SMART-TRANSPORTATION DIVISION

BEFORE THE U.S. DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

PHMSA-2017-0102

November 1, 2017

These comments are on behalf of the Transportation Division of the International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART). The SMART Transportation Division, formerly the United Transportation Union, is an organization representing approximately 125,000 transportation employees with active rail members in all operating crafts, including engineers, conductors, trainmen, switchmen and yardmasters.

This is in response to the PHMSA's request for additional information regarding its current regulations on Electronically Controlled Pneumatic (ECP) braking systems.

As a locomotive train engineer for 30 years who has operated trains with ECP brakes, I can attest that ECP brakes are the greatest safety advancement I have seen in my 40 years in the railroad industry. ECP brakes slow and stop trains up to 70 percent faster than conventional brakes and are the safest, most-advanced train braking system in the world.

The most recent analysis of ECP braking systems has focused almost exclusively on comparing ECP brakes with conventional braking systems during emergency brake applications. The analysis also evaluated conventional brakes with distributed power, which is a small aid to conventional brake systems. I readily admit that ECP brakes are only slightly better than conventional brake systems during emergency brake applications. But reviewing ECP brakes only as they apply to emergency applications is a mistake because emergency brake applications on freight trains are a rare event. PHMSA needs to consider other very significant safety benefits that ECP brakes provide in the safe movement of trains.

The most recent ECP review was unnecessary and was a response by Congress to demands from the nation's railroads to repeal the rule. ECP brakes have been studied and analyzed for years, and the jury is in -- ***if we truly want to take rail safety to a higher level, ECP brakes are the means in which to do so.***

The latest study focused on one aspect of ECP brakes because in emergency applications ECP brakes are only slightly better than conventional brakes and would not justify the entire costs of their installation. The real failure is that PHMSA did not look at comprehensive analyses of ECP brakes that have already been done on freight train operations. This can be corrected by reviewing past studies, including FRA's final report titled ECP Brake System for Freight Service that was produced by Booz Allen Hamilton and released in August 2006.

Conventional train air brake systems are a 140-year-old technology that has evolved to its maximum capability. You can add dynamic braking, which has been around since the 1930s, and you can add distributive power, which has been around since the 1990s, to conventional air brakes, and you gain slightly in improved braking. But the only dramatic advancement to improve a freight train's braking ability and safety is from ECP brakes. As a locomotive engineer, operating a train with ECP brakes is like driving the new top-of-the-line Tesla while operating a freight train with outdated conventional brakes is like driving a 1974 Ford Galaxie 500. The differences are that significant and substantial.

Below are 11 key reasons why ECP brakes are better than conventional air brakes:

1. **ECP brakes maintain a train's brake pipe pressure 100 percent of the time, conventional brakes do not.** The colder the weather, the thinner the air, the more crucial maintaining brake pressure is.

2. **ECP brakes allow for a "graduated" release.** An engineer can partially release the train's brakes without having to fully release them. This is vitally important because once a train's brakes are released, it takes time to recharge the train's brake pipe pressure in order for the brakes to work again. The graduated release feature allows an engineer to maintain the speed of his/her train down steep grades with a partial application of the brakes and without fully releasing and reapplying the train's brakes repeatedly. **The graduated release feature all but eliminates the possibility of a runaway train.**

3. **When the engineer makes an emergency application of the brakes, every car with ECP brakes applies 100 percent of the time.** This is not always true with conventional brakes.

4. **ECP brakes would have prevented the terrible Lac-Megantic oil train tragedy that killed 47 people and destroyed the town, a factor cited in Transport Canada's report on the accident.** These brakes would have prevented the accident because when air pressure on a car equipped with ECP brakes drops below 50 psi, the car automatically goes into emergency. Therefore, even an improperly secured train will not roll away.

5. **ECP brakes allow the crew to monitor every car in the train in real time** to determine if the brakes are applied or released. Conventional brakes do not.

6. **ECP brakes record retrievable data associated with brake failures.** There is no such review for conventional brakes. Trains are inspected every 1,000-1,800 miles, and if the brakes are working during the inspection the car moves on. If a car has brakes that fail to apply during that inspection, the car is taken to a repair facility. Often, that facility is a heated shop where the car warms up. The brakes are then tested, and if they work at that point, the car is not repaired and instead placed back in the train.

7. **ECP brakes all but eliminate in-train forces because all the cars apply and release at once.** Conventional brakes create a multitude of in-train forces, some of which damage couplers, knuckles, draft rigging and merchandise. These in-train forces also cause break-in-twos and derailments.

8. **ECP brakes cause all cars to brake evenly, which dramatically reduces damage to wheels and brake shoes, saving a great deal of money in maintenance and repair.** Conventional brakes do not. The modest cost of installing ECP brakes, approximately $3,000 per car on a new DOT 117 tank car that costs $144,000 to build, and about $60,000 per locomotive, will be more than paid for in the savings in car repairs, let alone reduced train derailments.

9. **ECP brakes can be modified to apply hand brakes to a railcar automatically from the locomotive, allowing the crew to apply a hand brake on every car in the train in seconds.** Conventional brakes must be applied by hand, and it can take an hour or more to properly secure a train.

10. **ECP brakes are required by the American Association of Railroads (AAR) for the movement of nuclear waste trains because they are the safest braking system available.**

11. **ECP brakes can be modified and will evolve to do everything sophisticated wayside train detectors do now** and will do it constantly in real time, eventually eliminating the need for wayside detectors.

For the safety of rail workers and the residents in surrounding cities and towns that trains run through, it is vital that ECP brakes be phased in on freight trains. We ask that PHMSA retain the final rule so we can gradually and cost effectively evolve our antiquated, outdated freight train braking systems into the best they can be.

In addition, **we request that PHMSA hold a public hearing** where I can explain in detail the benefits of ECP brakes and answer any questions the agency might have.

Thank you for the opportunity to comment.

John Risch
National Legislative Director
SMART- Transportation Division