



Watchlist Fact Sheet – Rail

Following railway signal indications

There is a risk of a serious train collision or derailment if railway signals are not consistently recognized and followed.

Background

Since 2004, there has been an average of 30 occurrences per year where a train crew did not respond appropriately to a signal indication displayed in the field. When this type of occurrence results in a train collision or derailment, it may present a significant risk to the public and the environment.

Since 1911, the railway industry in Canada has relied on centralized traffic control (CTC), a system of visual signals, to control traffic on a significant portion of its network—currently more than 43 000 kilometres of track.¹ The CTC system provides train crews with a series of signal indications requiring action relative to the signal displayed. The signal indications convey information such as operating speed and the operating limits within which the train is permitted to travel.

To augment CTC safety measures, railways have adopted various other defence mechanisms to help prevent accidents, such as two-person crews, *Canadian Rail Operating Rules*, and general operating instructions. However, these defences are inadequate in situations where the train crew misinterprets or misperceives a signal indication.

The Transportation Safety Board of Canada (TSB) has made two recommendations on this important issue.² As a result of these two recommendations, a working group has begun a study that could lead to positive safety action; however, the work has not sufficiently advanced to allow evaluation of progress on the outstanding deficiencies. As such, the risk of a serious train collision or derailment occurring in the absence of physical fail-safe train controls continues. Therefore, the Board has assessed the responses to these recommendations as Satisfactory in Part.

A number of TSB investigations have cited train signal misinterpretation/misperception as a cause or contributing factor.³ Furthermore, in the United States, the National Transportation Safety Board has investigated similar accidents and has also concluded that additional physical defences are required.⁴

Solution

Additional physical safety defences must be implemented to ensure that railway signal indications governing operating speed or operating limits are consistently recognized and followed.

¹ Source: *2013 Rail Trends*, Railway Association of Canada

² TSB Recommendations R00-04 and R13-01

³ TSB rail investigation reports R98V0148, R99T0017, R07E0129, R09V0230, R10Q0011, R10V0038, R11E0063, and R12T0038

⁴ National Transportation Safety Board accident reports RAB-06/07, RAR-07/01, and RAR-09/02