AAR Positive Train Control (PTC) Background Paper

In the Rail Safety Improvement Act of 2008 Congress required that the rail industry install positive train control systems (PTC) on all track where passenger traffic occurs. This includes not only Amtrak but local heavy rail commuter lines, such as VRE or SEPTA. In addition, it must be applied on all main lines where toxic by inhalation (TIH) chemicals are transported. In its NPRM, the FRA calculated the 20-year net present value cost of installation and maintenance to be $10 billion. They further calculated the net present value benefit to be $603 million, an approximate 16 to 1 negative cost-benefit ratio. The freight railroads will comply with the Congressional mandate, but need common-sense relief from aspects of the FRA proposed rule that would impose significant costs on the railroads over and above the statutory mandate.

Installation Flexibility

The proposed FRA rulemaking calls for basing the determination of where PTC is to be installed on 2008 (TIH) traffic patterns. Instead, railroads should have the right to modify PTC implementation plans as these traffic patterns evolve until the mandate takes effect in 2015. While FRA has said it might be willing to allow a railroad to not install PTC on a rail line if TIH traffic no longer exists on a rail line, it has been unwilling to specify the criteria it would apply in making such a determination. This is clearly unreasonable since the railroad industry anticipates there will be substantial changes in TIH routing patterns between 2008 and 2015. For example:

- The Obama Administration testified in support of legislation to require chemical facilities to stop using TIH where possible;
- DHS/DOT regulations will change TIH routing based on safety and security considerations;
- Dow Chemical has announced it plans to reduce shipments of highly hazardous materials by 50% by the year 2015;
- The City of Louisville, KY has announced it will no longer need chlorine tank cars delivered to its water treatment plants by April 2010, which is a growing trend in water treatment plants nationwide.

The railroads do not object to using existing traffic patterns for the PTC implementation plans that must be submitted to FRA by April 16, 2010, (the railroads have suggested using 2009 traffic patterns), **but those plans should be amended as TIH traffic patterns change between now and 2015. If the obligation to impose PTC is based on 2008 past traffic patterns, the railroads will be forced to spend hundreds of millions of dollars to install PTC on routes that will not have either TIH or passenger operations.**

Two Screens

The proposed FRA rule effectively calls for dual screens in the cab of the locomotive where two crew members are present in the cab even though there is no demonstrable benefit from a second screen. The engineer is authorized by FRA regulations to operate the train. The second person in the cab is a conductor. The conductor cannot, under FRA regulations, participate fully in operational activities and has no PTC-related responsibilities. Significantly, most passenger trains are operated with only the engineer in the cab, thus proving that only the engineer needs access to the PTC display. PTC is designed to provide positive enforcement to protect against the consequences of human error, with the screen primarily used as a way to easily display information. There is actual operating experience with several systems using one PTC display. For example, BNSF currently operates in revenue service a FRA approved PTC system with only one screen. In contrast, there is no operating experience using two PTC displays and there have been no studies to support a two-display requirement. At $8,000 per screen this unnecessary requirement could cost the railroads over $200 million.

De Minimis Exception

AAR has identified approximately 9500 miles of main line that handle less than an average of 2 cars per week of loaded or empty TIH cars. To date, FRA has proposed a "de minimis" exception for passenger traffic but not for TIH traffic. Under AAR's proposal, the de minimis exemption would apply only where the very small risk addressed by PTC is addressed by operational or other measures that provide the same or greater safety benefit in a more cost-effective manner. AAR is currently analyzing potential measures and would like and expect to work with the FRA to address how the same level of overall safety can be achieved by adopting alternative safety measures on lines where a de minimis concept applies. An exemption for these lines would avoid $475 million in PTC installation costs and $71 million in annual maintenance costs.

What Should be Done: Modify the FRA Rule before Issuance

- First, the industry should be given the flexibility to install PTC on a 2015 network where TIH and passenger traffic actually exists;

- Second, the requirement for a second screen in the cab of the locomotive when two crew members are present should be eliminated;

- Third, a de minimis exception should be permitted to minimize the costs of installing PTC. A de minimis exception would not have a significant adverse safety effect because it would be coupled with alternative safety improvements.