New partnership to SPARK global knowledge sharing

RSSB has entered into a partnership with the International Union of Railways (UIC) to share knowledge more proactively and efficiently.

A Memorandum of Understanding signed by RSSB and UIC on 1 June 2012 sets out formal arrangements to develop and deliver a knowledge sharing platform that will provide access to rail research and other relevant knowledge, for the benefit of the members of RSSB, UIC and the global rail community.

Following an evaluation process, SPARK has been chosen by UIC as the on-line platform to do this. From January 2013 onwards, the UIC’s International Rail Research Board (IRRBB), (of which RSSB is a member) will be able to use SPARK for sharing between its members and more widely, linking in to a new ‘Railway Research’ web portal hosted by UIC.

SPARK (http://spark.rssb.co.uk), is managed by RSSB, and is like a social network and on-line library all wrapped into one. It provides a way for the rail sector and others to work together and share knowledge more efficiently online, with the aim to reduce duplication, speed up innovation and maximise value. Researchers, innovators and decision makers in rail companies, universities and wider communities are able to upload and share information and knowledge. This could be work they encounter, own or are undertaking, and means users can find answers to their challenges which others have already found. Altogether it makes SPARK a gateway to valuable knowledge across many different railway engineering, operations and management topics.

For details of changes to Railway Group Standards view the Latest Updates page on the RGS Online website www.rgsonline.co.uk


For details of forthcoming dates for RSSB consultations on standards and associated documents, please see: http://www.rssb.co.uk/SiteCollectionDocuments/pdf/rgs/Forthcoming%20consultations.pdf

Front page photo: Image courtesy of Southeastern.
Now the new agreement with UIC sees SPARK developing an enhanced, international shop-window, enabling an even bigger on-line ‘knowledge community’, drawing on the combined wisdom from railway administrations and centres of excellence from across the globe.

The benefit for UIC and its members is taking advantage of the SPARK network and platform off-the-shelf, and helping to prevent “wheel reinvention” and duplication of different portals, libraries and extranets.

For RSSB members, the benefit is the opening up of knowledge sharing to an array of different railway administrations, agencies, companies, organisations, putting in reach a large number of subject matter experts and researchers across the world. UIC counts 200 members across 5 continents (railway companies, infrastructure managers, rail related transport operators, etc.). UIC’s members represent 1 million kilometres of lines, 2,800 billion passenger-km, 9,500 billion tonne-km, and a workforce of 6.7 million people.

SPARK was launched in November 2011, and already has about 500 users and almost 2,000 records of information. People employed by RSSB members can already access SPARK, as can members of recognised cross-industry groups and organisations which have a knowledge sharing agreement with RSSB.

For more information, go to: http://spark.rssb.co.uk

Redevelopment of www.rssb.co.uk

This August, RSSB will be starting a project to redesign the company website (www.rssb.co.uk) to better serve the needs of its stakeholders and to improve the whole user experience of the site.

RSSB will be going out to the rail industry to listen to the thoughts and views of its stakeholders to capture all necessary requirements for a new RSSB website.

RSSB would greatly appreciate your thoughts on the key issues it should consider as the project kicks off. If you would like to help, please visit https://www.surveymonkey.com/s/RSSB_site where you will find a short survey.

GB Rail Safety Performance and Trends 2011/12

RSSB has published its Annual Safety Performance Report for the financial year 2011/12.
In 2011/12, there were 1.46 billion passenger journeys (8% increase on 2010/11), 57.3 billion passenger kilometres (5% increase), and 48.5 million freight train kilometres (9% increase).

Against this setting, the 2011/12 headlines are:

• There were no passenger or workforce fatalities in train accidents in 2011/12. This is the fifth year in succession with no such fatalities. At 0.5 per year, the ten-year moving average for these train accidents remains at its lowest ever level.

• Four passengers died in separate incidents, all at stations. When non-fatal injuries are also taken into account, the total level of passenger harm was 40.7 fatality and weighted injuries1 (FWI); this is 5% lower than the 42.7 FWI (seven fatalities) recorded for 2010/11. When normalised by passenger journeys, the rate of passenger harm shows a 12% decrease compared with 2010/11.

• There was one workforce fatality associated with the operation and maintenance of the railway: an infrastructure worker died as a result of a road traffic accident while on duty. Including non-fatal injuries, the total level of workforce harm was 24.1 FWI, which is an increase of 3% compared with 23.4 FWI (one fatality) occurring in 2010/11. There are indications that part of the increase is due to improved reporting of Class 1 minor injuries. The rate of harm normalised by workforce hours also showed an increase, of 4%.

• There were 61 fatalities to members of the public, excluding those due to suicide or suspected suicide. Of the total, 53 were trespassers. Of the remaining eight, five were level crossing users, and three were members of the public in stations. Including non-fatal injuries, the total level of public harm was 65.5 FWI, which is notably higher than the 40.1 FWI recorded for 2010/11. The level of public harm recorded for 2010/11 was unusually low, which emphasises the increase, but the level of public harm recorded for 2011/12 is above average for the last ten years as a whole.

• For the second year running the number of fatalities at level crossings was at a historically low level. In addition, there is evidence that the underlying rate of train collisions with road vehicles at level crossings has reduced over this period.

• There were 34 potentially higher-risk train accidents. This is an increase on the previous year’s total of 18, but well below the levels seen prior to 2010/11. The number of potentially higher risk train accidents (PHRTAs) recorded for 2010/11 was unusually low.

1. FWI: a measure of the harm of an accident which takes account of the number of fatalities and non-fatal injuries. It is defined as a weighted sum of the fatalities and injuries, where the weights are the index of severity of each type of injury. It is used to compare the severity of accidents across different types of risk, such as trains and road vehicles.
• While there were two passenger train derailments due to collisions with road vehicles at level crossings, there were no passenger train derailments due to any other cause. This is the lowest number of passenger train derailments on record.

• At the end of 2011/12, the Precursor Indicator Model (PIM), which gives an indication of the underlying level of risk from train accidents, stood at 80.0, compared with 96.1 at the end of 2010/11.

• At the end of 2011/12, the estimated level of risk from signals passed at danger (SPADs) was 31% of the September 2006 baseline, compared with 88% at the end of 2010/11. The number of SPADs reduced by 7%, from 299 in 2010/11 to 278 in 2011/12.

• In total during the year, and excluding suicide, there were 66 accidental fatalities, 419 major injuries, 11,515 minor injuries and 1,466 cases of shock/trauma. The total level of harm was 130.3 FWI, compared with 106.3 FWI recorded in 2010/11. The main cause of the increase has been a return to higher levels of trespass fatalities.

A copy of the Annual Safety Performance Report can be found on RSSB’s website at http://www.rssb.co.uk/SPR/REPORTS/Pages/Annual-Safety-Performance-Report-2011-2012.aspx

RSSB has created the ASPR Dashboard, an innovative product for the 2011/12 ASPR. The Dashboard allows industry users to filter a wide range of ASPR data according to their personal analysis preferences. This provides the opportunity to analyse topics to a level of detail perhaps not covered in the ASPR. To see the Dashboard, please go to www.safetyriskmodel.co.uk, where, after registration, you will be granted access to this useful analysis tool.

Learning from Operational Experience Annual Report

Statistics show that the rail industry’s safety performance has steadily improved over time. However, we know that with good performance can come complacency; we also recognise that there will always be some residual risk associated with the transportation of people and goods. This is why the rail industry continues to strive to reduce the frequency of events that can cause harm, and to minimise the impact on passengers, staff and the public when they do occur.

One of the main contributors to the improvement of safety is the learning that flows from near misses and accidents. We call this Learning from Operational Experience (LOE).

LOE is defined as the process by which knowledge from the operation of systems is gained, exchanged and used, leading to continuous improvement in both business performance and safety.

The latest edition of the Learning from Operational Experience Annual Report (LOEAR) captures some of the lessons the GB rail industry has learnt during 2011/12. It looks at areas of general co-operative activity and specific issues affecting rail users and employees.

Summary of key points arising during 2011/12

• In 2011/12, the last recommendations from Formal Inquiries undertaken between 2002 and 2006 were closed out.

• During the year, RAIB published 26 reports, 23 of which involved incidents on the mainline railway.

• CIRAS – the Confidential Incident Reporting and Analysis System for the GB rail industry received 855 contacts on a diverse range of topics in 2011/12, of which 274 (32%) became reports after the screening process. Positive results were achieved in 50% of cases and included (inter alia) passenger congestion at stations, access gates being left open, ‘unsafe working’ on scaffolding towers and ‘insufficient’ lighting in a yard.

• The effective communication of safety-critical information is central to the safe running of the railway. Ensuring that all relevant, non-ambiguous, information is passed between all necessary parties is vital during degraded or emergency situations.

• Passenger risk at the platform-train interface is an issue on which the industry has been focusing. The role of the driver, the importance of the station dispatch environment, and the behaviour of the passenger are all implicated.

• Fatigue affects performance and can increase the likelihood of errors that have the potential to result in serious accidents. Both the industry and individuals have a responsibility to be aware of fatigue issues.

• While the majority of the risk at the road-rail interface arises from the behaviour of level crossing users (some inadvertent errors and others deliberate), the rest lies within the direct control of the railway. Effective training and adequate technology are both necessary for the correct operation of level crossings.

• The industry continues to co-operate across a wide range of learning-related activities, including CIRAS, research projects, information initiatives, and a new magazine – Right Track – aimed at the front line.

For more information contact Greg Morse, operational feedback specialist on 020 3142 5467 or at greg.morse@rssb.co.uk
The benefits of proactive health management are not always obvious to any industry, especially when management of traditional safety issues tend to dominate effort and attention. Industries such as construction, health, logistics and gas have begun a change to become more proactive believing that the benefits are there to be had. Could the rail industry benefit from understanding its health and wellbeing profile better? And, to target proactive health activities?

The Board of RSSB believes that there is scope and a business case to proactively improve the health and wellbeing management of people who work in the rail industry. Coordinated efforts in other sectors have yielded returns and the idea is to make similar gains within the rail industry.

Industry representatives from the Association of Train Operating Companies (ATOC) fora, Infrastructure Safety Liaison Group (ISLG), Network Rail and the Freight Operating Company (FOC) community have come forward to support the project and offer their expertise to help shape and influence the work. There will be ongoing contact with all stakeholder groups to develop the shared knowledge base on health.

RSSB has set up a Health and Wellbeing Project Team to work with industry representatives on the objectives and deliverables agreed at the March 2012 board meeting.

The objectives and deliverables for the project were outlined at the Risk Management Forum in April and are as follows:

Objective 1: Development of a health data collection framework

- Definition of main health impacts on task/role
- Agreement on data causal classification
- Business Case for methodology and model for collecting data

Objective 2: Identification and sharing good health management practice

- Identification of available good practice and develop a web resource to disseminate the information
- Improve relationship with 3rd party providers

Objective 3: Specific health tools and R&D

- General Health Risk Management DVD
- The case for Health and Wellbeing

For more information contact Graham Arkwright, safety planning manager on 020 3142 5466 or email graham.arkwright@rssb.co.uk

If you have any questions or would like to provide an input into this project please contact: Darryl Hopper, project manager, workforce health and wellbeing project on 020 3142 5389 or email darryl.hopper@rssb.co.uk

Risk evaluation and assessment for organisational changes

The European Commission Regulation 352/2009 on ‘the adoption of a common safety method on risk evaluation and assessment’ (‘the CSM’) sets out a risk management process that, from 1 July 2012, applies to all significant technical, operational and organisational changes which could impact on operating conditions of the railway system.


To support this legislative change, the Office of Rail Regulation (ORR) has published ‘ORR guidance on the application of the common safety method (CSM) on risk assessment and evaluation’ which offers guidance on the general way in which the CSM framework should be applied.

In response to a request from industry, RSSB has produced a four-page guidance document providing specific high level guidance on the application of the CSM when assessing significant organisational changes.

The RSSB document ‘Guidance on the use of common safety method (CSM) on risk evaluation and assessment for organisational changes’ provides guidance on:

- Determining if an organisational change is significant
- How to assess the change
- The relevance of the risk acceptance criteria and mutual recognition of organisational changes
- The requirements for independent assessment
Sustainability ‘culture toolkit’ launched

Sustainability is about valuing the future – it covers everything we do in the economy, the society and the environment. It can provide clues for how industries can secure better value-for-money and long term goals, but is also about how humanity weatherings critical impacts associated with climate change, natural resource constraints, and the effect of peoples’ way of living on the world around them.

To boost a shared understanding of what this means to GB rail, industry agreed a set of Sustainable Development Principles that reflect both the challenges and opportunities of sustainable development for rail. Recently, there has been more formal adoption of these Principles into the Initial Industry Plan and into the specifications for awarding rail franchises.

This means each individual rail organisation needs to understand its own immersion into sustainable development and the degree to which they reflect the principles themselves. Experience shows that it is sometimes hard to know whether you are making progress on embedding sustainable development into the way that your organisation works. What needs to change, and how far towards that are you?

Rather than each organisation having to invent a system from scratch, industry asked RSSB to develop a Sustainable Development Assessment Tool. Working in a similar way to the Safety Culture Toolkit, this provides a user-friendly, consistent, web-based system for rail organisations to measure their immersion into sustainable development. This framework is designed to help organisations answer questions about their own sustainability and move them towards a more resilient business model.

In essence the tool is designed to:

- Create a dialogue between teams and colleagues about sustainable development
- Improve understanding of performance in different areas of an organisation
- Baseline each organisation’s performance against the Sustainable Development Principles
- Act as a management tool for planning and measuring improvements
- Enable better communication both of sustainable development issues and performance

To encourage honest ‘warts and all’ assessments, the framework does not publish results. Indeed, it is less about achieving a high score and more about understanding where organisations are and what needs to be done to improve.

The toolkit was developed by RSSB’s in-house IT developers, using a framework built by Forum for the Future. The work was managed as a research project: T767 Embedding sustainable development principles in organisations.

The tool provides an evidence-based approach to assessing sustainability aiding communication, management and decision making as well as potential assistance in meeting relevant obligations.

For more information, contact Anthony Perret, programme manager sustainable development, anthony.perret@rssb.co.uk

Road Vehicle Driving Safety Risk

Rail is renowned as a safe mode of transport, around 20 times safer than using a car. However, many of us still drive cars as part of normal, everyday life, and many rail staff are required to drive road vehicles as part of their daily work. This could apply to train drivers, track workers, contractors and engineering staff that may need to travel between jobs; potentially early in the day or late at night depending on their role. An estimate suggests that there is likely to be upwards of 20,000 vehicles linked to the rail industry. Some companies have active processes to manage road risks, but the size and extent of the road risk issue to the rail industry as a whole has not been considered in depth.

Road driving safety is a significant challenge faced by the whole economy, and so is not just a rail industry issue. The total value of the prevention of reported road accidents in 2010 was estimated to be £14.9bn. In 2011, 1,901 people were killed on the roads - a 3% increase on 2010, and the first increase since 2003.

Currently 5 people die on Britain’s roads every day. The Royal Society for the Prevention of Accidents calculates that ‘after deep sea fishing and coal mining, driving 25,000 miles a year on business is the most life-threatening activity we undertake – more dangerous than working in construction’.

A significant proportion of these reported accidents relate to people whilst at work, with recognised estimates now between 25% and 33% for all serious and fatal road traffic incidents. Based on DfT figures this equates to approximately 600 work related fatalities.

To put this into perspective the Health and Safety Executive (HSE) has released provisional data showing 173 workers were killed through RIDDOR reportable accidents in 2010/11. Two road-traffic collision fatalities were recorded for the rail industry in 2010/11.
A recent study of CIRAS reports has also highlighted the concerns of staff who drive for work in the rail industry.

The cross-industry Safety Policy Group has now asked RSSB to look into the issue. The first step is to secure reliable data to ascertain the size and scale of the problem. The need to collect data into Safety Management Information System (SMIS) on road traffic collisions is stated in Railway Group Standard GE/RT8047, but analysis of SMIS data suggests a distinct level of under reporting. Additionally there is no requirement for contractors to record such incidents on SMIS, potentially those at highest risk from road related incidents.

RSSB has since initiated some research work to explore road risk within the rail industry, initially running an industry stakeholder workshop in June, to establish what shared improvements could be made. Next steps are to produce an industry survey to gain more detailed information and views from companies during the autumn.

If you have any questions, insights or supporting information to help our research, please contact: Ian Moreton, SMS Programme Manager, ian.moreton@rssb.co.uk, or Jill MacKeith, research manager, jill.mackeith@rssb.co.uk for any questions about research project T997.

The management of engineering change

A new page has been placed on RSSB’s website entitled the ‘Management of Engineering Change’. This webpage sets the context for and gives guidance on the management of engineering change. It also gives a high-level explanation of the three key railway-related regulations – the Common Safety Method on risk evaluation and assessment, ROGS 2006 (as amended) and the Railways (Interoperability) Regulations 2011.

Guidance on the management of engineering change

The webpage contains guidance on the management of engineering change. The following documents have been published on the webpage:

i. Guidance on the principles of the management of engineering change.

ii. A process map that allows organisations to navigate their way through the legislation and available guidance. The process map provides links to guidance specific to each regulation - for example, ORR's guidance on the Common Safety Method on risk evaluation and assessment, and the DfT helpnotes on the Railways (Interoperability) Regulations.

Detailed guidance on the management of engineering change in the areas of hazard identification, assessing risk and reducing risk will be provided as Rail Industry Guidance Notes (GNs). The two GNs have been approved by a multi-functional standards committee and will be published on www.rgsonline.co.uk on 01 September 2012.

The provision of the current GNs is a transitional arrangement. The GNs will be updated with data developed as part of Phase Two of the RSSB R&D project T955 on ‘Safety Risk Model Hazard Analysis for Rail Projects’. The data should be available by the end of 2013.

The principles level guidance, the process map and its associated links to guidance specific to each regulation, and the GNs replace the guidance found in the Yellow Book.

The Common Safety Method on risk evaluation and assessment

The Common Safety Method on risk evaluation and assessment (CSM on RA) came into force on 19 July 2010 for all significant changes to rail vehicles and, in some circumstances, to structural sub-systems. From 01 July 2012 the CSM on RA has been in force for all significant changes to the railway system – technical, operational and organisational.

The CSM on RA is essentially a framework that describes a common mandatory European risk management process for the rail industry. The GNs on hazard identification, assessing risk and reducing risk, together with the BS EN 50126 series, provide the detail needed to support application of the CSM on RA to significant engineering (‘technical’) changes.

The ORR has produced guidance on the CSM on RA, which is being amended to include guidance on applying the CSM on RA to significant operational and organisational changes – see article on organisational change above.

The status of Yellow Book issue 4

Yellow Book issue 4 (YB4) has been withdrawn, but continues to be available via the links on the ‘Management of Engineering Change’ webpage for organisations to use if they wish.
What are non-technical skills?
Non-technical skills (NTS) are generic skills that underpin and enhance technical tasks, for example, train driving. These skills could include the ability to take in information, focus, take decisions and communicate with others. NTS play a vital role in safety by helping people anticipate, identify and mitigate errors.

Why are NTS important?
Reviews of incidents and accidents in the industry have shown consistently that where NTS is lacking, the ability to prevent and mitigate errors is compromised, and so contributes to the incident taking place.

The Rail Industry Skills Forum asked RSSB to research NTS for the rail industry. The aim of this project: T869 Non-technical skills for rail: development, piloting, and evaluation of a training course, was to design, produce and pilot a suite of materials for training and reinforcing NTS for drivers and their managers.

After a thorough process of identifying and defining the NTS relevant to the driver role, development materials were designed by a human factors specialist in collaboration with input from a range of trainers from across the industry.

A total of three driver pilot courses and two manager pilot courses were run by trainers from Northern Rail and Arriva Trains Wales as part of the project. Evaluations showed a significant improvement in NTS following the courses, and the feedback collected was used to refine the materials.

The training materials, and associated guidance on how to effectively integrate NTS within competence management systems, have recently been published. The guidance is available on the RSSB website and the development material is available from SPARK. You can register and access SPARK at http://spark.rssb.co.uk

Long-term, the vision is for this suite of materials to be adopted and adapted as appropriate by other companies, and for other operational roles, integrating into existing technical training programmes as necessary.

The Rail Industry Skills Forum, which sponsored this work, has recommended this important research to railway companies in Great Britain and it was showcased at a launch event on 21 June. Places on NTS train-the-trainer courses are also available – RSSB Members: £250 including VAT and Non-Members: £1600 including VAT.

Modernisation of Safety Co-operation

Over the years, a variety of groups, forums and arrangements have been established nationally and regionally between train operators, freight operators, Network Rail, infrastructure contractors and RSSB to help understand system safety risk, review performance and sponsor improvements. These collective arrangements all play a part in discharging the legal “duty of cooperation” obligation on rail companies.

Recent developments including Network Rail route devolution, the development of alliances, the “Rail Value for Money” study, coupled with the post-ROGS safety regulatory regime, together provide an opportunity to modernise and improve the approach to the cooperative management of system safety.

A review of the current arrangements was undertaken by the Operations Focus Group (OFG) and Community Safety Steering Group (CSSG). This review included understanding the “as is” arrangements, legal requirements for co-operation under ROGS and the views of stakeholders. The review has concluded that current arrangements are:

- Complex and confusing
- Resource intensive and costly
- Inefficient in terms of duplication/overlap (as well as resource)
- Not geared around needs of national operators
- Failing to systematically address all risks

Following the review, proposals to improve have been developed and consulted on. The proposals are based on the application of the “System Safety Lifecycle Model” (below) to form the core of the cooperation process between SMS holders and to ensure that risks are managed in the most effective way and by the most appropriate group.
In March, RSSB board approved a staged approach to implementing the new arrangements as follows:

**Stage 1:** National Freight Safety Group (NFSG)
- National Infrastructure Operators Safety Group
- SWT/Network Rail Wessex Alliance Route Safety Group (RSG)

**Stage 2:** System Safety Review Group (SSRG)
- Cross Country Trains Safety Group
- Charter Train Operators Safety Group

**Stage 3:** Route Safety Groups

The project is intended to deliver the following benefits:
- Improved safety risk understanding and performance
- More effective co-operation between SMS duty holders
- Improved transparency
- A structured approach to safety assurance at the system level
- A reduction in number of meetings and clarity as to purpose of all new or remaining methods.

Good progress has been made with the freight operators and it is hoped to have the NFSG established in autumn 2012. This will be followed closely by the new arrangements for the national infrastructure operators.

Work has recently commenced with the Wessex Alliance to develop proposals for the Wessex RSG. This process will provide a major opportunity to work many issues, including arrangements for the review and management of specific risks on this route and mapping out relationships with the new national operator groups and the new SRG.

One important component of the system safety management is the application of effective assurance techniques and RSSB is developing Safety Assurance guidance to assist with this. This guidance is outlined below.

### Safety Assurance Guidance

The guidance will apply to three levels:
- Company (safety assurance of company risks)
- Company to Company (safety assurance of company interface risks)
- System (safety assurance given by the industry to those outside, for example Government, passengers and public)

The guidance uses a Safety Assurance model which is similar to the System Safety Lifecycle Model used for the proposed new industry safety groups.

1. **Assess risk profile**
   - New project or first application of the cycle model to current situation
   - Risk assess to define risk profiles
2. **Decide on controls**
   - Industry groups are aware of the risk profile
3. **Decide what and how to monitor**
   - Industry groups and companies may decide on controls and industry groups can play a role in coordinating these
4. **Operate and apply controls and monitor them**
   - Transport Operators apply controls and monitor as agreed
5. **Review data from monitoring**
   - ORR and RSSB receive data and process for annual and other reports. Admin support of industry groups to review and filter data.
6. **Assess new risk profile**
   - RSSB creates new risk profile. ORR reviews new risk profile and acts on it. Industry groups agree new risk profile and decide on new controls and actions.

---

For more information contact: John Abbott, director of national programmes; John.Abbott@rssb.co.uk

---

For more information on any of RSSB’s products and services please contact the RSSB Enquiry Desk on 020 3142 5400 or EnquiryDesk@rssb.co.uk

© 2012 RAIL SAFETY AND STANDARDS BOARD LIMITED
Bridget Eickhoff, RSSB’s Principal Infrastructure Engineer has been appointed Chairman of The Railway Division at the Institution of Mechanical Engineers for 2012-13. Bridget is responsible for leading the work on GB Railway Group Standards related to the interfaces between Infrastructure (track, bridges, tunnels and stations) and trains. Bridget also provides GB input into a range of European Standards and committees and participates in research projects in related areas.

On taking up the role, Bridget said ‘I was both delighted and honoured with the appointment and it gives me an opportunity to build on the good work the Division is already doing’.