LD 1644 HOT BOX DETECTOR TESTIMONY

My name is Daniel Cadogan; I'm writing on behalf of the Brotherhood of Locomotive Engineers and Trainmen, a division of the Teamsters Rail Conference. I am a Locomotive Engineer and the Chairman of the New England Legislative board.

To briefly qualify, I have 28 years of experience in the rail industry. I've been a Locomotive Engineer for twenty-one years and I was a Conductor for the seven years preceding that.

Hotbox Detectors, like most things on the railroad, need a little explanation.

Just like your vehicle, trains have axles with wheels on both sides. The point where these axles connect to the train are contained inside of boxes loaded with gears and lube oil. The average locomotive weighs approximately 300,000 pounds, bi-level coaches almost 200,000 pounds, single level coaches almost 150,000 pounds, and freight cars vary dramatically based on their contents. Sometimes, more important than the weight, is the content. With passenger equipment, the content is human life. In freight, the content could be something as innocuous as televisions or as dangerous as sulfuric acid.

Rail equipment moves around this country at speeds upwards of 150 miles an hour. In the state of Maine, speed is restricted to 80 miles an hour but imagine an axle, with a 300,000-pound engine bearing down on it, failing at a nominal, 30 mph. Has that ever happened? Yes, in Somerville Massachusetts, on a morning commuter train. Now imagine a 150,000-pound passenger car, full of people during rush hour, slowing to a station stop and that bearing fails. Has that ever happened? Yes again, in Belmont Massachusetts. These incidents did make the news, and the cycle quickly moved on because there were no injuries, but what if there were? What if metal fatigue sheared off a wheel on a curve at 80 mph passing another train? At what point should we take this seriously?

I can't venture a guess how old the freight equipment is in the state of Maine, but I can attest to the commuter equipment. The newest equipment we have running around the state has greater than of a half million miles on it. Rail equipment is synonymous for decades of use. Some of the recently scrapped equipment on the Boston Commuter Rail dated back as far as the 1970's. This was equipment was running up until about five years ago. The Amtrak Downeaster equipment isn't that far behind.

These detectors are devices, permanently mounted in and around the track structure that trains roll over or through. They are a system of sensors that detect anomalies in weight, sound, vibration, and temperature. Much like a new vehicle, they come in multiple styles with various options. Some of them measure the acoustics of a bearing as it passes over. Some detectors have pressure plates that detect things that may be dragging. The more common detectors are heat sensitive. The latter option will differentiate between the atmospheric temperature and the temperature of each individual axle as it rolls atop the sensor. After a train has completely passed one of these detectors, an audible report is transmitted via the applicable radio frequency on that territory. A typical audible alert will include the track location, number of axles inspected, and a satisfactory or unsatisfactory reading. If a train crew hears no defects they proceed under normal operation. If they receive a defect, they are to stop and inspect the train accordingly. The unsatisfactory reading will tell them which axle the detector took exception to. By rule, they are to inspect the identified axle as well as two full cars in front of it and two full cars behind it. Train crews then report their findings back to the Dispatcher and await further instruction.

The state of Maine has hundreds of miles of track. We would like to see these detectors installed on all lines eventually but lines that carry passenger trains are our main objective right now. This doesn't exclude freight trains completely, most freight trains at some point in their journey traverse passenger lines. It's at that point those trains would likely roll over a detector.

I encourage your support for this legislation and again thank you for the opportunity to speak about it.

Sincerely,

Daniel M. Cadogan