



annual review 2010

annual review 2010

In 2010, RSSB delivered its enhanced range of inter-dependent services to its members at reduced cost. In real terms RSSB's budget is now around one-third less than at its inception in 2003, whilst it delivers more services and increased value to its members.

'..strong support for RSSB's work, particularly in the areas of monitoring and reporting on industry safety performance and planning, and modelling industry safety risks.'

Increasing value

With reduced funding from the Department for Transport (DfT) for research activity from 2011-12, and with member funding held constant for a third year, RSSB has started to look at innovative ways to reduce its costs and, having contributed significantly to Sir Roy McNulty's Rail Value for Money Study, is now preparing to respond to the final report.

The Office of Rail Regulation (ORR) review of RSSB's role, governance, and funding, requested by the company, consulted widely with industry stakeholders. This found strong support for RSSB's work, particularly in the areas of monitoring and reporting on industry safety performance and planning, and modelling industry safety risks. RSSB has streamlined the structure of Railway Group Standards (RGS), and has played a significant role in representing GB interests, and providing technical expertise for the development of European Technical Standards for Interoperability (TSI).

Investing in research and innovation has a direct impact on competitiveness, productivity, and ultimately the financial effectiveness of the railway in Britain. Whether that research looks into potential technical or operational innovation, or seeks out information from

among the railway's many stakeholders, RSSB has established itself as the most cost-effective route to providing a range of important information that the industry needs.

Activities sponsored by the System Interface Committees (SIC) have produced results with the potential for significant cost savings for the industry, as well as an improved carbon footprint.

A risk assessment tool that informs the decision to allow trains with failed track circuit actuators to remain in service has, in trials, reduced related cancellations by 50%. Potential savings for the industry could be in excess of £1m per year. Advisory information on efficient driving techniques and the introduction of regenerative braking each have the potential to deliver energy savings of up to 25%.

The SICs have also increased their support of the Rail Technical Strategy (RTS) and developed programmes of work that support the work of the Technical Strategy Advisory Group (TSAG) for longer-term improvements to the efficiency and effectiveness of the railways.

Work on Stage 2 of the Vehicle Track Interaction Strategic Model (VTISM) has continued throughout the year, with the final version likely to be released in

‘...a new supplier assurance model for GB rail ... with the potential to realise cost-savings of up to £35m per year.’

the late spring of 2011. Version 2.4 of the software was released in summer 2010, and is being used by Network Rail to carry out cost planning for rail maintenance activities for Control Period 5 (CP5). The work on wheelset maintenance alone has the potential to save the industry up to £2m per year.

Research project T787, Gauging opportunities to run existing passenger vehicles beyond their current routes, determined the opportunities for allowing existing vehicles on alternative routes, and identified small localised modifications to infrastructure which would further enhance the network capability. This will give operational flexibility, enable the cascade of rolling stock from one route to another, and lead to greater asset longevity.

Research project T712, carried out in-house by RSSB experts, produced new knowledge on the benefit of train mass reduction. It has now provided scientifically supported values for the reduction in traction energy consumption and in track damage costs resulting from reduced tare mass of vehicles. These values are being taken forward by the Vehicle/Vehicle SIC and publicised for use in future vehicle design, procurement, and refurbishment.

RSSB's technical work extends to the development of tools and techniques for use by the industry. An important example is the Safety Culture Toolkit, which is widely used amongst RSSB's members and has proved of such interest outside the GB mainline railway that licensing opportunities are now being pursued.

Dutch rail company NS Reizigers has purchased a 10-year license to translate and use The 21st Century Professional Driver – Guidance on lifestyle and self-

management programme for 4,000 of its train drivers in the Netherlands.

Crossrail has purchased a license to use the RSSB Safety Risk Model. The agreement includes an initial one-year user licence fee, with an ongoing upgrade and support programme for subsequent years.

During 2010 RISAS has continued to provide value to the industry supply chain. The number of approved suppliers grew by some 200%, bringing the number approved to provide product overhaul services to the industry to 28, with another nine new companies now being assessed. The scheme provides the industry not only with the world's most demanding supplier assessment and certification process, but also a mechanism for performance feedback and follow up. Policy backing for the scheme's extension into other relevant areas of supply chain risk control has continued throughout the year.

In parallel, RSSB has led the development of a new supplier assurance model for GB rail, based on five key elements of lifecycle assurance. A three-stage implementation plan has been agreed, with the potential to realise cost-savings of up to £35m per year. Stage 1, 'Alignment', is due to start in April 2011.

RSSB continues to be a successful home for the industry's confidential, independent reporting and analysis system (CIRAS); and has driven cuts in its running costs of 60% over recent years. Maintaining its independence and confidentiality, CIRAS now receives over 600 contacts a year. Over 45% of reports to CIRAS generate change and improvement; including two changes to the Rule Book during 2010. CIRAS is an important source of information, as 35% of safety concerns reported back to companies are new to their

‘...improving engagement between those who create and manage standards, and those who use the standards ... to obtain feedback from the ‘front line’ users ... so that the standards can be improved...’

business. Although difficult to quantify, any accident or incident prevented by a CIRAS intervention would have repaid its costs many times over; and RSSB is working hard to spread the wider learning generated through the scheme

Standards that work for industry

RSSB has continued to make good progress during 2010 on bringing RGSs into line with their central purpose: which is to enable the different participants in the industry to cooperate where they need to do so, without having to reinvent the basis of that cooperation every time. The number of RGSs has reduced over the year, in line with this scope: some earlier standards have been withdrawn, because they did not involve cooperation across interfaces and so did not need to be in the RGS suite. However, to complement this change, the industry is increasingly making use of other types of document in RSSB’s range of standards – we have developed a number of Rail Industry Standards (RIS) (standards that duty holders may choose to adopt) and Guidance Notes, at the industry’s request.

The New Approach to the Rule Book programme is on schedule, with Tranche 1 in force from June 2010 and Tranche 2 from December 2010. Tranche 3 has been approved for implementation in June 2011, and timely progress is being made on the remaining tranches. The Board of RSSB has long recognised the importance of the New Approach, and in 2010 we have put considerable effort into articulating the value it adds, to consolidate support across the industry. The Rail Value for Money Study recognises the New Approach to the Rule Book as an enabler of significantly greater cost efficiency.

Also in the operations field, work has

been carried out to assess whether the risk of train driver distraction from mobile phones is adequately controlled. This work led to the introduction of RIS-3776-TOM Rail Industry Standard on the Use of Mobile Telephonic Equipment in Driving Cabs and, through the support of the RSSB research programme and the sponsorship of the Operations Focus

Group (OFG), the development of an education programme for train drivers (T904).

The RSSB Board endorsed the Industry Standards Co-ordination Committee (ISCC) Strategic Plan in March, and ISCC’s work has progressed according to this plan. It has initiated work to identify any standards which contain measures that are less than optimal and might present a barrier to efficiency. This work will be supported by R&D where necessary. It will build on the success of recent work on one particular standard – GI/RT7016 Interface between Station Platforms, Track and Trains. This standard requires platforms to be located on a trackbed with a gradient no steeper than 1 in 500 – a requirement which dated from about 1950, and was based on a change in the type of wheel bearing used on rolling stock. Research commissioned by RSSB concluded that removing the 1 in 500 requirement would not present an unacceptable risk. The standard has now been changed as a result of the research. The withdrawal of this measure avoids the need for projects to seek derogations supported by risk assessments on a case-by-case basis (or incur the high cost of compliance).

ISCC has also initiated work on improving engagement between those who create and manage standards (in ISCC itself and in the Standards Committees), and those who use the standards. The aim is to obtain

‘...a common set of requirements agreed by the industry, which will support the deployment of the European Train Control System on trains in a cost-effective manner...’

feedback from the ‘front line’ users of standards about any problems encountered, so that the standards can be improved as a result; and to help improve understanding about how to work with standards.

Each Standards Committee has also now produced a Strategic Plan, endorsed by ISCC, which sets out its key activities over the next few years in support of domestic and European standards.

RSSB has been very active in the development of European standards, providing technical input and coordinating the GB industry’s efforts in a number of areas – including the TSIs for Energy; Rolling Stock; and Control, Command and Signalling (CCS). In the case of the Freight Wagon TSI, we have developed the idea of a ‘GB Strategic Direction’ for the TSI: a document which sets out what the GB railway wants to achieve from the TSI, informing the detailed work of all the GB people who are involved in its development. This approach has shown great potential and is being adopted for the revisions of other TSIs that have recently been announced.

Another important element of European standardisation is the development of EuroNorms. A key element of supporting this is to ensure that they can be adopted into Railway Group Standards where similar requirements exist. In 2010 RSSB completed work on GM/RT2100 (Issue 4) Requirements for Rail Vehicle Structures which incorporated requirements from two key EuroNorms (EN12663 and EN15227). In addition, the RGS also incorporated the findings from a number of RSSB-led research activities related to interior passive safety. It also enabled the withdrawal of the final ATOC Code of Practice related to Rolling Stock.

RSSB has provided crucial input to the development and implementation of the European Rail Traffic Management System (ERTMS), including the revision of rules and technical standards and support to the implementation of the Cambrian Early Deployment Scheme, which is now in service. RSSB’s expertise has contributed to the European specification in the CCS TSI, including the development of UK Specific Cases that will enable the implementation of ERTMS in an economically efficient way. For example, the Rail Industry Standard for Onboard ETCS (RIS-0340-CCS) provides a common set of requirements agreed by the industry, which will support the deployment of the European Train Control System on trains in a cost-effective manner, helping to achieve the best value for money.

Sustainable Rail Programme

Supporting the industry’s planning for CP5 has been a key focus for the Sustainable Rail Programme (SRP) in 2010. Given a remit covering cross-industry environmental issues by the Planning Oversight Group, the programme focussed primarily on carbon and noise in its input to the Long-Term Planning Framework, published in August 2010.

This remit has been renewed for the Initial Industry Plan and the programme is currently developing an industry carbon management framework that will be vital to the industry cutting its carbon emissions and its £500m annual energy bill.

Through the Noise Policy Working Group, the SRP is also facilitating industry’s response to the EU Environmental Noise Directive, providing essential input to the relevant rail authority (DfT and ORR) and to the

‘...RSSB places greater emphasis on strategic research that will provide long-term, and broadly-based benefits to the industry...’

Planning Oversight Group in terms of priorities for CP5.

2010 also saw the delivery to ORR of an agreed industry protocol on the reporting of air emissions. The introduction of this important environmental indicator is now being managed by ORR, with reporting due to start in 2011/12.

It was also a busy year of research for the SRP, with publications including a review of transport behaviour and integrated transport, a benchmark study of sustainable development in industry procurement and a whole life carbon footprint of the railway. The latter, run in partnership with the technical strategy team, was a groundbreaking study, which identified for the first time the whole railway’s emissions and their sources. It has been invaluable in developing the carbon management framework for CP5 and will be a key input into the Rail Technical Strategy.

Based around the ground-breaking Sustainable Development Principles, the SRP is completing a key piece of work to develop a sustainability assessment framework for industry organisations. Currently in a pilot phase, the resulting tool will help organisations from across the rail sector identify not only how they perform, but also the risk and opportunities that sustainable development presents. This should lay the foundations for a wider engagement with sustainability across the industry, which will continue to be a key focus for the SRP.

Technical strategy

The Rail Technical Strategy looks at the future needs of the railway up to thirty years ahead. In support of the RTS, RSSB managed the strategic research programme and facilitated the Technical

Strategy Advisory Group (TSAG). TSAG commissioned research to examine the barriers to innovation in the rail industry that could hinder achievements in the RTS. The resulting report, Enabling Innovation, highlighted two strategic interventions needed to remove barriers and encourage technical innovation; these were: the need to establish an industry sponsorship role, to create the commercial pull for innovation; and for a technology leadership group, to create a vision and strategy for the GB rail system.

In light of that recommendation, and the integration of the strategy support research programme into the core RSSB-managed research programme, TSAG proposed taking on the leadership role itself from 2011. This was approved by the RSSB Board and from 2011 TSAG will become the Technical Strategy Leadership Group, with an expanded membership that will include experts with an operations focus, and a train supplier; and draw in other industry expertise as needed. Initially, it will take its lead from the results of the two-month consultation exercise, Tackling the technical strategy challenge, carried out by RSSB on behalf of TSAG during the last quarter of the year. This gathered opinion from across the rail industry about five key ‘game-changers’ that may significantly affect how railway services are delivered; especially about reducing the costs of providing the railway, and ensuring its sustainability as a preferred mode of transport.

In combining the two research programmes RSSB places greater emphasis on strategic research that will provide long-term, and broadly-based benefits to the industry; and to ensuring that the results of more short-term research, providing solutions to tactical issues, are taken-up and implemented effectively.

Better data quality, improved decision making

RSSB started 2010 by launching the new Industry Shared Risk Database (ISRD). This database identifies shared risk areas which require a collaborative approach to risk control. It clarifies the types of operators involved and suggests where the lead responsibility is likely to lie for each shared risk. The ISRD provides industry-wide sharing of safety management system (SMS) data about rolling stock, workforce, and operations incidents. It also provides links to supporting information such as the relevant controls, research outputs, and industry standards.

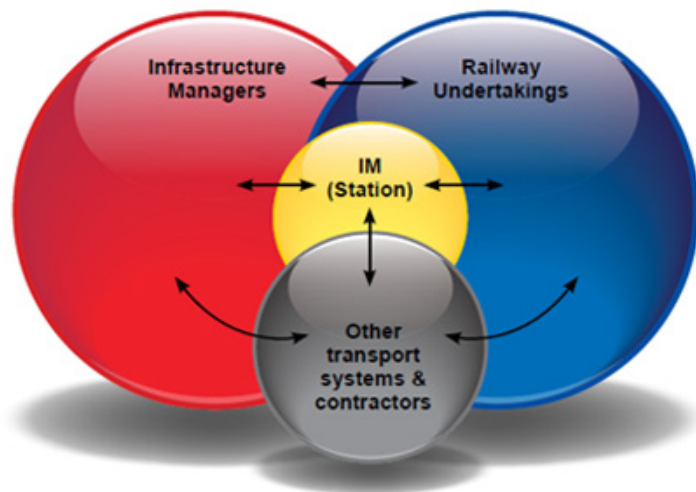
During the year RSSB revised the outputs presented from the Precursor Indicator Model (PIM). As there is a lot of public concern about level crossing safety, RSSB took steps to put the risks at level crossings in context. The PIM output now shows that the principle risk to both passenger and workforce from train accidents arises from infrastructure failure, and not level crossings. Level crossing risk is further put in context by the European Railway Agency (ERA) benchmark of all EU level crossings,

which shows that UK level crossings are the safest in Europe.

Under the supervision of its Board and the Safety Policy Group, RSSB wrote to the Planning Oversight Group and the DfT to recommend, as an industry consensus, that there should be no explicit safety metric in the 2014-19 High Level Output Specification. The reason for this is that there are more than sufficient measures and metrics with which the industry's compliance with its Health and Safety at Work obligations can be measured; and the existence of a further metric is likely to confuse rather than simplify the efforts on safety.

The SMS-holding community places significant value on the 'Opsweb' website. This was updated during 2010, to provide easier access to a wider range of useful information. The site is also a catalyst for collaborative working among SMS duty holders; and is used by some 60 railway companies worldwide. This popularity and usefulness is also reflected in the distribution of the RED DVD series produced by RSSB.

RSSB launched the new interfaces for the web-based Rail Notices application



Duty of cooperation interaction

‘...significantly enhanced Network Rail’s approach to signalling notices, and has been recognised internationally as a world-leading product.’

for recording operations and workforce incidents in January and April respectively. The new application has significantly enhanced Network Rail’s approach to signalling notices, and has been recognised internationally as a world-leading product.

Recognising its independence and suitability, the chairman of Network Rail asked RSSB to conduct an independent review of the reporting of RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995) reportable accidents by Network Rail and its contractors. Invitations to submit evidence were sent to all Network Rail staff; to contractor associations; and to trades union members, via Unite, RMT, and TSSA.

The review used some of the protocols previously used for Formal Inquiries, including the commitment on the part of RSSB to keep confidential all statements from those giving evidence. This commitment is important both to protect RSSB’s independence, and to encourage witnesses to be forthcoming when they supply evidence. The Board confirmed its commitment to preserve the confidentiality of witnesses.

At the beginning of September 2010, RSSB launched the new Taking Safe Decisions Analysis Tool. Developed in-house, it supports safety decision making by helping to construct a cost-benefit analysis that is compatible with Taking Safe Decisions and ORR Guidance. During the year RSSB implemented a second significant stage of the industry’s ‘SMIS Vision’, a major upgrade to the industry-wide Safety Management Information System. New ‘dashboards’ have given senior industry managers the ability to create

customised reports that provide the information that they specifically need

Two Industry Safety Meetings, involving the most senior people from RSSB members, were held during 2010. The theme of the February meeting was ‘Safety Leadership and Safety Culture’. The main debate of the day, among the senior industry figures present, included what we understand about the industry’s safety culture, and the value of the RSSB Safety Culture toolkit, which enables individual companies to begin to assess their culture, and also to benchmark against industry norms. The theme of the second meeting, in September, was safety assurance. This meeting developed a realisation that whilst duty holders are all reasonably confident of their own arrangements for assurance, they are less confident of the assurance needed to provide system level safety. Accordingly actions were agreed to review this and report back to the next Industry Safety Meeting, in February 2011.

The Operations Focus Group (OFG) is using the results of RSSB risk analysis and research as the basis of a review of the issues around risk, particularly to passengers, posed by the train/platform interface, and by other causes of ‘slips, trips, and falls’ around the station environment. The review is structured using the ‘4 Es’ approach (education, engineering, enforcement, and enabling), and the group intends to produce user-friendly tools and guidance to assist practical SMS holder management of this risk. OFG released the RED28 DVD, which focused on train dispatch, and is supporting the new Rail Industry Standard on dispatch RIS-3703-TOM Rail Industry Standard for Passenger Train Dispatch and Platform Safety Measures.

‘In managing the risk and opportunity associated with European legislation, RSSB represents GB interests, and gains knowledge that will be of benefit to the GB rail industry.’

Working internationally

In managing the risk and opportunity associated with European legislation, RSSB represents GB interests, and gains knowledge that will be of benefit to the GB rail industry.

In its eight years’ RSSB has established a national and international reputation and relationships, and is now fully engaged in utilising those relationships to benefit its members.

RSSB’s reputation for producing work of value to the broader rail industry continues to grow. RSSB receives frequent requests to contribute to international events; and in 2010 presented key papers at the World Level Crossing Symposium (WLCS) and the International Rail Safety Conference (IRSC). In addition, Alan Davies, programme manager for RSSB’s cross-industry work on road-rail interface, has been appointed chairman of the European Level Crossing Forum.

RSSB has been selected to host both the WLCS and the IRSC, in London in 2012. These conferences will be coordinated to enable their efficient delivery, and cost savings for delegates from around the world. Budgets are planned that are cost-neutral for the organisers of both events.

RSSB frequently hosts visits to the UK from foreign rail administrations, and in May RSSB was one of the hosts for delegates from the Swedish Transport Administration ‘Trafikverket’. Among the group’s priorities was to learn about our work on trespass in particular, and on community safety in general. Particularly well received were our human factors based research project Controlling trespass and access from the platform end – a guide to good practice, and the Trackoff educational initiative. The resources DVD from the latter has been named one of the six

best education films by Youth Worker Now, a monthly publication that provides the latest news, case studies, practical tips and resources from the youth work field.

In June 2010, RSSB hosted the biannual meeting of the TC9X committee of the Comité Européen de Normalisation Electrotechnique (CENELEC). CENELEC is the European body that produces and maintains all EuroNorm Standards, including those applicable to the railways. In July, leaders of rail research programmes from across Europe converged on our Angel offices for an RSSB/DfT organised seminar to plan the way ahead for rail research in challenging economic times. Presentations were made on some of the key proposals for new research in 2011 – by Network Rail on capacity; UNIFE on improving rail system interoperability; Trafikverket on cost-effective infrastructure; and by RSSB on enabling innovation.

RSSB representatives were among those who welcomed delegations from Polish infrastructure manager PKL, and from the MTR Corporation of Hong Kong. And in December, RSSB hosted visitors from across Europe at a two-day meeting about the Technical Specification for Interoperability for Persons with Reduced Mobility.

In the latter months of 2010, two new Europe-wide rail safety alert systems were introduced; one by the ERA, the other by the UIC (International Union of Railways). Following discussion with ORR, RSSB began development of a support process for a co-ordinated response to these alerts from all SMS duty holders.

RSSB was invited to give a key note address to the 2010 Australasian rail industry safety conference. RSSB is on two committees of the Transportation

Research Board in the USA – one on human factors, and one reviewing the Federal Railroad Administration research and development programme.

Forward planning

Being able to deliver the right information to the right audiences, at the right time, will clearly enhance the value of the body of knowledge that RSSB holds in its staff and its IT systems. RSSB has completed an initial internal knowledge review and is determining the details of a knowledge management strategy. This will start to deliver the infrastructure, information management and development processes, that will make information more easily accessible, useable and valuable.

Adding extra value to that information will not only benefit RSSB's members, but also develop its potential in terms of the value of its intellectual property. Greater accessibility and perceived value will also contribute to RSSB's licensing of its knowledge and expertise to non-members, both in the UK and internationally.

RSSB has also launched the Rail Research UK Association, a partnership between the British rail industry and academia. Funded by RSSB, this partnership will maximise the value available to the industry, and help the universities better understand the challenges to which they can contribute their expertise.

The latter part of 2010 has seen the groundwork laid that will provide the industry with greater access to and understanding of its own knowledge, starting to break down information silos, increase the value of information, and identify solutions. RSSB is developing a portal that will store existing knowledge in a more searchable way than it is currently available; combine RSSB's knowledge with that of external

partners; and allow the industry to establish whether research work has already been done, or identify opportunities for collaboration or co-funding.

Ongoing research into the effects of future climate change will help to further optimise investment in an affordable and cost-effective weather proofing programme. This will enable the industry to achieve cost savings and improve the effective performance of the railway during extreme weather events. The research will also feed into future railway specification and planning for CP5 and beyond. Praised by the Rt Hon Caroline Spelman, MP, as 'incredibly good value for money', the results of this work could save the industry £1 billion over the next 30 years.

'...incredibly good value for money', the results of this work could save the industry £1 billion over the next 30 years.'



RSSB welcomes the Rail Value for Money Study, chaired by Sir Roy McNulty. We made our own submissions to the review, which you can find at <http://www.rssb.co.uk/AboutUs/Pages/RailValueForMoneyStudy.aspx>