GB railway safety 2009/10 - Another year of sustained safety performance

RSSB has published its Annual Safety Performance Report (ASPR) for the financial year 2009/10. The headlines are:

> On the basis of fatality risk per traveller kilometre, rail travel is nearly 1,500 times safer than travelling by motorcycle, over 500 times safer than walking, over 400 times safer than cycling, over 30 times safer than travelling by car and around 3 times safer than using a bus or coach.

> It’s estimated that there were about 1.25 billion passenger journeys made in the last financial year, but there were no passenger or workforce fatalities in train accidents in 2009/10. This is the fourth financial year in the last five with no such fatalities.

> 2009/10 saw the lowest financial year total on record for category A signals passed at danger, which stood at 277. This is a decrease of 15 on the number recorded for 2008/09. There has been a substantial overall reduction in SPAD risk and train accident risk over the last decade. An analysis of trends in train accident precursors using the Precursor Indicator Model (PIM) shows the overall risk at 39% of March 2002 baseline level, compared to 46% at the end of 2008/09.

> There were 42 potentially higher-risk train accidents (PHRTAs). This is 6 lower than for 2008/09, and the lowest number recorded.

> The total level of harm in 2009/10 was the same as 2008/09, 129.7 FWI (fatalities and weighted injuries).

> Five passsengers died in separate incidents, all at stations. This is the same figure for 2008/09, and remains the lowest passenger fatality total recorded for either a calendar or financial year.

> Three members of the workforce died in accidents during 2009/10, all were working on the infrastructure. The overall level of workforce harm was 24.5 FWI which is a 6% reduction on the 2008/09 figure, and a 4% reduction when normalised by hours worked.
> Twelve members of the public died while using level crossings; the same number for 2008/09. Six were pedestrians, one was a cyclist, and five were road vehicle occupants, three of whom died in the same vehicle at an accident in Halkirk. While the number of fatalities is the same as 2008/09, the number of train collisions with road vehicles dropped from 21 in 2008/09 to 14.

> A further 49 members of the public were killed while trespassing; this is an increase of five on 2008/09.

Over the last 10 years, the industry has been able to effect the biggest safety improvements in areas where it has direct control and responsibility – particularly the risk from train accidents and more generally the overall risk to passengers and members of the workforce.

To view the full report on the RSSB website see
http://www.rssb.co.uk/SPR/REPORTS/Pages/default.aspx

CCTV level crossings within a possession

Since September 2007 there have been a number of incidents of rail movements proceeding over CCTV level crossings within possessions without the correct authorities. Most of these appeared to relate to a Person in Charge of Possession (PICOP) or Engineering Supervisor (ES) authorising a movement to take place past the signal protecting the crossing before the barriers had been lowered, despite the rule (and the non-compliance before it) requiring the PICOP or ES to obtain the signaler’s assurance that the barriers have been lowered and that the crossing is clear before allowing the train to pass the protecting signal.

This issue was discussed in great depth by the Operations Focus Group (OFG) at its February 2010 meeting and an initiative was taken to progress the proposal to develop briefing documents for the industry. In order to do this a cross industry sub group, led by RSSB, was set up. It was agreed by the sub group that three separate briefing documents were required to be developed to ensure that there would be no dubiety or misunderstanding regarding other people’s duties. The three audiences identified are:

1) Planners
2) Those giving movement authority such as ES & PICOP
3) Those undertaking movements such as drivers, On Track Machine (OTM) operators

The decision was taken for Network Rail to provide the document for planners because they need to comply with their company standards NR/L3/NDs303.

The guidance to ‘people authorising rail movements and for people driving trains or controlling on-track plant’ has now been completed and circulated by Network Rail. It has also been made available on Opsweb www.opsweb.co.uk.

For further information about this or any other OFG activities contact
Susan Cassidy email susan.cassidy@rssb.co.uk

What happened after TPWS? A fresh look at SPAD risk

Monthly analysis of trends in the risk from signals passed at danger (SPADs) has taken place since 2002, using a baseline level of SPAD risk at the March 2001 level. Since that time, SPAD risk has decreased significantly, with recent levels being consistently more than 90% below the baseline.

The main reason for the improvement has been the implementation of the Train Protection and Warning System (TPWS), but the industry has also instigated a range of other initiatives and rolling stock improvements that have played their part.

At the annual Operations Safety Conference in 2009, the discussion on SPAD risk raised concerns about whether it was still useful to make comparisons against a 2001 baseline when the current risk was so much lower. Some people felt that doing so could mask recent changes. There were also concerns that the method used to assess the risk was unduly sensitive to one or two high risk SPADs: for example, the near-doubling of the risk measure in 2007 was an artefact of the method and did not reflect a genuine dramatic increase in the underlying level of risk.

Accordingly, RSSB has developed a new and more robust method for evaluating the underlying level of SPAD risk. Put simply, it smoothes out the distribution of SPAD rankings. The result is an approach that is less sensitive to small numbers of high-ranking SPADs. In addition, the greater smoothness of the distribution makes it possible to use SPAD data over 12 months rather than 24, so the new measure has the benefit of being able to track changes in the
The SRM templates, which are produced to help transport operators create a comprehensive risk profile for their operations in support of their safety management activities, underpin safe performance at work for safety critical staff.

Using the new methodology, RSSB has re-baselined SPAD risk assessment to September 2006. This date has been selected because it reflects a time when TPWS was fully operational, and is a full year after the removal of Mark I rolling stock.

Both the old and new measures will be published in tandem for the time being. The old measure reflects the seriousness of SPADs that actually occurred, while the new measure better reflects the underlying SPAD risk. At the end of 2009/10, SPAD risk stood at around 70% of the new September 2006 baseline, as measured using the new methodology.

For more information contact Marcus Dacre, senior safety intelligence analyst, marcus.dacre@rssb.co.uk

Non-technical skills

Non-technical skills are generic skills such as decision making, workload management and situational awareness. Research has shown that non-technical skills (NTS) underpin safe performance at work for safety critical staff. They enhance technical task performance, and improve safety by helping people to anticipate, identify and reduce the occurrence of errors.

Interest and recognition of non-technical skills is growing across the rail industry worldwide, and NTS training courses have already been developed in Australia and the United States of America. Evaluations in a range of safety critical industries suggest that this type of training can result in improvements in safety, knowledge, behaviour, and attitudes – and bring financial benefits.

RSSB has begun a project with representatives from across the rail industry in Britain to develop, pilot and evaluate NTS training and reinforcement activities (project reference T869). This pilot course will focus on drivers; however, the guidance and core materials developed will be applicable to other operational roles.

In this project, task analysis methods have been used to map NTS onto each element of the driver role. A total of 26 NTS have been identified as being key skills for train drivers.

A report outlining these skills is available on the RSSB website: http://www.rssb.co.uk/SiteCollectionDocuments/pdf/reports/Research/T869_int_rpt.pdf.

A research brief outlining the project is available here: http://www.rssb.co.uk/SiteCollectionDocuments/pdf/reports/Research/T869_rb_final.pdf.

Over the next few months, RSSB will be facilitating the work of a group of trainers from across the industry to develop materials and reinforcement activities for the course. This course will be piloted at Northern Rail and evaluated before the materials and implementation guidance are made available in a final report. The intention is that other companies in the industry will be able to use this information to roll out the course; and that ultimately, NTS training can be integrated with technical training across the industry.

The technical leader on T869 is Kate Bonsall, human factors specialist, who can be contacted at Kate.Bonsall@rssb.co.uk or on 020 3142 5629.

You can also refer to RSSB’s Non-Technical Skills webpage, which provides further information in this area: http://www.rssb.co.uk/EXPERTISE/HF/Pages/NON-TECHNICALSKILLS.aspx.
Paul Thomas is new Chairman of Hazards Forum

Paul Thomas CB, RSSB’s Chairman has been appointed to lead the Hazards Forum.

The Hazards Forum’s agenda is to:

> Promote the Public understanding of Risk;
> Promote the understanding of specific technological and natural hazards;
> Identify key lessons from catastrophes;
> Work for the application of risk reduction and control strategies.

This agenda is primarily, but by no means exclusively, focused on the UK and is aimed at professional communities and the public.

> Providing a high level forum for reasoned debate;
> Arranging discussion meetings for opinion formers and experts;

For more details on the Hazards Forum see http://www.hazardsforum.org.uk/content/index.asp?CONTENT_ID=17

Events:

Vehicle/Track System Interface Committee Seminar ‘Taking theory into practice’

Date: 20 October 2010   Venue: RSSB Offices, Angel, London EC1

The purpose of the V/T SIC is ‘to assist the railway industry to manage all aspects of vehicle to track interfaces in the most cost effective and efficient way.’ Whilst the primary focus of the V/T SIC is set upon the point of contact between the wheel and rail, it is recognised that many other parameters of the track and rolling stock also affect this interface.

The seminar will present the work undertaken by V/T SIC over the last year and a review of progress since the last event. Speakers from the V/T SIC and those who have participated in the work will describe the technical details and key results. The seminar will also provide the opportunity to meet with many of the experts in this critical field.

To register an interest in attending this free event, please email conferences@rssb.co.uk. Programme details will be finalised in the coming weeks and will be sent out to those who have been in contact.