1. **Key Safety Issues**

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

1.1.1 During April and May 2014 there were no passenger accidental, one workforce accidental and four accidental public fatalities.

1.1.2 During April and May, there were 55 signals passed at danger (SPADs). This is 13 more 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 55 SPADs, 13 were risk-ranked potentially significant (16+), and one was risk-ranked as potentially severe (20+).

It is noted that at 306 the annual moving average number of SPADs at the end of May has risen above 300 for the first time since September 2011. This is a continuation of the rising trend that started around 18 months ago.

1.2 RAIB initiated two investigations:

1.2.1 Two signals passed at danger near Greenford, 20 March 2014

*Double SPAD raises questions about TPWS self-isolation, the in-cab display warning of this fact, and the monitoring of driver competence.*

1.2.2 Freight train derailment at Angerstein Junction, 2 April 2014

*Derailment calls state of track and rolling stock into question again.*

1.3 RAIB published two reports:

1.3.1 Passenger train collision at Norwich station, 21 July 2013

*Driver’s lack of vigilance exposes poor driver supervision, management training and the risk from permissive working.*

1.3.2 Near miss at Llandovery level crossing, Carmarthenshire, 6 June 2013

*Lapse in concentration highlights poor equipment layout design and failure to upgrade in accordance with modern practice.*

1.4 There was one other RAIB report:

1.4.1 Near miss at Balnamore AHB crossing, Northern Ireland, 31 May 2013

1.5 Serious RTC leads to death of 3 workers

At 04.30 on 9 June 2014 a white minibus containing 5 rail contractors from South Wales collided with a Heavy Goods Vehicle on the westbound carriage way at Junction 17 of the M4. Two were pronounced dead at the scene and a third died of injuries in hospital on 11 June. This is the worst workforce loss of life in a single incident since Tebay in 2004.
2. Members and Stakeholders

2.1 Membership Applications

2.1.1 Crossrail
Crossrail have confirmed that they are going to proceed and we will report when the membership officially commences.

2.2 GSM-R
The GSM-R Programme that RSSB has supported for many years has completed the roll out across the network with effect from the end of June. Although there remains some final work to undertake, it will now be possible to devote more resources to the ERTMS National programme, in accordance with expectations.

2.3 Polish Visit
We hosted a deputation of government policy advisors from Poland that is considering the implications of EU legislative requirements and recent developments in Poland. The material we shared was sufficient to convince our visitors that they wish to promote some sort of collaborative approach in the area of both safety and standards, for the Polish railway system.

2.4 SNCF
The committee advising the SNCF Board on safety has met twice since the last board meeting. A presentation was made to the committee about the GB approach to the collection and analysis of safety data and intelligence. In the discussions that followed this presentation it became clear that the GB approach is potentially going to form part of the recommendations which the committee will develop later in the year.

2.5 Abu Dhabi Visitors
A senior deputation from the Abu Dhabi Department of Transport visited RAIB, ORR and RSSB in June. They were looking for agreements and MOUs to support the development of their regulatory framework for new metro and light rail lines. In discussion we concluded that there may be an opportunity to further share our experience in the development of institutional arrangements for safety and we indicated a preparedness to enter into an MOU if both sides could see mutual benefit from this.

2.6 International Level Crossing Awareness Day (ILCAD), 3 June 2014; professional drivers’ misuse of level crossings.
Nearly 50 countries from around the world were involved in the International Level Crossing Awareness Day (ILCAD) on 3 June 2014. The theme this year addressed professional road drivers who misuse level crossings. An international press conference was hosted by REFER, the Portuguese railway infrastructure manager, in Lisbon. This included a roundtable session on safety campaigns, chaired by Alan Davies (of RSSB), Chairman of the European Level Crossing Forum, with contributions from RFF (French infrastructure manager), Infrabel (Belgian infrastructure manager), PKP (Polish infrastructure manager), Operation Lifesaver Estonia, Italian Accident Investigation Branch and REFER. The Portuguese Secretary of State for Infrastructures, Transport and Communications, also addressed the conference and announced that REFER and the country’s road infrastructure company will combine to form one organisation later this year.
2.7 National Operations Risk Conference, 2 October 2014

The 2014 SSRG sponsored National Operations Risk Conference is to be held at Network Rail’s Leadership Development Centre at Westwood and is going to be chaired by Charles Horton. The conference is going to be a mix of presentations, good practice exhibitions and audience interaction.

3. Research, Development and Innovation

3.1 Innovation

3.1.1 As anticipated at the last board DfT have now confirmed their intention to award an additional grant to RSSB in 2014/15 or £16.9m. A formal a grant offer letter containing the full details has been received and countersigned. Accordingly, these funds are delegated to TSLG, while the existing delegation of £4.5m from the Core research grant is now reduced to £3.5m for this year. The table below provides the breakdown:

<table>
<thead>
<tr>
<th>2014/15 Additional Grant</th>
<th>£</th>
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</thead>
<tbody>
<tr>
<td>Small Business Research Initiative</td>
<td>7.5</td>
</tr>
<tr>
<td>Rail Franchising Innovation: Open to All</td>
<td>6.0</td>
</tr>
<tr>
<td>Making the Most of European Funding</td>
<td>0.4</td>
</tr>
<tr>
<td>Co-funded Strategic Research</td>
<td>2.0</td>
</tr>
<tr>
<td>Rail Technical Skills Development</td>
<td>0.5</td>
</tr>
<tr>
<td>Rail Supply Group Support</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16.9</strong></td>
</tr>
</tbody>
</table>

TSLG will determine how the funds are utilised except for the Rail Supply Group Support where the specific expenditure will be proposed by RSG. The £0.5m support for RSG was prominently featured in a recent press release from the DfT and BIS which launched the group. One further consequence of this additional grant is that we will continue to make quarterly reports to the DfT to meet the conditions of the offer letter (and to keep DfT well informed).

3.1.2 Discussions are proceeding satisfactorily with Network Rail over a formal agreement for the payment of the Innovation funds for the period 2014 – 2019. Although all the governance has been long settled, as reported to this board, the Office of Rail Regulation is placing requirements on NR that mean a formal agreement is necessary if NR is to increase its Regulatory Asset Base behind the funding of RSSB.

3.2 Digital Railway

Network Rail are planning to launch the “Digital Railway”. This is a programme to accelerate the implementation of ETCS and other proven digital technology. This may have implications for TSLG activities, but as Jerry England both leads on Digital Railway for Network Rail and chairs TSLG we hope to achieve a coordinated approach. Network Rail are discussing with RDG Tech & Ops how to broaden industry support.
3.3 **R&D Budget Authorisations**

3.3.1 New projects authorised by the executive since the last board:

<table>
<thead>
<tr>
<th>Date</th>
<th>T#</th>
<th>Title</th>
<th>Cross industry group</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/06/2014</td>
<td>T1050</td>
<td>Release of Emergency Brake Performance Constraints</td>
<td>Adhesion Research Group</td>
</tr>
<tr>
<td>03/06/2014</td>
<td>T1052</td>
<td>Review of the rules for the operation of trains through flood water</td>
<td>Train Operations Risk Group</td>
</tr>
<tr>
<td>03/06/2014</td>
<td>T1053</td>
<td>Updating the level crossing risk management toolkit</td>
<td>Road-Rail Interface Safety Group</td>
</tr>
<tr>
<td>19/06/2014</td>
<td>T1026</td>
<td>Evaluation of signs, markings and audible announcements at platforms and development of human factors guidance on the design, testing, validation, installation and maintenance of this information</td>
<td>People on Trains and Stations Risk Group/PTI Strategy Group</td>
</tr>
<tr>
<td>19/06/2014</td>
<td>T1062</td>
<td>Platform recess - review of requirements</td>
<td>Infrastructure Standards Committee/PTI Strategy Group</td>
</tr>
</tbody>
</table>

3.4 **FutureRailway Report**

The full report is available at:


3.4.1 Testing: The test tram programme was launched by the Secretary of State for Transport at Rail Live 2014. The rail alliance testing voucher scheme continues to be successful with 9 users in the last month.

3.4.2 Avoidance of Bridge Reconstruction: 11 proposals were submitted to the Avoidance of Bridge Reconstruction Competition of which nine have been selected for funding for Phase 1.

3.4.3 Aesthetic OLE: Initial award meetings have taken place with all successful applicants. Information from applicants regarding payments schedules and deliverables and milestones is being sought.

3.4.4 Pantograph test rig: The pantograph measurement device competition received 6 entries. The successful proposal will result in two test systems, one at the University of Birmingham and one at Bounds Green Depot.

3.4.5 Remote Condition Monitoring: The judging process identified 22 projects to be offered feasibility studies. The Network Rail/South West Trains Wessex Alliance are expected to deliver the demonstrator projects.
3.4.6 Customer Experience: The first investment with a winner of the Customer Experience competition has been agreed.

3.4.7 Space for Rail: Two innovations have been selected as winners of the Space for Rail competition.

3.4.8 Ticketless Gates / Gateless Tickets: Four submissions were received, the selection panel was meeting on June 26th to determine the winners.

3.4.9 Tomorrow’s train design: Judging of the first stage of the ‘Tomorrow’s Train Design Today’ took place on 11th June and from 48 entries selected 25 who will give short presentations prior to selection of 15 to undertake feasibility studies of their concepts.

3.4.10 Enabling Innovation Programme: Next Generation Rail event managed by RRUKA and Future Railway held in Manchester from 11 – 13 June. Innovation Academy Pilot completed with Staffordshire Alliance. Twelve companies have expressed interest or undertaken the Innovation Capability Maturity Model (ICMM) self-assessment.

4. Interim Standards Strategy

4.1 Increase in scope of interoperability from January 2015.

The industry standards coordination committee (ISCC) has approved an approach for the management of Railway Group Standards (RGS) from the beginning of 2015 – when the scope of Interoperability TSIs becomes the whole network. RGSs associated with assets will still be required for the following purposes: To define compatibility with pre interoperability assets; to fill open points in TSIs; to be the National Technical Rules where this is provided for in TSIs; and finally to define the interface for all projects ‘below the bar,’ as defined in the regulations. RGSs that fulfil the role of National Safety Rules are not affected by this change.

In order to simplify matters as much as possible, ISCC has agreed to work toward a situation where the RGS for ‘below the bar’ application will simply mandate ‘apply the TSI plus any National Technical Rules.’ This will generally be a helpful simplification of the standards regime, but there are likely to be some instances where this change could import cost to NR, and we have agreed with NR to run a joint exercise to identify these cases and enable the exploration of other solutions.

4.2 ISCC has approved the CCS, ENE and RST standards committee’s strategic plans for 2014-19.

4.3 Six guidance notes on the Common Safety Method on Risk Evaluation and Assessment have now been published (7 June). Although a rather dry set of titles, this guidance is expected to make a significant contribution to the effective planning and delivery of projects to create or change assets across the industry, and directors may wish to ask for a more detailed briefing at a subsequent board.

4.4 The Traffic Operation and Management standards committee has approved for consultation the documentation that supports the creation of the ‘Safe Work Leader’.
5. **Internal**

5.1 **Finance Overview**

5.1.1 **Budget 2014/15**

The operating budget for 2014/15 was finalised in April. RSSB’s income is budgeted to be £39.8m and expenditure £43.0m leading to a loss before tax of £3.2m.

Net core expenditure is budgeted at £22.2m, R&D at £13.4m, Future Rail £5.8m and CIRAS £0.9m. The balance of £0.7m is the excess of the accounting charge for pension costs (provided by our actuary) over the company’s actual cash contributions into the scheme. These are not easily allocated between business areas.

Variances to these figures would most likely occur in the Future Rail business area where actual expenditure is likely to be greater than the fairly conservative budget of £5.8m. If this arises there will be no impact on the bottom line as any Future Rail expenditure variance is matched by a corresponding income variance in accordance with the accounting policy for Future Rail grant income.

For the same reason the further £16.9m recently awarded by the Department for Transport is unlikely to significantly affect the company’s bottom line though the impact of the grant is still being reviewed.

The core business is budgeted to break even after taking account of some unallocated funds held centrally to ensure a degree of flexibility over the coming year. If these are not utilised then the core business will record a larger surplus.

The overall company deficit arises mainly from the R&D area where a loss of £2.9m is budgeted and will be funded by the unspent grant taken to reserves in previous years. The balance of the overall £3.2m loss is largely the net effect of the pension accounting charge and expected interest.

At period two all business areas were performing within budget.

Capital expenditure will be dominated by work on R2, SMIS and the Requirements Management Database but this may change as key business systems are reviewed and potentially upgraded or replaced.

5.1.2 **Other Finance Matters**

The company’s cash balances currently fluctuate around the £40.0m mark and are more likely to rise than fall over the coming year. Most cash is out on deposit for up to six months earning reasonable levels of interest and we are currently reviewing RSSB’s treasury policy, with the help of the Audit Committee, to ensure that going forward funds continue to be managed effectively and responsibly.

We received the draft results of the Triennial Valuation of the company pension scheme which showed a 96% funding level – 2% worse than the indicative results. The results are highly sensitive to the proposal that the section is classified as “covenant 1 (other)” as opposed to a simple “covenant 1”. If the latter were the case the scheme would show a modest surplus. We are in discussions with the trustee about this and other points and will report back on this topic at the next board meeting.
5.2 Communications

5.2.1 Media enquiries

- SPADs and driver fatigue research, Mail on Sunday
- Level crossing incident statistics, BBC Yorkshire
- SPADs and SPAD risk, TrueNorth TV
- Great Heck accident (2001), Newcastle Chronicle

5.2.2 Press releases issued

- 28 April: Rail industry eyes £32m yearly saving by improving health and wellbeing
- 8 May: Finalists for the Aesthetic OLS (Overhead Line Structures) competition FutureRailway), held in association with the Royal Institute of British Architects (RIBA) and HS2 Ltd announced
- 12 May: Next Generation Rail: From Seed to Success - 11-13 June 2014

5.2.3 Publications

The following were published during May/June 2014:

- RED 39 ‘Keeping a cool head’
- Information Bulletin May/June 2014
- Right Track
- Analysis of the risk from animals on the line (2nd edition)
- Railway Group Standards Catalogue

5.2.4 Events

- 8 May: Dissemination briefing – Development of an assessment process for the Compatibility of Rolling Stock and Differential Speed. *RSSB facilitated briefing*
- 11 June: Risk Management Forum *RSSB facilitated Forum*
- 11-13 June: Next Generation Rail: From Seed to Success. *RRUKA facilitated event*
- 16 June: Workshop on the management of musculoskeletal disorders (MSD) in the rail industry. *RSSB facilitated workshop*
- 17 June: Improving the methods used to provide access to and from trains for wheelchair users *RSSB facilitated launch event*

5.2.5 Media coverage

- Rail Professional, May issue – feature on the new RSSB website
- Rail Professional, June issue – feature on the health and wellbeing issues and outputs, and on the Sustainable Rail Programme
- @RSSB_rail Twitter – now has 395 followers.
- @FutureRailway Twitter – now has 460 followers.

The Communications forward planner is attached as Annex B.
5.2.6 **Website**

Since launching the new website in April, there have been 131,000 user visits with 662 formally registering.

Among the most viewed areas of the site are the pages and publications dealing RSSB’s purpose and role which suggests an opportunity to further simplify and reinforce the way the brand, products and services are presented.

A dedicated news area will be developed to help provide regular, bite-size chunks of content to boost understanding of the organisation and the various products and services.

Areas connected to the Railway Group Standards and Rule Book also remain popular which suggests an opportunity to ensure RSSB is more closely associated with activities which are less well-known such as in research, development and innovation.

Of registered users, about a fifth are from non-member consultancy services, which suggests significant interest in our knowledge and opportunities as well as potential for commercial benefit or new relationships. While visitors from overseas make a very small proportion of the total, these also evidence of interest in RSSB and Britain’s railways generally.

5.3 **RSSB staff safety issues**

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

5.4 **Contracts over £250k**

£300,000 contract to cover funding contribution to Brecknell Willis & Co for their successful application to the RSSB/RIA innovation competition 2014. This money will be used to develop a demonstrator ‘active pantograph’

5.5 **IT Strategy Review Update**

The IT Strategy Review has been completed by David Lloyd, ex CIO at Amey and at Nokia UK. The overall rating was amber. The key points emerging are:

- Information Technology lies at the heart of RSSB products and services
  - RSSB supports 48 industry “systems” (ranging from the Safety Risk Model and SMIS to complex spreadsheet tools).
  - RSSB spends c£4.5m p.a. and this is likely to grow by 5%+ p.a.
- RSSB has no current holistic IT strategy
- Infrastructure is fit for purpose
- There is scope for more efficient use of existing back-office systems

There were 50+ recommendations. The most significant is a proposal that Information Technology requires a centre of excellence within RSSB. All the recommendations are being reviewed and a plan to address is being prepared.

The report will be circulated to the Audit Committee which will receive an update on the plan at the next Audit Committee meeting.

5.6 **Risk Management Forum**

The Risk Management Forum 2014 was held at Westwood (Network Rail’s Training and Development Centre) on Wednesday 11th June. 120 delegates attended from across the industry with representation from 24 RSSB member companies. The first morning session considered perspectives of railway risk with speakers from RSSB, ASLEF, ORR and RAIB. The second half of the
morning considered the implementation of the Common Safety Method (CSM) on Risk Evaluation and Assessment, a contrasting presentation from the Highways Agency explained how they were using some of RSSB’s guidance on Taking Safe Decisions. The afternoon took a slightly more tactical approach which included the work on the PTI Strategy and Network Rail’s Business Critical Rules programme.

5.7 People

5.7.1 Internal Director Recruitment

The first stage of interviews have taken place for the recruitment of the Director roles for Standards and for Risk and second stage interviews are currently being set. The board will be further updated when the posts have been filled.

The Director role for RD&I is still currently being defined, taking into account development of innovation activities across the industry.

5.7.2 Non-Industry, Non-Executive Director Recruitment

The Appointments Committee have approved the brief to start recruiting non-industry non-executives director(s) as agreed at the January board meeting. The head hunter has been identified and briefed and the search is currently underway. A reviewed long list of candidates will be refined by the Appointments Committee by the end of August. The board will be further updated on progress in September.

6. 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 May 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.

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 May 2014**

1.1 **Fatalities**

During April and May there were no passenger accidental, one workforce accidental and four accidental public fatalities:

- On 1 May, a member of workforce was fatally injured in a road traffic accident in Newcraighall (Scotland).
- On 31 May, a cyclist was struck at Wharf Road AHB level crossing (Anglia).
- On 7 April, a child was electrocuted on conductor rail after falling from the platform at Horley (Sussex).

There were 46 suspected suicides during April and May 2014. The average monthly figure over the past 12 months has been 23.6. 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**

On 2 April, a freight train derailed on the single line at Angerstein Junction (Kent). There were no reported injuries.

On 9 April, a freight train derailed on the down reception line at Westbury South Junction (Western). There were no reported injuries.

On 26 April, a freight train derailed at Ripple Lane (Anglia). The leading locomotive was derailed by one wheel and the second locomotive was derailed by all wheels and suffered a fuel leak. The leading bogie of the first wagon and the second bogie of the second wagon were also derailed. There were no reported injuries.

On 7 May, a road vehicle was struck by a passenger train at Ivy Lea Farm UWC level crossing (London North East). The driver of the road vehicle was fatally injured and a member of workforce suffered from shock.

On 8 May, a passenger train collided with another passenger train at low speed at Glasgow Central High Level (Scotland). There were no reported injuries.

On 11 May, a motorcyclist was struck by a passenger train at Frampton Gates level crossing (Western). The motorcyclist was fatally injured.

On 22 May, a freight train struck buffer stops at Kingsbury sidings and derailed, blocking adjacent running line at Kingsbury Branch Junction (London North West). There were no reported injuries.

On 25 May, an ECS train derailed in platform at Paddington station (Western). There were no reported injuries.

On 30 May, a freight train passed signal at red and became derailed on trap points at Doncaster (London North East). There were no reported injuries.
1.3 **Precursors**

During April and May 2014, there were 55 signals passed at danger (SPADs). This is 13 more than in the same two months in the previous year. The average monthly figure over the past 12 months has been 25.5.

Of the 55 SPADs, 13 were risk-ranked potentially significant (16+), and one was risk-ranked as potentially severe (20+).

There were also 4 broken rails during April and May.

1.4 **SPADs risk ranked 20+**

There was one SPAD risk ranked 20+ during April and May 2014; there are currently seven risk ranking forms outstanding for April and May.

SPAD risk ranking 23 – On 20 April a passenger train passed B15 signal at danger on the Down Main line at Dewsbury by approximately 804m. The signal at which the SPAD occurred was reported as having no indication when the SPAD occurred. B15 is a signal protecting a plain line and the distance to the conflict point where a collision could have occurred is 804m. The signal was not protected by TPWS at the time due to the signal being blacked out. This was holding B685 at danger, which the signaller instructed the driver to pass because of B15 being blacked out. The driver passed B685 at danger but did not stop at B15. As the train reached the first potential conflict point the risk ranking overrun probability is 10 (the highest being 10). In terms of the potential consequences, should a head-on or side on collision with a train have occurred, the SPAD risk ranking consequence score was 13 (the highest being 18). The score arises because (a) the permitted speed of the SPAD train was 44mph and for the conflict train was 0mph (potential collision speed in the calculation - 22 mph), (b) the collision would have involved two multiple unit passenger trains and (c) both trains were peak loaded with passengers.

2. **RAIB investigations initiated (GB heavy rail) – two**

2.1 **Two signals passed at danger near Greenford, 20 March 2014**

RAIB is investigating an incident in which a passenger train passed two consecutive signals at danger near Greenford on 20 March 2014 and travelled a considerable distance before being stopped.

The train involved was the 11:36 Chiltern service from Paddington to West Ruislip. There were no reported injuries.

A freight train had passed the junction at Greenford shortly before the passenger train was due. Because this train was still occupying the line between Greenford and South Ruislip, the signaller at Greenford kept the signal at the junction at danger. The passenger train, travelling at about 20 mph, passed this signal and the next one, 142 yards further on, which was also at danger. It passed over the junction and onto the single-track section towards South Ruislip, which was still occupied by the freight train. The signaller at Greenford was unable to send an emergency radio message to the driver, but contacted the signaller at Marylebone, who was able to do so. The train was stopped after it had travelled about 1.75 miles past Greenford.

RAIB’s preliminary examination found that the TPWS fitted to the train and the two signals concerned did not intervene to stop the train. This was because the
equipment had self-isolated when the driver prepared the train for departure from Paddington. Although this was indicated by a flashing light in the cab, the train was driven with the TPWS isolated.

RAIB’s investigation will seek to understand why the TPWS self-isolated, why the driver did not identify that the TPWS equipment was isolated and rectify the problem, and also why he did not respond to the signals at danger at Greenford. It will consider Chiltern Railways’ arrangements for training, briefing and assessing the competence of drivers. The investigation will also consider the operation of the signals at Greenford and the reasons why the signaller was not able to transmit a radio message to the driver after the train had passed the signals at danger.

2.2 **Freight train derailment at Angerstein Junction, 2 April 2014**

At about 12:16 on 2 April 2014. The train comprised 20 wagons (JRAs and JGAs), hauled by a Class 66. It had just left sidings at Angerstein Wharf, where the wagons had been unloaded, and was travelling to Bardon Hill in Leicestershire. It then derailed, at a low speed, on a curved section of the single track which links the sidings to the North Kent line at Angerstein Junction.

RAIB’s preliminary examination revealed that the leading bogie of the ninth wagon had derailed shortly after passing over a set of trap points about 30 metres before the junction with the North Kent Line, and that these points had been correctly set to allow the passage of the train.

Shortly after the derailment, the front of the train stopped at a signal on the North Kent line. The driver was still unaware of the derailment and he restarted his train from this signal when it cleared. The trailing bogies of the eighth and ninth wagons were then pulled off the track as the derailed bogie ran over part of a crossover between the Up and Down North Kent lines.

The train continued along the Down and was then stopped, about 180 metres from the initial point of derailment, by an automatic brake application caused when the brake pipe broke between the ninth and tenth wagons.

Although routed onto the Down North Kent line, the derailed wagons stopped in a position where they were foul of the adjacent Up line. Fortunately, there was no train on this part of the Up line when the derailment occurred.

In addition to damage to the derailed wagons, cabling and signal equipment, the derailment caused track damage. Train services on the North Kent line suffered disruption until 5 April.

RAIB’s investigation will seek to identify the sequence of events leading to the derailment and the factors that played a part. The investigation will include consideration of both track and wagon characteristics.

3. **RAIB reports published (GB heavy rail) – two**

3.1 **Passenger train collision at Norwich station, 21 July 2013**

The incident occurred at 00:11, when a passenger train carrying 35 passengers collided with a train stabled in Platform 6 at 8 mph. Eight passengers needed hospital treatment.

RAIB concluded that the accident occurred because during the last 20 seconds of the driver’s approach to the station, he either had a lapse in concentration or a microsleep.
RAIB identified some factors which may explain the driver’s possible lapse in concentration (ie the noise made by the passengers immediately behind his cab and the various thoughts occupying his attention at the time of the approach). RAIB also found that the driver had a previous operational history indicating that he was prone to lapses in concentration, and that this had not been identified by Greater Anglia’s competence management system.

Greater Anglia’s investigations of the previous incidents that the driver had been involved in had not raised any concerns about the driver’s ability to maintain concentration. This was because the driver manager who carried out the investigation had not been trained to consider that incidents, seemingly different in nature, could be linked by underlying behavioural issues. Opportunities to formally review the driver’s operational history were missed and this was also not identified by the internal audits conducted by Greater Anglia.

Furthermore, the driver was tired through a short-term lack of sleep, and his performance might also have been affected by the prescribed medication that he was taking. These could have been other factors leading to a lapse in concentration, or they could have led to the driver ‘microsleeping’.

RAIB identified two learning points and made five recommendations as a result of its investigation. The learning points relate to the importance of reporting all incidents to signallers, and the importance of providing occupational health physicians with all relevant medical information during consultation.

Four recommendations are addressed to Greater Anglia with respect to its competence management system, its accident and incident investigation procedures, its auditing processes and its fatigue management system. A further recommendation is addressed to Network Rail, with the support of Greater Anglia, to understand and mitigate the risk associated with permissive train movements at Norwich station.

The full report may be found here:

3.2 Near miss at Llandovery level crossing, Carmarthenshire, 6 June 2013

The incident occurred at around 05:56, when a Swansea–Shrewsbury service was driven over Llandovery level crossing while it was open to road traffic. As the train approached, a van drove over immediately in front of it. A witness working in a garage next to the level crossing saw what had happened and reported the incident to the police.

The level crossing is operated by the train’s conductor using a control panel located on the station platform. The level crossing was still open to road traffic because the conductor of train 2M43 had not operated the level crossing controls. The conductor did not operate the level crossing because he may have had a lapse in concentration, and may have become distracted by other events at Llandovery station.

The train driver did not notice that the level crossing had not been operated because he may have been distracted by events before and during the train’s stop at Llandovery, and the positioning of equipment provided at Llandovery station relating to the operation of trains over the level crossing was sub-optimal.

RAIB identified that an opportunity to integrate the operation of Llandovery level crossing into the signalling arrangements (which would have prevented this incident) was missed when signalling works were planned and commissioned at
Llandovery between 2007 and 2010. RAIB also identified that there was no formalised method of work for train operations at Llandovery.

RAIB has made six recommendations. Four are to the train operator, Arriva Trains Wales, and focus on improving the position of platform equipment, identifying locations where traincrew carry out operational tasks and issuing methods of work for those locations, improvements to its operational risk management arrangements and improving the guidance given to its duty control managers on handling serious operational irregularities such as the one that occurred at Llandovery.

Two recommendations are made to Network Rail. These relate to improvements to its processes for signalling projects, to require the wider consideration of reasonable opportunities to make improvements when defining the scope of these projects, and consideration of the practicability of providing a clear indication to train crew when Llandovery level crossing, and other crossings of a similar design, are still open to road traffic.

The full report may be found here:


4. Other RAIB reports (GB heavy rail) – one

4.1 Near miss at Balnamore AHB crossing, Northern Ireland, 31 May 2013

The incident occurred at around 03:10, when a car driver was forced to take action in order to avoid colliding with an engineering train that was traversing the crossing, which is located between Coleraine and Ballymoney on the Belfast to Londonderry/Derry line.

The car subsequently struck metal fencing forming part of the crossing, causing minor injuries to its two occupants and damage to the car. The crew of the train spoke with the car driver and then continued work without reporting the accident.

At the time of the accident, the engineering train was undertaking weed-spraying operations within a planned possession. Because of the possession, the crossing was being operated manually via its local controls. However, as the train passed over, its half barriers had not been lowered and its road traffic signals were not operating, even though this was required by the railway rules relating to this type of level crossing. This meant that the car driver did not have enough warning to stop his car before the train arrived.

RAIB found that the team responsible for undertaking weed-spraying was routinely not complying with the rules relating to the operation of AHBs within possessions. This was probably due to a combination of factors, including the team possibly having a low perception of the risks presented by this non-compliance and a desire by them to complete the weed-spraying more quickly. In addition, the team may have been influenced by the status of rules relating to the local control of other types of crossing in possessions and the method of work adopted at level crossings during a recent project.

RAIB also found that this non-compliance was not detected or corrected by safety checks conducted by Northern Ireland Railways. In addition, the investigation identified that the appointment of additional competent staff to operate crossings within the possession may have prevented the accident from occurring.

RAIB identified three key learning points: that the person in charge of a possession should correctly complete the form intended to help them keep track of level
crossings; that boarding moving trains, where it is prohibited, should be avoided; and that accidents should be reported.

RAIB has also made three recommendations to Northern Ireland Railways, relating to: ensuring that activities undertaken at level crossings within possessions are subject to effective risk controls; ensuring that method statements relating to track engineering are supported by risk assessments; and increasing the opportunities for non-compliances to be detected and corrected.

The full report may be found here:

5. **Overseas accidents (Apr–May 14)**

*(Possible) track maintenance*

**US: Subway train derails in Queens, injuring 19, 2 May 2014**

At around 10:30 (local time) on 2 May 2014, a commuter train derailed just outside 65th Street station in Queens. The middle six carriages of the eight-car unit left the tracks, sending standing passengers tumbling to the floor and others across aisle and vestibules.

The cause of the accident remains unclear; the Metropolitan Transportation Authority has launched an investigation, adding that there appeared to be track damage at the derailment site, but no structural damage.

**Equipment failures**

**South Korea: Collision at Sangwangsimni station, Seoul, injures over 170, 2 May 2014**

On the afternoon of 2 May 2014, a subway train struck the rear of another as it was pulling out of Sangwangsimni station, Seoul. Over 170 people were injured, most not seriously.

Around 1,000 people were evacuated from the station.

Seoul Metro official Chung Soo-young said the accident was caused by a signal failure.

It was also revealed that an on-board announcement for passengers to stay on the train were widely ignored, many forcing the doors and jumping down to the track.

**India: Passenger train derails, strikes freight, kills at least 20, 26 May 2014**

At around 11:00 (local time) on 26 May 2014, the Gorakhdham Express derailed and struck a stationary freight on the same line at Chureb, in Uttar Pradesh.

At least 20 people were killed and 83 were injured, including the driver and assistant driver of the passenger train.
Reports say that six carriages were involved, and that the accident was the result of a ‘signal failure’. The driver apparently attempted to stop the train several times, but to no avail. An investigation has been launched.

**Fatigue**

**US: Driver of train that struck stops at O’Hare Airport is dismissed**

The driver of the train that struck and overrode the buffer stops at O’Hare International Airport on 24 March 2014 has been dismissed.

A CTA spokesperson confirmed that the driver, whose identity has not been released, was dismissed after admitting that she had fallen asleep in the cab. She also admitted that this was not the first time she had done so.

The National Transportation Safety Board (NTSB) told the press two days after the accident that an emergency braking mechanism had engaged, but failed to deploy as designed.

**US: ‘Bronx’ driver said to have sleep apnoea, passenger files lawsuit**

The NTSB has announced that the driver of the Metro-North passenger train that derailed in the Bronx last December suffered from severe sleep apnoea, which appears to have been aggravated by a recent change to an early-morning shift the month before the accident.

Samuel Rivera, a passenger left paralyzed by the accident, is also filing a negligence lawsuit against Metro-North, seeking $100 million in damages. Rivera is a Metro-North employee based at Grand Central Terminal in Manhattan, although he was not on duty that day. The company has continued to pay his salary. It is also paying his medical bills and is remodelling his home in Ossining.

**Safety culture**

**Russia: Six killed in collision near Moscow, 20 May 2014**

At 12:38 (local time) on 20 May 2014, a passenger train struck a derailed freight near Moscow, killing six people and injuring 45 more.

One of the carriages was crushed by the impact.

Reports say that the director of the Moscow-Kyiv line has been detained for ‘violation of track maintenance regulations that led to multiple deaths’.

It appears that the drivers of the two trains involved had not been informed about repair work under way on the section. The investigation continues.

**Environmental conditions**

**US: Freight derailment sparks water fears, 14 April 2014**

At around 22:15 (local time) on 14 April 2014, a freight derailed near Nairn when the track formation collapsed at
a culvert, apparently caused by rain combining with spring snow melt to create unusually high water levels. Three locomotives and a flatbed wagon left the tracks.

There were no reported injuries, however, the Sudbury and District Health Unit issued a 'drinking water advisory' for residents who draw water from the Spanish River or from wells nearby, the locomotive having spilled diesel fuel into a creek that feeds the river.

After the derailment, the water treatment plant at Nairn and Hyman, about three kilometres downstream, stopped taking in water from the Spanish River. The 'all clear' was later given, though the 'advisory' remained for those who were not connected to the water mains.

_Dangerous goods_

US-Canada: FRA calls for double manning on dangerous goods trains and the withdrawal of older tank wagons; MMA and three staff charged with negligence

The Federal Railroad Administration (FRA) has announced plans to propose new rules mandating two-person crews as well as new policies for securing stabled trains to prevent the type of runaway seen in Lac-Megantic last July.

Debate over traincrew size has raged for decades, but surfaced again after the accident, as the train involved had been single-manned (albeit in accordance with both Canadian and US rules). The results of the Canadian accident investigation have yet to be made public, but preliminary reports suggested that the driver failed to pin down sufficient brakes (*inter alia*) to secure the train before leaving it unattended overnight.

Immediately after Lac-Megantic, Canadian transportation officials issued an emergency order prohibiting single-manning on trains hauling hazardous materials. Transportation officials in the US had hoped that the cross-industry Rail Safety Working Group would come to a consensus on the issue. The group agreed on other safety recommendations, but hit an impasse on crew size.

The Montreal, Maine & Atlantic Railway (MMA) was the only company operating in Maine with single-person crews at the time of the accident. MMA has since gone into bankruptcy and is in the process of being purchased by a new organization. In May, it, the train driver, its manager of train operations and the rail traffic controller were charged with criminal negligence.

In addition to two-person crews, the FRA plans to propose rules prohibiting freight trains – including those transporting crude oil – from being left unattended on the main line as well as in some yards. The proposed rules would also require locomotive cabs to be locked and their reversers removed or secured.

Meanwhile, federal transportation officials also came under pressure from members of Congress to finalize tougher design standards for the DOT-111-type tank wagon involved in the Lac-Megantic accident.

**US: Oil train derails in Colorado, 10 May 2014**

At 08:00 (local time) on 10 May 2014, six tanker wagons in a 100-wagon oil train derailed in Lasalle, Colorado, causing crude to leak from one vehicle into a nearby ditch.

The size of the spillage was not immediately known, but a vacuum lorry was brought in to remove it. Road tankers were also laid on transfer the oil.
According to the media, the train was loaded in nearby Windsor with Niobrara crude and was bound for New York. Niobrara oil comes from a shale formation in Colorado, Wyoming and Kansas. It is not considered as volatile as the Bakken crude from North Dakota and eastern Montana that exploded in the Lac-Mégantic derailment last July.

**Object on the line**

**US: Commuter train strikes tyre, derails in Chicago, 10 April 2014**

At around 19:40 (local time) on 10 April 2014, a CTA Blue Line service derailed after striking a lorry tyre that had fallen onto the line near Cicero station, Chicago. It was later revealed that the tyre had come from a vehicle on the adjacent Eisenhower Expressway, which then bounced over the railway boundary fence. There were no reported injuries.

**(Possible) sabotage**

**China: Passenger train ‘derailed by disgruntled employee’ injures 15, 13 April 2014**

At 03:17 (local time) on 13 April 2014, a Harbin Railways passenger train derailed in Suihua, injuring 15 people.

The state-run media reported that the incident had been caused by a ‘disgruntled’ employee.

Wu Zhenjin, who led a maintenance team, allegedly disconnected 12 metres of the track, ‘possibly out of anger at being passed over for a promotion’. He was duly arrested.

**Cause TBA**

**India: Passenger train derailment kills 17 in Nidi, 4 May 2014**

At around 10:00 (local time) on Sunday 4 May 2014, a passenger train derailed just outside a tunnel near Nidi, killing 17 people and injuring 120 more.

After the accident, some services were suspended – others re-routed – while rescuers searched the wreckage.

An investigation has been launched.
## Annex B - Communications Forward Planner

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