

**U. S. Department of Transportation  
Federal Railroad Administration**

**Docket No. FRA-2007-27623**

**April 19, 2007  
Technical Conference**

**Preliminary Comments of  
Brotherhood of Locomotive Engineers and Trainmen  
a Division of the Teamsters Rail Conference**

**Presented by  
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I want to begin by thanking FRA for convening today's technical conference on this very important subject. Also, today's comments are only preliminary in nature, and we expect to file more detailed, substantive comments prior to the May 18<sup>th</sup> deadline. For the time being, we believe it is important for FRA to understand our general perspective on the issue before us today.

“Safety-relevant technologies that while possibly providing significant efficiencies, may not be designed with failsafe characteristics” is quite a mouthful, but accurately sums up where much of the evolution of signal and switching technology has gone in recent years. To frame the context, however, a step backward is necessary.

FRA signal inspection, testing and maintenance regimens set forth in Part 236, Subparts A through G have a long history of proven effectiveness. As a young locomotive fireman and a young locomotive engineer, one of the key lessons that was drummed into my head during every training session or Book of Rules class was that the signal system was failsafe, and the vital information conveyed by signals could be absolutely trusted. Believe me, that was a comforting assurance when operating passenger trains on the Northeast Corridor at speeds in excess of 100 mph.

Yet, in spite of the margin of safety provided by signal systems and assured by FRA regulations, things never were, and are not today, perfect. I recall hearing anecdotally about a collision between two commuter trains decades earlier, which was caused by a clear signal failure triggered by a wild animal getting into a signal cabinet, gnawing through a wire, being electrocuted, and its body grounding two wires.

In the early 1980s I was operating a passenger train on the Corridor to New York. As I traveled through Linden, New Jersey, I observed a commuter train stopped in the station on an adjacent track. The automatic signal behind the train, however, still was displaying clear. I was so disturbed by what I observed that I stopped my train in the middle of the next interlocking — because I couldn't raise the block operator on the radio — to report the clear signal failure.

When I arrived in New York, I went to the train dispatchers' office to find out what was happening. After some discussion, the C&S Department ordered a 24-watch on the signal. All through the evening and night, and the following morning, the signal dutifully dropped every time a train passed it and cycled back up properly.

Finally, about an hour and a half before the watch was scheduled to end, a train passed the signal, after which it continued to display “clear.” A subsequent tear-down revealed that a graphite-based lubricant somewhere in the system had hardened, and occasionally — but not always — created a short circuit that prevented the signal aspect from changing.

I recount those events because they underscore the reality that — even with the best design and the most precise inspection, testing and maintenance requirements — failsafe sometimes doesn't mean failsafe for reasons beyond anyone's control. Nonetheless, the goals and the safety intent underlying FRA regulations must be maintained as new technologies are applied.

Indeed, it is clear that, when Subpart H was considered and adopted, all parties worked to replicate — to the extent possible — the theories underlying signal system safety in Subparts A through G. However, as FRA has noted, a number of technologies and devices that don't fit neatly within the current Part 236 structure are being designed, tested and, in some cases, used in the industry today.

It seems to us almost beyond question that devices and systems that are not designed on a closed circuit principle, and devices and systems that are not designed on a failsafe basis cannot be considered reliable. This must be the baseline, because every locomotive engineer, conductor, brakeman, hi-rail operator and machine operator implicitly accepts the information conveyed by these devices and systems as being 100% accurate. If that faith in the system is breached, chaos will ensue.

I operate in a very rarefied atmosphere, compared to the men and women I represent. I spend hour upon hour every month up to my elbows in some aspect of the CFR. I've read thousands of pages of preamble language and traced the evolution of numerous FRA regulations, and I know where to look to read every argument on every rulemaking going back nearly a decade.

I also spent my freshman year in college in an electrical engineering program, so — even though that was several decades ago — I have a decent amount of knowledge about basic electrical systems. Yet, when I hear my Brother Tim DePaepe talk about things like vital versus non-vital information, my eyes start to glaze over quickly.

Whenever there is a rulemaking or a waiver petition, the parties bring to the forefront the sharpest minds on the subject. However, when the decisions are rendered, they are carried out by workers who may not share that relevant expertise, who haven't participated in the discussion and the debate, and who may not even be aware that a federal regulation exists.

We strongly urge the FRA to apply a very simple rule in its deliberations on these devices and systems: If it walks like a duck and quacks like a duck, it is a duck. While it may be impractical, or even impossible, to write a rule for everything that is out there — or is on some drawing board — Subpart H teaches us that you can work back from the outcome.

We urge FRA to think about the human on the other side of that human-machine interface. What does he or she understand is being communicated ... whether it is a switch position, the absence of an obstruction, the end of an authority, or whatever else is involved.

Consistency of tolerances is one example of where FRA can play a positive role. The gap for determining whether a switch is properly aligned when a switch position detector is used in dark territory should not differ from the gap for whether a switch is properly aligned in signaled territory.

If I understand what Tim has been trying to teach me, I realize someone on the carriers' side could argue that I'm wrong, because the former is non-vital information while the latter is

vital information. My point is this: My members and your crews are not trained to identify such nuances; they do what they've been trained to do, based on what they observe.

We strongly believe that FRA will have to deal with these unconventional technologies, devices and systems — and sooner, rather than later — for two reasons. First, a failure to act will heighten an already-existing incentive for railroads and suppliers to develop non-regulated alternatives to current devices and systems as a means to escape labor costs associated with regulated inspections, testing and maintenance.

And, second, crews will read too much into the information they're getting from these new devices and systems, which will lead to errors. In both cases, accidents will increase, safety will suffer, and FRA will be forced at some point to start writing "blood rules" once again. Thank you.