



Committee on Transportation and Infrastructure  
U.S. House of Representatives  
Washington, DC 20515

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September 7, 2018

**SUMMARY OF SUBJECT MATTER**

**TO:** Members, Subcommittee on Railroads, Pipelines, and Hazardous Materials  
**FROM:** Majority Staff, Subcommittee on Railroads, Pipelines, and Hazardous Materials  
**RE:** Subcommittee Hearing on “The State of Positive Train Control Implementation in the United States”

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**PURPOSE**

The Subcommittee on Railroads, Pipelines, and Hazardous Materials will meet on Thursday, September 13, 2018 at 10:00 a.m. in 2167 Rayburn House Office Building to receive testimony on the status of implementing positive train control (PTC) on the freight and passenger rail network.

**BACKGROUND**

**Elements of Positive Train Control**

PTC describes technologies designed to automatically stop or slow a train before certain accidents occur — specifically, train-to-train collisions, derailments caused by excessive speed, unauthorized incursions by trains onto sections of track where maintenance activities are taking place, and movement of a train through a track switch left in the wrong position. A fully functional PTC system must be able to precisely determine the location and speed of trains; warn train operators of potential problems; and take action if the operator does not respond to a warning. For example, if a train operator fails to stop a train at a stop signal, the PTC system would apply the brakes automatically.

There are two primary types of systems—overlay and standalone—that functionally meet the PTC requirements. An overlay system allows railroads to install PTC components over existing rail infrastructure and operate the train in accordance with the existing signals and operations in the event of a PTC system failure. A standalone system may be used for new locations, as a replacement for an existing signal or train control system, or to enhance the capabilities of the current method of operation.

There are more than 20 major PTC components that are currently in various stages of development. In order to implement PTC that meets federal requirements, railroads need to integrate and install those components across the rail network. The Association of American Railroads (AAR) has reported that freight railroads will spend a total of \$10.6 billion and additional hundreds of millions each year to maintain PTC systems.<sup>1</sup> The cost of PTC for passenger rail is estimated at \$3.5 billion.<sup>2</sup> Railroads have made progress on PTC implementation, yet challenges still remain.

## **Legislative History**

*The Rail Safety Improvement Act of 2008* (RSIA, P. L. 110-432), Division A, included a requirement that certain freight, commuter, and passenger rail lines install PTC by December 31, 2015. The PTC mandate followed a September 12, 2008, accident in California, where a Metrolink commuter train collided head-on with a freight train in the Chatsworth district of Los Angeles. The scene of the accident was a curved section of single track on the Metrolink Ventura County Line just east of Stoney Point. According to the National Transportation Safety Board (NTSB), which investigated the cause of the collision, the Metrolink train ran through a red signal due to the engineer being distracted by text messages. After running the red signal, the commuter train entered a section of single track where the opposing freight train had been given the right of way by the train dispatcher. In the resulting collision, the Metrolink locomotive telescoped into the passenger compartment of the first passenger car and caught fire. All three locomotives, the leading Metrolink passenger car, and seven freight cars were derailed and both lead locomotives and the passenger car fell over. Tragically, there were 25 fatalities and 135 other individuals were injured.

Section 104 of RSIA amended title 49 of the United States Code to add a new Section 20157, implementation of positive train control systems. This section mandated that Class I railroad carriers and intercity passenger rail and commuter rail entities must implement PTC systems by December 31, 2015, on: (1) lines over which intercity passenger rail or commuter rail are operated; (2) main freight lines over which poison- or toxic-by-inhalation hazardous materials (TIH/PIH) are transported; and (3) such other tracks as the Secretary may prescribe by regulation or order.

As early as August 2012, the Federal Railroad Administration (FRA) reported that, “most railroads will likely not be able to complete full RSIA-required implementation of PTC by December 31, 2015.”<sup>3</sup> FRA cited the major implementation obstacles as spectrum and radio availability, design specification availability, interoperability standards, back office server and dispatch system availability, track database verification, and installation engineering, including the limited resources that were available to railroads.<sup>4</sup> In 2013, the Government Accountability Office (GAO) reported that, “most railroads report they will not complete PTC implementation by the 2015 deadline due to a number of complex and interrelated challenges,” and that

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<sup>1</sup> *Positive Train Control*, ASSOC. OF AMERICAN RAILROADS (March 2017), <https://www.aar.org/BackgroundPapers/Positive%20Train%20Control.pdf>.

<sup>2</sup> *Id.*

<sup>3</sup> *Positive Train Control Implementation Status, Issues, and Impacts*, Fed. Railroad Admin., <https://www.fra.dot.gov/Elib/Document/2318>.

<sup>4</sup> *Id.*

“Congress should consider granting FRA the authority to extend the deadline.”<sup>5</sup> Similar to the 2012 report, the GAO report outlined implementation challenges, citing the fact there are limited suppliers of the technology available to railroads and that many of the PTC components had not been developed before RSIA was enacted.<sup>6</sup> Additionally, GAO cited developing system components and PTC installation, system integration and field testing, and FRA resources as major challenges.<sup>7</sup>

In 2015, GAO and FRA again identified the need to extend the deadline.<sup>8</sup> According to the GAO report, the biggest challenges to PTC implementation were integration and field testing of PTC components, as well as FRA field testing, certification, and approval of systems and safety plans, including FRA’s available resources and timeliness.<sup>9</sup> Additionally, GAO cited issues with development of a major component of the Interoperable Electronic Train Management System had been continually delayed and was one of the major obstacles to meeting the 2015 deadline.<sup>10</sup> In FRA’s 2015 report, they also reported that there were a limited number of suppliers of PTC technology and issues remained with spectrum and radio interference.<sup>11</sup> Similarly, AAR and the American Public Transportation Association (APTA) reported that most railroads would not have had PTC fully implemented by the 2015 deadline.<sup>12</sup>

At the time, the potential impacts of a missed deadline were significant. In letters to Congress, freight railroads indicated that they would have to suspend shipments of TIH/PIH chemicals, and those shipments would have to have ceased well before the December 31, 2015 deadline. TIH/PIH chemicals are critical for the economy. For example, chlorine is used to purify drinking water and for manufacturing, while anhydrous ammonia is used by farmers for fertilizer. Some railroads would have had to suspend shipments of all commodities on lines requiring PTC, effectively shutting down the network.<sup>13</sup> Rail service disruptions lasting only one

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<sup>5</sup> *POSITIVE TRAIN CONTROL Additional Authorities Could Benefit Implementation*, GOV’T ACCOUNTABILITY OFFICE, <https://www.gao.gov/assets/660/656975.pdf>.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> *POSITIVE TRAIN CONTROL Additional Oversight Needed As Most Railroads Do Not Expect to Meet 2015 Implementation Deadline*, GOV’T ACCOUNTABILITY OFFICE, <https://www.gao.gov/assets/680/672320.pdf> (“In our 2013 report on PTC implementation, we suggested that Congress consider providing FRA with additional authority to extend the deadline on individual rail lines—when the need to do so can be demonstrated by the railroad and verified by FRA—on a case-by-case basis”); *Status of Positive Train Control Implementation*, FED. RAILROAD ADMIN, <https://www.fra.dot.gov/eLib/details/L16962>.

<sup>9</sup> *POSITIVE TRAIN CONTROL Additional Oversight Needed As Most Railroads Do Not Expect to Meet 2015 Implementation Deadline*, GOV’T ACCOUNTABILITY OFFICE, <https://www.gao.gov/assets/680/672320.pdf>.

<sup>10</sup> *Id.*

<sup>11</sup> *Status of Positive Train Control Implementation*, Fed. Railroad Admin, <https://www.fra.dot.gov/eLib/details/L16962>.

<sup>12</sup> Assoc. Am. RRs, PTC Implementation: The Railroad Industry Cannot Install PTC on the Entire Nationwide Network by the 2015 Deadline 13 (Apr. 2015); *Positive Train Control: An Assessment of PTC Implementation by Commuter Railroads*, APTA, [https://www.apta.com/gap/legissues/passengerrail/Documents/APTA%20PTC%20Implementation%20progress%20report\\_FINAL.pdf](https://www.apta.com/gap/legissues/passengerrail/Documents/APTA%20PTC%20Implementation%20progress%20report_FINAL.pdf) (APTA policy supports providing the Department of Transportation with the authority to provide extensions on a case by case basis).

<sup>13</sup> Letter from Carl R. Ice, President and CEO, BNSR Railway Co., to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from Luc Jobin, Executive Vice-President and Chief Financial Officer, CN, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 10, 2015); Letter from Keith Creel, President and Chief Operating Officer, CP, to Senator John Thune,

month were estimated by one report to give rise to a 2.6 percentage point hit to the United States' real GDP.<sup>14</sup> That same report noted that a shutdown would put nearly 700,000 jobs at risk.<sup>15</sup>

Similarly, in the event of a missed deadline, commuter railroads would have had to cease operations after December 31, 2015, significantly impacting commutes in major metropolitan areas (560 million trips per year).<sup>16</sup> Additionally, Amtrak service would have been suspended. Not extending the PTC deadline would have forced more commuters onto busy roads, and stopped or diverted some TIH shipments to other modes.

In response, Congress passed the bipartisan *Surface Transportation Extension Act of 2015* (P.L. 114-73). Section 1302 was the Positive Train Control Enforcement and Implementation Act of 2015, which extended the deadline to December 31, 2018, with the option of up to 24 months of additional time. Additional time is subject to FRA review and approval if railroads meet certain implementation milestones. Government, industry, and labor were supportive of extending the deadline.<sup>17</sup>

### **PTC Financing**

The Department of Transportation (DOT) has a number of grant programs and other financing options to assist railroads in implementing PTC. *The Fixing America's Surface Transportation Act* (FAST Act, P.L. 114-94) authorized a PTC Grant Program in the wake of the

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Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from Michael J. Ward, Chairman and CEO, CSX Corporation, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from David L. Starling, President and Chief Executive Officer, Kansas City Southern, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from James A. Squires, President and Chief Executive Officer, Norfolk Southern Corporation, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from Lance M. Fritz, President and Chief Executive Officer, Union Pacific Corporation, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015).

<sup>14</sup> AMERICAN CHEMISTRY COUNCIL, ASSESSMENT OF THE ECONOMIC AND SOCIAL IMPACTS OF THE FAILURE OF CONGRESS TO EXTEND THE COMPLIANCE DEADLINE FOR POSITIVE TRAIN CONTROL (PTC) (Sept. 2015).

<sup>15</sup> *Id.*

<sup>16</sup> *About Positive Train Control*, AMER. PUBLIC TRANS. ASSOC.,

[http://www.apta.com/mediacenter/ptbenefits/Pages/2015\\_1019\\_Positive-Train-Control.aspx](http://www.apta.com/mediacenter/ptbenefits/Pages/2015_1019_Positive-Train-Control.aspx).

<sup>17</sup> Letter from John Risch, National Legislative Director, SMART Transportation Division, and Ron Kloos, National Vice President/National Legislative Director, Transportation Communications Union/IAM, to Congress (Sept. 30, 2015) ("support [...] legislation introduced by House Transportation and Infrastructure Committee leadership [...] to extend the deadline for the implementation of Positive Train Control (PTC)."); Letter from Cal Dooley, President and CEO, American Chemistry Council, to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 5, 2015); Letter from The United States Conference of Mayors to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 5, 2015); Letter from Texas Department of Agriculture Commissioner Sid Miller to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 5, 2015); Letter from Pennsylvania State Association of Boroughs, to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 20, 2015); Joint letter from American farmers, manufacturers, retailers, energy providers, and other freight rail customers to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 23, 2015); Letter from the National Industrial Transportation League to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 1, 2015); Letter from the National Retail Federation to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 5, 2015); Letter from States for Passenger Rail Coalition to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Sept. 29, 2015); Press Release, TTD AFL-CIO, Shuster-DeFazio Offer Sensible PTC Extension Bill (Sept. 30, 2015) (on file with Committee).

PTC extension seeing the need for funds to assist railroads in implementing PTC. There is a matching cost share of 20 percent minimum of the total requested project cost. In 2017, FRA and Federal Transit Administration (FTA) had 27 total eligible projects from 16 states apply for grants, 17 projects from 13 states were selected and awarded grants which totaled the full authorization amount of \$197 million.<sup>18</sup> In the *Consolidated Appropriations Act, 2018* (P.L. 115-141), Congress made commuter railroads eligible applicants for the \$250 million set-aside in the Consolidated Rail Infrastructure and Safety Improvements (CRISI) program for PTC system implementation. In August 2018, FRA awarded \$203 million in grant funding for 28 projects in 15 states to assist with the deployment of PTC systems. In addition, FRA expects to issue a Notice of Funding Opportunity (NOFO) soliciting applications for PTC systems deployment projects based on the balance of the remaining \$46.3 million.

In total, FRA and FTA have awarded more than \$1 billion in grant funding to railroads to assist in implementation of PTC. Sources of grant funding are:

- \$475 million from FRA's High-Speed Intercity Passenger Rail (HSIPR) Grant Program;
- \$203 million from FRA's Consolidated Rail Infrastructure and Safety Improvements (CRISI) program;
- \$197 million in FAST Act PTC Grant funding;
- \$142 million in annual capital grant funding to Amtrak (as of August 2018);
- \$86 million from FRA's Railroad Safety Technology Grant Program;
- \$52 million in American Recovery and Reinvestment Act grant funding to Amtrak; and
- \$2 million in Research and Development grants.<sup>19</sup>

In addition to grants, the Railroad Rehabilitation and Improvement Financing (RRIF) program and the Transportation Infrastructure Finance and Innovation Act (TIFIA) program are available for financing PTC implementation. Indeed, the FAST Act specifically prioritized PTC installation projects for RRIF funding. In May 2015, FRA issued a \$967.1 million loan to Metropolitan Transportation Authority (MTA) for Long Island Rail Road's (LIRR) and Metro-North Railroad's PTC implementation.<sup>20</sup> On December 8, 2017, the Build America Bureau closed a \$162 million TIFIA loan and a \$220 million RRIF loan to the Massachusetts Bay Transportation Authority (MBTA) for PTC system implementation.<sup>21</sup>

### **PTC Mandate Progress**

As of June 30, 2018, the freight industry has made substantial progress in implementing PTC since the extension was passed in 2015. According to FRA, 99 percent of all radio towers have been installed; 93 percent of locomotives have been equipped and are operational; 66 percent of route miles are in PTC operation; 97 percent of employee training is completed; and 86 percent of track segments are completed.<sup>22</sup>

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<sup>18</sup> *Id.*

<sup>19</sup> Federal Railroad Administration Briefing with House Committee on Transportation and Infrastructure on Positive Train Control (on file with Committee).

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *PTC IMPLEMENTATION STATUS BY FREIGHT AND PASSENGER RAIL*, Fed. Railroad Admin., <https://www.fra.dot.gov/app/ptcsummary/>.

As of June 30, 2018, the passenger and commuter rail industry has made progress towards implementing PTC, with some entities making greater strides than others. Overall, 91 percent of radio towers are installed; 73 percent of locomotives are equipped and PTC operable; 24 percent of route miles are in PTC operation; 77 percent of employees are trained; and 48 percent of track segments are complete.<sup>23</sup>

Based on railroads' self-reporting data from their Quarterly PTC Progress Reports for Quarter 2 of 2018, FRA currently considers nine railroads at risk of not meeting the statutory criteria required to qualify for an alternative schedule. FRA currently considers any railroad that installed less than 90 percent of its PTC system hardware as of June 30, 2018, to be at risk, as installation of all PTC system hardware is only an initial phase of implementing a PTC system and only one of the six statutory criteria required to qualify for an alternative schedule.

The nine at-risk railroads are: New Mexico Rail Runner Express (Rio Metro), Capital Metropolitan Transportation Authority, New Jersey Transit, Altamont Corridor Express, Maryland Area Regional Commuter, Trinity Railway Express, South Florida Regional Transportation Authority, Peninsula Corridor Joint Powers Board (Caltrain) and Central Florida Rail Corridor (SunRail).

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<sup>23</sup> *Id.*

**WITNESS LIST**

The Honorable Ronald L. Batory  
Administrator  
Federal Railroad Administration

The Honorable Robert Sumwalt  
Chairman  
National Transportation Safety Board

Ms. Susan A. Fleming  
Director, Physical Infrastructure Team  
Government Accountability Office

Mr. Scot Naparstek  
Executive Vice President and Chief Operating Officer  
Amtrak

The Honorable Edward Hamberger  
President and Chief Executive Officer  
Association of American Railroads

Mr. Jeffrey D. Knueppel, P.E.  
General Manager  
Southeastern Pennsylvania Transportation Authority  
On behalf of American Public Transportation Association

Ms. Stacey Mortensen  
Executive Director  
Altamont Corridor Express