

The National Passenger Railroad Corporation (Amtrak) respectfully submits the following proposed findings and recommendations with regard to the February 4, 2018 collision in Cayce, South Carolina.

We appreciate the assistance, cooperation and guidance of the NTSB throughout the investigative process and for the opportunity to participate as a party to the investigation.

Incident summary

On February 4, 2018, about 2:27 a.m. EST, southbound National Passenger Railroad Corporation (Amtrak) train 91, operating on a track warrant, was diverted from the main track through a hand-thrown switch into a siding and collided head-on with stationary CSX Transportation local freight train F777 03. The accident occurred on the CSX Columbia Subdivision in Cayce, South Carolina.

The engineer and conductor of the Amtrak train perished as a result of the collision. At least 92 passengers and crewmembers on the Amtrak train were transported to medical facilities. The engineer of the stopped CSX train had exited the lead locomotive before the Amtrak train entered the siding, ran to safety, and was not injured. The conductor of the CSX lead locomotive saw the Amtrak train approaching in the siding and ran to the back of locomotive. The conductor was thrown off the locomotive and sustained minor injuries.

The normal method of train operation on the subdivision was a traffic control system with wayside signals. Signal indications authorized movement in either direction. On the day before the accident, February 3, 2018, CSX signal personnel suspended the traffic control signal system to install updated traffic control system components for implementing positive train control (PTC) on the subdivision. During the suspension, scheduled to last through February 4, 2018, dispatchers would use track warrants to move trains through absolute blocks in the work territory. The signal personnel stopped work at the accident location at 7:00 p.m. on February 3, 2018, and were scheduled to return on February 4 to complete the effort.

Amtrak served as a party to the NTSB investigation assisting in the inspection of the track structure, signal system, and mechanical equipment along with participating in interviews and record reviews.

In response to this accident, on February 13, 2018, the NTSB issued an urgent recommendation requesting that the Federal Railroad Administration (FRA) issue an emergency order providing instructions for railroads to follow when signal suspensions are in effect and a switch has been reported relined for a main track. On April 23, 2018 FRA issued a draft Safety Advisory¹. FRA indicated the advisory “would identify existing industry best practices railroads utilize when implementing temporary signal suspensions and would recommend that railroads conducting rail operations under temporary signal suspensions develop and implement procedures and practices consistent with the identified best practices.” The Safety Advisory also recommended that railroads take certain other actions to ensure the safety of railroad operations during temporary signal suspensions. Amtrak submitted comments to the docket in support of this advisory which included a summary of the risk management actions taken by the corporation as of the date of comment.

¹ Docket FRA-2018-0037

NTSB held an Investigative Hearing on July 10-11 2018 during which, Amtrak provided testimony pertaining to passenger safety, detailed the actions taken in response to recent accidents and provided an update on the progress of our Safety Management System (SMS) implementation. This submission details additional progress made since the hearing.

Amtrak Response

Amtrak employees responded to the scene of the incident to assist in the response and recovery efforts as well as supporting the NTSB and FRA investigations. In accordance with federal requirements, Amtrak activated the Family Assistance Center to address needs of families of passengers involved in the accident. Amtrak sincerely regrets the injuries suffered by our passengers and employees in the Cayce, South Carolina derailment as well as the tragic loss of life of two of our very professional and respected crew members.

Background

The area in which the incident occurred is owned and dispatched by CSX. Amtrak operates passenger train service in this area under an agreement with CSX in which our operations are “hosted” by CSX. Under this agreement, Amtrak is required to comply with the operating rules and procedures as enacted by the host railroad. As noted in the July investigative hearing, 97% of the nearly 21,000 route-miles Amtrak operates are owned by other railroads and subject to host agreements. This reliance on host railroads is a central feature of Amtrak’s business model.

We recognize that the hosts’ operating rules have been in place for a long time, and while they reflect years of experience, they can also impose their complexity on Amtrak’s operations as we account for the variances created by over 30 different host rule books. These operating practices generally reflect the freight orientation of the hosts, which makes sense but can no longer be considered adequate by themselves. The complexity of the array of rules makes our training difficult, it makes our compliance monitoring difficult, and it makes it difficult to regulate our industry. This complexity also offers us an opportunity to streamline our approach by developing a more consistent approach to operating over our various hosts.

As noted in prior submissions and correspondence to NTSB, Amtrak had been working toward the development of an SMS before the April 3, 2016 accident in Chester, PA involving Amtrak MOW equipment and Train 89², and our efforts took on increased emphasis following recent accidents. In addition to the staffing and organizational alignments detailed in testimony provided by Amtrak officials at the investigative hearing, Amtrak’s board of directors passed a resolution requiring the implementation of an SMS and Positive Train Control (PTC) in March of 2018. This resolution served as a cornerstone upon which recent efforts to operationalize safety processes were built.

Amtrak is aggressively implementing processes for risk reduction and driving cultural change through data-driven decision making. We have undertaken multi-departmental root cause and corrective action

² NTSB Accident ID DCA16FR007

initiatives through teams comprised of both non-agreement and agreement personnel evaluating critical employee exposures. We have worked to improve and expand our safety processes with host railroads. Amtrak has initiated a number of joint risk assessment and risk reduction activities with host railroads and tenants in areas which Amtrak functions as a host. We are working to strengthen our joint efficiency testing procedures and are increasing the frequency, while expanding the content, of data sharing efforts. We are applying our risk assessment processes and making safety driven decisions to the proposed establishment of new routes, the continued operation of our trains in Non-PTC territory, and changes to the system which may have an impact on safety. We are working to reinvigorate our safety committees and, through the continued application of risk management tools under the guidance of the system safety department, tasked these groups with risk reduction throughout the Amtrak system.

In 2018, we have identified and prioritized a number of focus areas in which we are working to develop our SMS. These focus areas include Safety Policy, Risk-based Hazard Management, Data Acquisition and Analysis, Safety Assurance, Voluntary Safety Reporting, and Accident/ Incident Investigation. Amtrak understands that successful implementation of a safety management system is never complete; a critical element of the system is continuous improvement. As of the date of this submission, Amtrak has issued a new safety policy, endorsed by the executive leadership team to all employees. We have created new safety metrics which combine lagging and leading indicators to monitor the performance of our safety programs. These metrics are communicated throughout the organization and progress toward the achievement of goals is monitored at multiple levels of the company. We have implemented a Voluntary Safety Program with our engineering labor organizations and are continuing to improve our corrective actions through robust and collaborative accident/incident investigations.

As we move into 2019, we are expanding our risk management program to include a formalized program of assessments focused on identification of opportunities to improve station and grade crossing safety. We are continuing to invest in systems to improve employee training and to enable the acquisition of safety data to enhance the analytical capabilities of the organization. We are launching an internal evaluation program to assess critical safety processes, and continuing the expansion of voluntary safety reporting programs. We are executing all of these activities against the backdrop of a paradigm shift toward implementing a Just Culture where we become a learning organization.

Post Incident Actions Undertaken

After the Train 91 accident, Amtrak again focused on how to improve safety for our customers and employees. We have concluded that we can no longer solely rely on the operating rulebook of a host and must instead augment our hosts' operating practices in ways that meaningfully enhance the safety of our passenger operations.

To increase consistency across our operations and to standardize our approach to risk reduction, we developed and implemented a new signal suspension risk assessment approach. This process was implemented in late February. This process utilizes a formal risk assessment methodology to identify, analyze, assess, and mitigate risks due to human error associated with operating passenger service through areas normally protected by a signal system that has been temporarily disabled. The risk assessments are conducted upon receipt of notification of a signal system suspension from a host railroad. We perform the risk assessment via a collaborative review process with input from multiple departments

including Operating Practices, System Safety, and local Train and Engine (T&E) staff. This review includes determining the length of suspension, distance of suspension, train volumes, number of adjacent tracks, number of facing point switches, authorized speed, sight distance, number of road crossings, type of work being performed, equipment being utilized, clearing procedures and weather forecast. As a result of the assessment process, operational mitigations including, but not limited to, speed restrictions, alternate routing, operational modifications and service suspensions are required. Each assessment and the mitigations prescribed are reviewed and approved by members of senior leadership. The results of the risk assessment and the operational mitigations prescribed are communicated to affected employees and shared with host railroads. The execution of this process is subject to system-wide oversight and monitoring. To date each mitigation that has been applied has been more restrictive than the operating practice of the host railroad. This practice exceeds the FRA's suggested actions under the draft safety advisory. As of the date of this submission, this process has been executed successfully more than thirty times.

The tools developed to apply risk management methods to planned signal suspensions has become the foundation for our forward-looking hazard mitigation processes throughout the Amtrak system and across our operations on host railroads. Employees at all levels are empowered and expected to identify the hazards in their work area and collectively we will look to mitigate those hazards. Amtrak has employed similar risk assessment tools and methods in the evaluation of operations in areas where PTC will not be active in 2019. These assessments are the logical outgrowth of the signal suspension risk assessment process and will be completed by the end of 2018. The Non-PTC territory assessments assign immediate operational mitigations to contain risk along with developing technological mitigations to reduce residual risk. The assessment process engages front-line employees working alongside subject matter experts to develop a suite of safety improvement options.

Similarly, Amtrak's SMS implementation will require the support provided by our labor leaders and the familiarity of our field personnel. While being mindful of the central importance of standardized procedures and rule adherence, we also know that our employees' working relationships with the hosts' field personnel, dispatchers, and maintenance forces enrich their situational awareness, providing vital insights that we must weave into our safety program to make it as comprehensive and effective as possible.

Proposed Findings

1. The following factors did not cause or contribute to the accident: the physical condition or actions of the crew of Amtrak Train 91 (including the Locomotive Engineer and Conductor); the mechanical condition of the train nor the physical conditions of the tracks.
2. The signal system and the protections against train to train collisions inherent in the system were inactive due to a planned infrastructure modification project in order to implement PTC.
3. Amtrak complied with the provisions of CSX Columbia Subdivision Bulletin No. 105, which contained instructions and restrictions for operations during the signal suspension. The crew received proper authority to operate through the area and complied with all operating instructions and speed restrictions through the area of suspension.

4. Prior to the operation of the Amtrak train through the area, the crew of train CSXT 777-03, consisting of an engineer and a conductor, manipulated multiple switches in the area of the Silica Storage Track and an adjacent automotive consignee resulting in the misalignment of the silica switch. The crew completed a Switch Position Awareness Form (SPAF) incorrectly indicating that the switch was appropriately lined for the movement of the Amtrak train.

Probable Cause

The probable cause of the incident was the failure on the part of the CSX crew to comply with CSX Operating Rules concerning operation of switches during a signal suspension.

Proposed Recommendations

Amtrak respectfully submits the following proposed recommendations for NTSB consideration:

To Amtrak:

1. Continue and expand the use of Risk Assessment Practices to identify, evaluate and mitigate hazards present during operations.
2. Continue the implementation of a Safety Management System.

To the Federal Railroad Administration:

1. Issue the final rules for Passenger Railroad System Safety Programs and Freight Railroad Risk Reduction Programs.
2. Issue guidance to railroads which includes best practices for risk assessment.
3. Facilitate inter-agency exchanges of safety information and risk management methods.

Conclusion

Amtrak pledges to continue working collaboratively with internal resources and industry stakeholders to improve the safety of railroad operations. We wish to express our continued commitment to implementing a Safety Management System and look forward to the findings and recommendations of the National Transportation Safety Board.