

FRA AUDIT REPORT

National Railroad Passenger Corporation (ATK)

Class I

FRA Audit Number: 2022-ATK Special Audit 05-1

Report Date: November 15, 2022

Contents

Contents	1
Preface.....	2
Infrastructure Investment and Jobs Act Reporting Requirement.....	2
Background.....	2
Significant Findings	5
Audit Findings by Discipline	8
Safety Culture Review	8
Motive Power & Equipment Division	15
Operating Practices Division	18
Safety Partnerships Division.....	24
Signal & Train Control Division	26
Track Division	32
Grade Crossing & Trespass Outreach Division	36
Conclusion	38
Exhibit A: Scope and Methodology.....	39
Exhibit B: List of Acronyms.....	42
Exhibit C: FRA’s Major Contributors to This Report	45
Appendix A: Safety Culture Safety Pulse Interview Questionnaire and Observation Data Collection Forms.....	47
Amtrak 2022 Safety Culture Audit Safety Pulse Interview.....	47
Amtrak 2022 Safety Culture Audit Safety Observation	48
Appendix B: Amtrak’s Comments.....	49

Preface

The Federal Railroad Administration (FRA) is statutorily authorized to conduct inspections and investigations and issue reports concerning railroad operations, but FRA is not primarily an auditing organization. Therefore, this performance audit does not strictly adhere to generally accepted government auditing standards. However, this performance audit was planned and performed to meet the stated audit objectives, obtain sufficient and appropriate evidence, and to provide a reasonable basis for the stated findings and conclusions.

Infrastructure Investment and Jobs Act Reporting Requirement

The Infrastructure Investment and Jobs Act (IIJA),¹ also known as the Bipartisan Infrastructure Law (BIL), was signed into law by President Biden on November 15, 2021. The BIL provided \$1.2 trillion for much needed transportation and infrastructure investments throughout the nation. For the rail industry, the BIL provides federal funding for rail improvements over the subsequent five years.

As part of the U.S. Department of Transportation (DOT), the Federal Railroad Administration (FRA) is responsible for promoting and enforcing rail safety throughout the nation, including with respect to the National Railroad Passenger Corporation (Amtrak). One of the requirements in the BIL is for FRA to “conduct a focused review of Amtrak’s safety-related processes and procedures, compliance with safety regulations and requirements, and overall safety culture.”² To meet this requirement, FRA’s Office of Railroad Safety performed a multi-disciplinary safety audit of Amtrak’s compliance with a range of safety regulations under the Code of Federal Regulations (CFR), and also provided best practices feedback to Amtrak regarding non-regulatory safety processes and procedures observed during the audit. A key part of this multi-disciplinary safety audit involved a detailed review of Amtrak’s safety culture. FRA is required to submit this comprehensive safety audit report on Amtrak to Congress no later than one year after the enactment of the BIL, November 15, 2022. Due to the extensive resources needed to complete the multidiscipline audit and report, FRA’s report submission was delayed.

Background

Amtrak is uniquely situated as the only Class I passenger railroad in the United States. Unlike other Class I railroads, Amtrak operates in 46 states, the District of Columbia, and in three

¹ Pub. L. 117-58 (Nov. 15, 2021).

² Id. § 22407.

Canadian provinces. Created by Congress in 1970 as a federally chartered for-profit corporation with the federal government as the majority stockholder, Amtrak currently serves more than 500 destinations across over 21,400 miles of routes and has more than 17,000 employees.³ During fiscal year (FY) 2021, in the Northeast Corridor (NEC) alone, Amtrak made more than 4.4 million trips, transporting tens of millions of passengers.⁴

Over the past decade, Amtrak has been involved in fatal incidents and accidents. A sample of three such accidents are described here. On May 12, 2015, a derailment occurred at Frankford Junction in Philadelphia, Pennsylvania. This derailment resulted in eight fatalities and approximately 200 injured people, including 11 with critical injuries. This accident closed the NEC for six days and resulted in Amtrak paying \$265 million to accident victims. The accident was attributed to human factors involving the engineer's actions or inactions, as well as to issues involving positive train control (PTC) and automatic train control (ATC) within this section of the corridor.⁵

Another accident on April 3, 2016, in Chester, Pennsylvania, killed two Amtrak maintenance-of-way (MOW) employees and injured 39 people. A National Transportation Safety Board (NTSB) investigation into that accident revealed that the engineer and the two deceased Amtrak MOW employees all tested positive on FRA post-accident toxicological testing.⁶ The investigation also revealed that Amtrak did not routinely perform drug testing of MOW employees under its own authority. (FRA did not require Federal alcohol and drug testing for MOW employees until June 2017, except for when a MOW employee was fatally injured in an accident. See 81 FR 37894 (June 10, 2016).) FRA's accident investigators issued a report determining the cause of the accident was due to a MOW backhoe that was fouling one of the main tracks.⁷ FRA investigators also identified five other contributing factors to the accident, all failures to comply with Federal regulations or Amtrak rules and procedures: (a) failure of the MOW foreman to apply a supplemental shunting device, (b) failure of the MOW foreman to apply whistle board signs at the work location, (c) failure of the MOW foreman to use the radio when cancelling foul time, (d) failure of the MOW watchman to raise orange disc on approach of train, and (e) failure of MOW foreman to provide a job briefing on track safety.⁸ The NTSB also investigated this

³ Amtrak, *FY 2021 Company Profile, For the Period October 1, 2020 -September 20, 2022*, <https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/nationalfactsheets/Amtrak-Company-Profile-FY2021-030922.pdf>.

⁴ Id.

⁵ National Transportation Safety Board, *Derailment of Amtrak Passenger Train 188*, Philadelphia, PA, May 12, 2015, <https://www.nts.gov/investigations/AccidentReports/Reports/RAR1602.pdf>.

⁶ National Transportation Safety Board, *Amtrak Train Collision with Maintenance-of-Way Equipment*, Chester, PA, April 3, 2016, <https://www.nts.gov/investigations/AccidentReports/Reports/RAR1702.pdf>.

⁷ Office of Railroad Safety, Federal Railroad Administration, HQ-2016-1123 Accident Investigation Report on Amtrak in Chester, PA, April 3, 2016, <https://railroads.dot.gov/elibrary/hq-2016-1123-summary-report-finalized>.

⁸ Id.

accident and found several contributing factors,⁹ including: (a) unprotected fouled track used to route a passenger train at maximum authorized speed, (b) absence of shunting devices, and (c) inadequate transfer of job site responsibilities during a shift change. These factors are an example of the culture that existed at Amtrak, which allowed for these unsafe work practices.

The following year, Amtrak was involved in another fatal derailment near Dupont, Washington, during Amtrak's initial revenue service run on the newly opened Point Defiance Bypass route. On December 18, 2017, an Amtrak train traveling at approximately 78 miles per hour (mph) entered a 30-mph curve and partially derailed off an overpass onto the Interstate 5 highway below, hitting several vehicles. The accident killed three people, injured 57 passengers and crew members, and injured eight people in vehicles who were travelling on Interstate 5. FRA investigators found the probable cause of this accident was the train's excessive speed.¹⁰ According to the NTSB, this accident caused more than \$25.8 million in damage.¹¹

Amtrak reported significant improvements in safety during fiscal year 2019.¹² In fiscal year 2019, Amtrak noted that it implemented its System Safety Program (SSP),¹³ claiming that the implementation has resulted in "a 26% reduction in customer incidents; 72% fewer serious employee injuries; a 10% reduction in FRA reportable injuries; and a 3% reduction in trespasser/grade crossing incidents."¹⁴ In this audit, FRA does not seek to determine the degree to which Amtrak's SSP implementation affected the railroad's safety outcomes. FRA notes that Amtrak also met the statutory deadline to implement an FRA-certified, interoperable PTC system on its PTC-mandated main lines by December 31, 2020.

⁹ National Transportation Safety Board, *Using Technology to Protect Maintenance-of-Way Employees*, September 28, 2018, <https://www.nts.gov/investigations/AccidentReports/Reports/RSR1803.pdf>.

¹⁰ Office of Railroad Safety, Federal Railroad Administration, HQ-2017-1239 Accident Investigation Report on Amtrak 501 in DuPont, WA, December 18, 2017, <https://railroads.dot.gov/elibrary/hq-2017-1239-finalized>.

¹¹ National Transportation Safety Board, *Amtrak Passenger Train 501 Derailment*, DuPont, Washington, December 18, 2017, <https://nts.gov/investigations/AccidentReports/Reports/RAR1901.pdf>.

¹² Amtrak, *Improved Safety and Customer Experience Drive Record Amtrak Ridership*, November 8, 2019, <https://media.amtrak.com/2019/11/improved-safety-and-customer-experience-drive-record-amtrak-ridership/>.

¹³ Amtrak's initial SSP implementation predates the implementation requirements of 49 CFR Part 270, System Safety Program. FRA initially published Part 270 in August 2016, but stayed the rule's effective date until May 2020 in order to revise the rule in response to petitions for reconsideration. See 85 FR 12826 (Mar. 4, 2020). FRA reviewed Amtrak's SSP plan and approved it in June 2020.

¹⁴ Amtrak, *Improved Safety and Customer Experience Drive Record Amtrak Ridership*, November 8, 2019, <https://media.amtrak.com/2019/11/improved-safety-and-customer-experience-drive-record-amtrak-ridership/>.

Significant Findings

This audit report identifies more than 20 findings FRA discovered during the audit, as well as more than 30 recommendations for improvement. The audit found numerous instances of noncompliance with applicable regulations, resulting in 16 recommendations for the assessment of civil penalties (i.e., 16 recommended violations). Due to the length of the audit report, a brief summary of our most significant findings is highlighted below by topic.

- Safety Culture

FRA's audit of Amtrak's *Safety Culture* revealed overall positive results with room for improvement. The audit showed that Amtrak's leadership is clearly committed to safety; the organization practices continuous learning; employees feel personally responsible for safety; the work environment is safety conscious; the organization responds to safety concerns fairly and consistently; reporting systems are clearly defined and not used to punish employees; employees and the organization work to foster mutual trust; open and effective communication exists across the organization; and safety efforts are supported by training and resources. The main area of improvement centers around consistent communication of safety priorities to all staff.

- Motive Power and Equipment

FRA's *Motive Power and Equipment* (MP&E) discipline's portion of the audit did not reveal any major issues. While FRA observed minor defects at Amtrak's major shops throughout the nation, during the audit, FRA auditors did not identify any instances of noncompliance with FRA regulations for which violations were recommended. However, MP&E did identify a few areas where Amtrak needs to increase equipment maintenance testing to ensure passenger and crew safety, such as proper testing of intercom systems throughout train cars. FRA observed several instances in which individual Amtrak employees performed this equipment testing, although two employees are needed to accurately perform the equipment tests.

- Operating Practices

FRA's *Operating Practices* (OP) discipline found several areas of concern that Amtrak needs to address. FRA auditors identified many defects and recommended one violation during the audit. Two noteworthy areas of concern involve Amtrak worker safety. Specifically, OP noted inadequate reporting by Amtrak of Roadway Worker Protection incidents, and the need for training on specific procedures for Blue Signal Protection at its Washington, DC, location. FRA also wants to emphasize Amtrak's opportunity for

improving safety by modernizing its dispatch system, to take advantage of technological updates and enhanced safeguards.

- Safety Partnerships

FRA's *Safety Partnerships* Division (SPD) focused on Amtrak's compliance with a regulation that went into effect in 2020 (Part 243) that requires Amtrak to record qualification designations for its new and existing employees. SPD determined that Amtrak's records did not clearly indicate which federal regulations its employees are qualified on to perform tasks that ensure compliance. This lack of detail could have a serious impact on safety if neither FRA nor Amtrak know which employees are qualified to perform certain tasks. Amtrak took action to correct the identified recordkeeping deficiencies and as a result, SPD did not recommend any violations.

- Signal & Train Control

FRA's *Signal & Train Control* (S&TC) discipline found several issues. Auditors identified 90 defects, where nine of them were recommended for violations. The audit identified defects relating to compliance with hours of service, point detection, and securement regulations, which were all rectified by the Amtrak Signal managers. The audit also identified significant noncompliance with highway-rail grade crossing testing requirements, resulting in a recommendation to update Amtrak's plans and procedures, including recordkeeping, for testing grade crossings activated by Positive Train Control (PTC). Regarding PTC regulatory compliance, the audit identified defects relating to documentation of training records and hardware revision control, as well as the accuracy of Amtrak's PTC Safety Plan documentation. A particularly concerning finding is Amtrak's delay in timely resolving the conditions FRA imposed in its conditional approval of Amtrak's Advanced Civil Speed Enforcement System II (ACSES II) PTC Safety Plan.

- Track

FRA's *Track* discipline focused on Amtrak's rail lines and bridges in its busiest regions within the NEC, Michigan Corridor, and other areas. Auditors identified 1,036 defects during the audit, with six of those recommended for violations. Overall, Track found mostly positive results with a few exceptions primarily related to discrepancies and inaccuracies in reporting.

- Grade Crossing & Trespass Outreach

FRA's *Grade Crossing & Trespass Outreach* (Grade Crossing) discipline found that Amtrak is compliant with FRA's grade crossing regulations relating to signage and inventory requirements, as well as other grade crossing policies and best practices in the industry. Grade Crossing did not recommend any violations. However, Amtrak should continue working with State and local authorities to upgrade grade crossing equipment.

Audit Findings by Discipline

Safety Culture Review

The primary objective of the safety culture review was to measure the effectiveness of Amtrak's current safety culture initiatives by: (1) reviewing Amtrak's available safety culture resources, (2) interviewing Amtrak's safety management leadership, frontline managers, and employees, and (3) observing safety practices in the field. Furthermore, the safety culture audit sought to determine if individuals in management and labor feel empowered in their normal workday to stop an unsafe practice they observe, are aware of the methods to report a safety hazard or concern and are practicing yard safety in accordance with Amtrak's established safety policy.

Unlike a broken rail or a review of recordkeeping, safety culture cannot be easily seen. Amtrak's safety culture was analyzed using the definition and elements FRA described in 2017 (Morrow & Coplen, 2017).¹⁵ Specifically, safety culture is the shared values, actions, and behaviors that demonstrate a commitment to safety over competing goals and demands. The critical elements of a strong safety culture are:

- The work environment is safety conscious,
- Leadership is clearly committed to safety,
- Open and effective communication exists across the organization,
- Employees feel personally responsible for safety,
- The organization practices continuous learning,
- Reporting systems are clearly defined and not used to punish employees,
- Decisions demonstrate that safety is prioritized over competing demands,
- Employees and the organization work to foster mutual trust,
- The organization responds to safety concerns fairly and consistently, and
- Safety efforts are supported by training and resources.

The safety culture audit was primarily focused on the following critical elements: (1) employees feel personally responsible for safety, (2) the work environment is safety conscious, and (3) reporting systems are clearly defined and not used to punish employees. Amtrak's recent safety culture initiatives have focused on activities in these areas; therefore, FRA chose to focus on these elements to review the efficacy of these endeavors. FRA's audit findings and recommendations that shed light on these and other elements are noted in the text below.

¹⁵ Morrow, S. & Coplen, M. (2017), *Safety culture: A significant influence on safety in transportation*, (Report No. DOT/FRA/OR017/09), Washington, DC: Federal Railroad Administration; available at: <https://railroads.dot.gov/elibrary/safety-culture-significant-influence-safety-transportation>.

FRA reviewed Amtrak’s available safety culture programs and resources and met with Amtrak safety management leadership to discuss current and future safety culture initiatives. FRA inspectors conducted on-the-spot interviews of employees (pulse interviews), as well as targeted observations of specific safety behaviors (safety observations) during the course of their other audit activities. Copies of the safety pulse interview form and the safety observation data collection form are attached as appendices to this report. The findings below are based on this information. Except where specifically noted in the findings below, information collected from interviews and observations did not show any trends related to railroad craft, geographical region, or type of employee (agreement or non-agreement). In all cases, the critical elements of a strong safety culture were used as the criteria for comparison of Amtrak’s safety culture resources, safety observations, and results from safety pulse interviews.

Finding 1: Amtrak has developed a comprehensive framework to improve safety.

Safety Management System Strategy Roadmap

Amtrak has developed a comprehensive multi-year safety management system program. This plan is reviewed annually, tracks progress, and contains items that address the critical elements of a strong safety culture. Additionally, as this program matures, goals are moving towards proactive, rather than reactive strategies. By keeping this program active, through regular roadmap updates and bi-weekly status meetings, Amtrak is demonstrating its commitment to safety and continuous improvement.

Safety Culture Survey

Amtrak’s 2022 safety culture survey provides a view of the opinions of bargaining agreement and non-agreement employees regarding various safety issues. Agreement employees generally do not hold a managerial position, while non-agreement employees are more likely to hold a management position. Non-agreement employees report Amtrak’s safety initiatives more favorably than agreement employees; for most questions, these differences are small. Both groups, however, felt that safety issues could be discussed freely and openly, that their teams would get personally involved if observing an unsafe action, and that they could safely admit, discuss, and learn from mistakes. The biggest discrepancy between agreement and non-agreement employees is in their perception of safety communication between managers and employees. Agreement employees were also less likely to view the actions of senior leaders as reflecting safety as the top priority.

The results from Amtrak’s safety culture survey are encouraging. However, there still may be some perception among employees that management does not make safety a priority. This

perception may be exacerbated by their belief that managers do not communicate about safety, as evidenced by the gaps between agreement and non-agreement employees' perceptions of management's communications about safety. Additional topics for safety culture questions in future surveys are discussed in the findings below. Analyzing the differences between these groups of employees in data from previous and future surveys may better inform how these employees view safety and reveal opportunities to address those areas with the biggest differences.

Safety Starts with Me Training

Amtrak has developed Safety Starts with Me (SSWM) training, which is used to introduce employees to its safety values and expectations. All employees, both agreement and non-agreement, are required to take the SSWM day-long training course. Employees are first introduced to SSWM during new hire orientation, and the course begins with a pre-recorded welcome from Amtrak's President and CEO discussing Amtrak leadership's commitment to safety. Amtrak collects survey data after each class and uses it to drive actions to address systemic safety deficiencies identified by employees. Using these data to address safety deficiencies drives a process of continuous safety improvement.

Amtrak's Voluntary Safety Reporting System (AVSRS)

In addition to Amtrak's participation in the FRA-sponsored Confidential Close Call Reporting Program (C3RS), Amtrak has established AVSRS as an electronic reporting system that allows employees to report hazards directly to Amtrak. The system allows for tracking and accountability in addressing potential safety hazards in a proactive and engaging method. Information reported through AVSRS is instantly uploaded to a secure database. Employees are given the opportunity to suggest a mitigation to resolve the reported issue. According to Amtrak, this feature helps employees feel personally responsible for safety. AVSRS also allows employees to report potentially sensitive topics by indicating the report is confidential; on reports so marked, information that could identify an employee is only viewable by two Amtrak employees. AVSRS, released in early 2022, is still relatively new, but Amtrak has already begun to conduct trend analysis on the data and has found that voluntary reports from employees have increased dramatically with its implementation. Because AVSRS is so new, Amtrak's safety culture survey did not include questions about its usefulness to employees, or the degree to which employees trust the information to be used in non-punitive ways.

AWARE: Amtrak Wayside Alert and Report for Engineers (and conductors)

AWARE is a software application (app) that provides conductors information about speed restrictions and locations, and alerts the conductor to upcoming changes. Intended as a tool to improve conductor situational awareness, the app allows for conductors and engineers to easily communicate critical safety information. The app helps make safety critical information easily accessible at all times, and provides timely, location-based alerts. Currently, Amtrak is in the process of integrating additional features in the AWARE app, including a feature to allow conductors to communicate information on assaults and other passenger safety issues with other conductors and the train engineer.

FRA notes that there may be additional expansions to AWARE app features that can increase conductors' ability to easily and quickly access timely safety information. For example, the app could include information on Amtrak's track crossing policies, or critical incidents and the relief options available to employees after involvement in a critical incident. This functionality would provide information in a convenient and easy to access platform, so employees needing to refresh their knowledge of policies, procedures, and protocols can do so quickly.

Recommendations

- **Ensure that the safety culture survey captures information about all current safety programs and apps.**
- **Using the data from the employee safety culture survey, implement actions to close any gaps in perception between agreement and non-agreement employees regarding any safety culture elements.**
- **Solicit feedback from end users (conductors) after the AWARE app is expanded to include information on passenger assaults and other passenger concerns. Use that feedback to refine those features in the app.**
- **Explore other information that would be beneficial to integrate into the AWARE app in future updates.**

Finding 2: Amtrak employees are generally aware of and use the “Good Faith Challenge.”¹⁶

Safety pulse interviews revealed nearly all Amtrak employees across the system and across railroad crafts who participated were aware of the “Good Faith Challenge.” Furthermore, most also felt empowered to use the “Good Faith Challenge” if they observed an unsafe action. In practice, only about 40% of those surveyed reported that they had ever used the “Good Faith Challenge.” Non-agreement employees were more likely than agreement employees to have used the challenge. It is notable that of those employees who did report using it, many reported using it more than once. Based on the results from the safety culture pulse interviews, Amtrak’s efforts to promote awareness of the “Good Faith Challenge” to its employees have been effective. The survey results suggest, however, there still may be some confusion among employees about the circumstances in which they can use the challenge. There may be some reluctance among non-agreement employees to use the “Good Faith Challenge” because of fear of reprisal, lack of assurance that reported concerns will be addressed, or failure of employee workplace safety consciousness to extend to concerns that do not pose an imminent threat.

Recommendations

- **Continue to promote using the “Good Faith Challenge” if an employee observes an unsafe action.**
- **Develop and implement outreach that specifically targets encouraging agreement employees to use the “Good Faith Challenge” when they observe an unsafe action.**
- **Ensure that training and other outreach materials include real-world examples or other materials that address potential areas of concern illustrated by the survey results.**

Finding 3: There may be opportunities to enhance certain safety reporting methods.

All employees interviewed reported being aware of more than one way to report a safety concern. Of the six methods of reporting a safety concern mentioned on the questionnaire (see question 5 of the safety pulse interview in Appendix A), reporting directly to a supervisor was the most frequently cited. However, reporting directly to a supervisor does not create the same level of record keeping as Amtrak’s other methods. As such, it is possible that safety concerns reported in this manner may not be consistently recorded and resolved. Of the remaining reporting methods, emailing a dedicated email address and calling the Engineering Action

¹⁶ See 49 CFR § 218.97. The purpose of the Good Faith Challenge is to provide railroaders with a non-punitive mechanism for raising and resolving safety concerns to ensure that their work is performed safely and in compliance with federal regulations and railroad operating rules.

Hotline were the least frequently cited. It is possible that with so many methods to report a safety concern, employees have found methods that are easier to access or more preferable than others.

Many employees reported willingness to report a concern anonymously using the FRA-sponsored C3RS program. C3RS reports are submitted directly to an independent third-party (currently, the National Aeronautics and Space Administration (NASA)), which deidentifies the reports before sending them back to the participating railroad for analysis. Employees reporting a close call through C3RS are provided protection from both FRA enforcement action and railroad disciplinary action. AVSRS provides an additional option for confidential but not anonymous reporting that allows Amtrak to directly gather information about safety concerns. Specifically, AVSRS can gather information that NASA may remove from a C3RS report if there is any possibility of using it to identify the employee involved in the close call, such as the precise location and time of an event. C3RS is a valuable program that enables both management and labor to collaboratively examine close calls to identify root causes, and to recommend corrective actions. Results of C3RS analyses are also generally applicable across the railroad. AVSRS is a valuable complement to C3RS, however, because it enables Amtrak to receive reports immediately and directly from employees, so the railroad can identify issues more quickly and focus corrective actions on targeted locations. If employees are unwilling to use AVSRS to report safety concerns that could potentially be sensitive, there is potential to lose valuable information about those concerns that could aid in a timely and comprehensive resolution of the issue. FRA believes Amtrak can encourage employees to report issues through *both* AVSRS and C3RS by clarifying that employees who report an event through both programs will still receive the C3RS protection from Amtrak discipline. Amtrak can also explore methods to share pertinent data between AVSRS and C3RS, to enhance the value of both programs.

Recommendations

- **Create and implement a policy and processes for supervisors to record safety concerns reported by employees.**
- **Evaluate all the methods for reporting a safety concern, and focus resources and outreach efforts on those that are most useful and effective.**
- **Work with employees to develop more confidence and trust in the confidential reporting mechanism within the AVSRS.**

Finding 4: Amtrak employees generally follow safe procedures when crossing tracks.

Safety observations revealed the majority of Amtrak's employees comply with Amtrak's track crossing policies. Inspectors reported observations where small safety briefings were held prior

to a crossing. Additionally, when required, one or more lookouts were stationed in a manner to allow those on the track ample notice to clear the track should a train approach.

Amtrak's written policies and leadership's commitment to yard and track safety are evident in Amtrak employees' and managers' behavior and actions surrounding track crossings. Although FRA inspectors did not announce they would be completing a safety observation, it is possible that the presence of FRA inspectors may have altered the behavior of employees and managers. Based on behaviors during these safety observations, all employees appeared to be well informed on Amtrak's safety protocols.

Recommendations

- **Use existing training opportunities such as the Safety Starts with Me training and refresher trainings, to continue to promote awareness of Amtrak's track crossing policies.**
- **Consider providing Amtrak's track crossing policies in an easy to access platform, so employees needing to refresh their knowledge of Amtrak's track crossing safety protocols can do so quickly before attempting the crossing.**

Motive Power & Equipment Discipline

FRA's MP&E audit sought to assess the level of compliance by Amtrak with MP&E Regulations, including 49 CFR Parts 238-Passenger Equipment Safety Standards; 218-Railroad Operating Practices (Blue Flag Protection); 229-Railroad Locomotive Safety Standards; and 231-Railroad Safety Appliance Standards.¹⁷ The primary objective of the audit was to evaluate Amtrak's periodic maintenance procedures and assure that the proper tests and preventative maintenance were being performed. The second objective was to observe brake tests, daily inspections, mechanical inspections, and blue flag protection of mechanical employees designated to perform inspections on passenger cars and locomotives. The last objective was to observe and sample the completeness and record retention of periodic maintenance performed at major shops throughout the country.

FRA inspected a total of 330 passenger cars during the audit, and 47 of those cars were found to have defective conditions. FRA also inspected 82 passenger locomotives, where 19 of those locomotives were found to have defective conditions. MP&E did not recommend FRA pursue enforcement actions for those defects because Amtrak had not yet performed the required daily inspections of the equipment, or the equipment was otherwise already scheduled for service.

MP&E auditors visited 24 Amtrak locations during the audit and observed the highest number of defects at these five locations:

- New Orleans, LA - 25 defects.
- Los Angeles, CA - 24 defects.
- Bakersfield, CA - 17 defects.
- Chicago, IL - 12 defects.
- Oakland, CA - 10 defects.

These five Amtrak locations have a greater opportunity and availability for equipment to be inspected without causing disruption to schedules and passengers. Of the total 123 defects found system wide, a total of 88, or more than 71%, were found at these five locations.

FRA inspections of Amtrak at locations where significant compliance was demonstrated included Queens, NY, and Rensselaer, NY. FRA inspected 22 passenger cars at each location and found zero 49 CFR Part 238-Passenger Equipment Safety Standards defects. In Sanford, FL, ten passenger cars were inspected, and at Hialeah, FL, 15 passenger cars were inspected without any 49 CFR Parts 238-Passenger Equipment Safety Standards defects found.

¹⁷ All references to CFR Parts and Sections in this document refer to Title 49 of the CFR.

Finding 1: Amtrak needs to ensure intercom systems in all train cars are properly tested.

FRA found a total of 123 defects during the MP&E portion of the audit. The most frequently found violations were of the following regulations: § 238.305 - Interior Mechanical Inspection of Passenger Equipment; § 238.303 - Exterior Mechanical Inspection of Passenger Equipment; § 238.307 - Periodic Mechanical Inspection of Passenger Cars/Unpowered Vehicles; and § 238.131 - Exterior Side Door Safety Systems-All Passenger Cars and Locomotives Used in A Passenger Service.

Required daily interior and exterior inspections on passenger trains are usually performed by one person from each craft, all working together on one train (i.e., one carman, one electrician, one machinist, and one pipe fitter). These employees are under time constraints, as passenger trains run on a very tight schedule. Certain tasks require two employees to be performed correctly. For example, to test a passenger car intercom system successfully, one electrician would have to be speaking on the intercom system, while another employee would be checking to ensure all speakers throughout the train are working correctly.

FRA observed that after daily inspections, however, there were cars that had inoperative intercom speakers. On five occasions, FRA auditors observed lone Amtrak electricians testing intercom systems on passenger coaches by speaking into the microphone, and when the electrician heard his or her voice in that coach, the intercom system was wrongly considered to work correctly. Intercom systems not working properly may make it difficult for passengers to hear station stop announcements on a noisy and/or moving train. More critically, an improperly working intercom system may cause passengers to miss emergency evacuation notifications or other important safety announcements.

Recommendation

- **Update internal policies to ensure that intercom systems are thoroughly inspected by verifying that all speakers are operational and that there are enough employees to conduct a thorough mechanical equipment inspection.**

Finding 2: Amtrak must ensure all passenger emergency windows are working properly.

Section 238.113 also requires passenger emergency exit windows be designed to come out with one complete pull on the red emergency release handle. This pulls the complete gasket out from around the window, and the window can then be pushed out without breaking. FRA observed

three emergency windows with the mounting rubber gasket cut or not in one piece, which reduces the ability to remove the window in an emergency. This can be critical in a life threatening situation, thus potentially eliminating an exit route for passengers during an emergency.

Recommendations

- **Ensure employees are knowledgeable of the proper procedure for installing emergency exit window gaskets.**
- **Employees should conduct more thorough mechanical equipment inspections of emergency windows.**

Finding 3: FRA found five door bypass switches with seals not properly applied.

Section 238.305 requires that as part of equipment's calendar day inspection, all exterior side door safety system override devices must be inactive and sealed in all passenger cars and all locomotives in the train consist, including cab cars and Multiple Units (MU) locomotives. During the audit, FRA found five door bypass switches with seals that were not properly applied. The seals were not applied tightly enough to prevent the door bypass switch from being thrown without removing the seal. This is a very important component of the exterior safety side door system that prevents a train from being operated while an exterior door is open. These defects could expose train crews, passengers, and the public to increased hazards such as potential property damage and potential injuries by defective safety equipment remaining in service.

Recommendation

- **Ensure there are sufficient employees to conduct more thorough mechanical equipment inspections for both the interior and exterior of passenger equipment.**

Operating Practices Discipline

FRA's Operating Practices (OP) audit team focused on three areas during this audit: (1) roadway worker protection (RWP) from the operations and engineering sides on the NEC and Chicago, (2) an assessment of the Amtrak Centralized Electrification and Traffic Control (CETC) Dispatch Center in Wilmington, DE, and (3) observation of railroad testing officials performing testing (217T) with various Amtrak testing officers and FRA inspectors along the NEC and the Chicago area.

FRA identified 48 defects related to hours-of-service as well as the unauthorized use of a personal electronic device inside a dispatching center during the onsite inspection. A violation was recommended for one of those defects, with the remainder being of a minor nature. Three defects were also noted for locomotive engineers not providing proper whistle protection while traveling past roadway workers. Another two defects were recorded for improper radio use, and two defects were included under Roadway Worker Protection for a watchman not providing proper protection. Finally, FRA found seven railroad safety rules that were not being properly followed by different railroad employees.

Finding 1: Amtrak's RWP incidents are not being accurately reported.

During the audit, FRA auditors observed two incidents in which watchmen were not properly performing their job in accordance with § 214.329(b), which requires a watchman to provide audible or visible warnings of approaching trains or equipment to employees working on railroad tracks. This is particularly critical along the NEC, where trains routinely travel between 100 to 150 mph. During the first six months of 2022, Amtrak recorded a single failure for a watchman not performing duties correctly. During the audit, FRA auditors witnessed two incidents in a single week of watchmen not performing duties correctly. These two incidents in a week raise the possibility that non-compliance by watchmen might be more prevalent than Amtrak's railroad testing would indicate. This issue happens when railroad officers fail to report exceptions when they occur.

In addition, FRA auditors observed five incidents where trains failed to give a proper audible warning to groups of workers on the right-of-way as required by § 214.339. Providing a proper audible warning is vitally important, as the warning is a redundant layer of protection for employees working along the right-of-way in high-speed territory. During the first six months of 2022, one Amtrak crew had two recorded failures at Chicago Union Station. Locomotive engineers are required to provide a proper amount of audible warning when coming into contact with roadway workers, but during one week, FRA auditors witnessed five incidents where proper warnings did not occur. Such a safety issue suggested that Amtrak was not performing enough

tests and/or they were not holding locomotive engineers accountable when they fail to follow regulations. Amtrak has since addressed this issue through revisions to their operational testing program under Part 217.

Recommendation

- **Ensure that watchmen perform their duties consistently while in place and that train crews provide audible warning to workers on the right-of-way, especially in high-speed territories.**

Finding 2: Amtrak employees at Washington, DC's Union Station were unaware of the proper procedure to follow Blue Signal Protection.

Under 49 CFR Part 218, Subpart B – Blue Signal Protection of Workers, the regulations provide the minimum requirements for the protection of railroad employees engaged in inspections, testing, repair, and servicing of rolling equipment, as these activities require working on, under, or between such equipment and subject them to the danger of personal injury posed by any movement of equipment. FRA auditors observed that Washington, DC's Union Station (DC Union Station) employees were confused as to the proper procedure to follow when placing blue signal protection (BSP) on station tracks to protect individuals working underneath and between trains, likely because BSP procedures that address the unique conditions at DC Union Station are not readily available or included in training. When FRA inquired, neither the Amtrak employees nor local managers were able to produce a commonly followed procedure to safely place BSP on station tracks. In fact, auditors made requests to Amtrak's safety and training departments to provide the BSP policy at DC Union Station, and at the time of the audit the railroad was unable to comply.

Further engagement with Amtrak has identified the BSP procedure. But the lack of communication and training of this procedure, which requires employees to place BSP on equipment, may result in employees entering between or underneath train equipment to service that equipment without being protected as required by federal regulations.

Recommendation

- **Ensure BSP procedures are communicated, and training is provided for all Amtrak facilities. This practice will help ensure that workers have proper protection prior to entering in, between or underneath trains and equipment.**

Finding 3: Amtrak is using an outdated dispatch system that does not include safety features currently available.

While visiting Amtrak's dispatch center, FRA auditors observed that Amtrak's current dispatching system lacks a number of improved safety features that are commonly available in Class I railroad dispatch centers. Important safety features not part of Amtrak's current dispatch system include:

- Permission to pass stop signal indications and route locking.
- Automatic population of limits contained in blocking when applied and transmitted to field employees requiring protection.
- Train status indications for visual reference by the dispatcher, such as whether PTC/Cab Signal is active or inactive.
- Train information accessibility, including consist and crew information.
- Inability to place a block over a signal while in time. For example: In a bridge strike, the dispatcher can request a signal to stop to hold traffic. However, in order to prevent fledged moves, the dispatcher must come back to that location after time has run to apply blocking (possibly one to eight minutes).
- Dispatcher-induced speed restriction verification and entry from desk. Currently, Amtrak's system requires an assistant dispatch chief to manually receive and enter information into two separate systems and notify the dispatcher working the affected territory, who then communicates the speed restriction to the affected trains.
- Field employee interaction for electronically requesting and receiving speed restrictions, out of service requests, and foul time.

Amtrak's dispatch system lacks available technological safety advancements that have been developed as best practices in other computer-aided dispatch (CAD) systems used in the industry. The current version of Amtrak's CAD system requires more human interaction and manual paper processes than are seen in other comparable centers nationally. Each manual interaction or process allows a greater opportunity for human factor error incidents to occur and increases the opportunities for information loss.

If technological advancements were integrated into Amtrak's dispatch system, it could drastically reduce the possibility of human factor error incidents and would enhance efficiencies. These enhancements would directly improve the safety of the Wilmington CETC Dispatch Center's operations and overcome infrastructure limitations at the Harrisburg Line's dispatching operations. On the Harrisburg Line, passenger service accounts for 99% of the traffic. The use of multiple operators to direct traffic under a dispatcher on the Harrisburg Line, allows for the potential of human errors in instructions and routing for train movements. This potential for human error could lead to catastrophic consequences.

Recommendations

- **Evaluate an upgrade in dispatching systems in order to achieve the greatest capability and ensure the safest operations that meet or exceed the industry standard among fellow Class I railroads.**
- **Upgrade the outdated sectional operator and tower model of dispatching on high-speed corridors to improve train operations and maximize worker and public safety.**
- **Modernize the Harrisburg Line's dispatching practices, such as by installing a modern rail traffic control system.**
- **Standardize training techniques and processes related to the Harrisburg Line's train operations.**
- **Eliminate obsolete physical infrastructure as well as current, multi-step practices related to the application and removal of RWP work zones.**
- **Ensure that management have an improved ability to oversee dispatching practices and conduct required regulatory oversight.**

Finding 4: Amtrak showed an increase in failures of operational test reporting when FRA employees were present.

FRA auditors accompanied Amtrak testing officials while they conducted operational testing on 16 different occasions in accordance with 49 CFR § 217.9. During those 16 tests, Amtrak testing officials recorded 29 total rules failures. The most significant findings occurred at Amtrak's District of Columbia (DC) and Pennsylvania locations.

In the first six months of 2022, Amtrak's DC location recorded only 15 total rule failures by its transportation employees. A grand total of 8,187 tests were reported by Amtrak as being performed by its DC employees during the first 6 months of 2022. Therefore, Amtrak at DC had a failure rate of 0.19%, or a 99.81% compliance rate during the period. In the three days in which FRA auditors accompanied Amtrak's railroad testing officials in DC, approximately 100 tests were performed, with ten rule failures noted. The disparity between Amtrak only recording 15 failures in six months, as opposed to finding ten failures in three days when accompanied by FRA employees calls into question the true state of rules compliance of Amtrak transportation employees at its DC location.

Similarly, in Pennsylvania, Amtrak recorded 11 total rule failures of Amtrak transportation employees within the first 6 months of 2022. During the three days FRA auditors accompanied Amtrak, two Amtrak testing officials recorded a total of eight rule failures. However, during the first six months of 2022, the same two Amtrak officials recorded no rule failures despite conducting more than 1,300 tests. These two examples in DC and Pennsylvania suggest

Amtrak’s testing officials may be underreporting failures, which could have significant effects on safety.

Another notable issue observed was an incident in which a supervisory Amtrak testing official in Chicago conducted a “banner” test for restricted speed compliance by placing a banner on the wrong track. Amtrak’s own records indicate the supervisor had not received Amtrak’s Supervisor Qualification or field training tests. The testing official’s failure to recognize the proper station track on which to place the banner calls into question the true degree of qualification and training the testing officers receive. Additionally, this mistake could have compromised the safe movements of other trains not being subject to the intended test. For instance, other trains that were not a part of this testing may have struck the artificial obstruction used for the test, causing a possible derailment. Amtrak has since addressed the issue of supervisors’ qualifications and ability to conduct testing properly.

Recommendation

- **Review the results of testing officials and engage in enhanced oversight to ensure tests are conducted appropriately, and evaluate the results to detect emerging safety issues.**

Finding 5: Amtrak should adequately test foreign line train crews.

Amtrak has significant foreign line train¹⁸ movements over its railroad, particularly on the NEC. 49 CFR § 217.9 requires Amtrak to conduct tests on foreign line train movements. During the audit, FRA found the following issues and concerns:

Pennsylvania:

- The Southeast Pennsylvania Transportation Authority (SEPTA) creates significant traffic on the NEC and Harrisburg lines. In the first half of 2022, Amtrak did not test SEPTA’s trains or train crews. In January and March of 2022, Amtrak only tested two SEPTA locations north of Philadelphia; and in Delaware SEPTA’s train crews were only tested once in January 2022. At no time were SEPTA train crews tested on safety significant rules pertaining to restricted speed, interlocking rules, train securement, etc. Without

¹⁸ A foreign line train is a railroad that operates on a host railroad, or in which rail operations are conducted by more than one railroad on the same track.

adequate testing of safety critical rules, Amtrak is not assured that SEPTA crews are operating safely under normal conditions.

- Norfolk Southern Railway (NS) operates and uses Amtrak's rail lines along the NEC and Harrisburg lines, with many rail cars carrying hazardous materials. Amtrak only tested NS train crews once in the first half of 2022 (in March). Without adequate testing, Amtrak cannot be assured that NS train crews are operating safely while using Amtrak's tracks.
- Conrail operates multiple daily movements over Amtrak's rails in the NEC in the greater Philadelphia area; many of these movements include freight trains containing hazardous materials. Conrail crews were tested by Amtrak only once in the first half of 2022 (in January).

Illinois:

- Amtrak has significant commuter traffic at Chicago Union Station. Although Amtrak tested commuter operations routinely through every month of the first half of 2022, the railroad failed to check any Saturday movements, and only a single test was recorded on a Sunday. Without adequate weekend testing, Amtrak does not know the status of safety operations on Saturdays and Sundays.

Recommendation

- **Amtrak must ensure that rules testing of foreign line trains is conducted in a routine and comprehensive manner. Tests should concentrate on safety critical rules. Amtrak, as the host railroad, must perform tests for restricted speed, interlocking rules, and banner testing, as well as tests for other safety critical rules.**

Safety Partnerships Division

Safety Partnerships Division (SPD) conducted a limited-scope program review to determine compliance with 49 CFR Part 243 - Training, Qualification, and Oversight for Safety-Related Railroad Employees. Part 243 went into effect for large railroads on January 1, 2020. Areas of focus included the following sections of Part 243:

1. § 243.101(d)(3) – Documentation for new safety-related railroad employees. The tasks and related steps associated with on-the-job training (OJT) exercises for a particular category or subcategory of employee shall be maintained together in one manual, checklist, or similar document.
2. § 243.203 – Qualification status records for all existing and new hires (employed after January 1, 2020).
3. § 243.109(d)(i) – Requires Amtrak serve a copy of its Part 243 submissions to the president of each labor organization that represents Amtrak employees subject to Part 243.
4. § 243.207 – Annual review due by September 1, 2021.
5. § 243.209 – A listing of railroad contractors utilized by Amtrak.

On a separate matter not specifically related to the audit, SPD conducted a review of Amtrak's recently submitted Apprentice Program for Mechanical Employees. Part 243 requires railroads to submit certain training program plans to FRA for review and approval. SPD is responsible for processing all Part 243 program plan submissions at FRA. SPD noted in its review of the Apprenticeship Program that Amtrak employed a systematic approach in the curriculum development process. ADDIE, which stands for Analysis, Design, Development, Implementation and Evaluation, is an internationally generally accepted model for technical training course development, particularly for adult learners. Using the ADDIE model, Amtrak attempts to ensure that the necessary rigor is embedded in its course curricula development to achieve the highest probability of learning transfer. SPD observed that each course included in the program contained a detailed syllabus along with measurable learning objectives. The program also contained a detailed description of OJT in terms of the administration, progression, and successful completion, which provides learners clear expectations and a path to qualification. OJT checklists were also included in the submission as required by Part 243. Amtrak developed the Apprentice Program in collaboration with its labor unions. SPD approved the program on October 5, 2022.

Finding 1: Amtrak failed to record the qualification designation(s) of existing and new hire employees.

Railroads are required to designate the qualifications of each safety-related employee under § 243.201, and to record the designations in accordance with § 243.203. Amtrak records, however, do not fully describe the qualification designation(s) for existing employees and new hires. Amtrak's Learning Management System (LMS) does not currently have the capability to record this information. Failure to fully describe all the qualification designation(s) of Amtrak employees impedes FRA's and the employees' ability to understand which safety-related tasks they are qualified to perform.

On October 6, 2022, SPD met with Amtrak to discuss FRA findings and expectations for remediation. Amtrak agreed with SPD findings and indicated it would initiate remediation efforts immediately. Amtrak initially anticipated completing remediation efforts within 60 days, if not sooner. However, Amtrak subsequently indicated it will need more time to remediate the records.

Recommendation

- **Complete all ongoing revisions to the LMS to clearly document all qualification designation(s) of all occupational categories and subcategories of Amtrak employees. Amtrak needs to specify when the task will be completed.**

Signal & Train Control (S&TC) Discipline

The objective of the S&TC audit was to determine the level of Amtrak compliance with 49 U.S.C. § 21104, *Hours of Service*; 49 CFR Part 228, *Passenger Train Employee Hours of Service*; *Recordkeeping and Reporting*; *Sleeping Quarters*, 49 CFR Part 234, *Grade Crossing Safety* and 49 CFR Part 236, *Signal and Train Control* regulations. A second objective and area of focus of the S&TC audit was to review records and reports relating to PTC to validate:

1. PTC System Performance, Including Reporting (Enforcements, Initialization Failures, Cut Outs, and Malfunctions).
2. Configuration Management (New or Updated Control Plans and Critical Features Verification and Validation (V&V) Processes).
3. PTC Training by Disciplines.
4. Current PTC Implementation Plan (PTCIP) and PTC Safety Plan (PTCSP) Documentation, including Compliance with Conditions.

Over a two-week period, the S&TC Division conducted an audit of the Amtrak system with a specific focus on compliance with 49 U.S.C. § 21104, 49 CFR Part 228, 49 CFR Part 234, and 49 CFR Part 236. The audit was conducted in the following locations: District 4, Chicago Union Station and the Michigan line; District 2, Providence and the New London Northeast Corridor; and District 1, Northeast Corridor and the Harrisburg line. During the audit, 327 units and 2280 sub-units were inspected, which resulted in the identification of 90 defects. Of the defects, nine were recommended for violation and the assessment of civil penalties. However, there were no systemic issues noted relating to compliance with FRA's Hours of Service, Grade Crossing, and Signal and Train Control regulatory requirements.

The defects that were recommended for violation and/or recommended actions are described below:

- S&TC reviewed 1,112 Hours of Service records (49 CFR Part 228) and identified six employees that exceeded the statutory maximum of 12 consecutive hours on November 6, 2021. FRA recommended six (6) violations and assessment of civil penalties. The Amtrak Signal managers took immediate action and provided additional training to the employees. FRA has no finding related to the Hours-of-Service aspect of the audit.
- FRA recommended two (2) civil penalty violations for non-compliance with 49 CFR § 236.334 - point detector. FRA regulations require point detectors to be maintained so that when a switch mechanism is locked in the normal or reverse position, contacts

cannot be opened by manually applying force at the closed switch point. At North Penn Interlocking, switch 81 indicated with a 1/2-inch obstruction in the reverse point and also indicated with a 3/8-inch obstruction in the normal point. The Amtrak Signal manager took immediate corrective action in response to the non-compliant condition.

- FRA recommended one (1) civil penalty violation for non-compliance with 49 CFR § 236.553 - Seal, where required. Amtrak locomotive 668 had an Advanced Civil Speed Enforcement System II (ACSES II) cut-out seal that was ineffective. FRA was able to cut-out ACSES II without cutting or breaking the seal. Amtrak took immediate action, and the seal was repaired. ACSES II retesting was also performed by Amtrak employees following the inspection.

Finding 1: Amtrak failed to test the ITCS pre-start crossing warning times in accordance with 49 CFR § 234.259.

49 CFR § 234.259, *Warning Time*, requires that the warning time for grade crossing warning systems be tested annually and when the grade crossing warning system is modified because of a change in train speeds. Electronic devices that accurately determine actual warning time may be used in performing such tests. This requirement applies to all routes and train detection units.

During an inspection of highway-rail grade crossing records for compliance with Part 234, FRA noted that the railroad was not properly recording the wireless crossing activation times for grade crossing warning systems that were pre-started by Amtrak's Incremental Train Control System (ITCS). ITCS pre-starts activation of the grade crossing warning system for passenger trains operating at speeds above 79 mph in order to maintain minimum warning times that would not otherwise be provided by the conventional approach, track circuits. The accurate recording of these warning times, as required by regulation, is critical to ensuring FRA Inspectors have the ability to look back at test records to ensure full compliance and identify anomalies.

Recommendation

- **Update processes and procedures to include testing of the ITCS pre-start warning times in accordance with § 234.259.**

PTC

Amtrak utilizes three types of PTC systems—the Advanced Civil Speed Enforcement System II (ACSES II) on the NEC, the Interoperable Electronic Train Management System (I-ETMS) while operating on freight railroads’ PTC-governed main lines, and the Incremental Train Control System (ITCS) for high-speed passenger train operations (up to 110 mph) on the line segments identified as Amtrak Michigan Line East and Amtrak Michigan Line West.

The audit included the review of the following PTC records and reports:

- PTC System Performance including Reporting (Enforcements, Initialization Failures, Cut Outs, and Malfunctions).
- Configuration Management (New or Updated Control Plans, and Critical Features V&V Processes).
- PTC Training by Disciplines.
- Validation of Current PTCIP and PTCSP Documentation, Including Compliance with Conditions.

FRA performed the audit of Amtrak’s PTC program during the week of September 19, 2022.

PTC System Performance:

For the PTC performance audit, FRA focused on compliance with § 236.1023, *Errors and malfunctions*, and § 236.1029(h), including a review of Amtrak’s recent biannual reports of Amtrak’s and its tenant railroads’ malfunctions, cut outs, and initialization failures. This audit included a detailed review of:

- The primary reasons for PTC system cut outs, including mostly communication failures around tunnels and other geographically challenged areas requiring erection of additional radio towers,
- Malfunctions attributed to loss of communications, and
- Train Management Computer triplex mismatches and initialization failures being attributed to incorrect entry of consist data and open repair tickets.

Further discussion was held revealing Amtrak’s successful mitigations that should reduce the frequency of occurrences of these errors and malfunctions in the future.

FRA also reviewed Amtrak’s compliance with § 236.1029, *PTC system use and failures*, including discussion of the en route failures procedures and the appropriate first point of contact, including Amtrak’s PTC Help Desk, as governed by Amtrak’s operating rules, processes, and procedures.

PTC Configuration Management:

For the configuration management audit, FRA focused on compliance with § 236.1035, *Field testing requirements*, including a review of the requirements associated with regression testing of a certified PTC system and what information is required. The PTC lab tour included a review of new territory V&V testing. A demonstration of regression testing process was provided by Amtrak and the testing was found to be compliant, thorough, and well-planned.

FRA also reviewed Amtrak's Operations and Maintenance Manual (OMM) and ACSES II Configuration Management Plan and determined Amtrak is not documenting its inter-departmental approvals for changes to its ACSES II system. It was also determined Amtrak was not tracking hardware revisions for wayside PTC equipment. Amtrak is updating its procedures and processes to ensure its PTC system configuration is accurately documented.

PTC Training:

For the PTC training aspect of the audit, FRA focused on compliance with § 236.1041, *Training and qualification program*, including a review of Amtrak's training programs and processes for employees, such as train crew members, dispatchers, back-office personnel, signal and train control personnel, mechanical employees, and maintenance of way (MOW) personnel. These programs include training for all supervision of the above employees. Discussions included employees' training on employee use and access to Amtrak's OMM via internet/intranet sites. Amtrak reported that all MOW employees are trained to be Railroad Workers in Charge (RWIC) capable. Although FRA made some recommendations, the overall program satisfies the requirements.

PTCIP and PTCSP Documentation:

For the PTC documentation audit, FRA reviewed Amtrak's PTC Implementation Plan (PTCIP) and PTC Safety Plan (PTCSP). FRA's audit of Amtrak's PTCIP found the document was up to date and in compliance with regulations. Findings with respect to Amtrak's PTCSPs, including compliance with PTCSP conditions, are described below.

Finding 2: Amtrak failed to ensure its PTC Safety Plans accurately reflect the as-built configuration of its PTC systems.

In accordance with §§ 236.1015 and 236.1021, a railroad's PTCSP must accurately reflect the as-built configuration of its PTC system.

FRA's audit of Amtrak's ACSES II and I-ETMS PTCSPs found the documents did not accurately reflect the as-built systems. Specifically:

- On January 18, 2022, FRA approved Amtrak's Request for Amendment (RFA) to its ACSES II PTCSP, Version 4.0, dated August 24, 2016. On September 8, 2022, FRA approved Amtrak's RFA, Version 2.3, dated July 25, 2022, but Amtrak's ACSES II PTCSP has not been updated to reflect the modifications proposed in the approved RFAs. Amtrak must update Section 5 of its ACSES II PTCSP to include all variances from its FRA-issued Type Approval and any other proposed amendments that FRA approved.
- Review of Amtrak's ACSES II PTCSP also found that Section 18.3, Locomotive Service Facilities, does not accurately reflect its current locomotive repair facilities. Amtrak agreed to update the document.
- Review of Amtrak's I-ETMS PTCSP revealed Amtrak is currently operating onboard software version 6.3.21.5. However, Amtrak signed on to an I-ETMS RFA that requested approval of onboard software version 6.3.24.0 and was approved by FRA on August 8, 2022. FRA also notes that Amtrak's current software version information is not found in Amtrak's I-ETMS PTCSP.

Recommendation

- **Review the processes and procedures for ensuring Amtrak's PTCSPs remain up-to-date and reflect the as-built configuration of each PTC system in operation, and update current PTCSPs to reflect all FRA-approved RFAs.**

Finding 3: Amtrak's continued delay in resolving PTC Safety Plan conditions requires increased effort and focus.

FRA also observed during the audit Amtrak's delay in timely closing and resolving the conditions FRA imposed in its conditional certification of Amtrak's ACSES II and conditional approval of Amtrak's ACSES II PTCSP. FRA notes that given the complex nature of the NEC and the requirement for all applicable railroads operating on the NEC to maintain PTC system interoperability, managing modifications and upgrades to the ACSES II system requires significant coordination, planning, and support from suppliers. FRA appreciates Amtrak's technical leadership, but the continued delay in resolving the safety-related conditions of FRA's certification of Amtrak's ACSES II PTC system continues to raise a significant safety concern.

FRA's certification of Amtrak's ACSES II PTC system includes multiple conditions requiring upgrades and changes to the ACSES II system to address safety concerns. Amtrak's compliance with these conditions is critical to the long-term safety and interoperability of the NEC. Amtrak

has not developed a deliverable plan and schedule to complete the requirements in these certification conditions.

Recommendation

- **Through senior leadership within Amtrak, and supported by FRA, reconvene the NEC PTC leadership meetings to raise the profile and urgency of resolving ACSES II certification conditions. Through this forum, develop a deliverable strategy to address these safety issues and prepare a plan and schedule for implementation. The NEC PTC leadership team should meet regularly to discuss progress and resolve technical and supplier issues.**

Track Discipline

The objectives of the Track Division's audit were to determine Amtrak's compliance with 49 CFR Parts 213, 214, and 237 Safety Standards. During the audit, the Track Division looked at 2,273 units and documented 1,036 defects, with six of those defects recommended for civil penalties. Overall, the inspections, observations, and FRA inspector feedback was positive, with some noted exceptions.

Concerns identified during this audit are centered on four primary areas, which include Amtrak's reporting and recordkeeping of non-class specific track defects; roadway workers working within interlocking limits on high-speed track; inconsistent application of Amtrak's Continuous Welded Rail (CWR) plan procedures; and bridge workers not recording all required information on their submitted bridge inspection reports.

Finding 1: Many Amtrak track inspectors are not correctly recording non-class specific defects on inspection reports.

During its audit, the Track Division auditors observed a recurrent issue that FRA Track Specialists have previously reported to Amtrak concerning improper recording of non-class specific defects by Amtrak inspectors. Non-class specific defects do not, in most instances, require immediate corrective actions, but instead permit track repairs to be completed within a 30-day period. A review of Amtrak's track inspection records, however, shows that many Amtrak inspectors are not properly recording non-compliant conditions as required by the Track Safety Standards (TSS). Identified defects should be recorded in Amtrak's "Safety Section" on their inspection reports, because that is the section Amtrak managers use to identify defects that require a remedial action. Instead, Amtrak inspectors are recording non-compliant defects in the "Maintenance Section," which does not trigger a remedial action that is required by the TSS. Amtrak was also cited during this audit for failure to specify the nature and location of deviations found as required by § 213.241(b).

This issue is a concern to FRA because defect reporting standards under § 213.241 in the TSS plainly state that railroad track inspectors are required to list all deviations from the TSS. Therefore, all tracks must be inspected at the correct frequency, and all defects must be recorded on an inspection report on the day of inspection, specifically noting the location and nature of the defect found. Failure to do so is not in compliance with the TSS. As such, defects not correctly recorded during an inspection run may not be correctly identified for remediation and repaired within the required 30-day timeline, which can increase the potential risk of an accident or incident.

Recommendation

- **Amtrak must ensure that its inspectors are documenting non-class specific defects identified in the field, to ensure those defects are recorded and reviewed for remediation within the 30-day time period.**

Finding 2: NORAC operating rules related to the movements of track cars and minor repairs.

On Amtrak property, the railroad uses Northeast Operating Rules Advisory Committee (NORAC) rules that specifically govern the movement of trains and on-track equipment. During field activities, FRA auditors observed Amtrak's roadway workers improperly utilizing NORAC operating rules related to the movement of on-track equipment through interlockings as on-track safety while performing work.

FRA's regulations distinguish between work and movements under the roadway worker protection rule. Pursuant to § 214.301(c), railroads can make movements under the operating rules of the railroad without establishing working limits. However, railroads must establish some type of on-track safety while performing work.

As an example of the aforementioned practice, during a joint FRA/Amtrak on-track inspection in a hi-rail vehicle, a joint tie defect was identified inside an interlocking. An Amtrak inspector stopped so all could verify the nature of the potential defect. The defect was confirmed, and the track inspector elected to immediately repair the issue. NORAC Form D Line 2 is an operating rule that allows on-track equipment to make movements outside interlockings. Amtrak uses NORAC Rule 241 to make movements through interlockings. When Amtrak employees exited their vehicles to make repairs, they were no longer engaged in a movement per § 214.301(c), and on-track safety was required.

Recommendation

- **Ensure roadway workers utilize an acceptable form of on-track safety while engaged in work activities.**

Finding 3: Amtrak has improper or incomplete Continuous Welded Rail (CWR) records.

As part of the Amtrak audit, FRA evaluated Amtrak's rail defect remediation and CWR plan monitoring. This was associated with a thorough inspection of CWR records along with randomly selected locations for field follow-up. FRA field audits verified that Amtrak is destressing (balancing internal forces in the rail to minimize the potential for buckles or the rail pulling apart) rail locations, but the consistency of procedures varied from subdivision to subdivision. The deviations included the following:

- Improper use of reference marks.
- Missing critical reference mark information on the rail.
- Improperly applied anchors in the rail destressing process.
- Missing critical reference mark information on the corresponding disturbance reports.
- No recorded disturbance report was provided from a physical work location.
- No reference marks established at a location to track the rail neutral temperature.

The FRA audit team reviewed Amtrak's CWR records from July 1, 2021, to July 1, 2022. FRA auditors focused on CWR Report A, Records of Track Disturbance, where maintenance work has affected the Rail Neutral Temperature (RNT). Auditors noted multiple instances where either rail installation or rail repair was performed, but recorded information does not list a new RNT. Amtrak's CWR plan requires their division office to monitor these reports to ensure protective and/or corrective action is made when there is an adjustment to RNT.

Additionally, FRA found several records that were not filled out completely or correctly. The majority of record defects for these locations did not provide the rail end gap, rail added or removed, or the correct milepost that the work was performed, which is required in Amtrak's CWR program.

Because Amtrak is not recording current rail conditions, they do not have valid information that might help them prevent a track buckle or pull-apart.

Recommendations

- **Retrain all § 213.7(c) personnel who are qualified to inspect CWR or supervise the installation, adjustment, and maintenance of CWR track. Specifically,**
 - **Train all personnel on proper recording of required information on CWR rail records.**
 - **Train all supervisors for improved monitoring and consistency with Amtrak's CWR plan.**

Finding 4: Amtrak bridge inspectors recorded all the required information in their personal notes, but neglected to include much of their findings in the narrative section of their official reports.

FRA auditors also looked at Amtrak's bridges and structures in eastern New York and central Michigan. Most of the defects identified during the audit were written under § 237.109(c)(6), which requires that the condition of bridge components inspected be recorded, and that narratives should support correct interpretation of the report. In FRA's observations, Amtrak bridge inspection reports lack the narrative description necessary to correctly interpret their submitted reports. This conclusion was made after FRA auditors accompanied Amtrak bridge inspectors to conduct field observations. During these observations, FRA compared previous bridge inspection reports to the findings of two different Amtrak inspectors in Michigan. The bridge inspection reports indicate that the Amtrak bridge inspectors recorded all the required information in their personal observation notes, but neglected to include much of their findings on the record report. This appears to be a training issue as Amtrak bridge inspectors were proficient in bridge inspection techniques but failed to properly document formal records.

Recommendation

- **Retrain Amtrak bridge workers on proper bridge inspection reporting to ensure they are reporting all required information and findings on their submitted bridge inspection records.**

Grade Crossing & Trespass Outreach Discipline

The Grade Crossing & Trespass Outreach (Grade Crossing) discipline focused its audit on Amtrak's Michigan Line. During the audit, the Grade Crossing Division focused on compliance with 49 CFR Part 222 – Use of Locomotive Horns at Public Highway-Rail Grade Crossings; 49 CFR Part 225 – Railroad Accidents/Incidents: Reports Classification, and Investigations; and 49 CFR Part 234 – Grade Crossing Safety. Other relevant criteria FRA considered included the American Association of State Highway and Transportation Officials (AASHTO) Green Book,¹⁹ and the Manual on Uniform Traffic Control Devices (MUTCD).²⁰

Finding 1: Amtrak should work with State and local authorities to upgrade grade crossing equipment.

The Amtrak Michigan Line is a corridor on the east end of the regional routes between Chicago, Illinois, and Detroit, Michigan. Amtrak passenger trains operate over NS tracks between Chicago, Illinois and Porter, Indiana. At Porter (Porter Junction), the route diverts onto an Amtrak-owned and dispatched portion to Kalamazoo, Michigan. From Kalamazoo to Dearborn, Michigan (Detroit) and Pontiac, Michigan, the line segment is owned by the Michigan Department of Transportation (Michigan DOT) and dispatched by Amtrak. The line segments from Porter to Dearborn are subject to Amtrak regional service operations, where trains can operate at a maximum speed of 110 mph. Due to the speed of these Amtrak trains, additional safety features are recommended for highway-rail grade crossings on these line segments to keep motorists and pedestrians safe.²¹

FRA's Grade Crossing auditors looked into grade crossing and trespass issues in Michigan on tracks owned by both Amtrak and the Michigan DOT. FRA selected specific grade crossings to review, based on Incident Data reports and input from Amtrak and Michigan DOT. A review of grade crossing inspection reports and FRA auditor inspections revealed several grade crossing and trespass issues. Several high-trespass areas and homeless encampments were identified along the railroad right-of-way, as well as needed upgrades at potentially hazardous grade crossing locations. FRA discussed these issues with Amtrak and Michigan DOT officials. However, two main issues that seem to be impeding progress are the lack of sufficient funding

¹⁹ AASHTO, *A Policy on Geometric Design of Highways and Streets*, 7th Edition (2018).

²⁰ U.S. Department of Transportation, Federal Highway Administration, <https://mutcd.fhwa.dot.gov/index.htm>, last updated September 14, 2022.

²¹ U.S. Department of Transportation, Federal Highway Administration, *2009 Edition Part 8, Traffic Control for Railroad and Light Rail Transit Grade Crossing*, https://mutcd.fhwa.dot.gov/htm/209/part8/part8_toc.htm, last updated April 27, 2023.

for the upgrades and disagreements between the various stakeholders on the type of crossing improvements that are needed.

Recommendation

- **Amtrak should implement robust safety mitigation measures, such as grade crossing engineering, elimination, and separation improvements combined with trespass prevention initiatives to reduce incidents at grade crossings subject to 110 mph passenger train operations on the Michigan Line.**

Amtrak is keeping FRA apprised as they engage public authorities about funding opportunities to support grade crossing and trespass prevention infrastructure improvements along the Michigan Line.

Conclusion

FRA's audit illustrated that in many aspects, Amtrak's system is largely effective and compliant with relevant safety regulations. However, Amtrak needs to invest in new technology to replace its outdated dispatching system, increase equipment testing, work on reporting issues, and focus on worker safety. The BIL required FRA to additionally review Amtrak's safety culture. FRA's review indicates Amtrak has a mostly positive safety culture with some room for improvement.

Exhibit A: Scope and Methodology

FRA conducted its multi-disciplinary safety audit of Amtrak between July and September 2022. FRA provided timely notification of the upcoming audit by electronically sending an audit announcement letter to Amtrak's President and CEO, Stephen Gardner, dated June 7, 2022. In preparation for this audit, FRA reviewed the requirements of the BIL, and reviewed Amtrak's own Office of Inspector General's Interim Audit Report titled "Safety and Security: The Company Can Take Steps to Evaluate Its Current Safety Culture."²²

FRA evaluated aspects of Amtrak's safety culture through observations of employee behavior and conducting short "safety pulse" interviews with Amtrak employees and managers. FRA's safety pulse interviews were comprised of questions designed to understand how Amtrak's written safety culture polices are working every day in the field. FRA inspectors conducted field observations of Amtrak employee's track crossings to test whether they use appropriate crossing safeguards (consistent with regulatory requirements and Amtrak policy) in the field during other audit-related activities. The interview questionnaire and the field observation data collection form are included in Appendix A. Additionally, FRA staff reviewed existing safety culture materials and interviewed key Amtrak personnel regarding current safety culture initiatives.

To gather as much information as possible across Amtrak's entire system, FRA inspectors from each discipline performed safety pulse interviews and safety observations as part of their other audit tasks. This allowed FRA to have a more comprehensive view of Amtrak's safety culture across geographical service areas, crafts, and both agreement and non-agreement employees.

Inspectors conducted a minimum of one safety pulse interview and one safety observation each day they were in the field. Prior to beginning their fieldwork, inspectors were given copies of Amtrak's polices and safety rules regarding electronic devices, right-of-way access, and safety on or about tracks. FRA conducted over 150 safety pulse interviews and made 95 safety observations during the audit period.

For each safety observation, inspectors recorded the date, time, and location of the observation and noted the position of the employee(s) crossing the track. Inspectors recorded if the crossing occurred at a 90-degree angle, if crossing safeguards were employed per Amtrak's policies, if there was any inappropriate fouling of the tracks, and if employees appeared distracted. Inspectors also recorded any additional notes from their observations. For example, if multiple people crossed at the same time but only one took appropriate safeguards, this was noted.

²² Amtrak, *Safety and Security: The Company Can Take Steps to Evaluate Its Current Safety Culture* (OIG Report No. A-2021-001), October 2, 2020.

Inspectors also recorded the date, time, and location, and noted the position of employees who participated in the safety pulse interviews. To elicit honest responses without fear of reprisal, no other identifying information was collected from these employees. Employees were asked if they knew about Amtrak’s policy to stop an unsafe operation and request a “Good Faith Challenge.” Employees were asked if they personally felt empowered to stop an unsafe operation. They were then asked if they were aware of any ways to report a safety hazard or concern at Amtrak and if so if they had ever reported a safety hazard or concern. Lastly, employees were asked to identify the methods they would use to report a safety hazard or concern. The options given were (1) report to supervisor, (2) use Amtrak’s Voluntary Safety Reporting System (AVSRS), (3) email an Amtrak-specific email address, (4) call or text APD, (5) call the engineering action hotline, or (6) report through the Confidential Close Call Reporting System (C3RS).

The Motive Power & Equipment Discipline conducted its portion of the audit of Amtrak’s system throughout 12 States (including Washington, DC) and 24 individual locations over a span of 18 days, 24 hours a day at the following locations: Rensselaer Shop, Rensselaer, NY; Sunnyside yard, NY; Southampton St. Yard, Boston, MA; Ivy City, Washington, DC; Bear, DE; Wilmington, DE; Philadelphia, PA- Penn Coach Yard; Amtrak Auto Train, Sanford, FL; Hialeah Maintenance Facility, Miami, FL; Brighton Park Shop, Chicago, IL; Lumber Street, Chicago, IL; Beech Grove, Indianapolis, IN; New Orleans, LA; Oakland, CA; Sacramento, CA; Auburn, CA; Los Angeles, CA; Goleta, CA; San Luis Obispo, CA; San Diego, CA; and Seattle, WA.

FRA’s Operating Practices (OP) audit team consisted of seven OP inspectors and three OP specialists, who conducted OP’s audit during the weeks of August 28 and September 12, 2022. The team focused on three areas during this audit: (1) roadway worker protection (RWP) from the operations and engineering sides on the NEC and Chicago, (2) an assessment of the Amtrak CETC Dispatch Center in Wilmington, DE, and (3) observation of railroad testing officials performing testing (217T) with various Amtrak testing officers and FRA inspectors along the NEC and the Chicago area.

FRA observed over one hundred engineering and train employees involved with RWP through RWP inspections. These inspections were focused upon track safety programs and procedures observed by FRA, including proper safety briefings, flagman responsibilities, track occupancy, working limits, train coordination, train approach warning, and other railroad safety rules. FRA audited various sites where engineering projects had commenced, as well as conducted on board inspections. FRA on-board inspections required the FRA audit team to ride in operating cabs of lead locomotives, to observe and verify that all Amtrak employees were following the railroad rules and federal regulations, which are required during and around the different engineering projects.

During the audit, FRA also observed and inspected eight dispatch desks, two assistant chief dispatcher desks, and one chief dispatcher per shift to verify rule compliance. Additionally, FRA auditors observed 14 different Transportation Department supervisors inspect train crews for rule compliance.

On August 10, 2022, FRA's Safety Partnerships Division (SPD) made its initial data request related to program documentation for Part 243 compliance. SPD requested the data by close of business September 30, 2022. On September 27, 2022, SPD received and began its review of program documentation.

The Signal, Train Control and Crossings (ST&C) Discipline conducted an audit of the Amtrak system between September 12 – 23, 2022. This audit consisted of inspections at sample sites in FRA Districts 1, 2, and 4 on multiple subdivisions. During the two-week field audit, the ST&C Division conducted inspections at the following locations: District 4, Chicago Union Station and the Michigan line; District 2, Providence and the New London NEC; and District 1, NEC and the Harrisburg line.

The Track Discipline performed their audit between August 28 – September 12, 2022. They inspected Amtrak's main line tracks including the NEC, Michigan Corridor, as well as tracks in Harrisburg, PA, and Springfield, MA along with yard track hubs that were inspected concurrently for compliance with FRA regulations. Additional FRA auditors inspected Amtrak's bridges and structures on the Empire Sub in eastern New York and the Central Division AM Line in Michigan. Additional yards, divisions, subdivisions, etc. visited included: District 1 - NYP Interlockings, Post Road, NY/NY Mainline, NHB Line Hi-rail, Providence Section, Groton Section, Sunnyside Yard, Hellgate Main, Mill River Springfield Line, Boston (Tower 1), Dorchester Bridge, Southampton St. Yard, Middleboro; District 2 – Harrisburg line and NEC (Adams & Philadelphia Sub, Wilmington & Perryville Sub, Baltimore Sub, Washington Terminal); District 4 – Michigan (Porter, IN, Niles, MI Yard, Jackson, MI, Detroit, MI), Illinois (Chicago Union Station and Chicago Maintenance Yard); Bridges (NEC and Michigan Corridor); Rail Integrity (Michigan Line, Harrisburg Line, NEC (Boston – Penn Station, NY).

From September 12-16, 2022, FRA's Grade Crossing and Trespass Outreach Discipline performed a limited audit of grade crossings and high-trespass areas on Amtrak's Michigan Line, specifically in eastern and western Michigan. FRA auditors and Amtrak and Michigan DOT officials participated in the inspections throughout the week. During these inspections, several high-trespass areas and homeless encampments were identified along the railroad right-of-way, as well as needed upgrades at potentially hazardous grade crossing locations.

Exhibit B: List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACSES II	Advanced Civil Speed Enforcement System II
ADDIE	Analysis, Design, Development, Implementation, Evaluation
APP	Application
ATC	Automatic Train Control
AVSRS	Amtrak's Voluntary Safety Reporting System
AWARE	Amtrak Wayside Alert and Report for Engineers
BIL	Bipartisan Infrastructure Law
BSP	Blue Signal Protection
C3RS	Confidential Close Call Reporting System
CAD	Computer Aided Dispatch
CETC	Centralized Electrification and Traffic Control
CFR	Code of Federal Regulations
CWR	Continuous Welded Rail
DC	District of Columbia
DOT	Department of Transportation
EPPS	Enhanced Employee Protection System
FRA	Federal Railroad Administration
FY	Fiscal Year
I-ETMS	Interoperable Electric Train Management System
IIJA	Infrastructure Investment and Jobs Act

LMS	Learning Management System
MOW	Maintenance of Way
MP&E	Motive Power and Equipment
MPH	Miles Per Hour
MU	Multiple Units
MUTCD	Manual on Uniform Traffic Control Devices
NASA	National Aeronautics and Space Administration
NEC	Northeast Corridor
NORAC	Northeast Operating Rules Advisory Committee
NS	Norfolk Southern Railway
NTSB	National Transportation Safety Board
OJT	On-The-Job-Training
OMM	Operation and Maintenance Manual
OP	Operating Practices
PTC	Positive Train Control
PTCIP	Positive Train Control Implementation Plan
PTCSP	Positive Train Control Safety Plan
RNT	Rail Neutral Temperature
RWIC	Railroad Workers in Charge
RWP	Roadway Worker Protection
SEPTA	Southeast Pennsylvania Transportation Authority
SPD	Safety Partnerships Division

SSP	System Safety Program
SSWM	Safety Starts with Me
S&TC	Signal and Train Control
TSS	Track Safety Standards
V&V	Verification and Validation

Exhibit C: FRA's Major Contributors to This Report

Karl Alexy	Associate Administrator for Railroad Safety/Chief Safety Officer
Carolyn Hayward-Williams	Director - Office of Railroad Systems and Technology
Charles King	Director - Office of Railroad Infrastructure and Mechanical
Mike Long	Director - Office of Regional Operations and Outreach
Mark Patterson	Director - Office of Data Analysis and Program Support
Miriam Kloeppe	Staff Director - Audit Management Division
Amanda Emo	Senior Engineering Psychologist - Audit Management Division
Tanya Rucker	Program Analyst - Audit Management Division
Gary Fairbanks	Staff Director - Motive Power & Equipment Division
Douglas Yates	Deputy Staff Director - Motive Power & Equipment Division
Christian Holt	Staff Director - Operating Practices Division
Zach Allen	Railroad Safety Specialist - Operating Practices Division
Rick Kiester	Railroad Safety Specialist - Operating Practices Division
Robert Castiglione	Staff Director - Safety Partnerships Division
Cory Johnson	Human Performance Specialist – Safety Partnerships Division
Gabe Neal	Staff Director - Signal, Train Control and Crossing Division
Christopher Noblett	Deputy Staff Director - Signal, Train Control and Crossing Division
Richard Scott	Deputy Staff Director – Signal, Train Control and Crossing Division
Yujiang Zhang	Staff Director - Track Division

Michael Pirato

Deputy Staff Director - Track Division

James Payne

Staff Director - Grade Crossing and Trespass Outreach Division

Amtrak 2022 Safety Culture Audit Safety Pulse Interview

Inspector Appendix A: Safety Culture Safety Pulse Interview Questionnaire and Observation Data Collection Forms

Name:

Site Location:

Date:

Time:

Position	1. Do you know about Amtrak’s policy to stop an operation if you feel it is unsafe and request a “Good Faith Challenge”?	2. Do you think you have the power/authority to stop an unsafe operation?	3. Are you aware of any of Amtrak’s employee safety hazard and concern reporting methods?	4. Have you reported a safety concern using one of Amtrak’s employee reporting methods?	5. What reporting methods would you use to report a safety concern? (circle numbers of any method employee mentions below; or use X if completing form electronically) <ol style="list-style-type: none"> 1. Directly to Supervisor 2. Amtrak Voluntary Safety Reporting System (AVSRS) (<i>web or mobile</i>) 3. Email SystemSafety@Amtrak.com 4. APD NCC at 800-331-0008 or text APD11 5. Engineering Action Hotline at 800-288-1310 6. Confidential Close Call Reporting System (C3RS) 	NOTES:
<i>(example) L engineer</i>	Y	N	Y	Y	1 2x 3 4x 5 6x	<i>Used app on iPad Would report to fellow</i>

												<i>engineer as well</i>
					1	2	3	4	5	6		
					1	2	3	4	5	6		
					1	2	3	4	5	6		
					1	2	3	4	5	6		

**Amtrak
2022 Safety
Culture
Audit
Safety**

Observation

Inspector Name:
Date:

Site Location:
Time:

Position M for management L for labor (or specific craft if known)	Fouling Track X if Yes	Crossing Safeguards X if Yes	Cross at 90° angle X if Yes	Distracted X if Yes	Notes
<i>Example: L (MoW)</i>		X	X		<i>Crew of 5 crossed track. First looked and employed crossing safeguards. Rest did not</i>
<i>Example: M</i>	X				<i>Manager was not violating Amtrak's electronic device policy, but was distracted by other yard activity.</i>

Appendix B: Amtrak's Comments

FRA provided Amtrak with a draft of its report on October 28, 2022, and FRA received Amtrak's comments on November 7, 2022. A summary of Amtrak's comments are listed below, along with FRA's response.

- Amtrak's Comment, #1
 - In the Background section of the report, FRA stated: "According to Amtrak, they have made some significant improvements in safety during the past few years."
 - Amtrak responded: "Is FRA able to include metrics to support this?"
 - FRA's response: To more accurately state Amtrak's position, FRA included the link to Amtrak's Media Center posting on November 2, 2019, *Improved Safety and Customer Experience Drive Record Amtrak Ridership*.

- Amtrak's Comment, #2
 - In the Significant Findings section under the Operating Practices discipline summary, FRA stated: "Another important finding is that Amtrak's dispatch system lacks technological updates and enhanced safeguards."
 - Amtrak responded: "Does the current system meet regulatory standards? Does FRA intend to introduce regulatory requirements for technological updates and enhanced safeguards?"
 - FRA's response: FRA notes that we did not cite non-compliance with regulations regarding this statement, since there are currently no regulations for this part of dispatch. However, FRA wants to emphasize Amtrak's opportunity to improve their dispatch system. FRA reworded the sentence to say, "FRA also wants to emphasize Amtrak's opportunity for improving safety by modernizing its dispatch system, to take advantage technological updates and enhanced safeguards."

- Amtrak's Comment, #3
 - In the Audit Findings by Discipline section, Operating Practices' write up for Finding 4, FRA stated: "Amtrak's own records indicate the supervisor had not received Amtrak's Supervisor Qualification or field training tests. The testing official's failure to recognize the proper station track on which to place the banner calls into question the true degree of qualification and training the testing officers receive."
 - Amtrak responded: "This has been checked and verified that the employee was qualified under the original TESTS system and grandfathered into the SPARTN system. Amtrak agrees that a more substantial and organized approach to initial and recurrent training of Test Officers must be developed."

- FRA’s response: FRA will not change our Finding, because at the time of the audit, Amtrak was not able to produce records showing that the supervisor had received Amtrak’s Supervisor Qualification or field training tests.
- Amtrak’s Comment, #4
 - Also, in the Audit Findings by Discipline section under the Operating Practices discipline’s Finding 5, FRA stated: “Amtrak has abdicated their responsibility to assure safe operations by not adequately testing foreign line train crews.”
 - Amtrak responded: “While Amtrak and Host/Tenant railroad do perform joint testing, the results need to be shared more transparently and efficiently. Amtrak does not Abdicate its responsibility to assure safe operations.”
 - FRA’s response: FRA adjusted the report finding to state, “Amtrak should adequately test foreign line train crews.” FRA’s Operating Practices Discipline sees this as a long-term issue, with Amtrak not having adequate oversight of foreign line operations on their property. Additionally, testing is inconsistent overall. Amtrak must remain on top of this issue consistently and not occasionally.
- Amtrak’s Comment, #5
 - FRA’s Safety Partnerships Division provided criteria for which they audited against in the Audit Findings by Discipline section, the specific criteria listed was: “§ 243.203 – Qualification status records for all existing and new hires (employed after January 1, 2020).”
 - Amtrak responded: “FRA Requested qualification records for the following employee groups:
 - Bear Shops – Training and qualification records for all new mechanical employees (locomotive and car/coach), hired after January 1, 2020, and training and qualification records for 10 percent of grandfathered employees (locomotive and car/coach), hired prior to January 1, 2020.
 - Wilmington Shops - Training and qualification records for all new mechanical employees (locomotive and car/coach), hired after January 1, 2020, and training and qualification records for 10 percent of grandfathered employees (locomotive and car/coach), hired prior to January 1, 2020.
 - NEC - Training and qualification records for all employees categorized as roadway workers hired after January 1, 2020, and training and qualification records for 10 percent of grandfathered employees categorized as roadway workers hired prior to January 1, 2020.
 - Off Corridor Seattle - Training and qualification records for all new mechanical employees (locomotive and car/coach), hired after January 1,

2020, and training and qualification records for 10 percent of grandfathered employees (locomotive and car/coach), hired prior to January 1, 2020.”

- FRA’s response: FRA agrees with this comment.
- Amtrak’s Comment, #6
 - After the Safety Partnerships Division’s recommendation to their finding, they included the following statement: *“On October 6, 2022, SPD met with Amtrak to discuss FRA findings and expectations for remediation. Amtrak agreed with SPD findings and will initiate remediation efforts immediately. Amtrak anticipates completing remediation efforts within 60 days, if not sooner.”*
 - Amtrak responded: *“Amtrak recognizes the importance of accurate record keeping and documentation of qualifications and will work with FRA to ensure a thorough understanding of this requirement under part 243. Amtrak will begin to explore options for remediation immediately and will work with internal partners to develop an accurate timeline for completion of these efforts; however, is unable to commit to completing this within 60-days as noted here.”*
 - FRA’s response: FRA has revised its comments to *“[o]n October 6, 2022, SPD met with Amtrak to discuss FRA findings and expectations for remediation. Amtrak agreed with SPD findings and indicated it would initiate remediation efforts immediately. Amtrak initially anticipated completing remediation efforts within 60 days, if not sooner. However, Amtrak subsequently indicated it will need more time to remediate the records.”*
- Amtrak’s Comment, #7
 - In the Audit Findings by Discipline section, the Grade Crossing and Trespass Outreach discipline found: *“Amtrak should work with State and local authorities to upgrade grade crossing equipment.”*
 - Amtrak responded: *“Collaboration vs. competing priorities is also a concern here and requires clarification. As the regulator, what has FRA committed to regarding this topic?”*
 - FRA’s response: The Federal Government has made a commitment to provide a historic level of federal funding to the transportation industry over the next five years through the BIL. The BIL funding will primarily be distributed to the rail industry through grants, some of which can be used to help pay for upgrades to grade crossing equipment and address trespassing.