June 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:

- Shunting procedures and speeds
- RMMM maintenance and modification
- RMMM operation
- Safety systems of work – planning and paperwork
- Track worker management
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Austria: Shunting collision at Westbahnhof, 27 January 2012

For the full report, click [here](https://www.rssb.co.uk) (in German).

At 14:55 (local time) on 27 January 2012, a collision occurred during a shunt movement at Westbahnhof station in Vienna. A rake of five carriages and locomotive collided with stationary coaching stock at a speed of 17 mph, injuring six members of staff. The accident caused extensive damage to the rolling stock and minor damage to infrastructure.

The resulting investigation found that the five-car rake had been routed onto the line occupied by the stationary rake in error.

**Recommendations**

- The infrastructure manager should review the shunting processes for compliance with the rules regarding permitted speeds, as the lack of ‘technical protection’ to prevent accidents puts more emphasis on human factors. A lower speed limit ‘appears likely to prevent accidents or at least to minimize the consequences of accidents’.

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Sweden: Tamper fire between Skälebol and Kornsjö, 20 July 2007

For the full report, click [here](https://www.rssb.co.uk).

At 11:10 (local time) on 20 July 2007, a fire occurred in a tamper as it was travelling under its own power (with two other machines) from Trollhättan to Norway. There were no reported injuries, but the machine was completely burnt out.

The investigation found the immediate cause of the accident to be that a distribution pipe in the tamper’s engine had not been properly installed and was hanging loose.

A contributing cause involved the turbocharger, which ran hot due to a cylinder that had failed. The charger functioned as a source of ignition, catching the hanging pipe alight.

The investigation also noted that the installation of an overheating alarm may have prevented the accident and that an on-board sprinkler system might have limited the damage.

**Recommendations**

- The Swedish Transport Authority should:
  - Review the need for the certification of repair and maintenance personnel;
  - Monitor how the infrastructure manager ensures that the function and design follow-up of machines are documented during rebuilding or other modifications;
  - Ensure that the infrastructure manager monitors how a modified machine’s function is to be safeguarded when it is coupled to other machines;
  - Ensure that the infrastructure manager specifies how its history of repairs is to be maintained for annual examinations, machine approval and inspection; and
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**UK: Near miss with track workers near Roydon, Essex, 16 July 2012**

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

The incident occurred at around 13:43, when a Cambridge–Liverpool Street service was approaching a bridge just north of Roydon station, Essex, at a speed of 62 mph.

As it did so, two track workers had to run from the bridge to avoid being struck by the train. The last of the track workers got clear of the line around two seconds before the train passed them.

At the time of the incident, the track workers were working on a line which was open to traffic. They were being protected by a system of work which relied on a lookout to warn of approaching trains. If established correctly, such a system should allow track workers to reach a position of safety at least 10 seconds before a train arrives.

The incident occurred because the lookout was not able to give the track workers on the bridge sufficiently early warning of the approach of the train. This was because the COSS responsible for protecting the group from train movements had implemented a system of work which was inappropriate, given the nature of the task and the location in which it was being undertaken.

The system of work implemented by the COSS had been issued by a planner, who had selected it as an appropriate system based on his knowledge of the location and his previous experience of working on the track. It is possible that this incident could have been avoided had the planner sought approval for the system from a more senior person before it was issued, as is required by Network Rail's standards.

The inexperience of the COSS and the group in implementing this type of system of work was an underlying factor in the accident. The short time-frame in which the work was planned and the experience of the planner were also possible underlying factors.

RAIB also list the following learning points:

- Network Rail's standard NR/L2/OHS/019 requires that authorisations for the 'same shift' issue of safe system of work (SSOW) packs are kept to a minimum. Planning SSOW in advance of the shift allows the pre-planning of line blockages and provides more opportunity to allocate the work to staff that are familiar with the location, task and form of protection. Advance planning also gives more time for those involved in the planning, approval and verification of the pack to ensure that it is accurate, appropriate and can be implemented with the available resources.

- When a SSOW pack is issued on the same shift that work is due to start, it is important that the COSS receiving the pack checks that it has been authorised for a 'same shift' verification by the responsible manager, and then undertakes verification and acceptance of the pack, as required by NR/L2/OHS/019.
Worldwide FI Summary

Recommendations

- Network Rail should review, and then improve as appropriate, the methods by which controllers of site safety assess both the required and the available sighting distance when at sites of work. The review should include:
  - The accuracy, availability and presentation of information concerning the available sighting distances at sites of work (particularly in those areas where sighting is limited, or too short to permit a sufficient warning from one or more lookouts);
  - Identification of recommended methods of assessing sighting distance when on site (including the use of special equipment); and
  - The adequacy of existing training and assessments of competence related to the assessment of sighting.

- Network Rail should review, and then improve as appropriate, the methods by which planners assess the suitability of ‘Red Zone working’ when selecting an appropriate safe system of work. The review should include:
  - The availability and presentation of information on sighting distances and warning times;
  - An assessment of when and how the available information is generally used by planners and any barriers to its use;
  - The means by which planners establish locations at which multiple lookouts or special equipment are needed in order to provide sufficient warning; and
  - The means by which planners are informed of locations at which it is impossible for lookout(s) to provide sufficient warning without the use of special equipment.

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