Testimony by

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Oversight of Positive Train Control Implementation in the United States

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Good morning, and thank you Chairman Denham, Ranking Member Capuano, and all of the members of this Subcommittee for holding this hearing on rail safety and Positive Train Control. My name is Richard Anderson, and I serve as the President and Chief Executive Officer of Amtrak. My term as CEO began January 1 and, prior to this, I served as Co-CEO with Wick Moorman since July. Previously, I served as the CEO for Delta Air Lines, CEO for Northwest Airlines, and the President of Commercial Business at United Health Group.

Amtrak is committed to running the safest rail system for our customers and our employees. We have seen what can be achieved when stakeholders work together toward a common goal, as demonstrated by the commercial aviation system which last year achieved the remarkable feat of zero passenger fatalities. Amtrak has achieved strong results in the past and can and must do the same again for the intercity passenger rail industry.

Sadly, the recent incidents have demonstrated that we are far from that goal today. Though the circumstances of each of these accidents are quite different, the tragic derailment of Train 501 near DuPont, Washington, the grade-crossing incident near Crozet, Virginia, which impacted many of your colleagues, and most recently, the collision between Amtrak Train 91 and a CSX freight passenger train near Cayce, South Carolina remind us that there are still too many gaps in the U.S. rail network's current safety systems.

I am here today to pledge to you that, despite these incidents, Amtrak is a safe railroad that is becoming safer each day. All of us at Amtrak are doing all that we can with the resources we have to make sure that incidents like these don't occur again. I will chronical some of the many steps we've taken in response to these varied incidents and, more generally, describe our work to adopt a more predictive and global approach to safety. I will also present areas where broader policy discussion and greater resources are needed to strengthen safety across the diverse network of freight and commuter railroads that host the vast majority of Amtrak's route miles.

Positive Train Control

One of the most critical tools that the rail industry needs to vastly improve safety is the prompt implementation of Positive Train Control (PTC) technology. Amtrak is confident that the installation of PTC on the required routes nationwide will make the entire U.S. rail network safer for passengers, railroad employees, and the cities and towns which the national rail network traverses.

Amtrak has long been a leader in the installation of PTC, having already deployed systems almost universally where we control the tracks including on most of the Northeast Corridor (NEC), the busiest railroad in North America. As we've already pledged in a letter to Transportation Secretary Chao, we are set to complete the installation of PTC on the few remaining elements of the infrastructure we control and on all of our equipment by the December 31, 2018 Federal deadline.

For the tracks we use but do not own or control, we are cooperating with our freight and commuter host railroads as they advance their obligations to complete PTC installations, which are required either because of the presence of our trains or the haulage of certain hazardous material. Additionally, the various freight and commuter railroads that operate over Amtrak's infrastructure must equip their rolling stock with PTC for use on our railroad and we are working cooperatively with them to advance these tasks.

PTC in Context

Railway operations in the United States are complicated, with multiple companies and agencies required to cooperate closely to ensure the safe, reliable, timely operation of various types of trains across differing networks. To integrate PTC into this complex environment has been a significant undertaking for the industry and its suppliers. While Amtrak has been eager to bring this technology online, it has been a difficult process and has required the dedication of significant resources, both in terms of funding and of our personnel.

To place PTC in its proper context, permit me to explain how PTC is designed and how Amtrak operates. PTC relies on three interdependent elements, all of which must be in place for the system to function. The first includes equipment that must be installed on the locomotives by owners and operators. Second, trackside equipment must be installed by host railroads along the protected routes that monitor signals, switches, and track circuits. Third, there are computer systems, called back office servers (BOS), which link the locomotives and the trackside equipment while integrating more information about the network. Additionally, each host railroad and rail operator must have a BOS and it needs to be correctly integrated before the system can be operational. All of this must be done in the proper sequence, and for the carriers required to use the system, it must be achieved in accordance with the timetables set by law.

Locomotive Installation

The first part of a PTC system is the equipment installed on locomotives and cab cars, which monitors a train's position and speed and activates braking as necessary to ensure compliance with speed restriction and territorial limits. The complexity of our operations requires Amtrak to use three different PTC systems across our network. Since 2000, Amtrak's Northeast Corridor operations permitted to exceed 125 mph have depended on our first form of PTC called Advanced Civil Speed Enforcement System, or ACSES. By the end of 2015, to meet the original deadline of the 2008 Rail Safety Improvement Act, Amtrak had enabled ACSES for all our locomotives, cab cars and trainsets operating on the NEC. For equipment that operates on a 98-mile stretch of track Amtrak owns in Michigan and to permit higher speed operation on the newly purchased and upgraded line owned by the State, we have installed a second form of PTC equipment, called ITCS.

Finally, to operate across the other host railroads that make up 72 percent of the miles our trains travel, we are also installing a third form of PTC in our locomotives to integrate with the I-ETMS system in use by freight railroads. Having already PTC commissioned 338 units, we are on target to have 447 Amtrak-owned units fully commissioned and ready to operate before the December 31, 2018, deadline. Apart from our locomotives and rolling stock, several of our state partners also own their own equipment which we operate and maintain. Amtrak is working with these owners and various suppliers to help achieve compliance prior to year's end.

Trackside Equipment

The second part of a PTC system is the trackside equipment, which monitors railroad track signals, switches, and track circuits. By law, each railroad owner is responsible for installation of PTC equipment on the tracks within their rights-of-way. Additionally, the hosts are responsible for reporting their PTC trackside readiness schedule to the Federal Railroad Administration (FRA). Amtrak is working with the host railroads to develop an implementation schedule for PTC integration and testing. While 13 out of 20 host railroads that will be using I-ETMS have not provided a notice of intent to start PTC testing, the four Class I railroads that own the majority of the track over which Amtrak operates (BNSF, CSX, NS, and UP) have all provided letters of intent.

Regarding the trackside installations for which Amtrak is responsible, Amtrak completed the ACSES PTC implementation on all but a few miles near terminals and stations on the NEC in December 2015 and on the Harrisburg Line during the first quarter of calendar year 2016. On our Michigan Line, trackside PTC implementation on our segment was fully completed in 2011 and the State-owned portion of our route to Detroit will be completed by June 2018. Installation of the ACSES PTC system on Amtrak's Springfield Line will be completed by late Fall 2018 and we will soon begin hardware installation on the portions of the Hudson Line in New York which we control, with implementation expected by December 31, 2018.

Back Office Servers (BOS)

The third part of a PTC system is the back office server, which stores all information related to the rail network and trains, and transmits authorization for individual train movements. Each host railroad and each rail operator will have a BOS that enables the necessary information exchanges. For a BOS to be operational, the tenant who operates over a host railroad must establish a dedicated two-way communication link between their BOS and the host BOS, a process known in the field as federation. Amtrak's ACSES system does not require a BOS, so Amtrak only needs a BOS for its ITCS system in Michigan and its I-ETMS operations over freight hosts. Amtrak's BOS will pass crew and train information to the host railroad system, as well as to the locomotives themselves. Operability of Amtrak's BOS is currently scheduled for April 2018,

though we are looking to accelerate its delivery through our vendors. Once it is operable, federation with the BOS of each individual host railroad must commence before PTC operations can occur.

Next Steps for PTC Implementation

While PTC relies on completing these three components, the next vital steps in deploying PTC include testing and training. Once Amtrak and a host have linked their BOS units, testing of the system will proceed, beginning this spring, to verify functionality along with system interoperability testing to ensure that all of the disparate components work together correctly. As for training, Amtrak is implementing a training plan for 1,300 locomotive engineers and 2,200 conductors that includes classroom training and, once the PTC system is active, field training. We are taking steps as part of this training to prepare our employees for what will likely be the phased deployment on routes as different hosts and territories are brought online.

This phased implementation brings us to a number of challenging policy questions facing Amtrak, FRA, Congress and the various railroads we interact with across our network. It is now clear that we are likely to encounter four different scenarios where PTC is not yet operational by the end of the year.

First, there will be carriers that have made sufficient progress to apply to FRA for an alternative PTC implementation schedule under the law. In these instances, Amtrak's equipment will be ready for PTC operation, but additional work, testing or approvals are still required by the host railroad before the system is considered functional. We believe a significant number of routes outside of the NEC will face this situation. The question we must ask ourselves is whether we continue to operate over such routes until PTC is turned on and if so, what additional safety protections are appropriate to reduce risks?

Second, there will be carriers over which we operate who appear unlikely to achieve sufficient progress to apply for an alternative PTC implementation schedule by year's end. For any such route segments, Amtrak will suspend operations until such time as the carrier becomes compliant with the law.

Third, there are areas over which we operate for which there is an FRA "Mainline Track Exclusion" in place exempting that segment from the PTC requirements based on the low levels of freight and passenger train traffic or the presence of low-speed operations, such as in yards and terminals. We are currently reviewing our policy on operating passenger trains on Exclusions to determine whether we have adequate safety mitigation practices in place for each territory and in certain areas, where signal systems are not in place, we will reconsider whether we operate at all.

Lastly, there may be railroads that operate over Amtrak tracks in the NEC which may not have sufficient PTC-commissioned rolling stock by the December 31, 2018 deadline to operate

normal services. Under the present rules, Amtrak cannot permit non-compliant equipment to be used over our railroad after the deadline and we will be working closely with our partners and the FRA to determine the best way to address this situation.

As we prepare to operate in a PTC environment, I do think it is worth noting that PTC was designed to address specific vulnerabilities in train operations – train-to-train collisions, over-speed derailments, incursions into work zones, and misaligned switches. Thus, PTC is not a complete technology answer as there are events that PTC does not address –such as when a car or truck crosses over tracks at a crossing, certain track defects, or other incidents like rockslides.

I raise this not to take anything away from PTC and the important capabilities it offers the rail industry, but simply to be clear about how we cannot rely on PTC alone. Safety depends on the hard work and vigilance of thousands of our trained and dedicated employees and on the appropriate levels of investments being made in the network's infrastructure. For instance, while the number of total U.S. train accidents has declined by 14 percent over the past four years and accidents involving passenger trains accounted for only 2.5 percent of all accidents, according to the FRA rail safety database, grade crossing and trespasser incidents remain high. In 2017, there were 1,880 grade crossing accidents involving 243 fatalities and a separate 552 trespasser fatalities. PTC will help protect against many of the human factors-caused accidents that occur across the U.S. rail system, but having made progress against this vulnerability, we must also turn our attention and, the attention of the highway and motorist communities, to the startling loss of life that occurs on a daily basis when motorists and pedestrians occupy the right of way ahead of a train.

Safety and Amtrak

Amtrak, as the nation's intercity passenger rail carrier, has long recognized our unique requirement to have strong protocols in place to make riding the rails safe. In many areas, we go above and beyond FRA requirements and industry practice. For example, Amtrak requires a full annual physical evaluation for every engineer, including sleep apnea screening, whereas FRA simply requires an exam once every three years. Amtrak requires that newly promoted engineers are evaluated monthly for their first year of service, whereas FRA has no special requirements for evaluation of newly promoted engineers. Amtrak engineers and conductors are required to attend annual training for recertification, whereas FRA only requires full recertification every three years. In addition, Amtrak's drug and alcohol testing protocols exceed federal requirements. Our testing regimen is so strenuous that employees understand that a random drug test in the course of the year is not just possible, it is likely.

We're also taking other steps, such as installing inward-facing cameras. These cameras monitor locomotive and engineer performance and are installed in Amtrak trains along routes in the Northeast, Midwest, and West and we are actively working to install them on Amtrak trains nationwide. Reviewing the data from these cameras, coupled with the data from our efficiency

testing programs, provides us an excellent view of operational issues to be addressed in future training programs.

While many of these efforts draw on safety practices used by some of our partners in the freight rail industry, since we are carrying people, we believe we must also draw on the expertise of other safety-critical industries. Our goal is to build upon our good practices and take them to the next level to deliver the world-class safety that our customers deserve and expect.

To put us on the path to reach that goal, just last month Amtrak hired a new Executive Vice President and Chief Safety Officer, Ken Hylander. Ken is a widely respected member of the transportation safety community with more than thirty years of service – in addition to being a former colleague of mine at Delta Airlines. Ken reports directly to me to ensure his position has full authority and maximum impact. Amtrak has consolidated several previously separate resources, including System Safety, Compliance and Training, Environmental Compliance, Sustainability, and Public Health underneath him.

Safety Management System (SMS)

Ken's primary objective will be to implement a Safety Management Systems (SMS) to improve our safety culture. SMS will revitalize Amtrak's safety programs by primarily strengthening hazard identification and complimentary mitigation programs. An SMS is a proactive risk management system, which will move us toward a more predictive safety management method at an organizational level. Having a safety culture that continually identifies, and mitigates, future risk is the proven way to improve overall safety performance. It has been a cornerstone of improving safety in many industries, including aviation, health care, and energy – and it is also the right system for Amtrak.

A positive safety culture means an organization that easily facilitates and is receptive to safety discussions; that is committed to and practices risk reduction; that recognizes and accepts a healthy balance between centralized policy and procedure control and the value of local knowledge. A safety culture requires the reporting of safety issues at all levels. It is intolerant of recklessness and willful disregard for safety practices and learns from its mistakes. Safety culture emerges over time. Daily decisions and actual practice will define our culture. A good safety culture and a successful SMS are interdependent.

We will know as a company that we have arrived at a good SMS when we 1) have better safety data available for decision making, 2) can analyze safety risks before we do something, not after; and 3) have closed-loop processes that find hazards, mitigates them, and verifies efficacy. Additionally, our safety processes will be fully integrated into our organizational decision-making and supported by strong oversight to ensure compliance with the practices we want to implement. At a personal level each Amtrak employee will know his or her role in the safety process.

We know that implementation of an SMS is a significant undertaking – it requires our organizational commitment. SMS demands that all safety related procedures must be carefully documented, universally understood, and unfailingly applied. SMS is designed to advance that outcome by formalizing our knowledge into processes, checklists, and governing documentation to improve consistency. Amtrak believes the implementation of SMS will truly take our safety performance to the highest level of service. These efforts are in line with the NTSB's recommendation that Amtrak and our unions implement a SMS Program and generally consistent with the Risk Reduction Program approach mandated by this Committee in the 2008 Rail Safety Improvement Act and required by FRA through the development of a System Safety Program.

Conclusion

When the Amtrak board asked me to lead their railroad, they did so with the expectation that I would bring an outsider's perspective to the business. This mandate, combined with the events of the past few months, compels me to examine our business practices and think carefully about ways in which an elevated safety focus would alter how we operate. Some of these changes have been made, and several more of them are now underway. Let me present some examples.

We are changing our policies on operating on host railroad territories with temporarily inoperable signal systems. While we are evaluating two different approaches, they both boil down to reducing speed significantly in these circumstances in advance of known hazards. While we see such a change as fully warranted, they may result in operational impacts to our host railroads and our trains, and we will need to work with our hosts to determine the best ways to minimize those impacts.

Building on the changes to our operations when signals are unavailable, Amtrak will change how we operate through sections of track with no signals at all, so-called 'dark territory,' which is also exempted from the PTC mandate. Approximately 1 percent of our current or planned routes transit through dark territory, totaling 222 miles in Indiana, Maine, New York, Quebec, and Vermont. We believe it is time to reevaluate the risks that accompany such operations and adopt a new approach, particularly as the implementation of PTC will provide even greater safety margins beyond traditional railroad signaling on the vast majority of our routes. Based on hazard analyses and mitigation options, the application of new technologies like switch position indicators; altered operating practices; signal system and PTC investments or rerouting or route abandonments may all be appropriate for such dark territory. Working together with our host railroads and local stakeholders, we need to quickly evaluate the risks and take the necessary steps to ensure we don't leave sections of our network unnecessarily vulnerable.

Amtrak is organizing a centralized standards, training, and quality assurance organization for engineers and conductors moving away from a former regional approach to training and safety oversight. Our aim is a more robust, consistent, and unified approach to these issues,

which will serve as a vital resource across our network. Similarly, immediately following the December derailment of Train 501, we adopted a new policy that requires approval from the heads of our operations and safety departments before our personnel operate over new or modified routes. While Amtrak had general procedures for new routes prior to that incident, they were managed regionally and we believe a central review by our safety and operating experts and a single array of consistent standards will strengthen outcomes.

A related initiative is the revamping of our trainmaster and road foreman staffing to provide more support and training for our engineers and conductors. These positions directly manage our front-line employees who operate our trains and we are re-thinking our qualification training standards and identifying the additional resources – both manpower and technology – to enable our crews to benefit from industry leading approaches to procedural and operational training regimens. We will look carefully at how the commercial aviation industry has applied simulation, and more recently, virtual reality as well as augmented reality, to make our training more realistic and more effective to serve our crews and customers better.

Strengthening safety is a continuous process. Amtrak's responsibility is to lead safety across our industry and serve as good stewards of the vital resources that we receive from Congress and the Administration to help us implement these advancements. Likewise, railroads alone can't solve all of the issues, as grade crossing and trespasser accidents require a broader effort of local, state and Federal stakeholders to educate motorist and pedestrians, better equip vulnerable crossings, limit public access to rights of way and strengthen enforcement.

I have great confidence in Amtrak's dedicated workforce and the commitment I see across our company to becomes the safest passenger railroad in North America, but there is work to be done to improve the entire rail system. While the challenges described today are difficult, they can be overcome. At Amtrak, we owe our customers nothing less.

Thank you for the opportunity to appear before you today, and I welcome your questions.