This is a collation of some of the world’s railway formal inquiry reports. It includes a brief incident synopsis, along with the main causes and recommendations from each investigation.

Readers may find some of the actions and recommendations useful to their own operations.

Co-ordinated by Greg Morse and Suzanne Tabernes, RSSB

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- Rule violation
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- Driver error
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- Adequacy of rules
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Canada: Fatal level crossing collision and derailment at Pratt Siding, Glencoe, 29 July 2011

For the full report, click here: [LINK](#)

At 10:40 (local time) on 29 July 2011, a VIA Rail Canada passenger train, travelling at 78mph, struck a pick-up truck at Pratt Siding level crossing near Glencoe, Ontario. The locomotive and all four coaches derailed, some ending up foul of the running line. The truck was destroyed and the lone occupant was airlifted to hospital, where he later succumbed to his injuries. Six of the 116 passengers sustained minor injuries.

The Transportation Safety Board of Canada (TBSC) listed the following causes:

- The vehicle driver did not stop at the stop sign, but applied the brakes just prior to reaching the crossing when he became aware of the oncoming train. The vehicle skidded onto the railway and into the path of the train.

- The sightlines at the stop sign were adequate; however buildings along the east side of road and vegetation along the track and in the fields prevented the vehicle driver and the train crew from noticing each other well in advance of the crossing.

- Although the locomotive horn was sounded as required when approaching the crossing, and was sounded continuously when the train crew realised that the vehicle was not stopping, these actions may not have alerted the vehicle driver to the approaching train. (With the train travelling at approximately 80mph and the horn placed near the mid-point of the locomotive, the forward sound pressure propagation of the horn and its resulting auditory warning was reduced.)

- During the collision, a piece of the vehicle, which damaged the locomotive pilot, became lodged under the front of the locomotive, leading to the derailment.

Safety actions

- Operation Lifesaver has provided several education and awareness sessions to students at nearby schools about safety at railway crossings.

- Canadian National (CN) Police will continue to monitor driver awareness at public crossings in the area.

- The Road Authority performed crossing safety assessments of all crossings in the area.

- Transport Canada (TC) initiated discussions with the Road Authority to enhance the level of protection at Pitt Road, Old Airport Road and Doherty Street crossings.

- CN submitted an application for funding under the Grade Crossing Improvement Program (GCIP) to upgrade the protection at Pratt Siding level crossing to flashing lights, bells and gates.

- TC modified its 2002 draft Railway-Roadway Grade Crossings Regulations and its Canadian Railway-Roadway Grade Crossings Standards, which will be incorporated by reference in the Regulations. The draft Regulations clarified the roles and responsibilities of railway companies and road authorities and focussed on making the grade crossing owners more accountable and proactive in ensuring the safety at crossings. The final round of consultations prior to publishing in the Canada Gazette, Part I was completed on 21 June 2012.

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Canada: Near miss between passenger train and freight train at Meharry, Manitoba, 29 October 2011

For the full report, click here: LINK

At 12:05 (local time) on 29 October 2011, a VIA Rail Canada passenger train en route from Canora to Winnipeg was heading east on the main (single) line with permission to set back into the layby at Meharry. However, it exceeded its limit of authority by approximately 4.3 miles.

Around ten minutes later, the crew saw the headlight of an approaching westbound Canadian National freight train.

The CN crew members contacted the VIA crew by radio and began to stop their train, which was travelling at 25 mph. On hearing the radio call, the VIA crew realized that they had travelled beyond the limits of their authority and immediately brought the train to a stand. The two trains stopped approximately 1,500 feet apart. Without requesting authority from the signaller, the passenger train then reversed back into the siding at Meharry. There were no reported injuries.

The TBSC listed the following causal factors:

- The incident occurred because the VIA crew did not take the siding at Meharry as instructed by the rail traffic controller (RTC) one hour earlier.
- The VIA crew did not broadcast the ‘1 mile to Meharry’ station sign or the restriction at Meharry and lost an opportunity to remember to bring the train into the siding.
- Neither the track-side visual cues nor the written clearance triggered a recall of the RTC instruction or alerted the train crew members that they were proceeding down the main track rather than entering the siding to stop.
- In the VIA crew members’ efforts to clear the main track, the passenger train reversed up the main line Meharry Siding without proper clearance from the RTC.

Safety action

- VIA Rail Canada management met with all operating employees within the Winnipeg terminal and provided them with briefings and mentoring to reinforce the relevant Canadian Rail Operating Rules.

UK: Fatal shunting accident at Grosmont, North Yorkshire Moors Railway, 21 May 2012

For the full report, click here: LINK

At around 12:20 on 21 May 2012, a volunteer guard was killed after becoming trapped between two coaches at Grosmont station on the North Yorkshire Moors Railway. The coaches had just been uncoupled, the accident occurring when the steam engine that was hauling a coach away from the rest of the rake changed direction. The driver applied the brake as soon as he realised, but there was insufficient distance to avoid trapping the guard, who had moved back between the vehicles to complete work associated with uncoupling.
The locomotive changed direction because its screw reverser was not locked and moved under the weight of the valve gear into forward gear. It is likely that the guard moved back between the coaches because he had no reason to believe that the locomotive and coach moving away from him would change direction.

RAIB found the immediate cause of the accident to be that the guard was between vehicles during a shunt move when the locomotive and a coupled coach that were moving away unexpectedly changed direction. The causal factors are as follows:

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- As the locomotive was drawing away, the reverser moved from reverse to forward gear causing the locomotive to change its direction. The following is a factor leading to this:
  - The driver omitted to engage the mechanical latch with the screw reverser to prevent its movement.

- The guard went into the four foot at the end of the rake of coaches in Platform 4 while the locomotive and a coupled coach were close by but moving away. The following is a probable causal factor leading to this:
  - The guard would not have had any reason to believe that the S15 locomotive and its attached coach would change direction and move back towards him.

Although not linked to the accident, RAIB also observed that:

- The competence management system covering shunting on the NYMR could be improved and;
- Recent applicable changes to shunting rules as applied to the national network are not reflected in the NYMR rule book.

**Learning points:**

RAIB has identified the following key learning points, which are essentially a reiteration of the advice contained in the urgent safety advice issued following the accident:

- Drivers of steam locomotives fitted with screw reversers (and those carrying out the practical driver assessments) need to be made aware of the risks associated with the unintended movement of the reverser while the locomotive is in motion and the control measures in place to prevent this. This should include the importance of remaining vigilant when shunting, and using the locking device to prevent the unintended movement of the reverser at all times the locomotive is moving and the reverser is not being operated.

- Staff carrying out shunting duties should be made aware that they should not go between vehicles until the vehicles: are a safe distance apart; are at a stand; secured; and the shunter has reached a clear understanding with the driver about what they are doing and an assurance that the vehicles will not be moved.

- Staff should also be made aware that they should never assume that a train moving away from them will continue to move away.

**Recommendations**

- The North Yorkshire Moors Railway should review its safety management arrangements with regard to shunting. The review should particularly take into account the adequacy of, and best practice in, the following:
  - The rules covering shunting;
  - The method of training staff to undertake shunting duties;
The method of assessment of staff, which should include elements of both practical and written assessment, being passed out for shunting duties for the first time and on subsequent occasions; and

- The system of management checks confirming that safe methods are being applied.

- The North Yorkshire Moors Railway should implement any necessary changes and should document the revised safety management arrangements.

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Published 25 October

Canada: Freight train derailment at Fabyan, Alberta, 21 January 2012

For the full report, click here: LINK

At 16:17 (local time) on 21 January 2012, Canadian National (CN) freight train proceeding westward from Wainwright to Edmonton derailed at the east end of Fabyan Bridge, near Fabyan, Alberta. The derailed wagons were loaded with grain; seventeen of them fell off the north side of the bridge, damaging several steel tower legs and bracing members. Approximately 1,760 feet of track was destroyed. There were no reported injuries.

The TSBC listed the following causal factors:

- The derailment occurred when the high rail rolled over in the curve at the east end of Fabyan Bridge.

- The progressive failure of a number of lag screws in the rail fastening system resulted in an insufficient number of remaining lag screws to resist the lateral curving forces of the train.

- Frequent inspections and observation of conditions did not indicate that the curve was under stress, and action was not taken to adequately secure the curve.

Other findings

- At the apex of a vertical depression in the track, normal train action will result in additional dynamic forces on the track structure.

- With the derailment occurring on the curve at the east end of the bridge, the bridge guard rails could not prevent all of the derailed cars from falling off the bridge.

Safety action

- On 23 January 2012, CN implemented Guidelines for inspections of curves, turnouts, and bridge decks with screw spikes.

- For some curves, CN is specifying the use of a new, superior type of tie plate with wood tie elastic fastener systems. The tie plates are 7½ inches by 18 inches cast ductile, each fastened to the ties with 4 screws and 2 spikes. The rails will continue to be fastened to the plate using “e”-type elastic fastener clips. The tie plates are more robust and resistant to breakage than the rolled plate. Lugs on the bottom of the tie plate will dig into the tie, providing mechanical resistance and friction resistance to lateral curving forces.