Transportation Division
Positive Train Control Update

Minnesota Legislative Board
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“Railroad managers are experts on what is supposed to happen. SMART-TD members are experts on what actually happens”.

“They [train crews] always know what works and what does not work.”

-Robert Lauby, Federal Railroad Administration, Associate Administrator and Chief Safety Officer. Former NTSB Rail Safety, 40 year veteran. Retirement comments, April 2019.

How Did We Get Here?

Industry stakeholders agree: Positive Train Control (PTC) is clearly a beneficial aid to railroad mainline train movement safety!

45 U.S.C. 49 C.F.R. Part 236 Subpart H.

1940s: Automatic Train Control, (ATC) wayside signals stopped trains prior to exceeding speed at restriction or Absolute Stop signals. Essentially same vital goal as PTC as originally intended.

1890s - 1970s: Road-trains in assigned service had scheduled work shift start times. Crew fatigue was not a safety issue. (However, crews did have 16-hour Hour of Service shifts until 1969.)

1980s: Carrier managements annulled road-trains with scheduled start-time and ran all road-trains in "pool-service" or on-call. Carriers did not provide accurate train line-ups to plan rest. Train crew fatigue and sleep deficits became a significant safety issue. Today, NTSB continues to cite crew fatigue as a "most wanted target" safety goal for the industry.

1990s: The BN installed the ARES train stop test project in northern Minnesota. Please reference the comments of retired FRA-R&D and MSU Professor Steven Dittmeyer's ARES conclusions. The BN ARES train stop system was effective.

2006: FRA CAWG Report Findings – fatigue identified as the one of the highest categories of possible contributing factor of collisions.

Is PTC really a new and untested technology?

- Burlington Northern RR initiated work on the ARES PTC system in 1982, with Rockwell as designer and systems integrator.
- ARES was tested on the Mesabi Iron Range from 1987 to 1993 on 17 locomotives, 3 track vehicles, and 250 miles of track (CTC, ABS, and unsignaled territory).
- BN used commercial off-the-shelf data radios in the 160 MHz band.
- ARES was integrated with locomotive health monitoring, work order reporting, and AEI consist data, but not tied to wayside signals.
- BN had a multidisciplinary team of 10 overseeing ARES; top management strongly supported it.
- Visitors included shippers, suppliers, union reps, other railroads, news media, FRA, NTSB, Congressional staff, state and local governments.
- NTSB placed PTC at the top of its first list of "Most Wanted Safety Improvements" in 1990; Harvard Business School wrote a case study on ARES in 1991.
- Program terminated in 1993 by new BN management.

Collision Analysis

Working Group (CAWG)

65 Main-Track Train Collisions, 1997 through 2002:

Review, Analysis, Findings, and Recommendations

August 2006

CAWG Final Report

Federal Railroad Administration

What Are Train Crews Experiencing With Positive Train Control Now?

- **Speed differentials between the locomotive speedometer and PTC speed control monitor.**
- **PTC gray or blank screen during operation; conflicting signal report from track signals.**
- **Increased in-train forces with slack action, draft and buff forces, with fuel modulating programs.**
- **Speed Restrictions, Form “A, B, C, X” and other orders have lost crew resource management (CRM) fail-safe redundancy. (Carriers propose to weaken “mandatory directive” communication redundancy).**
- **Periods of locomotive engineer task over load.**

Oversight: What is Not Shared at 10,000 Feet

- **Railroad carriers own and report all PTC and safety data.**
- **With carrier self reporting, DOT-FRA assumptions, analysis and conclusions are largely unknown to the general public.**
- **Certain railroad carriers are non-compliant with the DOT-FRA Final Rule-PTC on locomotive monitor requirements.**
- **When the PTC mandate is fully implemented, only 25% of the nation's railroads will have PTC overlay on mainline track.**
- **SMART-TD National Association of State Legislative Directors has begun collecting PTC failure data from train crews. Since March 30, 2019, over 300 PTC failures have been reported and collected from across U.S. The RRTE data is raw, voluntary and under analysis at this time.**

PTC in Context:
What This May Mean To You

- **PTC in-train failures after terminal departures cause public road, industrial and town crossings to be blocked.**

- **Railroad carriers have sued in federal courts to strike down state and local blocked crossing laws. See CSX v. City of Defiance, Ohio, April 2017, and past decisions.**

- **Railroad carriers are running "double trains" that can be over two miles long. File reports are available upon request regarding distributed power telemetric delay.**

- **Potential marketing rationale that may affect shipper and commodity group rates.**

- **Whether a train has PTC or no PTC, all of the ground and equipment tasks with the machine behind the locomotives, or the train, remain unchanged.**

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Federal judge says municipalities can't cite railroads for blocking crossings

csxtomorrow

BUCYRUS, Ohio — A federal judge has ruled that municipalities in Ohio can no longer cite railroads for blocking crossings. The decision came after CSX Transportation sued the City of Defiance arguing it did not have to pay city fines, the Bucyrus Telegraph-Forum reports.

Judge James J. Carr of the United States District Court of Northern Ohio made the ruling in April and stated that federal law governing railroads preempts state law.

The issue came to a head a few years ago after CSX blocked a number of crossings in the region, including in one extreme instance, where a crossing was blocked for 15 hours. A local court fined the railroad $1,000 in that instance.

State of Indiana v. NS Rwy., Case No. 18S-!F-193 (Ind. S.Ct. Sept. 24, 2018)
CSX v. City of Defiance, Ohio, Case No. 3:16-cv-02242(W.D. Ohio 4/28/17)
BN v. Chase County, Kansas, Kan. Ct. of Appeals, 11/5/ 2018

More Questions?

Thank You!

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