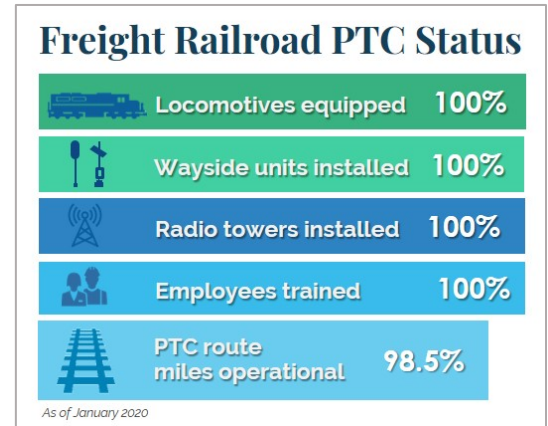


Positive Train Control (PTC) New Technology for a Safer Future

What is PTC? What Kind of accidents will it prevent?

PTC is a safety system that tracks the speed and movement of trains and can automatically stop a train to prevent specific human-error accidents. In 2008, Congress passed legislation requiring that PTC be installed on track that carry passengers and certain hazardous materials. The law requires that the technology prevent four specific types of accidents:

- Train-to-train collisions;
- Derailments caused by excessive speed;
- Accidents that can occur if trains are routed down the incorrect track; and
- Unauthorized train movements on tracks undergoing maintenance.



When will this technology be in full operation? What are the deadlines?

By the end of 2018, Class I freight railroads had all PTC hardware installed on all required route miles. Wireless spectrum to support PTC communications has been secured and all employees whose duties require a familiarity with PTC operations or maintenance have been trained in accordance with the law. **As of January 2020, 98.5% of the required Class I route miles are in operation** and additional segments of track are continually coming under PTC service.

As all freight railroads met the 2018 statutory requirements, they now have up to an additional 24 months to test and ensure their systems function properly, are fully interoperable and can meet the rigorous demands of long-term, day-to-day operation. By the final December 2020 deadline, Class I freight railroads will have PTC fully implemented on all required route miles.

What is interoperability?

America's rail network is a combination of privately owned freight and publicly owned commuter and passenger systems. It is very common for the trains pulled by the locomotives of one railroad to operate on track that is owned and controlled by another railroad. Interoperability ensures that individual railroads' PTC systems work together seamlessly no matter which railroad owns the locomotives and track. Put another way, a passenger locomotive operating on a freight railroad's track must behave the same way as that freight railroad's locomotive would on that same track.

How does PTC technology work?

PTC systems must be able to determine the precise location, direction and speed of trains, compare this information with similar details of other trains or other types of restrictions on track use, warn operators of potential changes in operating conditions or conflicts and bring a train to a stop should the engineer fail to act appropriately. To accomplish this, PTC systems are comprised of hundreds of thousands of components that must work and communicate across an interconnected network of freight, passenger and commuter railroads.

Can a PTC-enabled train still have an accident?

PTC will prevent four specific types of accidents related to human error that were outlined by Congress, but it does not address every potential cause of a rail accident.

Railroads approach safety strategically and deploy a variety of methods to address the leading causes of incidents — track, equipment and human error — to help reach the goal of zero accidents. These plans rely heavily on the continuing development of technology to address the increasingly complex issues that result in track or equipment component failures.

There is no substitute for aggressively maintaining and modernizing physical infrastructure and equipment. Each year, the industry invests an average of \$25 billion in maintaining and modernizing the rail network, helping make recent years the safest in rail history.

Learn more at [AAR.org/PTC](https://www.aar.org/PTC)