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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Some of the key issues raised and/or suggested by the stories in this edition:

- Safe systems of work
- Role of lookout
- Safety culture
- Points maintenance (taking account of local conditions)
- Train crew distraction
- Points indicator visibility
- Train driver guidance
- Wagon maintenance
- Track maintenance
- Cross-border co-operation
16 February

**UK: Track worker fatality at Newark North gate, 22 January 2014**

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

At around 11:34, a track worker was struck by a passenger train as it approached Newark North Gate station. He was part of a team of three carrying out the ultrasonic inspection of two sets of points at Newark South Junction and was acting in the role of lookout.

A few minutes before, the lookout and two colleagues arrived at the adjacent yard in a van. One was in charge of carrying out the inspections; the other, the Controller of Site Safety (COSS), was in overall charge of the team’s safety. They had planned to carry out the inspections on lines that were still open to traffic in accordance with a pre-planned Safe System of Work (SSoW). All three had many years of relevant experience in their respective roles and were familiar with the work site.

Upon arrival, the lookout and tester proceeded to the track to start the inspection work; the COSS remained in the van. Shortly after they had started the inspection, the 10:08 King’s Cross–Newark North Gate approached. It was due to stop in Platform 3, which required it to negotiate two sets of crossovers.

The train blew a warning horn, which the two staff on site acknowledged before moving to the nominated place of safety.

However, just before the train moved onto the first crossover, the lookout turned to face away from the train, walked towards the station and then out of the position of safety. He moved to a position close to where he had been before the train approached, most probably to check for trains approaching on the up line, having incorrectly decided that the approaching train was going into Platform 1.

Although the train braked and blew a second warning horn, the lookout did not turn to face the train until it was too late for him to take evasive action.

RAIB confirmed the immediate cause of the accident to be that the lookout was in a position on the track where he could be struck by the train. The report also lists the following causal factors:

- The lookout moved from the position of safety and into the path of the train. This was probably to check for trains approaching on the up line, having incorrectly decided that the train was going into Platform 1;
- The lookout did not take evasive action when the train sounded the horn a second time, probably because he believed the approaching train was on another line;
- There was a breakdown in safety discipline and vigilance at the work site.

A possible underlying factor was that Network Rail’s process for assessment in the line was not being followed as envisaged by the procedure, which may have led to a deterioration in the safety attitude and discipline of individuals and teams going unaddressed.

Although not linked to the cause of this accident, RAIB observes that the SSoW planning at Doncaster Marshgate Depot was not being implemented in accordance with the hierarchy of risk set out in the appropriate Network Rail standard. The intention of the standard is that the planner should choose the safest practicable system of work. However, in the case of the rail testing and lubrication teams, this was being disregarded in favour of the most flexible and convenient system of work for the availability of staff and equipment or one that fitted with custom and practice. The amount of ‘red zone’ working undertaken by the rail testing and lubrication teams based in the Doncaster delivery unit was significantly higher than the target for the LNE&EM route.

**Action taken**

During 2013, Network Rail began a major review of the way work activities on the track are controlled (the ‘Planning and Delivering Safe Work’ programme) in order to improve track worker safety. As a result of this programme, training for a new role of Safe Work Leader (SWL) is currently being introduced. This role is intended to provide better safety leadership on site. Initial operation is currently scheduled for mid-2015, in the East Midlands region.
All SWLs will have selection, training and mentoring requirements which will include non-technical skills and other safety leadership requirements. There will be three types of SWL (SWL1–SWL3), ranging in responsibility from that of a current COSS (SWL1) to managing complex work sites (SWL3). New processes for planning and implementing work activities on the track will also be introduced, including the use of an electronic work permit system, linked to electronic maps. Network Rail also intends to introduce a role of Safe Task Leader (STL) to replace the COSS role within engineering possessions.

On 10 February 2014, Network Rail issued a safety bulletin to all staff about this accident. It encouraged internal discussion between staff about what could be done to reduce risks associated with working on or near the line under lookout warning red zone conditions and posed the following questions:

- ‘Safe System of Work – Can your work be done other than ‘red zone’ with lookouts? What would you need to do to plan it at a higher level in the hierarchy next time?’
- Positioning site lookouts – When your COSS positions your site lookout, is consideration given to positioning them in a permanent position of safety?
- Staying vigilant – If you are doing routine work you have done numerous times before in that location with the same safe system of work how do you make sure that you stay focussed on the risks?
- Recommencing work – When you stop work for a train to pass, do you always wait for the permission of the COSS before you leave your position of safety?’

On 2 and 3 April 2014, Network Rail held a national safety briefing event for all of its track maintenance staff, including COSSs and lookouts. A video reconstruction of the accident was shown at the briefings, followed by discussion on the learning points and areas of improvement.

Network Rail has indicated that it is progressing the following actions in its LNE&EM route as a result of this accident.

- A trial of a non-technical skills programme for lookouts, which aims to assess the individual’s capabilities and aptitude for effectively and consistently performing the role of lookout (completed in June 2014).
- Assessed briefing sessions for lookouts and COSSs on challenging the safe system of work (completed in June 2014).
- A trial of the use of trained safety mentors to develop the non-technical skills of existing lookouts (ongoing).
- The use of standard, fenced, lookout ‘stations’ at track locations such as junctions, where lookouts are required on a frequent basis (RAIB report 15/2010, Whitehall West Junction, Recommendation 1) (ongoing).
- The development of co-ordinated maintenance work programmes in junction areas so that multiple maintenance activities are carried out during one visit rather than several separate visits (ongoing).
- Investment in the procurement of semi-automatic track warning systems to provide early warning of approaching trains (RAIB report 19/2009, Grosvenor Bridge, Recommendation 2) (to be started early 2015).

Recommendations

- Network Rail should:
  - Systematically brief and where appropriate re-brief its COSS/SWLs that they must be on site at all times, even when working with experienced staff, and that they must provide a full site based safety briefing once the safe system of work has been verified by them as being appropriate for the conditions at the time of the work;
Rebrief its lookouts about not leaving the position of safety until the COSS has given permission;

Actively monitor the degree to which work site discipline is being maintained, and take appropriate corrective action if any issues are found; and

Investigate how best to maintain vigilance and safety discipline for cyclical and repetitive tasks and implement any practicable measures into its working procedures.

Network Rail should:

Introduce sufficient managerial supervision and audit checking to confirm that the standards governing the safety of track workers are being correctly implemented by its delivery units in the planning of SSoWs, particularly in those areas where staff regularly work on lines that are still open to traffic.

Take steps to strengthen any weaknesses it finds, including the re-training of staff involved in planning safe systems of work.

17 February

**Australia: Freight train derailment at Union Reef, NT, 30 December 2013**

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

At 15:47 (local time), a freight travelling from Darwin to Adelaide derailed while traversing the points into the loop at Union Reef. Shortly beforehand, the crew had sent a remote control message for the points to reverse, but the automated points system was unable to complete the movement – leaving the points in an unsafe open position.

There were no reported injuries, but about 100 metres of track were damaged, and the main line between Darwin and Tarcoola was blocked for about 5 days.

The Australian Transport Safety Bureau (ATSB) found that the points had most likely failed to fully switch because of the build-up of ore product and inadequate lubrication. It had been previously recognised that this location was prone to ore product build-up in the four-foot and points, but the inspection and maintenance regime had not been adjusted to address the issue and the potential increase in risk to rail operations that it presented.

The ATSB also found that the train crew were distracted by several conflicting responsibilities at a time when they were also expected to be preparing for entrance to the crossing loop. While the driver was driving at a speed he considered appropriate for traversing the points, he did not expect the point indicator to remain at red (or the points to be unsafe) and, as such, was unable to stop the train before the open points. Reduced sighting of the point indicator due to the track curvature and trackside vegetation had limited the opportunity for early identification and response to the red indication, even though a repeater indicator had provided prior warning as to its unsafe status.

Furthermore, the guidance issued by the operator – Genesee Wyoming Australia (GWA) – does not provide clear and unambiguous information for train crews on acceptable points approach speeds where sighting distance is reduced.

The ATSB also notes that – due to the train’s late running – the signaller made a last-minute decision to ‘loop’ the freight, thereby presenting the train crew with conflicting responsibilities when approaching said loop.

**Action taken**

After the accident, GWA reviewed the reliability, inspection and maintenance frequency of motorised self-restoring points machines. Similarly, with a view to identifying and addressing any increased risk in...
these locations, it specifically undertook to monitor the functionality and performance of track/points exposed to the accumulation of mining products.

Responding to the human element, GWA advised that a Critical Safety Zones programme will be introduced to provide clarification to train crews on acceptable speeds and necessary caution required when approaching points with reduced sighting distances.

**Recommendations**

- None listed.

**24 February**

*Bulgaria: Freight train derailment at Helmeu, 24 September 2014*

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

At 13:50 (local time) on 24 September 2014, the last wagon of a cross-border freight train derailed near a set of points at the border station of Helmeu. There were no reported injuries.

The investigation determined that the incident occurred because the creep force and the load acting on the wagon’s leading wheel increased, due to the thickness of the wheel flange being below the minimum limit. This increased the leading angle of the wheel in relation to the rail and thus helped increase said creep force. The condition of the track was also outside acceptable limits.

The underlying causes highlight deficiencies in wagon maintenance and track maintenance procedures.

**Recommendations**

- The infrastructure manager should take steps to form a new Romanian–Ukrainian border agreement, which will introduce clear provisions to establish that railway staff involved in an accident/incident between border railway stations or in border stations allow investigators access to the rolling stock involved and respond to questions asked by the authorized representatives of the State in which the accident / incident occurred.