

## Why GAO Did This Study

Positive train control (PTC) is a communications-based train control system designed to prevent some serious train accidents. Federal law requires passenger and major freight railroads to install PTC on most major routes by the end of 2015. Railroads must address other risks by implementing other technologies. The Department of Transportation's (DOT) Federal Railroad Administration (FRA) oversees implementation of these technologies and must report to Congress in 2012 on progress in implementing PTC. As requested, this report discusses railroads' progress in developing PTC and the remaining steps to implement it, the benefits of and challenges in implementing other safety technologies, and the extent of FRA's efforts to fulfill the PTC mandate and encourage the implementation of other technologies. To conduct this work, GAO analyzed documents and interviewed FRA and rail industry officials. GAO also interviewed and surveyed rail experts.

## What GAO Recommends

GAO recommends that the Secretary of Transportation direct DOT's Administrator of FRA to (1) include in its 2012 report to Congress information about PTC implementation risks and strategies to mitigate them and (2) monitor and report on the adoption of other technologies supported by the agency's efforts. DOT reviewed a draft of this report, provided technical comments, and said it would consider the recommendations.

## RAIL SAFETY

### Federal Railroad Administration Should Report on Risks to the Successful Implementation of Mandated Safety Technology

## What GAO Found

The four largest freight railroads and Amtrak have made progress in developing PTC and are preparing for implementation, but there is a potential for delays in completing the remaining sequence of steps to implement PTC in time for the 2015 deadline. For example, although railroads have worked with suppliers to develop some PTC components, the software needed to test and operate these components remains under development. As a result, it is uncertain whether components will be available when needed, which could create subsequent delays in testing and installing PTC equipment. Additionally, publicly funded commuter railroads may have difficulty in covering the \$2 billion that PTC is estimated to cost them, which could create delays if funding for PTC is not available or require that railroads divert funding from other critical areas, such as maintenance. The uncertainties regarding when the remaining steps to implement PTC can be completed, as well as the related costs, raise the risk that railroads will not meet the implementation deadline, delaying the safety benefits of PTC. Additionally, other critical needs may go unmet if funding is diverted to pay for PTC.

Other technologies hold promise for preventing or mitigating accidents that PTC would not address, but face implementation challenges. Experts identified technologies to improve track inspection, locomotives and other rail vehicles, and switches as having promise to provide additional safety. But challenges to implementing these technologies include their costs, uncertainty about their effectiveness, regulations that could create disincentives to using certain technologies, and lack of interoperability with existing systems and equipment. For example, electronically controlled pneumatic brakes are a promising technology to improve safety by slowing or stopping trains faster, but are expensive and not compatible with some common train operations.

FRA has taken actions to fulfill the PTC mandate and has the opportunity to provide useful information on risks and mitigation strategies to Congress in its 2012 report. FRA has developed PTC regulations, hired new staff to monitor implementation of PTC, and created a grant program to provide funding to railroads. Going forward, as it monitors railroads' progress, FRA will have additional information for determining whether the risks previously discussed are significant enough to jeopardize successful implementation of PTC by the 2015 deadline. Prior GAO reports have noted that the identification of risks and strategies to mitigate them can help ensure the success of major projects. Including such information in FRA's 2012 report would help Congress determine whether additional actions are needed to ensure PTC is implemented successfully. Additionally, FRA's actions to encourage the implementation of other rail safety technologies align with some, but not all, best practices for such efforts. For example, FRA has followed the best practice of involving the industry early in developing new technologies, but it does not monitor the industry's use of technologies that it helped develop. Monitoring and reporting on the industry's adoption of new technologies could help the agency better demonstrate the results of its efforts.