RSSB: Proud to be working for the rail industry for ten years

RSSB marks its 10th anniversary this month. The last decade has seen substantial changes to the rail sector and, as a ‘young’ organisation, RSSB has played its role in helping to change the industry for the better.

RSSB was originally founded as 'Rail Safety and Standards Board' in response to a Cullen Inquiry recommendation following Ladbroke Grove. Its primary objective was to facilitate system safety improvement.

Nowadays, the organisation is promoted simply as ‘RSSB’ and embraces a much broader portfolio of activities that industry chooses to do together in one place. For example, RSSB’s work covers issues as diverse as supplier assurance, sustainable development, optimising system interfaces, training and competence, as well as supporting long term strategy and planning.

Although owned by its six categories of industry members, and therefore very much an industry body, it retains its independence from any particular part of the industry. RSSB’s work supports the industry on any matter where industry cooperation can improve safety and business performance and reduce cost. Importantly it is not a regulator or agency.

Industry’s achievements supported by RSSB have been based on world-class data, information and analysis systems, shared research and knowledge, smarter standards and rules and the desire to reduce duplication and red tape. This has led to an impressive range of industry-owned products, services and programmes, yielding success stories such as Taking safe decisions, the RED DVD series, models and tools to manage vehicle-track interaction.

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
and level crossing risk, work to understand wayfinding and crowding, containment and crashworthiness research, the Sustainable Rail Programme, RISAS, as well as development of the Rail Technical Strategy through TSLG and recently the setting up of the Enabling Innovation Team.

RSSB’s chief executive Len Porter explains:

‘At the heart of RSSB’s support for the industry is its independence, governance arrangements and the provision of information and knowledge that underpin some of the mainline railway’s most sensitive safety-critical decision making across a broad range of recognised industry risk.

‘Through its board with its fully inclusive cross-industry membership and its range of senior level sub-committees, RSSB is also the guardian of due process that provides the industry and its stakeholders with confidence in decisions that have stood the test of time during the last decade, which followed a difficult time in the industry’s history.

‘Long before the Value for Money study, RSSB, its systems interface committees and other bodies have been operating at the leading edge of seeking to improve industry performance at reduced cost, and without compromising business (and therefore safety) risk.

‘RSSB has become part of the fabric of the rail industry, a sector which is attracting major investment and is an exciting place to be right now. We have demonstrated that RSSB is a listening organisation that can help members to save time and money in diverse areas. We’re looking forward to the next ten years with confidence in our people and products.’

Discover research and innovation opportunities with RSSB at Railtex

RSSB is helping to raise the profile of the rail industry’s research, development and innovation (RD&I) capabilities, to boost awareness, engagement and adoption. RD&I help businesses make the railway more efficient by improving performance, safety and reliability at reduced cost. While, in comparison to other industries, the investment in RD&I by the rail industry has historically been low, the opportunities to do research and innovate are now growing, triggered by new partnerships, opportunities and funding.

The opportunities to inform, develop, trial and implement solutions are being presented to a range of popular rail events this year. Having already exhibited and presented at the Railway Industry Association Innovation conference and Innovate UK, RSSB is encouraging the rail industry and innovators to visit its ‘research village’ at Railtex, to find out more about the funding and opportunities on offer.

The cross-industry R&D programme

This c£9m pa programme provides RSSB members from across the whole industry the opportunity to develop ideas and commission research, typically where the solution is not in the gift of one organisation. From an initial idea, through its development, decision to fund and its delivery, RSSB supports industry decisions through the lifecycle of the project usually through a cross-industry sponsoring group.

Since 2003, the programme has delivered a wide range of answers, toolkits, standards, models, and knowledge to improve the operation and engineering of the railway system, and developing the people that make it work.

As part of the cross-industry R&D programme the Technical Strategy Leadership Group (TSLG) has commissioned research by RSSB to inform the development of the Rail Technical Strategy (RTS) and support initiatives with the potential to change the game’ for rail, including enabling innovation.

Enabling Innovation Team (EIT)

The work on the RTS has led to the development of the industry’s new Enabling Innovation Team, established within RSSB. Reporting into TSLG, its mission is to de-risk and accelerate innovation in a way that meets industry’ challenges. This is supported by funding of c£30m up to April 2014 with further funding expected during Control Period 5 for the following 5 years.

Rail Research UK Association (RRUKA)

Universities also offer considerable research capability. RSSB and Network Rail established and co-fund RRUKA as a bridge between industry and academia which brings together those who do research with those who can use and fund it. RRUKA is also a member of TSLG, which provides further opportunities to work together on the future railway vision.

Partnerships

RSSB has built a number of partnerships as one of the keys to securing value-for-money research and making the most of others’ expertise and experience. These lead to combined knowledge, access to new markets and additional funding opportunities. RSSB partnerships include:

• Engineering and Physical Sciences Research Council (EPSRC)
• Rail Technical Research Institute of Japan
• Technology Strategy Board
• TRL
• Rail Cooperative Research Centre (CRC) in Australia
• The International Union of Railways (UIC)
• The Railway Industry Association (RIA)

There is also regular work with other national and international organisations for example the Federal Railroad Administration (FRA) in the USA and others outside the rail industry, for example Britain’s Highways Agency and Construction Industry Research and Information Association (CIRIA).
Knowledge sharing is also identified by the rail industry as an enabler for improving performance and bringing strategy to life. SPARK is a free, interactive web tool to help industry do this. At its heart is a library where users have the opportunity to contribute their knowledge and find something new. In partnership with UIC, SPARK houses a substantial on-line ‘knowledge sharing community’, drawing on the combined wisdom from railway administrations and centres of excellence across the globe.

The opportunities and funding to engage in RD&I has increased over the last ten years, partly as a result of RSSB and TSLG building the evidence base in support. RSSB has worked hard to help industry make sense of and exploit the growing number of initiatives and partnerships, to benefit the whole mainline rail system.

To find out more about the potential to uncover solutions and knowledge to support industry action and decision making as well as RSSB’s significant in-house technical expertise, come and find us at Railtex on 1 May 2013 or contact us at anytime: enquirydesk@rssb.co.uk

Revised Railway Group Standards Code and Standards Manual published

The Railway Group Standards Code (the Code) and the Standards Manual (the Manual) set out the governance arrangements for the management of Railway Group Standards, Rail Industry Standards and Rail Industry Guidance Notes.

The current versions of the Code and Manual have been in use since June 2008 and December 2009 respectively.

The Code and the Manual have been revised to reflect the significant changes contained in the amendments to The Railways and Other Guided Transport Systems (Safety) Regulations (ROGS) 2006 and The Railways (Interoperability) Regulations 2011, as well as the recommendations for the management of cross-industry standards contained in the ORR’s review of RSSB and the McNulty report.

The revised Code has been approved by RSSB’s Board and the ORR; and the revised Manual has been approved by the Industry Standards Coordination Committee (ISCC).

The revised Code and Manual were published on 02 March 2013 and can be found on rgsonline under General Documents and on RSSB’s website http://www.rssb.co.uk/RGS/Pages/RGSCODE.aspx

The revised Code and Manual will come into force on 03 June 2013. Briefings for members of standards committees are taking place in March and April 2013.

If you have any queries or comments on the revised Code and Manual, please contact: Caroline du Plessis, head of standards policy at RSSB.
Good Practice Guide on Competence Development (RS/100)

RS/100 Good Practice Guide on Competence Development is a new guidance document that provides practical advice to anyone who needs to understand, manage or contribute constructively to the analysis, design, delivery, review or assessment of training and competence development activities.

A review of the existing suite of RSSB good practice guides (GPGs) in the area of training and competence (RS/220, RS/221, RS/501, RS/701 and RS/702) found that although the guidance was comprehensive, it was mostly driver-focused and contained some outdated information, which was repeated across the suite. There were also concerns about the extent to which the guides were practical and user-friendly.

The Good Practice Guide on Competence Development replaces this suite of RSSB GPGs. It reflects the latest developments and thinking around how to ensure staff competence, while highlighting good practice from rail and other industries in case studies. The principles, evidence-based research findings and practical examples discussed in the good practice guide apply broadly across many roles, particularly operational roles where poor performance can have a significant impact on safety.

All Railway Duty Holders in Great Britain are required under The Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS, 2006) to make provisions within their safety management system to ensure, so far as is reasonably practicable, that the competence of all safety-critical staff under their control is developed and maintained to a minimum safe standard.

Whilst meeting these minimum standards, as required by legislation, is necessary and important, it is also preferable that people are developed to be experts in their role. The RSSB Good Practice Guide on Competence Development (RS/100) aims to move users beyond the minimum requirements by providing users with the tools needed to develop effective and comprehensive competence management systems to meet business and learner needs.

The RS/100 Good Practice Guide on Competence Development is available at www.rgsonline.co.uk (under Railway Group Standards > Traffic Operation and Management > RSSB Good Practice Guides).

If you have any queries please contact: RSSB 020 3142 5400 or enquirydesk@rssb.co.uk.

Rail Human Factors – Supporting reliability, safety and cost reduction

The Fourth International Rail Human Factors Conference took place on 5 to 7 March in London. The conference was jointly organised by RSSB, The University of Nottingham and Network Rail. Over 170 delegates attended from across the world.

The conference was opened by Paul Zanelli (Head of Research at Network Rail) and Michael Woods (Head of Operations and Management Research at RSSB), who drew out the importance of the human factors profession in the rail industry.

The programme consisted of over 100 presentations and two interactive workshops in three days. Key note speakers from the United States and France opened each of the three days of the conference. The programme covered a diverse range of topics including traffic management, safety culture, competence, human reliability, metro, ERTMS, passengers and stations and track work. Two technical visits to the London Underground training centre and the Victoria Line Service Control Centre were also organised.

The conference proceedings were provided to delegates in a book called ‘Rail Human Factors, Supporting reliability, safety and cost reduction’.

Making it easier for depots to test the Automatic Warning System (AWS)

Research by RSSB for the rail industry is helping to make it easier to test AWS equipment in depots.

AWS plays a vital role for the safe movement of trains, and the whole rail system relies on the AWS equipment on rolling stock working correctly at the interface. Operational experience has shown that the AWS testing unit used in depots, (known as TY287), can be difficult to set up and use by depot maintenance staff. This difficulty arises partly because the pass/fail mark is sensitive to the variability in the way AWS equipment can be located within the underside of the rail vehicle, depending on factors such as the class of the vehicle and the arrangement of bogies and other traction components.
The Vehicle Train Control and Communications System Interface Committee (V/TC&C SIC) and Train Control Technical Sub Group commissioned research by RSSB to simplify the use of the TY287 ‘depot tester’ by providing clear written instructions on how to determine whether the AWS receiver is operating within its required limits.

The emerging findings are supporting a number of enhancements to the TY287 to improve its usability. These can be implemented when a TY287 tester is returned to a manufacturer for re-calibration. These include the addition of the following:

- A laser to help with alignment
- Incremental height adjustment
- A software modification to provide additional power settings
- Alternative mounting arrangements to facilitate use where the existing mounting arrangement is compromised by the position of the vehicle wheels (eg Class 390)

For further information, please contact:
Andrew Broadbent, head of engineering research at RSSB, enquirydesk@rssb.co.uk.

Implementation of all of the enhancements is likely to cost less than £750 per tester. In many cases, it is envisaged by the V/TC&C SIC that these enhancements will be desirable rather than necessary, but the research is showing that inclusion does make the tester more user friendly.

Guidance on which options to implement for particular classes of vehicle have been included within the outputs of the research, which is due to be published shortly: project references T808 AWS Testing - the way forward and T975 Design options for the TY287 Automatic Warning System testing unit.

RSSB supported the industry in proposing these changes through its oversight of the systems interface committees, enabling cross-industry dialogue and decision-making, as well as management of the relevant research projects and provision of technical expertise on rolling stock engineering.

For further information, please contact:
Marcus Dacre, safety risk assessment manager at marcus.dacre@rssb.co.uk.

Safety Risk Model – Version 7.5 update

The Safety Risk Model (SRM) is a comprehensive model of railway risk on the GB mainline network. It comprises 121 hazardous events that could lead to injury or fatality during the operation and maintenance of the railway. The version 7.5 update is a partial update of the model from version 7. No train accident related hazardous events have been updated. Of the remaining hazardous events, 53 were identified as having a potential change in risk based on recent data compared to the version 7 risk results.

The results of the version 7.5 update of the SRM are contained in a Risk Profile Report (RPR), which is a condensed version of the Risk Profile Bulletin (RPB) that usually accompanies each version of the SRM. The RPR is available to download from www.safetyriskmodel.co.uk (registration required) as a pdf document accompanied by Excel data sheets. Data used to populate version 7.5 had a cut-off date of 30 June 2012. This was followed by six months of update work, with the risk figures being available from January 2013.

The SRM outputs are being used by the DfT and ORR for measuring industry performance against the High Level Output Specification (HLOS) safety metrics. Since the start of Control Period 4, the passenger safety metric shows that there has been a 5.6% reduction in passenger risk and an 8.8% reduction in workforce risk. The overall level of risk estimated for the railway is 139.3 Fatalities and Weighted Injuries per year (FWI/yr). This figure excludes direct risk from suicide and attempted suicide except for where there are secondary effects upon passengers and workforce. The overall risk breakdown by person type is as follows:

- Passengers 54.7 FWI/yr
- Workforce 27.0 FWI/yr
- Member of Public 57.7 FWI/yr

For further information please contact:
Marcus Dacre, safety risk assessment manager at marcus.dacre@rssb.co.uk.
New Regulation: Common Safety Method for Monitoring

RSSB has written to its members' heads of safety to provide timely information on the forthcoming EU Regulation on Common Safety Method (CSM) for Monitoring, which comes into effect in the UK on 7 June 2013.

The purpose of the Regulation is to introduce a consistent, common approach to monitoring safety in a duty holder’s operational and maintenance activities, as part of its obligation to have a safety management system (SMS), in the Railways and Other Guided Transport Systems (Safety Regulations) (ROGS).

Members have received a simple four-page leaflet which illustrates the monitoring process that regulators will be looking for in a transport operator’s SMS. The process is designed to better coordinate safety assurance activities, and the degree of existing effectiveness of current SMSs is likely to dictate how far companies will need to adapt and change their systems in response to the new requirements.

For a copy of the four-page leaflet on CSM for monitoring, go to http://www.rssb.co.uk/NP/Documents/CSM%20Regulation%20A4%20Leaflet.pdf or contact enquirydesk@rssb.co.uk for additional hard copies within your organisation.

Meeting rail’s carbon ambition

Through the Sustainable Rail Programme (SRP), the rail industry has identified potential cost savings of £360 million by the end of CP6 by making smart interventions to reduce carbon.

Over the last two years industry has already made significant progress in implementing its Carbon Management Framework (launched in the Initial Industry Plan for CP5):

- Energy efficiency and pay-for-what-you-use energy billing is included in franchise ITTs
- 20% of traction energy is now billed on a metered basis
- Government policies are seeking reductions in operational and embedded carbon
- Industry is developing a whole life carbon measurement tool
- New protocols have been agreed to ensure robust measurement of emissions

Research by RSSB for the SRP has identified four key network level interventions that together could help save over 1 million tonnes of CO₂ and over £100 million in CP5 (rising to 2.8 million tonnes of CO₂ and over £350 million by the end of CP6 in 2024). The interventions are:

- Practising energy efficient driving across the network, and in particular installing driver advisory systems (DAS)
- Installing the automatic shutdown of hotel loads
- Ensuring weight reduction is specified in new trains
- Enabling regenerative braking on the Class 92 fleet

There are also widespread opportunities around LED lighting at stations and depots as well as many other opportunities that may work in specific cases though not at the network level.

The four key interventions, when considered alongside the decarbonisation of electricity generation and the electrification of the network outlined in the High Level Output Specification (HLOS), could lead to overall traction carbon reductions of 38% per passenger km and 10% per net freight km. This translates into an absolute reduction in traction CO₂ emissions of 12% or 400,000 tonnes per year by the end of CP5 (against a 2009/10 baseline).

These reductions have now been adopted as industry ambitions in the Industry Strategic Business Plan.
Issuing the challenge - Enabling Innovation Team update

The Enabling Innovation Team (EIT), set up by RSSB under the Technical Strategy Leadership Group in October 2012, to accelerate the uptake of innovation across the industry, has been moving forward with a number of new cross-industry innovation projects. The current priority for the EIT has been building a portfolio of investments in innovation demonstrator projects and actions which will help enable innovation and drive new concepts through to implementation. These projects are looking at ideas which can deliver benefits to the railway in the short, medium and long term. The first set of competitions and projects are now off the ground:

**Capability and route mapping**

To inform our investment strategy we will be identifying the priorities for investment to accelerate implementation of the GB rail system of innovative technology, business, operational and process solutions. This will require the development of detailed route maps and an assessment of the capability and capacity of UK industry to deliver innovation in these areas. This project is being managed by a joint team from Arthur D Little and Atkins.

**The Radical Train**

This is a key project in the EIT portfolio. We are seeking proposals for the new ideas which can make a huge difference: showing how a significant step change in the performance of trains on UK railways can be made and to develop radical train systems and sub-systems which might also have international market potential. Engineering Consultancy Frazer-Nash is managing the competition process on behalf of EIT, which opened on 13 March 2013. Go to [http://www.futurerailway.org/eit/Pages/Competitions.aspx](http://www.futurerailway.org/eit/Pages/Competitions.aspx) to apply.

**Customer experience**

We have appointed a consortium of Innocentive and IXC to develop and manage a prize competition targeted at bringing innovations in Customer Experience to the industry. The competition will have a total prize fund of £1m and will be opened to applicants in April. We will be seeking opportunities to improve the experience of customers within the GB Rail network (across both passenger and freight operation) in areas of service culture, business process, journey planning, seamless journey experience and ergonomic design of facilities. We are developing the detailed scope of the competition with industry experts, and will launch full details to the press during April.

**Remote Condition Monitoring**

Remote Condition Monitoring (RCM) is key to improving efficiency, health, safety, commercial and operational performance of the railway. For infrastructure and rolling stock in particular it is widely recognised as an essential enabler to progress risk-based asset management approaches. The EIT is working with the South West Trains Network Rail Wessex Alliance to explore how the railway can rapidly increase its use of RCM. An accelerated innovation process is being used to move from clarifying the Alliance’s RCM challenges towards the goal of contracting a demonstration project by the end of May 2013.

Initiation of the next set of projects is underway, and we will be holding a range of different cross-industry events to consider a number of new challenges in the spring. Full details of these will be communicated in due course, it is expected that a number of challenge workshops will be held, and development events on areas including: Simulation, testing and trialling; technologies to take forward the Rail Technical Strategy; business and operational innovation and electrification optimisation. More information on open and future challenges is available on the Future Railway website [www.futurerailway.org/eit](http://www.futurerailway.org/eit).

EIT has also been very busy in raising awareness across the industry of the new team are and what it is here to do, hitting the conference circuit with a presence at a range of industry events: the RIA Technology & Innovation Conference, Unlocking Innovation Scheme workshops, Rail Alliance Summits and exhibiting at Innovate UK!

EIT would like input from RSSB members from whatever part of the industry you are involved with: if you have a challenge you need support in solving, a solution you think will help an industry challenge, or if you would simply like to know more about the EIT and the Rail Innovation Fund.

For more information visit the EIT website [www.futurerailway.org/eit](http://www.futurerailway.org/eit), or contact challenges@futurerailway.org