Positive Train Control

**Key Takeaway:** PTC is a set of technologies that prevent the most serious human-error accidents like train-to-train collisions and over-speed derailments. PTC is fully implemented and operates network-wide on 100% of Class I PTC route miles. This technology also provides the foundation for future rail safety innovations.

Mandated by Congress as part of the Rail Safety Improvement Act of 2008 (RSIA), PTC has been an unprecedented technological undertaking requiring each railroad to develop — from scratch — a system comprised of hundreds of thousands of components that must work across an interconnected network of freight, passenger and commuter railroads.

These technologies are designed to automatically stop a train before certain accidents related to human error occur. PTC systems determine the precise location, direction and speed of trains, warn train operators of potential problems and safely bring the train to a stop if the operator does not act.

**PTC is safety technology.**

PTC is designed to prevent train-to-train collisions or derailments caused by excessive speed; unauthorized train movement onto sections of track where maintenance activities are taking place; and movement of a train through a track switch left in the wrong position. It does not prevent accidents caused as a result of track or equipment failure, improper vehicular movement through a grade crossing, trespassing or certain types of train operator error.

**PTC provides the foundation for future innovations.**

PTC is part of freight rail’s strategic approach to making a safe network even safer. Record investment — approximately $780 billion since 1980 — and the use of advanced inspection technology, enhanced rail cars and rigorous employee training have all contributed to increasing safety among the leading causes of incidents — track, equipment and human error.

Greater application of technology to address critical safety issues has the potential to compound these benefits. Beyond safety, PTC systems and their foundational components have the potential to drive further efficiencies and innovation across the nation’s rail network. With detailed geo-mapping, advanced communications systems and upgraded locomotive hardware, railroads have new tools in their ongoing efforts to increase capacity, optimize customer service and reduce fuel use and emissions.

Realizing the full benefit of these future technologies, however, will require modernization of regulations that recognize the value a technologically-advanced rail industry brings to the nation.