1. Safety Performance

1.1 Safety Information

1.1.1 Summary safety information is included in Annex A. The headlines since the last board meeting are:

- During October and November 2014 there were no passenger or workforce accidental fatalities. There were four accidental public fatalities.
- During October and November, there were 57 signals passed at danger (SPADs). This is two fewer than in the same two months in the previous year. (Note that this figure is provisional until all cases have been agreed with the relevant parties.) Of the 57 SPADs, 17 were risk-ranked potentially significant (16+), and 1 was risk-ranked as potentially severe (20+).

1.2 RAIB Investigations and publications

1.2.1 RAIB initiated five investigations:

- Near miss with track workers near Hest Bank (22/09/2014)  
  Staff not warned of train’s approach, questions raised about lookouts and Lookout Warning Operated System (LOWS) equipment
- Freight train derailment at Porthkerry, (02/10/2014)  
  Defective rail probable cause for derailment that damaged 80m of track
- Severe electric shock to train driver near South Weaver, Cheshire (23/09/2014)  
  Incident raises issues of staff behaviour, rules and procedures, OLE maintenance and post-incident management
- Collision with lineside equipment in Watford Tunnel (26/10/2014)
Incident calls maintenance procedures and lineside cabinet design into question

- Runaway of trolleys and subsequent near miss at Raven level crossing (11/11/2014)
  Shades of Tebay as issues of trolley maintenance and operation combine in near miss.

1.2.2 RAIB published four reports:

- Falling debris at Denmark Hill station (01/08/2013)
  Loose cladding highlights need to rigorously record structural defects and to communicate maintenance needs to competent staff effectively
- Class review of East Coast Main Line rail breaks
  Statistics highlight rail break problem, and need to share lessons learnt widely
- Passenger train collision with trolley at Bridgeway UWC (16/01/2014)
  Planning issues combine with competence and supervision problems
- Buffer stop collision at Chester station (20/11/2013)
  Low adhesion incident raises questions around sanding equipment and data recorder analysis

1.2.3 RAIB published one other report (GB heavy rail):

- Engineering train collision near Penirth (12/01/2014) – BULLETIN
  Speeds permitted in worksites and the need for stringent risk assessments revealed

Further details relating to the RAIB reports and investigations is available on the RSSB board members extranet page.

2. RSSB Products and services

2.1 Safety and Risk

2.1.1 RSSB received a letter from the ORR requesting its participation into an industry investigation into freight train derailments. RSSB have responded indicating work already completed or in progress. We will support further work identified by the investigation.

2.1.2 Industry Safety Strategy

Following the meeting of RDG at which the topic of an RDG SHE Committee was explored, RDG requested Network Rail to consider how this might be developed. Network Rail have concluded that a “strawman” industry safety strategy would provide a focal point for discussion.
RSSB are supporting Network Rail in the development of a strawman and a small workshop will be held on 13 January to progress this. RSSB believes this will require cross-industry participation as it develops and RSSB provides the industry focal point to coordinate this work.

2.1.3 Chair of System Safety Risk Group (SSRG)

In April 2015 SSRG will have been in existence for two years and in accordance with the terms of reference approved by the board, the chair needs to be re-elected or replaced. The current chair, Andy Cooper has put himself forward for a second term of office (two years) with the support of ATOC. The SSRG unanimously supported his reappointment at its meeting on 17 December 2014.

2.2 Standards

2.2.1 In November ASLEF announced a recommendation to its members to operate at 20mph for trains with defective radios. This was in response to concerns about a recent prosecution of a train driver. Following a meeting called and chaired by Ian Prosser, Director of Railway Safety at ORR, RSSB has picked up a number of actions to evaluate risks, to harmonise instructions that currently sit in a number of different project originated documents and to further clarify the Rule Book and its instructions in this area. In response to the meeting and an exchange of letters with Ian Prosser ASLEF have now withdrawn their threatened action. RMT followed a similar course of action.

2.2.2 Cliff Cork, Head of the Infrastructure and Rolling Stock delivery unit and principal rolling stock engineer leaves RSSB to retire at the end of December. He has made an immeasurable contribution to RSSB and the industry during his career.

2.2.3 Technical Specifications for Interoperability (TSIs)

The scope of TSIs will cover the vast majority of the Network Rail network from 01 January 2015. ISCC has considered the implications of this for the management of group standards and concluded that apart from the review that is currently underway, between RSSB and NR, which may throw up significant areas to consider, the only steps that need be taken immediately are the prudent clarification of which clauses of Railway Group Standards are notified as National Technical Rules. When notified, this will help to avoid duplication of effort when getting authorisations for bringing assets into service. The suite of Rolling Stock standards have been reviewed for this purpose and are currently being notified to the DfT.
RSSB is leading a process to learn lessons and make recommendations for the future. A workshop was hosted at RSSB on the 10 December, to consider the experience of influencing and shaping the current versions of TSIs. Around 80 people attended from all parts of the industry, DfT and ORR and a significant number of lessons learned and recommendations are being assembled for ISCC to consider.

2.2.4 Further to the report to directors in November, the Cyber Security part of the RSSB web site is now live with the documents assembled for the purpose by the High Integrity Software Group. It is available at the following link http://www.rssb.co.uk/improving-industry-performance/cyber-security

2.3 Knowledge

2.3.1 R&D Budget Authorisations

There have been four new R&D budget authorisations by the RSSB executive since the November board meeting.

<table>
<thead>
<tr>
<th>Date</th>
<th>T#</th>
<th>Title</th>
<th>Budget</th>
<th>Cross industry group</th>
</tr>
</thead>
<tbody>
<tr>
<td>27/10/2014</td>
<td>T1072</td>
<td>Investigation of AWS wrong side failure code 5 issues</td>
<td></td>
<td>Train Control Technical Sub-Group</td>
</tr>
<tr>
<td>24/11/2014</td>
<td>T1057</td>
<td>Investigating the risks posed by luggage to passengers and staff on trains and stations</td>
<td></td>
<td>People on Trains and Stations Risk Group</td>
</tr>
<tr>
<td>24/11/2014</td>
<td>T1059</td>
<td>Evaluating the use of on-train driver only operation (passengers) monitors during station departures</td>
<td></td>
<td>People on Trains and Stations Risk Group</td>
</tr>
<tr>
<td>24/11/2014</td>
<td>T1077</td>
<td>The effect of water on the transmission of forces between wheels and rails</td>
<td></td>
<td>Adhesion Research Group</td>
</tr>
</tbody>
</table>

2.3.2 R&D summary

a. DfT has confirmed an extension to the current R&D grant for the period 2015/16 to 2019/20, with an indication of proposed grant funding as follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>Proposed grant funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015/16</td>
<td>£9.3m</td>
</tr>
<tr>
<td>2016/17</td>
<td>£9.2m</td>
</tr>
<tr>
<td>2017/18</td>
<td>£9.3m</td>
</tr>
<tr>
<td>2018/19</td>
<td>£9.6m</td>
</tr>
<tr>
<td>2019/20</td>
<td>£9.8m</td>
</tr>
</tbody>
</table>
The grant extension comes with a new grant condition as follows, which is deliverable from the end of the 2015/16 financial year. ‘In addition to the quarterly progress report on the work funded by the grant, within one month of the end of each financial year, we also require the RSSB to provide an annual report covering the impact of all past research and a summary of the outcome of its communications plan for the previous year.’

b. Recognising the potential contribution that the academic community can make to rail innovation, RSSB and Network Rail co-fund Rail Research UK Association (RRUKA) as a bridge between industry and academia which brings together those who do research with those who can use and fund it. RRUKA celebrated its third year of operation on 5 November with its Annual Conference, with a keynote presentation from Network Rail CEO Mark Carne. Topics ranged from bridge scour, vibration, and passenger crowd management, to improved understanding of SPAD risk and managing the risks of slips trips and falls for the ageing rail passenger.

c. A Rail Exec Club award for ‘The most interesting approach to train operations’ has been won at the end of November by ‘Stations as a Service’ (StaaS), a research project co-funded with InnovateUK. It is tackling Automated detection and response support to unattended luggage, remote monitoring of station assets, dynamic retail demand forecasting and real-time journey information. The project is being delivered by CISCO, Telent, Abellio, Workware Systems and Network Rail.

d. Research completed to date during Quarter 3 includes:

- Getting the most from complementary policing, other rail staff and private security; sharing good practice (T1021)
- Statistical distribution of frictional hysteresis of a pantograph (T1038)
- Research into traffic signs and signals at public road level crossings (T756)
- The effects of railway traffic on embankment stability (T679)
- Review of the braking tables in RGS GK/RT0075 Lineside Signal Spacing and Speed Signage (T999).

2.4 Innovation
2.4.1 Innovation – Progress Summary

In the last period two competitions have been launched (£4.4m PowerTrain and £4m Predictable and Optimised Braking). The Future Railway programme has now approved to invest in 84 innovation projects. Contracts have been let for 60 of these projects with 24 contracts under negotiation. It is envisaged that over 100 innovation projects will have been contracted by the end of the financial
year, the remaining c16 investments expected to be made in Rail Operators Challenge, PowerTrain, Predictable & Optimised Braking and RISE.

The Rail Technical Strategy (RTS) portfolio mapping is proceeding well with all portfolios on target to report back to the Technical Strategy Leadership Group (TSLG). This work will also inform the refresh of the FutureRailway Programme 5 year plan which will be presented for approval by TSLG and endorsement by Rail Delivery Group (Technology and Operations) before the end of March 2015.

2.4.2 Workforce Development

As part of their portfolio, the team are managing the delivery of T1016 Driver Training Review which is research aimed at developing and piloting a generic industry training course to enable delegates to become qualified competent (novice) train drivers for use by industry. The course embraces innovation through iBooks, eLearning and use of iPad technology. It builds upon good practice from previous research and is competence based, demonstrated by formative assessment.

The pilot course is currently in progress with Southeastern delegates, facilitated by Network Rail at the Paddock Wood training centre. Feedback to date has been excellent. All trainee drivers passed the course and this will be calibrated against existing testing. Delegates will re-join Southeastern for company induction, traction and route learning.

2.4.3 Predictable and Optimised Braking (in all conditions)

A briefing event was held on the 10 November with over 35 individuals attending and who represented 25 different organisations. The event outlined the competition, provided a background to UK braking issues as well as presenting the results of the braking modelling work undertaken using the Network Rail model. The competition call is due to close on 18 December.

2.4.4 Powertrain

The competition which opened on 17 November is seeking novel technical solutions to improve energy efficiency of self-powered vehicles. A briefing event is planned for 03 December with a webinar the following week for those not able to attend the briefing

2.4.5 IPEMU (collaboration with Network Rail)

Further testing is underway at the Old Dalby Test Track with the train reaching 100mph in independently powered mode. Testing has raised some issues with software which is being modified. Other testing remains within programme
parameters. Further testing is to be undertaken on the national network early in 2015.

2.4.6 **Innovation in Franchising**

RSSB continue to advise DfT on policy and the design of the Innovation in Franchising Funding Scheme (liF_FS) mechanism. A small team has been created to administer the scheme and mobilisation will now commence following the East Coast franchise announcement.

As a precursor to the full scheme a £6m open-to-all train operator challenge competition will be launched in January 2015.

2.4.7 **Accelerating Innovation in Rail 3 – ‘Customer Experience’**

The Technical Strategy Leadership Group (TSLG) has approved the launch of a new competition in early 2015 focussed on customer experience. The completion will be co-funded with Innovate UK (the former Technology Strategy Board). TSLG and Innovate UK will provide up to £3m each. With innovator co-funding this is likely to result in c£10m of activity. Part of the process will allow rail operators and customer representatives to set out the challenges to be addressed.

2.5 **Schemes**

2.5.1 **CIRAS**

a. Conference in 2015

CIRAS is to host a conference in conjunction with the organisers of the Rail Safety Summit on 01 May 2015. The conference is entitled “Confidential reporting for safety – are we addressing the needs of the workforce?” and is to be held at the Royal College of Physicians in London. The conference is going to feature a number of speakers including the National Audit Office, Pam Warren (Ladbroke Grove survivor), a legal perspective and the Head of CIRAS with the key note address being delivered by Charles Horton.

b. CIRAS membership 2015/16

Following the receipt and analysis of wider contractor and supplier data from the Rail Industry Supplier Qualification Scheme, CIRAS with the support of Network Rail and TfL plans to move ahead and expand membership of the scheme with effect from April 2015. The additional revenue that this will generate will enable annual subscription levies for large, medium and small members to be reduced by 25-35%.
c. David Morris appointment with Transport for London (TfL)

David Morris, chair of the CIRAS Committee has been appointed by TfL to become the independent safety advisor for their boards’ Safety, Environment and Accessibility Panel. There is no conflict with his role of CIRAS chair and it will help facilitate stronger links between CIRAS/RSSB and TfL.

3. **Internal**

3.1 **Members and Stakeholders**

3.1.1 **Membership Applications**

3.1.1 a) **JSD Research and Development Limited**

JSD Research and Development Limited have applied for membership in the Infrastructure Contractors Category (E) with immediate effect (subject to ORR licence approval on 25 December 2014).

JSD design, build and operate weed control equipment for use on the UK rail network.

Directors are asked to **ADMIT** the above to be members with effect from 08 January 2015.

3.1.1 b) **Voluntary membership of Franchisees before they are required by licence to join.**

Approaches have been received from both Serco Caledonian Sleepers Ltd (the winner of the Franchise Competition for the Anglo Scottish Sleeper service) and MTR Crossrail Ltd (the winner of the franchise competition to be the passenger train operator of Crossrail) to join RSSB on a voluntary basis as soon as possible. In both cases this is to enable engagement with and access to RSSB tools, data and services to commence prior to the start of operations. In discussion with the two applicants a generic approach has been developed to enable this to happen. This creates the opportunity to set a precedent for all new franchises, to welcome them into membership prior to their operational date and consequent licence obligation.

The proposed template terms for voluntary admission of a winning franchise bidder, prior to the commencement of the licence condition is that for the period of voluntary membership, a fee that represents 10% of the fee that will become payable upon commencement of the franchise. This helps to achieve the objective of widening the membership base and welcoming in new franchises.
as soon as their plans are known while not discouraging them or disadvantaging other members through offering services for free. As with the two voluntary members recently admitted to the Infrastructure Manager Category, in the event of a vote at a general meeting, the share of the vote allocated to the voluntary member would be proportional to the fee that they have paid (rather than to their turnover).

This arrangement can be accommodated within the existing Constitution Agreement, but when it is next reviewed it would make sense to include these generic terms within the body of the agreement.

Directors are asked to ENDORSE these terms as the general offer to all new franchisees to become members in advance of their licence obligation to do so.

3.1.1 c) Serco Caledonian Sleepers

In discussion with SERCO we have agreed terms for voluntary membership with immediate effect, subject to directors’ approval. Serco Caledonian Sleepers are going to become operational from April 2015 and will then pay the full fee that is related to their forecast turnover, in accordance with the Constitution Agreement. Serco Caledonian Sleepers have submitted an application form and signed the accession agreement.

Directors are therefore asked to ADMIT Serco Caledonian Sleepers Ltd to membership in the Passenger Operators category with effect from 08 January 2015.

3.1.1 d) MTR Crossrail Ltd (MTRC)

In discussion with MTRC the generic terms for early membership have been agreed but the detail of what the exact fees will be upon the commencement of operations has yet not been finalised. MTRC will become operational from the end of May 2015 when they take over the service from Liverpool Street to Shenfield. They will operate only this service group for around two and a half years before the next stage of Crossrail commissioning, at which point the membership fees will be adjusted. However, to enable membership to commence as soon as possible, Directors are asked to endorse application of the generic principles set out above to MTRC and their admission as voluntary members upon completion of the normal Constitutional accession procedures.

Directors are asked to ENDORSE the application of the generic terms to MTRC and to ADMIT MTRC to membership upon completion of the application process.
3.2 Directors

3.2.1 Anna Bradley was appointed Chair designate on 08 December 2014 and will take over as Chair on 01 April 2015 when Paul Thomas retires from the board.

3.2.2 Charles Horton has been re-appointed as one of the two passenger Train Operator representatives on the board with effect from 21 December 2014 for a further three year term.

3.2.3 Chris Fenton has been appointed Chairman of the National Skills Academy for Railway Engineering (NSARE) replacing Terry Morgan at the 03 December 2014 AGM.

3.2.4 Anson Jack has been elected to a part time professorship at Birmingham University. From 01 January 2015 he is working one day a week as Professor of International Railway Benchmarking and Director of the Birmingham International Railway Academy. This is consistent and synergistic with the agreed reduction of his working week to 4 days at RSSB which was introduced in September 2014.

3.3 Finance Overview

3.3.1 Membership Fees for 2015/16

As reported previously, membership fees are set by the July RPI figure of the previous year, less one percent. July 2014 RPI figure was 2.5% and accordingly invoices for membership fees for the year commencing 1 April 2015 will be set at 2014/15 fees plus 1.5%.

3.3.2 The 2014/15 budget anticipated a company loss of £3.2m. This was driven by plans to utilise £2.5m of previously recognised R&D funding and the core business breaking even. A further £0.7m charge reflected the difference between the actuarial cost of the pension scheme compared with the cash cost. The accounting arrangements for the Future Rail programme match expenditure with income and so do not impact on the bottom line.

3.3.3 Actual expenditure since April 2014 has been held lower in the lead up to the re-organisation. The core business was £2m below budget at the end of period nine largely due to reduced levels of recruitment and low usage of the budget set aside for contingent activities. R&D has performed in line with budget and the Innovation Directorate, which includes the Future Railway programme, has outpaced the budget, with costs matched by income.
3.3.4 A forecast was carried out at period nine and the company is now expected to make a loss of £1.2m, a variance of £2m on budget. Anticipated expenditure for the main business segments is set out below.

<table>
<thead>
<tr>
<th></th>
<th>Reforecast</th>
<th>Budget 14/15</th>
<th>Actuals 13/14</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>£</td>
<td>£</td>
<td>£</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td>44.8m</td>
<td>39.8m</td>
<td>36.6m</td>
</tr>
<tr>
<td><strong>Expenditure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core</td>
<td>20.2m</td>
<td>22.2m</td>
<td>21.0m</td>
</tr>
<tr>
<td>R &amp;D</td>
<td>12.8m</td>
<td>13.4m</td>
<td>11.8m</td>
</tr>
<tr>
<td>CIRAS</td>
<td>0.9m</td>
<td>0.9m</td>
<td>0.9m</td>
</tr>
<tr>
<td>Innovation</td>
<td>11.4m</td>
<td>5.8m</td>
<td>4.5m</td>
</tr>
<tr>
<td>Pension adjustment</td>
<td>0.7m</td>
<td>0.7m</td>
<td>0.8m</td>
</tr>
<tr>
<td><strong>Total Expenditure</strong></td>
<td>46.0m</td>
<td>43m</td>
<td>39.0m</td>
</tr>
</tbody>
</table>

Core expenditure has been held at 2013/14 level with efficiencies offsetting annual pay increase and additional projects (eg cyber security, reorganisation costs, people agenda costs, carbon tool and others). Note that the increase in income in the table above is all related to the way that Innovation expenditure is accounted for (with actual expenditure being matched by income).

3.3.5 The current variance of £2m is not expected to increase as recruitment into vacancies resumes following the reorganisation in November. R&D is forecast to continue spending to budget with the only variance arising on one delayed contract (AliR2). The Innovation directorate is projected to continue significantly above budget. This results from weak budgeting rather than current control. A full review of project forecasting for innovation activities is nearing completion. This will also support improved cash forecasting.

3.3.6 The office relocation and the increased spending on major IT projects (SMIS upgrade) are likely to lead to increased outflows around the end of the financial year. Much of this spending will be CAPEX which would defer the impact on the Income and Expenditure account to future years.

3.3.7 The Forecast for 2014/15 shows an exit run rate consistent with the levels of funding planned for 2015/16 using the RPI minus 1% funding model.

3.4 Communications

3.4.1 In response to the Stakeholder Survey feedback the communications function has been reorganised.

3.4.2 A detailed Communications update is available via the RSSB board members extranet page.

3.5 Organisational Design

The organisational design is progressing to plan. A Management Development Programme was launched in December to provide a consistent approach to leadership and performance across RSSB.
3.6 RSSB staff safety issues

There have been no safety issues since the last report to directors.

3.7 Office move

3.7.1 The lease on the Helicon building near Moorgate has now been completed. In order to complete the transaction RSSB were required to provide a 6 month rental deposit which will be held by the Landlord for the duration of the lease. Interest will be paid on this balance.

3.7.2 A design and build contractor who will carry out the fit-out of the office has been appointed. Work has now begun to finalise the design in order that a Licence to Alter may be obtained from the Landlord. Work is expected to commence on site at the end of January 2015.

3.7.3 Redacted for publication

3.7.4 Redacted for publication

3.8 Contracts over £250k

<table>
<thead>
<tr>
<th>Title</th>
<th>Supplier</th>
<th>Date signed</th>
<th>Dept</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Intelligent Passenger</td>
<td>Ayoupa</td>
<td>10/12/14</td>
<td>Innovation</td>
<td></td>
</tr>
<tr>
<td>Tomorrows Train Design Today Competition - N44 Flex</td>
<td>Seymourpowell</td>
<td>31/10/14</td>
<td>Innovation</td>
<td></td>
</tr>
<tr>
<td>T1071-03 – SafeCap+</td>
<td>University of Newcastle Upon Tyne</td>
<td>17/09/14</td>
<td>Innovation</td>
<td></td>
</tr>
</tbody>
</table>

3.8.1 Redacted for publication

3.8.2 Redacted for publication

4. Recommendations

The board are asked to:

- **NOTE** this report and **DISCUSS** individual items as appropriate
- **ENDORSE** individual items as appropriate.
Annex A - Key safety reports to November 2014

- Public accidental fatalities include trespass and non-trespass, but exclude fatalities at level crossings (which are shown separately).

RIDDOR-reportable major injuries to each person type reported in SMIS. The majority of passenger injuries occur in stations.

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) reportable cases only. Includes derailments at level crossings after striking road vehicles. Does not include buffer stop and ‘open door’ collisions. Passenger low-speed collisions predominately occur at stations.

Statutorily reportable collisions (excluding roll back and open door collisions), derailments, buffer stop collisions and trains striking road vehicles. PHRTAs are normalised per million train miles.

SPADs on or affecting Network Rail managed infrastructure.

The dark blue bars refer to trains striking barriers where a previous incident had caused the barriers to encroach onto the running line, such as a road vehicle striking the barriers.
1. **Summary of safety performance for October and November 2014**

1.1 **Fatalities**

During October and November 2014 there were no passenger or workforce accidental fatalities. There were four accidental public fatalities:

- On 1 October, a member of public trespassing on the running line was struck by a passenger train near Topsham (Western).
- On 19 October, a member of public trespassing on the running line was electrocuted at Camberley station (Wessex).
- On 3 November, a member of public trespassing on the running line was struck by a passenger train near Corkerhill (Scotland).
- On 4 November, a pedestrian was struck by a passenger train at Sandhill automatic half barrier level crossing (Anglia).

There were 52 suspected suicides during October and November 2014. The average monthly figure over the past 12 months has been 24.4. Suicide figures are subject to change as more information (eg, coroners’ verdicts) is made available.

1.2 **Reportable train accidents: collisions, derailments and trains striking road vehicles**

There were seven reported train accidents during October and November 2014.

- On 2 October, a freight train derailed at Porthkerry No.2 Tunnel (Wales). There were no reported injuries.
- On 23 October, a freight train derailed by two axles at Heworth, between Sunderland and Newcastle (London North East). There were no reported injuries.
- On 31 October, an on track machine struck a gate at Lingwood manually controlled level crossing (Anglia). There were no reported injuries.
- On 13 November, a passenger train struck a lorry at Downham By-pass automatic half barrier level crossing (Anglia). There were no reported injuries.
- On 13 November, a freight train derailed when leaving Ashburys yard (London North West). There were no reported injuries. RAIB is holding an investigation into the accident.
- On 17 November, a freight train derailed at West Sleekburn junction (London North East). There were no reported injuries.
- On 25 November, a passenger train struck a road vehicle at St Davids Golf Club user-worked level crossing with telephone near Harlech (Western). The driver of the road vehicle suffered from minor injuries.
1.3 SPADs risk ranked 20+

There was one SPAD risk ranked 20+ during October and November 2014; there is currently one risk ranking form outstanding for October and November. Post meeting note: All forms received prior to the board meeting commencement.

SPAD risk ranking 21 – On 1 November a passenger train passed CA87 signal at danger on the Down Cambridge line at Whittlesford by approximately 10m. The driver stated a loss of concentration. CA87 is a signal protecting a plain line and the distance to the conflict point where a collision could have occurred is 1057m. The signal is not protected by TPWS, and the risk ranking overrun probability is 6 (the highest being 10). In terms of the potential consequences, should a rear end collision have occurred, the SPAD risk ranking consequence score was 15 (the highest being 18). This score arises because (a) the permitted speed of the SPAD train was 80mph and for the conflict train was 0mph (potential collision speed in the calculation – 40mph), (b) the collision would have involved a multiple unit passenger train and a non-dangerous freight train and (c) the passenger train was peak loaded with passengers.

2. Overseas accidents (October–November 14)

Environmental

US: Rescue locomotive strikes rear of stalled train in Arkansas, 16 October 2014
On the morning of 16 October 2014, a tourist train stalled near West Fork, Arkansas. At around 10:30 (local time), the rescue locomotive collided with the rear carriage, injuring 35 people (five critically). Some 300 gallons of diesel fuel were also spilled near the White River. Early reports suggest that leaf fall had caused the passenger train to stall, but that information about its precise location had not been accurately conveyed to the rescue crew. The National Transportation Safety Board is investigating.

Russia: One killed in derailment in Sakhalin, train falls to shoreline, 3 November 2014
At 18:35 (local time) on 3 November 2014, a two-car passenger train derailed and fell on to the shoreline between Kholmsk and Chekov, in the Sakhalin region of Russia. A railway maintenance foreman was killed and 17 passengers were injured.

‘All 17 victims have been taken to hospitals in Kholmsk and Chekov with injuries of varying degrees. The other passengers refused medical assistance,’ said a spokesperson for the Emergencies Ministry.

Preliminary investigations suggest that the shoreline had been eroded by high tides.
Platform-train interface

China: Passenger crushed to death between train door and screen on Beijing Metro, 6 November 2014

At around 19:10 (local time) on 6 November 2014, a 33-year-old passenger was killed when she got stuck between the closing doors of a metro train at Huixin West, Beijing. The train started to move and continued for some 100 metres, during which the passenger was crushed and fell to the track.

She was taken to hospital, but later succumbed to her injuries.

The local press noted that the screens were erected within the last ten years after a spate of suicide incidents.

Dangerous goods

US: Train carrying dangerous goods collides with lorry and derails; fifty homes evacuated, 5 October 2014

On 5 October 2014, a freight train carrying dangerous goods struck a lorry at a level crossing in Mer Rouge, LA, seriously injuring both crew members and causing two locomotives and 17 wagons to derail. Fifty homes were evacuated for about two hours due to argon leaking from one of the vehicles.

Canada: Dangerous goods derailment in Saskatchewan involves ‘Lac-Megantic’ rolling stock, 7 October 2014

On 7 October 2014, a freight train carrying dangerous goods derailed near Clair, Saskatchewan. Twenty-six of the 100 wagons were involved, two of which began to leak petroleum distillate and caught fire. Around 50 homes were evacuated and the main road was closed.

Canadian National (CN) later said that many of the tankers were of the DOT-111 class, the same type involved in the Lac-Megantic accident of July 2013. A spokesperson said that they are owned by the customer and CN has no choice but to accept them. 'We are on record as favouring a very aggressive phase-out of the older model DOT-111s, but we are required to accept these cars at this point,' he went on.

'We are calling on the industry and the federal government to phase them out, but the fact is, there are many of them, and it will take time to do this.'

The 111 is considered the workhorse of the North American fleet and makes up about 70% of all tank wagons on the network. They have a service life of between 30 and 40 years. However, both CN and Canadian Pacific (CP) have said they are already phasing out or retrofitting their fleet.

Since October 2011, all new tankers have been built to safer specifications, but there is a long backlog on new orders as there are only a handful of manufacturers in North America. A government-commissioned report notes that there are about 228,000 DOT-111s in service throughout the continent. About 92,000 carry flammable liquids; about 26,000 reinforced models have been put into service – a figure that is expected to rise to 52,500 next year.

Transportation Safety Board of Canada (TSBC) investigators are focusing on a length of broken rail as the likely cause of this latest derailment. 'There were some signs of distress and wheels going over a piece of rail that was broken already,' Rob Johnston, head of TSBC rail investigations in the agency’s central region, told the media.
‘Pieces of the rail head are worn, they're battered. There's some indications this had broken and there's some indication wheels had run over the rails. So [it’s] quite possibly the point where it likely occurred.’

The TSBC is now reviewing CN's inspection and maintenance records along the stretch of track concerned.

**New Zealand: Freight off at Port of Tauranga – dangerous goods involved, 15 November 2014**

At 20:50 (local time) on 15 November 2014, a freight train derailed in a yard near Port of Tauranga. One of two containers carrying batteries overturned, causing a small amount of acid to leak. The cause has yet to be determined.

**Cause TBA**

**Australia: Driver injured in Tasmania freight train derailment, 9 November 2014**

At around 05:00 (local time) on 9 November 2014, a freight train derailed just north of Colebrook, Tasmania, on a newly laid section.

The driver was injured in the incident, which saw both locomotives overturn.

Seventeen wagons also left the tracks, one of which was carrying petroleum.

The Australian Transport Safety Bureau is investigating.

**US: Freight train collision leads to derailment near Missoula, 13 November 2014**

Just before 22:30 (local time) on 13 November 2014, a westbound freight train struck the rear of an empty eastbound consist as the former was joining the main line from a siding. Three locomotives and ten unladed wagons were derailed as a result. Two members of the westbound crew were treated for minor injuries. Local power lines were also damaged, leaving residents without electricity for around two hours.

**NEWS UPDATES**

**Canada: Lac-Mégantic corner’s report in: ‘47 violent deaths could have been avoided’**

The Lac-Mégantic accident of 6 July 2013 could have been avoided, coroner Martin Clavet has concluded in his report on the deaths of the 47 victims.

Clavet's document is similar to the TSBC report, in its description of the mechanics of the incident, but it also goes into specific detail about where each victim was found, who they were with, and the steps taken to identify the remains. In most cases, nothing was left but bones and ash.

Clavet also provides the possible causes of death, such as breathing burning hot fumes, succumbing to toxic gases, or fatal shock after being buffeted by an explosion. It was impossible in most cases to determine the precise cause of death.

In each case, the same conclusion was reached: ‘It was a violent death. This death could have been avoided.’
Clavet calls for various levels of government study and adds that Transport Canada (TC) should implement the recommendations made by the TSBC with regard to train safety. Specifically, he stated that there needed to be clear guidelines on how many handbrakes should be applied to a train, based on its weight and slope of the track.

The coroner also wants TC to ensure that trains carrying hazardous materials are not left unattended.

‘There have already been notable advances and numerous aspects of rail security have been clarified,’ he said in a statement. ‘However, deficiencies persist and certain measures still have to be clarified.’

The Railway Association of Canada commented on the report, saying, ‘This tragedy never should have happened […]. We want the people of Lac-Mégantic to know that we remain committed to learning everything we can from this tragedy, and that we’re working with all levels of government to make sure that our industry is as safe as possible.’

TC has said that it has already taken significant action on rail safety, including with brakes and extra supervision for hauling dangerous goods. ‘There are a lot of these matters that we've already addressed through our legislation,' said Transport Minister Lisa Raitt. 'We've been working with municipalities and rail on all of these matters. So we've heard this before. It's great to see it again.'

**US: Ineffective safety management common theme in 5 recent Metro-North accidents says NTSB**

The National Transportation Safety Board (NTSB) has announced that, in its investigation of five Metro-North accidents, it has identified several recurring safety issues, including inadequate and ineffective track inspection and maintenance, extensive deferred maintenance issues, inadequate safety oversight, and deficiencies in passenger vehicle crashworthiness, infrastructure worker protection procedures and the organizational safety culture.

Within an 11-month period from May 2013 to March 2014, the NTSB launched investigations into five significant accidents involving Metro North. Taken together, these resulted in six fatalities and 126 injuries.

‘Seeing this pattern of safety issues in a single railroad is troubling,’ said NTSB Acting Chairman Christopher A. Hart. ‘The NTSB has made numerous recommendations to the railroad and the regulator that could have prevented or mitigated these accidents. But recommendations can only make a difference if the recipients of our recommendations act on them.’

The probable causes relate to the following Metro-North accidents:

- 17 May 2013, derailment and subsequent collision in Bridgeport, Connecticut;
- 28 May 2013, employee fatality in West Haven, Connecticut;
- 18 July 2013, CSX derailment on Metro-North tracks in Bronx, New York;
- 1 December 2013, derailment in Bronx, New York; and
- 10 March 2014, employee fatality in Manhattan, New York

As a result of the early findings from the five investigations, the NTSB has initiated an in-depth special investigation into Metro-North. On 19 November 2014, it will hold a meeting to discuss the numerous safety issues identified during that special investigation. During the meeting, investigators will discuss all five accidents, examine the common elements found in each, and highlight lessons learned and the steps that have been taken to make rail transit safer for Metro-North passengers.
The NTSB will also issue safety recommendations designed to improve safety for Metro-North and other railway companies.

**US: Montana ’737’ derailment of July 2014 possibly caused by track defects**

On 4 July 2014, a freight train carrying a number of Boeing 737 fuselages and other large aeroplane assemblies derailed on its way to the Boeing factories in Washington state.

Three of the fuselages fell down an embankment next to the Clark Fork River, near Alberton, western Montana. All were later recovered by salvage crews.

In November, the Federal Railroad Administration (FRA) revealed that the incident may have been caused by ‘issues with the track alignment’. 