

NOT FOLLOWING SIGNAL INDICATIONS

Train crews do not consistently recognize and follow railway signal indications. This poses a risk of train collisions or derailments that can have catastrophic consequences. This issue has been on the Watchlist since 2012.

The situation

Train crews rely on railway signal indications to control train movements and prevent collisions, similar to how drivers follow traffic signals. However, railway signal indications are more complex, providing critical information about track conditions, speed restrictions, and movement authorization.

In Canada, the system depends primarily on human interpretation and compliance. Fatigue, inadequate training, distraction, or misunderstanding can lead to missed signal indications, creating a risk of collisions and/or derailments. Currently, there are no mandated physical fail-safe defences to automatically stop a train.

Since 2001, the Transportation Safety Board of Canada (TSB) has called for physical fail-safe defences that intervene to slow or stop a train when a crew doesn't respond to signal indications. They can also protect against overspeed derailments, incursions into work zones, and main track switches left in the wrong position.

The U.S. implemented Positive Train Control (PTC) in 2020 on all high-hazard routes. Canadian railways operating in the U.S. are required to have PTC, but the same protection is not mandatory in Canada, creating a significant safety disparity on an integrated North American network.

Recommendations

Since 2001, the TSB issued four recommendations aimed at reducing the risks of accidents due to missed railway signal indications:

- Immediate interim measures to mitigate risks from non-compliance with signal indications (R25-01)
- Expedited implementation of physical fail-safe train controls on Canada's high-speed rail corridors and on all key routes ([R22-04](#))
 - This was reiterated in Safety Investigation Report R23D0108
- Implementation of physical fail-safe train controls for passenger and freight railways, beginning with Canada's high-speed rail corridors ([R13-01](#))



- Additional backup safety defences to help ensure that signal indications are consistently recognized and followed ([R00-04](#))

Number of occurrences

Between 2019 and mid-2025, there were 303 occurrences of missed railway signal indications, including:

- Greely, BC (R24C0020): a CPKC freight train passed a Restricting signal indication and collided with a stationary CPKC freight train at a speed of 22 mph; 2 crew were injured, 4 locomotives derailed, 2 cars caught fire, and 17,500 litres of diesel was spilled.
- Delta, BC (R23V0205): a BNSF train passed a Stop signal indication and collided with the side of another BNSF train at a speed of 34 mph, derailing cars carrying dangerous goods; 8,000 litres of diesel spilled.
- Montréal, QC (R23D0108): a CN train passed a Restricting signal indication and collided with a stopped commuter train at 25 mph; causing major damage to the train and injuries to passengers and crew members.
- Wainwright, AB (R23E0079): a CN freight train passed a Stop signal indication at 23 mph, causing multiple cars and locomotives to derail.
- Cornwall, ON (R23H0006): a CN freight train passed a Stop signal indication at 43 mph, nearly colliding head-on with a VIA passenger train carrying 167 passengers.

Action taken

Watchlist issues are complex and require coordinated action from operators, regulators and other stakeholders. While some progress has been made, much more is needed. The following steps have been taken to date.

In 2022, Transport Canada announced plans to require Enhanced Train Control (ETC) on Canada's highest-risk corridors. While a positive step, progress has been slow. Critical actions—including corridor risk assessments and drafting regulations for public and stakeholder consultation—remain incomplete, delaying implementation of this essential safety protection.

Action required

Trains operating in Canada must have a level of protection against this safety issue equivalent to those operating in the U.S.

The issue of not following railway signal indications will remain on the Watchlist until there is demonstrable progress in the following key areas:



- Strengthening the monitoring of signal compliance, near-miss events, and targeted interventions.
- Implementing additional interim measures to mitigate the risks associated with train crews not complying with railway signal indications while physical fail-safe train control systems are being developed.
- Mandating and implementing physical fail-safe train control systems that automatically prevent collisions, overspeed, and derailments.