymerization-induced explosion. One source of information about polymerization consulted by NS and its contractors, The Chlorine Institute's Pamphlet 171, included misleading information about signs of polymerization. NS and its contractors continued to describe polymerization as an imminent threat when expert opinions and available evidence should have led them to reconsider their course of action. NS compromised the integrity of the decision to vent and burn the tank cars by not communicating expertise and dissenting opinions to the incident commander making the final decision. This failure to communicate completely and accurately with the incident commander was unjustified. The significant local and environmental impacts of a vent and burn decision demonstrate the need for federal guidance about when to conduct a vent and burn.

Lastly, inward- and outward-facing recorders can help railroads verify train crew actions and investigators improve the quality of investigations and identification of safety enhancements, and without a requirement, we have missed an opportunity to record important safety data.

### Probable Cause

The NTSB determined that the probable cause of NS train 32N's derailment was the failure of the L1 bearing on the 23rd railcar in the consist that overheated and caused the axle to separate, derailing the train and leading to a postderailment fire that likely began with the release of a Class 3 flammable liquid from a DOT-111 tank car that was punctured during the derailment. Contributing to the postderailment fire and the severity of the hazardous materials release was the continued use of DOT-111 tank cars in hazardous materials service. Also contributing to the severity of the hazardous materials release were the failure of NS and its contractors to communicate relevant expertise and dissenting opinions to the incident commander, and the inaccurate representation by NS and its contractors that the tank cars were at risk of catastrophic failure from a polymerization reaction, which created unwarranted urgency and led to the unnecessary decision to vent and burn five derailed VCM tank cars to prevent a polymerization-induced tank car rupture. Contributing to the exposure of emergency responders and the public to postderailment hazards were NS's delay in transmitting the train consist information to emergency responders and Ohio's insufficient training requirements for volunteer firefighters.

## What We Recommended

As a result of this investigation, we issued 34 new recommendations and reiterated 1 previously issued recommendation. We also classified four previously issued recommendations.

We recommended the FRA to research bearing defect detection systems and use the results to establish regulations on the following related subjects:

- Railroads' use of bearing defect detection systems, including thresholds for alerts and alarms and distances between wayside detectors.
- Railroads' operational responses to bearing alerts and alarms.
- Installation, inspection, and maintenance of wayside bearing defect detection systems.

We recommended that the AAR develop a database of bearing failure and replacement data to help railroads, regulators, and investigators identify and address bearing failure risk factors.

We issued a recommendation to Ohio to amend its statute limiting volunteer firefighter training and bring its training requirements in line with a widely accepted standard. To expand the reach of lessons learned at East Palestine, we recommended that the International Association of Fire Chiefs, the International Association of Fire Fighters, and the National Volunteer Fire Council inform their members of the derailment and fire and encourage them to adopt training that meets a widely accepted standard. We also recommended that the National Volunteer Fire Council identify barriers to volunteer firefighter training and actions to address them.

To improve local preparedness, we recommended that the Columbiana County Emergency Management Agency develop a policy to immediately provide train consist to emergency responders and update its emergency plans to incorporate lessons learned from the East Palestine derailment.

Our investigation report classified Safety Recommendation R-07-4 to PHMSA Closed–Acceptable Action. This recommendation, previously classified Open–Unacceptable Response, asked PHMSA to require railroads to immediately provide emergency responders with train consist information. We are grateful to PHMSA for taking this action. We also recommended that NS review and revise its practices to ensure a train's consist is immediately communicated to first responders. We made a new recommendation that PHMSA require that placards used to identify hazardous materials be able to survive accidents and fires.

We issued additional new recommendations to PHMSA expanding and accelerating the current phase out of DOT-111 tank cars from hazardous materials service and expanding the definition of high-hazard flammable trains (HHFTs) to



include a wider variety of hazardous materials and account for variations in how well different tank car specifications survive derailments. We made a related recommendation to the AAR to account for the risk posed by certain tank cars in its definition of key train. We also recommended that the AAR take steps to require manufacturers of tank car service equipment to demonstrate that their products are compatible with a tank car's intended lading, and that the FRA monitor the AAR's progress to ensure it addresses weaknesses in its approval process.

Regarding the vent and burn decision, we recommended that:

- NS establish a policy of communicating all expert opinions to the full incident command, share information collected by its emergency response contractors with entities that provide hazardous materials guidance, and update its submissions to the PHMSA incident database.
- The FRA disseminate current and updated versions of its existing study on the vent and burn method to help guide incident commands in the future.
- PHMSA spread awareness of the FRA's most current guidance by referencing it in the next edition of the Emergency Response Guidebook.
- The Chlorine Institute review and revise its pamphlet on VCM to ensure that it is accurate and suited to supporting emergency responses, and that it change its Chlorine Emergency Plan program to make sure specialized emergency response contractors can appropriately respond to chemical hazards during a VCM incident.
- Oxy Vinyls update its safety data sheet for VCM to ensure that it is accurate and develop a policy to ensure that its expertise is communicated to the full incident command.
- The American Chemistry Council and The Chlorine Institute make their members aware of the events at East Palestine and emphasize the importance of shippers communicating their expertise to the full incident command.

We made an additional recommendation to the International Association of Fire Chiefs, the International Association of Fire Fighters, and the National Volunteer Fire Council to encourage the distribution of federal guidance about the vent and burn method.

We also recommended that the secretary of transportation and the FRA require the installation and use of inward- and outward-facing audio and image recorders on locomotives, obtaining legislative authority to act if necessary. In addition, we reiterated a recommendation that we first made to all the Class I railroads in 2013 that they should install and use such recorders in advance of a requirement to do so.

Each of these recommendations is detailed in our final report, and I am happy to discuss any of them in detail. I urge this committee to closely examine the recommendations in which we have identified that legislative authority may be necessary for implementation, particularly those related to the following.

- ***Accelerating Phase-out of DOT-111 Tank Cars for Flammable Liquids.*** The Fixing America's Surface Transportation (FAST) Act (Public Law 114-94) phased out legacy DOT-111 specification tank cars for transporting flammable liquids, such as crude oil and ethanol; however, certain other flammable liquids may still be transported in such tank cars until May 1, 2029, under the law. This includes the DOT-111 tank car transporting flammable liquid that likely started the fire in East Palestine.
- ***Prohibiting Other Hazardous Materials in DOT-111 Tank Cars.*** We recommend prohibiting other hazardous materials in DOT-111 tank cars, including combustible liquids. Any nonpressure tank car transporting hazardous materials must meet or exceed the safety standards of DOT-117 specification tank cars. We emphasize meeting or exceeding the DOT-117 specification because we do not want to see such hazardous materials moved from DOT-111 tank cars to AAR-211 tank cars, which also pose a risk in derailments.
- ***Revising and Expanding the Definition of High-Hazard Flammable Train.*** The FAST Act codified the definition of an HHFT. The train in the East Palestine derailment was not an HHFT because it did not contain a block of 20 or more than 35 total loaded tank cars of a Class 3 flammable liquid, as defined in the act. We believe the definition of an HHFT should include a broad range of hazardous materials, including flammable gases and combustible liquids. We recommended that PHMSA seek legislative authority if necessary to revise the definition of HHFT to account for differences in survivability between tank car specifications and to include hazardous materials other than flammable liquids that can contribute to cascading hazardous materials releases. We have previously stated in comments to the HHFT rulemaking that the threshold of 20 or more than 35 total loaded tank cars of a Class 3 flammable liquid is far too high.
- ***Requiring Recorders on Freight Rail.*** The FAST Act required railroads providing regularly scheduled intercity rail passenger or commuter rail passenger transportation to the public to install inward- and outward-facing image recording devices in all controlling locomotive cabs and cab car operating compartments in passenger trains. However, the law did not require freight railroads to install such devices, and when the FRA issued its final rule implementing the FAST Act requirements, it left out freight railroads, citing this reason. We have recommended recorders for freight railroads since 2010, and

in the East Palestine report, we issued new recommendations calling on both the secretary and the FRA to issue regulations to require them, and for the FRA to require that railroads routinely review recordings to ensure safety. We recommended that they seek legislative authority, if necessary.

- **Providing increased funding for the fire service.** PHMSA provides grant funding to states and other entities (through competitive grants) for training emergency responders. Our investigation found that volunteer firefighter training was not sufficient to support a safe emergency response to the East Palestine derailment and that the emergency response lacked efficient coordination because the responding agencies did not have common radio channels.

Radio systems for emergency responders are subject to numerous regulations and standards governing their use and minimum interoperability requirements, including Federal Communications Commission (FCC) regulations. Authorities with jurisdiction are ultimately responsible for ensuring interoperability through suitable equipment, protocols, and training; however, they may not have the means to do so, as radio interoperability can cost millions of dollars.

While we recognize the committee does not have jurisdiction over the FCC, it could increase funding for states and other entities, as well as additional eligibility for radio interoperability, within the Hazardous Materials Emergency Preparedness Fund.

## **Rescheduling of Marijuana**

As we discuss rail safety, I also want to call your attention to the comments that we have submitted in response to the US Drug Enforcement Administration's (DEA's) notice of proposed rulemaking, "Schedules of Controlled Substances: Rescheduling of Marijuana."<sup>8</sup> The proposed rule would transfer marijuana from Schedule I to Schedule III of the Controlled Substances Act. As you know, the NTSB has long been concerned about impairment in all modes of transportation. This includes our concerns about marijuana use among crewmembers and other safety-sensitive personnel in rail. We believe there will be a serious negative impact on transportation safety if the DEA moves forward with rescheduling without addressing the issues further detailed in our comments, which are appended to my testimony.

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<sup>8</sup> 89 *Federal Register* 44597

## **Conclusion**

Again, thank you for the opportunity to discuss these critical rail safety issues and the NTSB's perspectives and recommendations with the committee today. We strongly believe that continued vigilance and improvement are needed in our rail system. We recognize the progress that has been made; yet there will always be room for more when it comes to safety. We stand ready to work with the committee to continue improving rail safety, which includes ensuring that the NTSB has the resources needed to carry out our essential mission.

To that end, I thank you on behalf of our entire agency for your committee's strong bipartisan work to ensure a robust reauthorization for the NTSB in the recently passed FAA bill. I also thank you for your steadfast support for bolstering our agency funding in FY 2024. It was your support that ensured that funding increases for safety crossed the finish line. I urge your continued consideration for additional resources at the NTSB as Congress moves forward with FY 2025 appropriations.

Thank you again, and I am happy to answer your questions.

# National Transportation Safety Board

Office of the Chair

Washington, DC 20594



July 19, 2024

US Drug Enforcement Administration  
Attn: DEA *Federal Register* Representative/DPW  
8701 Morrisette Drive  
Springfield, VA 22152

Re: Docket Number DEA-1362

Dear Sir or Madam:

The National Transportation Safety Board (NTSB) has reviewed the US Drug Enforcement Administration's (DEA) notice of proposed rulemaking titled "Schedules of Controlled Substances: Rescheduling of Marijuana," published at [89 Federal Register \(FR\) 44597](#) on May 21, 2024. The proposed rule would transfer marijuana from Schedule I of the Controlled Substances Act (CSA) to Schedule III of the CSA, consistent with the US Department of Health and Human Services' (HHS) August 2023 recommendation.<sup>1</sup>

Through our accident and incident investigations and transportation safety research, the NTSB has developed experience with marijuana use among noncommercial and commercial vehicle operators and other transportation safety-sensitive personnel. We recognize that marijuana is a prevalent drug with performance-impairing effects, that human performance is critical to the safe operation of transportation systems, and that most people interact with transportation systems multiple times per day. Consequently, we believe that interactions with transportation systems are among the most important ways in which the public may be exposed to risk from marijuana's effects. This perspective has informed our related recommendations to improve transportation safety. It is also why we believe transportation safety deserves prominence in the national conversation about marijuana rescheduling. Although the NTSB has not made any recommendation concerning marijuana's scheduling under the CSA, we appreciate this opportunity to share our perspective on marijuana-related transportation safety issues for the DEA to consider during this rulemaking process.

In commercial transportation operations, the NTSB is particularly concerned that the proposed rule would prevent testing for marijuana use by safety-sensitive employees who are subject either to the US Department of Transportation (DOT)

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<sup>1</sup> See HHS. [August 29, 2023, letter](#) from Rachel L. Levine, MD, Assistant Secretary for Health, HHS, to Anne Milgram, Administrator, DEA.

drug testing under Title 49 *Code of Federal Regulations (CFR)* Part 40, or (as is the case for many air traffic controllers) to federal workplace drug testing under HHS Mandatory Guidelines for Federal Workplace Drug Testing Programs using Urine and Oral Fluid (HHS Mandatory Guidelines).<sup>2</sup> Currently, HHS Mandatory Guidelines authorize testing for Schedule I and II controlled substances only.<sup>3</sup> We urge the DEA to ensure that any final rule to reschedule marijuana does not compromise marijuana testing under DOT and HHS procedures applicable to safety-sensitive transportation employees.

We also have broader concerns related to the transportation safety effects of marijuana rescheduling that are not limited to drug testing in commercial operations. Marijuana rescheduling has a potential to affect everyone who interacts with transportation systems and infrastructure, from vehicle operators and passengers to pedestrians and bystanders. Anticipating and mitigating transportation safety risks of rescheduling marijuana will require diligent consideration of scientific evidence and expert insight. We urge the DEA to thoroughly examine issues of transportation safety when evaluating the public health risks of marijuana, and when accounting for the human and economic costs of the proposed rescheduling action.

### **NTSB's Experience with Marijuana in Transportation**

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate and issue safety recommendations aimed at preventing future occurrences. The NTSB is a public health authority for purposes of federal health information privacy laws; we conduct public health activities intended to prevent or control injury.<sup>4</sup>

The NTSB regularly reviews toxicological evidence in our investigations, including from DOT drug testing of commercial vehicle operators and other safety-sensitive transportation employees subject to such testing. The NTSB sometimes reviews evidence from workplace drug testing of safety-sensitive

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<sup>2</sup> Procedures for transportation workplace drug and alcohol testing programs are at [49 CFR Part 40](#) and include procedures for drug testing using urine and oral fluid. The HHS Mandatory Guidelines for Federal Workplace Drug Testing Programs using Urine are at [88 FR 70768](#). The HHS Mandatory Guidelines for Federal Workplace Drug Testing Programs using Oral Fluid are at [88 FR 70814](#). As of June 3, 2024, there were not yet any laboratories certified by HHS to conduct oral fluid testing (see [89 FR 47579](#)). The HHS has proposed Mandatory Guidelines for Federal Workplace Drug Testing Programs using Hair ([85 FR 56108](#)); a revised version of those guidelines is under review by the Office of Management and Budget (according to information presented at a [June 4, 2024, public meeting](#) of the HHS Substance Abuse and Mental Health Services Administration Drug Testing Advisory Board).

<sup>3</sup> See [88 FR 70768](#) and [88 FR 70814](#).

<sup>4</sup> See [79 FR 28970](#) and [49 CFR 831.9\(b\)\(2\)](#).

transportation employees of the federal government, particularly air traffic controllers employed by the Federal Aviation Administration (FAA). DOT and federal workplace postaccident and postincident drug testing data provide information about use of potentially impairing drugs by individuals whose performance may have contributed to an accident or incident. Additionally, DOT and federal workplace drug testing data, including from pre-employment and random drug testing, are useful for evaluating the safety practices of transportation employers involved in our investigations. DOT and federal workplace drug testing procedures include required testing for marijuana use.<sup>5</sup>

Well-established scientific evidence shows that marijuana impairs the abilities needed to safely operate a vehicle and to perform other safety-related tasks. Marijuana can adversely affect performance by slowing reaction time, altering perception, and impairing sustained attention, planning, decision-making, and risk assessment.<sup>6</sup> In our investigations, the NTSB has repeatedly identified toxicological findings indicative of marijuana use by noncommercial and commercial vehicle operators.<sup>7</sup> Identifying whether marijuana's effects contributed to an event can be

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<sup>5</sup> See [49 CFR 40.82](#); [49 CFR 40.85](#); [49 CFR 40.91](#); [88 FR 70768](#), section 3.4; and [88 FR 70814](#), section 3.4.

<sup>6</sup> Compton, R. 2017. [Marijuana-Impaired Driving: A Report to Congress](#). DOT HS 812 440. Washington, DC: National Highway Traffic Safety Administration.

<sup>7</sup> Some of the NTSB-investigated events that have occurred since 2022, for which dockets have been published, and for which at least one vehicle operator toxicology test was positive for the primary psychoactive substance in marijuana or one of its metabolites, include the following:

- *Aviation Investigation Final Report, Bay Minette, Alabama, March 11, 2022* ([ERA22FA153](#))
- *Intersection Crash Between Passenger Car and Combination Vehicle, Tishomingo, Oklahoma, March 22, 2022*, [HIR-24-04](#) ([HWY22FH008](#))
- *Aviation Investigation Final Report, Sausalito, California, May 6, 2022* ([WPR22FA172](#))
- *Aviation Investigation Final Report, Valdez, Alaska, July 11, 2022* ([ANC22FA053](#))
- *Collision between Amtrak Passenger Train and Union Pacific Railroad Roadway Maintenance Machine, Oakland, California, July 15, 2022*, [RIR-23-11](#) ([RRD22FR011](#))
- *Aviation Investigation Final Report, Seguin, Texas, July 22, 2022* ([WPR22FA264](#))
- *Collision between US Coast Guard Cutter Winslow Griesser and Center-console Boat Desakata, Atlantic Ocean, Near Dorado, Puerto Rico, August 8, 2022*, [MIR-23-14](#) ([DCA22PM034](#))
- *Aviation Investigation Final Report, Hanna City, Illinois, August 13, 2022* ([CEN22FA383](#))
- *Aviation Investigation Final Report, Watsonville, California, August 18, 2022* ([WPR22FA309](#))
- *Aviation Investigation Final Report, Scio, Oregon, August 21, 2022* ([WPR22FA312](#))
- Ongoing highway investigation, Goodyear, Arizona, February 25, 2023, see the "[Medical Factual Report](#)" ([HWY23FH008](#))
- Ongoing highway investigation, Woodlawn, Maryland, March 22, 2023, see the "[Medical Factual Report](#)" ([HWY23FH010](#))

The [public dockets](#), and in some cases final reports, for these events can be viewed using the [CAROL Query](#). Together, these events resulted in 28 fatalities, plus additional injuries. This list is not intended to be comprehensive, nor were marijuana's effects necessarily causal or contributory in the listed events.

challenging, because toxicological evidence of marijuana use does not directly predict impairment. Despite this challenge, the NTSB has found sufficient evidence to cite marijuana's effects in the probable causes of multiple events, including in our recent report on a March 2022 intersection crash between a passenger car and a combination vehicle in Tishomingo, Oklahoma, in which six teenagers died.<sup>8</sup>

In recent years, marijuana use in the United States has grown rapidly to historic levels, including striking growth in the number of users reporting daily or near-daily marijuana use, with 42% of past-month marijuana users reporting to the US National Survey on Drug Use and Health that they used marijuana for 21 days or more in the past month.<sup>9</sup> The DEA recently reported that the potency of delta-9-tetrahydrocannabinol (delta-9-THC), the primary psychoactive substance in marijuana, is at an all-time high in leafy marijuana.<sup>10</sup> Accordingly, the transportation safety risks of marijuana use have never been more relevant. The NTSB's 2022 safety research report, *Alcohol, Other Drug, and Multiple Drug Use Among Drivers*, found that marijuana was the second-most commonly detected potentially impairing drug among study drivers, after alcohol.<sup>11</sup> A 2022 National Highway Traffic Safety Administration study of road users seriously or fatally injured in crashes also found evidence of a high prevalence of marijuana use among study drivers, with delta-9-THC or its psychoactive metabolite detected in blood from 25% of study drivers who had crash injuries resulting in a hospital trauma team alert, and 31.7% of fatally injured study drivers presenting to medical examiners.<sup>12</sup> Data published by the Federal Motor Carrier Safety Administration show that the tested-for nonpsychoactive metabolite of delta-9-THC is by far the most commonly detected tested-for substance

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<sup>8</sup> (a) NTSB. 2024. *Intersection Crash Between Passenger Car and Combination Vehicle, Tishomingo, Oklahoma, March 22, 2022*. [HIR-24-04](#). (b) Additional cases in which the NTSB has cited marijuana's effects in the probable cause can be found by using the [CAROL Query Custom Search](#) and searching the "probable cause" field for "marijuana," "cannabis," or "tetrahydrocannabinol."

<sup>9</sup> Caulkins, J. P. 2024. "[Changes in Self-Reported Cannabis Use in the United States from 1979 to 2022](#)." *Addiction*.

<sup>10</sup> DEA. 2024. [National Drug Threat Assessment 2024](#). DEA-DCT-DIR-010-24. DEA Strategic Intelligence Section.

<sup>11</sup> See NTSB. 2022. *Alcohol, Other Drug, and Multiple Drug Use Among Drivers*. [SRR-22-02](#). The safety research included data from four laboratories, each of which provided data from specific populations of drivers (such as drivers arrested for impaired driving, crash-involved drivers arrested for impaired driving, crash-involved fatally injured drivers, and drivers suspected of impaired driving in a crash that involved a fatal or serious physical injury). The safety research did not distinguish between commercial and noncommercial drivers.

<sup>12</sup> See Thomas, F. D., J. Darrah, L. Graham, A. Berning, R. Blomberg, K. Finstad, C. Griggs, M. Crandall, C. Schulman, R. Kozar, J. Lai, N. Mohr, J. Chenoweth, K. Cunningham, K. Babu, J. Dorfman, J. Van Heukelom, J. Ehsani, J. Fell, and C. Moore. 2022. [Alcohol and Drug Prevalence among Seriously or Fatally Injured Road Users](#). DOT HS 813 399. Washington, DC: National Highway Traffic Safety Administration. The study selected seven Level I trauma centers that served large geographic areas; medical examiners joined the study at four of these sites. The study did not evaluate impairment or risk associated with drug presence, and it did not distinguish between commercial and noncommercial drivers.



on DOT drug testing of commercial motor vehicle drivers, with 37,657 tests reported as positive for this marijuana metabolite in 2023.<sup>13</sup>

Although some states have passed laws permitting medicinal and recreational uses of marijuana, driving under the influence of marijuana is illegal in all 50 states, the District of Columbia, and the Commonwealth of Puerto Rico.<sup>14</sup> In 2022, the NTSB made a recommendation to the District of Columbia, the Commonwealth of Puerto Rico, and the 21 states where cannabis use is legal but driving-related cannabis warning labels are not required or are inadequate, to require a warning label on marijuana products advising users not to drive after marijuana use due to its impairing effects.<sup>15</sup> Recently, as a result of our Tishomingo crash investigation, the NTSB made several recommendations and issued a safety alert aimed at increasing public awareness of the dangers and illegality of driving under the influence of marijuana.<sup>16</sup>

Laws against operating vehicles under the influence of marijuana are not limited to driving. Boating under the influence of marijuana is illegal in all 50 states, the District of Columbia, and the Commonwealth of Puerto Rico, and the US Coast Guard enforces federal law prohibiting boating under the influence.<sup>17</sup> Additionally, federal regulation prohibits piloting a civil aircraft while using any drug that affects faculties in a way contrary to safety.<sup>18</sup> In 2020, as a result of our safety research report, *2013–2017 Update to Drug Use Trends in Aviation*, the NTSB made a recommendation to the FAA to revise the *Aeronautical Information Manual* and the *Pilot's Handbook of Aeronautical Knowledge* to explicitly state marijuana's classification as an illicit drug per federal law and, thus, its prohibited use by pilots.<sup>19</sup> For commercial vehicle operators and other safety-sensitive employees subject to drug testing under DOT regulations for all transportation modes, the DOT has stated

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<sup>13</sup> (a) Federal Motor Carrier Safety Administration. 2024. "[Drug and Alcohol Clearinghouse: April 2024 Monthly Summary Report](#)." For more information see the "[Drug and Alcohol Clearinghouse](#)" web page. (b) Notably, in 2023 there were 12,680 drug test refusals for unknown reasons.

<sup>14</sup> See the Governors Highway Safety Association's "[Drug Impaired Driving](#)" web page concerning state laws.

<sup>15</sup> Overall, Safety Recommendation [H-22-42](#) was classified Open–Await Response on January 12, 2023. For more information, see NTSB. 2022. *Alcohol, Other Drug, and Multiple Drug Use Among Drivers*. [SRR-22-02](#).

<sup>16</sup> (a) Safety Recommendations [H-24-12](#), [H-24-13](#), [H-24-14](#), [H-24-15](#), [H-24-16](#), [H-24-17](#), and [H-24-18](#) were classified Open–Await Response on July 18, 2024. (b) NTSB. 2024. *Intersection Crash Between Passenger Car and Combination Vehicle, Tishomingo, Oklahoma, March 22, 2022*. [HIR-24-04](#). (c) NTSB. 2024. "Safety Alert–Parents: Protect Your Teen from Marijuana-Impaired Driving." [SA-093](#).

<sup>17</sup> (a) See the US Coast Guard's "[BUI Initiatives](#)" web page. (b) See [33 CFR Part 95](#).

<sup>18</sup> See [14 CFR 91.17\(a\)\(3\)](#).

<sup>19</sup> (a) Safety Recommendation [A-20-12](#) was classified Open–Acceptable Response on July 11, 2024. (b) NTSB. 2020. *2013–2017 Update to Drug Use Trends in Aviation*. [SS-20/01](#).

that it is unacceptable to use marijuana, regardless of the reason for its use, based on the drug's federal Schedule I status.<sup>20</sup>

### **Marijuana Scheduling Affects Transportation Employee Drug Testing**

DOT procedures for transportation workplace drug testing programs are codified in 49 *CFR* Part 40. These procedures are incorporated into drug testing requirements of numerous DOT-regulated modes, including highway, aviation, railroad, transit, and pipeline.<sup>21</sup> US Coast Guard regulations also incorporate 49 *CFR* Part 40 into drug testing requirements for merchant marine personnel and following serious marine incidents involving vessels in commercial service.<sup>22</sup> Generally, employees with a verified positive DOT drug test must be removed from safety-sensitive duties, and may return to those duties only after successfully completing a return-to-duty process.

The Omnibus Transportation Employee Testing Act of 1991 requires the DOT to conform its drug testing procedures with HHS guidelines for federal workplace drug testing, including using HHS-certified laboratories.<sup>23</sup> Executive Order 12564, which required federal executive agencies to develop drug-free workplace programs, including employee testing for illegal drug use, defines "illegal drugs" to include only Schedule I and II controlled substances.<sup>24</sup> The HHS Mandatory Guidelines authorize testing for Schedule I and II controlled substances only.<sup>25</sup>

The NTSB is concerned that the proposed rule to move marijuana to Schedule III of the CSA would, upon becoming effective, immediately prohibit continued testing of safety-sensitive transportation employees for marijuana use under 49 *CFR* Part 40 and HHS Mandatory Guidelines, because the HHS-certified laboratories used for such testing are not authorized to test for Schedule III controlled substances. This would mean that airline pilots, airline maintenance workers, bus and truck drivers, locomotive engineers, subway train operators, ship captains, pipeline operators, personnel transporting hazardous materials, and other safety-sensitive transportation employees would be prevented from being tested for marijuana use under 49 *CFR* Part 40. Testing of FAA-employed air traffic controllers, which is conducted under the DOT's Drug and Alcohol-Free Departmental Workplace

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<sup>20</sup> (a) DOT. 2012. "[DOT 'Recreational Marijuana' Notice](#)." Office of Drug and Alcohol Policy and Compliance. Issued December 3, 2012. (b) DOT. 2009. "[DOT 'Medical Marijuana' Notice](#)." Office of Drug and Alcohol Policy and Compliance. Issued October 22, 2009.

<sup>21</sup> See [49 CFR Part 382](#), [14 CFR Part 120](#), [49 CFR Part 219](#), [49 CFR Part 655](#), and [49 CFR Part 199](#), respectively.

<sup>22</sup> See [46 CFR Part 16](#) and [46 CFR 4.06](#).

<sup>23</sup> Omnibus Transportation Employee Testing Act of 1991, [Public Law 102-143](#), 105 Stat. 952 (1991).

<sup>24</sup> See [51 FR 32889](#).

<sup>25</sup> See [88 FR 70768](#) and [88 FR 70814](#).

Program, would be similarly negatively affected, as would testing of other civilian air traffic controllers.<sup>26</sup>

As stated above, marijuana use is prevalent and increasing in the United States, and the drug is known to impair abilities critical to performing safety-sensitive functions. The NTSB therefore cautions the DEA that moving marijuana to Schedule III without taking steps to ensure that marijuana testing remains within the scope of pre-employment, random, reasonable suspicion, and postaccident/postincident drug testing would create a safety blind spot that could endanger the public. This blind spot for marijuana use would be particularly relevant because of the lack of a reliable toxicological test for marijuana-related impairment. Removal of marijuana testing from DOT and HHS drug testing panels for safety-sensitive transportation employees would remove a layer of safety oversight that employers have been managing for decades, and it would prevent DOT and HHS drug testing from acting as a deterrent to marijuana use by those employees. Additionally, the NTSB would no longer have DOT and federal workplace marijuana test results as evidence in our investigations.

We urge the DEA to ensure that any final rule to reschedule marijuana does not compromise marijuana testing under DOT and HHS procedures applicable to safety-sensitive transportation employees. If, to achieve this, additional measures are necessary beyond changes to the text of the rule, we urge the DEA to ensure that the rule does not become effective until such measures have been implemented.

Because marijuana has no currently accepted medical use in treatment in the United States (CAMU) under federal law, a physician's recommendation for the use of medical marijuana does not constitute a "legitimate medical explanation" for a positive DOT or federal workplace marijuana test result under 49 *CFR* Part 40 and HHS Mandatory Guidelines.<sup>27</sup> We additionally urge the DEA to scrutinize how its determination about marijuana having a CAMU might affect a safety-sensitive transportation employee's ability to present medical marijuana use as a legitimate medical explanation for a positive marijuana result on a DOT or federal workplace drug test. Of course, this consideration is valid only if the DEA ensures that the ability to test is preserved.

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<sup>26</sup> Under [14 \*CFR\* 120.1\(a\)](#), the drug testing requirements of 14 *CFR* Part 120, which incorporate the procedures of [49 \*CFR\* Part 40](#), apply to all air traffic control facilities not operated by the FAA or by those under contract to the US military.

<sup>27</sup> (a) See [49 \*CFR\* 40.137](#); [49 \*CFR\* 40.151](#); [88 \*FR\* 70768](#), section 13.5; and [88 \*FR\* 70814](#), section 13.5. (b) The NPRM defines CAMU as "currently accepted medical use in treatment in the United States"; see [89 \*FR\* 44599](#).

## Transportation Safety is a Public Health Issue

The NTSB is pleased that the DEA is considering driving safety as part of its evaluation of the public health risks posed by marijuana. Effects on driving safety are crucial to consider, as are other effects on transportation safety at federal, state, and local levels. We note that the driving-under-the-influence prevalence data cited in the HHS rescheduling recommendation reflect only a small portion of the large body of existing research on the epidemiology and consequences of marijuana use in transportation. We encourage the DEA to diligently examine the multifaceted transportation safety implications of marijuana rescheduling. Marijuana is a prevalent drug with performance-impairing effects, human performance is critical to the safety of transportation systems, and most people interact with transportation systems multiple times per day. For these reasons, transportation safety is a public health issue that deserves prominence in the national conversation about marijuana scheduling. This topic must be addressed in any responsible accounting of the public health costs, both human and economic, of the proposed rescheduling action.

As described above, the NTSB has made efforts through our recommendations and reports to increase public awareness of the fact that marijuana's potential to impair is proven, regardless of the drug's legal status. This will remain true if marijuana is rescheduled as proposed, or if it is not. Whether used legally or illegally for medicinal or recreational purposes, marijuana impairs abilities needed to perform safety-related tasks, and operating a vehicle while impaired by marijuana is dangerous and broadly illegal across the United States. The present rulemaking provides an opportunity to spotlight this message. We encourage the DEA to, in parallel with this rulemaking, proactively educate the public that marijuana rescheduling does not imply that driving or performing other safety-sensitive transportation tasks under the influence of marijuana is safe or legal. Without such public education, this rescheduling action has a potential to further cloud the transportation safety risks of marijuana use.

Finally, the NTSB recognizes that the proposed changes to [21 CFR Part 1308](#) are preliminary. We also appreciate that 21 *CFR* Part 1308 must conform with the CSA, and that ongoing legislative efforts to clarify the CSA hemp exception implemented by the Agriculture Improvement Act of 2018 might yet affect the proposed rule.<sup>28</sup> Regardless, any final rule to reschedule marijuana would necessarily affect the definitions in 21 *CFR* Part 1308. We urge the DEA to seek specific expertise to avoid unintended consequences of changes affecting 21 *CFR* Part 1308 definitions,

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<sup>28</sup> (a) Agriculture Improvement Act of 2018, [Public Law 115-334](#), 132 Stat. 4490 (2018). (b) The Agriculture Improvement Act of 2018 implemented a definition of "hemp," excepted hemp from the CSA's definition of marijuana, and excepted "tetrahydrocannabinols in hemp" from control under Schedule I of the CSA. (c) See the Farm, Food, and National Security Act of 2024, [HR 8467](#), 118th Cong. (2023-2024) and the "[Amendment to HR 8467 Offered by Mrs. Miller of Illinois](#)." See also the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2024, [HR 4368](#), 118th Cong. (2023-2024).

including the definitions of “tetrahydrocannabinols,” “marijuana extract,” and (as newly proposed) “naturally derived delta-9-tetrahydrocannabinols.” The DEA has a critical responsibility to ensure that those definitions are unambiguous in scope, so that the rescheduling action affects only the specific substance(s) for which a CAMU has been established, and for which the eight factors determinative of control, including public health risk, have been fully evaluated.<sup>29</sup> Imprecise definitions could affect restrictions on psychoactive substances not assessed for this rulemaking that pose a threat to transportation safety.

## Summary

In summary, as a public health authority and an independent federal agency that conducts safety investigations in all major modes of transportation, the NTSB has distinct experience with marijuana-related transportation safety issues. Based on this experience, the NTSB urges the DEA to do the following:

- Ensure that any final rule to reschedule marijuana does not compromise marijuana testing under DOT and HHS procedures applicable to safety-sensitive transportation employees. Such employees include airline pilots, airline maintenance workers, bus and truck drivers, locomotive engineers, subway train operators, ship captains, pipeline operators, personnel transporting hazardous materials, air traffic controllers, and others.
- Scrutinize how a DEA determination about marijuana having a CAMU might affect a safety-sensitive transportation employee’s ability to present medical marijuana use as a legitimate medical explanation for a positive marijuana result on a DOT or federal workplace drug test.
- Diligently examine the multifaceted transportation safety implications of marijuana rescheduling, which has a potential to affect everyone who interacts with transportation systems and infrastructure, from vehicle operators and passengers to pedestrians and bystanders.
- In parallel with this rulemaking, proactively educate the public that marijuana rescheduling does not imply that driving or performing other safety-sensitive transportation tasks under the influence of marijuana is safe or legal. Marijuana impairs the abilities needed to safely operate a vehicle and perform other safety-related tasks, and operating a vehicle under the influence of marijuana is dangerous regardless of marijuana’s scheduling under the CSA.

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<sup>29</sup> As noted in the NPRM, when determining whether a drug should be controlled (and if so, under which schedule), the US Attorney General must consider eight factors determinative of control set forth in [21 United States Code 811\(c\)](#). The sixth of these factors is risk to the public health.

- Seek specific expertise to avoid unintended consequences of changes affecting 21 *CFR* Part 1308 definitions, including the definitions of tetrahydrocannabinols, marijuana extract, and (as newly proposed) naturally derived delta-9-tetrahydrocannabinols.

Thank you for the opportunity to provide comments. As stated in my June 20, 2024, letter to DEA Administrator Milgram, an in-person hearing would facilitate the DEA's examination of the transportation safety effects of the proposed rule.<sup>30</sup> The NTSB will participate in the hearing process if given the opportunity.

Sincerely,



Jennifer Homendy  
Chair

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<sup>30</sup> NTSB. June 20, 2024, letter from Jennifer Homendy, Chair, NTSB, to Anne Milgram, Administrator, DEA.