Worldwide FI Summary

March 2013

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.

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Key issues in this edition:

- Driver error
- Automatic train protection system settings
- Safety critical communications – location details
- Safety culture
- Track circuit settings
- Railhead contamination
Slovak Republic: Collision between Bratislava Vinohrady and Bratislava Main, 26 October 2012

At 15:24 (local time) on 26 October 2012, a push-pull passenger train running in push mode passed a signal at danger and struck the rear of another passenger train which was waiting between Bratislava Vinohrady and Bratislava Main stations.

Two people (including one of the drivers) were seriously injured; a further 21 sustained slight injuries.

The investigation found that the accident was caused by the driver of the push-pull train failing to observe the red signal and failing to brake in time to avoid the collision.

Recommendations

- The train operator ‘should take action’ against the SPAD driver, focusing on ‘loss of competence, extraordinary medical examination and psychological examination’ issues.

- The train operator should consider the possibility of adjusting the speed at which the train protection system applies the brakes after a SPAD.

Australia: Collision between train and excavator near Maitland, NSW, 20 December 2011

At 07:43 (local time) on 20 December 2011, an empty coal train collided with an excavator that was being used for scheduled maintenance of lines near High Street Station, Maitland.

The excavator suffered extensive damage. The lead locomotive suffered minor damage and was able to continue on its journey after a crew change. Neither the train crew nor the track workers were injured.

The Australian Transport Safety Bureau (ATSB) found that the collision occurred despite the fact that the maintenance work being undertaken had been authorised and that safety measures designed to exclude rail traffic from the worksite had been put in place.

Contributing safety factors

- The network control officer responsible for issuing the Controlled Signal Block to protect the movement of the excavator while it was accessing the worksite misunderstood the worksite location and the information provided by the protection officer in relation to the identification of the locomotive that had just passed the site.

- Details of safety critical information, such as worksite location, locomotive identification and protection officer’s contact details, were not read back by the network control officer during the conversation associated with the issuing of the Controlled Signal Block.
The rules and procedures governing the issue of a Controlled Signal Block did not require or provide for coordination between network control officers when the Controlled Signal Block affects more than one controller’s area of responsibility.

Safety message

The ATSB note that the incident highlights the importance of ensuring that the exact location of a given worksite is clearly understood by all concerned in providing protection and that communications between network control officers and worksite staff is effective.

Recommendations

The Australian Rail Track Corporation has advised that it is currently reviewing the entire content of Rule ANWT 308 – Controlled Signal Blocking and will include the issue identified by the ATSB in that review.

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UK: Derailment of a tram at East Croydon, 17 February 2012

For the full report, click here: LINK

At around 06:23 on Friday 17 February 2012, a westbound tram derailed after passing over facing points as it approached East Croydon. The tram was running one minute behind the tram ahead, and was routed left to follow it towards Platform 3. As the tram travelled forwards at low speed, the points moved under its leading bogie, forcing its centre and rear bogies right towards Platform 2. The centre bogie derailed as the routes diverged. Approximately 100 passengers were detrained close to the platform. There were no reported injuries.

RAIB note that the main cause of the accident was that the points moved beneath the tram. This was because a track circuit failed to respond to it and failed to lock the points to prevent movement. Furthermore, the track circuit was not correctly adjusted in accordance with the manufacturer’s instructions and the railhead may have been contaminated with silt. The tram also had a relatively high wheel tyre to wheel tyre resistance (although this was within specified limits).

RAIB also note that, at East Croydon, the track circuit/mass detector provided one barrier to the points moving under or immediately in front of a tram. It is likely that the signalling system was designed on the basis that trams would stop on the loop in the platform and that this, coupled with appropriate operating practices, would act as a second barrier. The operator was unaware that a tram stopping short of the loop would mean that this second barrier was ineffective. This is consistent with the absence of an absolute requirement for drivers to stop on the loop in platforms at East Croydon.

Recommendations

London Tramlink should review the operational and signalling arrangements at East Croydon to consider whether undue reliance is being placed on the correct operation of track circuits. If found necessary:
Additional measures to alert tram drivers to the stopping position in platforms should be provided and/or; The signalling and/or point control arrangements should be modified.

- London Tramlink should identify areas of paved track where silt collects and instigate an improved inspection and cleaning regime where such silt may affect the safe operation of the tramway system.

- London Tramlink should conduct a fundamental review of track circuit settings and wheel tyre to wheel tyre resistances and then put in place a system of maintenance that ensures the signalling equipment and trams are maintained to mutually compatible standards, which include due allowance for reasonably foreseeable levels of contamination at the wheel/rail interface.