reporting

2001 the first operating year

RAILWAY SAFETY

Working for a safer railway

leading

Railways are the safest form of public transport in the UK and throughout Europe, although media coverage may lead people to believe otherwise. However, the public has a right to expect an absolute and consistent dedication to safety improvement. Railway Safety's job is to help the UK's rail industry to achieve this. We are not a regulator or an enforcer, but a coordinator of the industry's efforts. We will, from this perspective, challenge the industry by setting tough targets for inclusion within the Railway Group Safety Plan.

The public inquiry into the Ladbroke Grove rail accident of October 1999 produced many recommendations. Among these was the establishment of two new safety bodies – a Rail Industry Safety Body (RISB) and a Railway Accident Investigation Branch (RAIB). We strongly support these recommendations and believe that the RISB will provide greater clarity of safety leadership for the UK's fragmented rail industry. The Rail Regulator has proposed that Railway Safety should be adapted to form the RISB's core, and the consultation process has already started. Railway Safety has consistently advocated the need for a separate RAIB and we will help with the Health and Safety Commission and the Department of Transport, Local Government and the Regions (DTLR) to establish it.

Meanwhile, we are continuing our work on behalf of the industry to ensure that safety remains top of the agenda. There are many challenges ahead and I believe Railway Safety, with its dedicated staff, is best placed to provide the necessary leadership to an industry which is more than ever focused on improving safety. This document outlines some of our achievements and progress during our first year of operation as an independent company. We also intend to publish a full company report covering the financial year to April 2002.

Sir David Davies Chairman, Railway Safety

working for a safer railway 1

Railway Safety provides leadership and support in safety management for the entire rail industry.

We develop and maintain Railway Group Standards, help railway companies to apply them, and monitor their performance. We also provide extensive practical support, ranging from risk models and the latest safety information, to technical advice.

Our key achievements
This report offers a brief review of Railway Safety's first year as an independent company. Below are just some of the ways in which we helped the industry's continuous safety improvements:

>Europe: we have provided the UK's key input into common European standards for equipment and operations (page 3)

>National initiatives: a new team has been established to promote and coordinate pan-industry activities to deliver safety improvements (page 3)

>Railway Group Standards: many new and revised mandatory standards for railway safety have been issued, including delivering key public inquiry recommendations (pages 5, 9)

>System authorities: expert bodies for key railway systems have and are being established (page 5)

>Safety performance: we have published regular, comprehensive reports for the industry (page 7)

>Research and development: we have set up a team to sponsor and manage wide-ranging research on key safety issues (page 11)

>ERTMS: a pan-industry team has been established to plan the implementation of the new European standard train protection system (page 11)

>Human factors: we have raised the profile in this vital area by cataloguing existing knowledge and coordinating new research (page 11)

>Formal inquiries: we continue to lead the industry's accident investigations process and track recommended actions (page 13).

How independent is Railway Safety?
Railway Safety was established on 31 December 2000 as an independent, not-for-profit subsidiary of Railtrack Group PLC. It was created from the former Railtrack Safety & Standards Directorate on the recommendation of the DETR to create a more independent body, pending the outcome of Lord Cullen's inquiry into the rail industry's safety structure. Our funding is agreed by the Rail Regulator and flows from the rail industry and the Strategic Rail Authority.

The company has its own Board of Directors, comprising a balanced representation of rail industry professionals and safety experts from outside the industry. Five of the directors are entirely independent of UK railway businesses, including the former President of the Royal Academy of Engineering, a former Chairman of the Health and Safety Commission and the Director of Safety Regulation from the Civil Aviation Authority.

Cross-industry cooperation
Railway Safety actively seeks input on its strategic direction and safety priorities through the Safety Advisory Board (SAB). The SAB includes representatives from the rail industry, trade unions, passenger groups, independent safety groups, the Strategic Rail Authority and HM Railway Inspectorate.

The National Safety Task Force, which was formed immediately after the accident at Ladbroke Grove, also represents the whole industry and meets regularly to determine how safety initiatives can best be collectively delivered. Railway Safety facilitates these meetings and coordinates and tracks the resultant actions.

RAIB Railway Accident Investigation Branch
RISB Rail Industry Safety Body
DETR Department of Environment, Transport and the Regions
DTLR Department of Transport, Local Government and the Regions
SAB Safety Advisory Board
ERTMS European Rail Traffic Management System

>liaising

Railway Safety liaises extensively with national and international safety organisations, rail companies and safety action groups throughout the industry.

european and national initiatives 3

The impact of the many European Union interoperability and safety initiatives is obviously of wide concern in the UK. Railway Safety is working closely with European rail companies and organisations to address the issues. We have made significant progress towards incorporating UK safety regulation best practice into European Commission proposals for a Safety Directive. We are also working to ensure that UK industry interests are represented in proposals for a European Rail Agency.

High-speed interoperability
A Railway Safety team contributed to the Technical Specifications for Interoperability (TSIs) for high-speed interoperability throughout 2001, and these have now been approved at member state government level. We are currently investigating their impact on UK rules, including the Railway Group Standards. We are also working with the DTLR to redraft the high-speed interoperability regulations, addressing concerns over their impact on network safety.

We have succeeded in raising the general profile of transitional issues – in particular, by establishing RailConform Ltd as a pan-industry Notified Body (subject to DTLR confirmation) to address system integration and help ensure safe interworking on complex projects during the transition.

Conventional interoperability
Railway Safety is supporting and coordinating the UK industry's input into the development of conventional (non-high-speed) interoperability of European railways. We have appointed a programme manager to coordinate UK input into the TSIs. Our Chief Executive has recently been re-elected to the Board of the Association Européenne pour l'Intéroperabilité Ferroviaire (AEIF), and chairs the UK's Interoperability Cross-Industry Group.

Railway Safety is also actively supporting a number of related projects such as defining in detail the Trans-European Network routes in the UK, in collaboration with the Strategic Rail Authority.

National initiatives
Railway Safety facilitates a number of groups that coordinate the UK industry's efforts to improve safety in key risk areas. For example:

>The National Trespass and Vandalism Coordination Group focuses on probably the greatest potential risk to safety on the railway. The group has had a number of notable successes, such as the Thomas the Tank Engine campaign aimed at schoolchildren.

>The Track Safety Strategy Group aims to improve safety for all who work on or about the track by developing and promoting the use of new methods and focused briefing materials, and the routine separation of track workers from trains.

>The National SPAD Focus Group leads the introduction of SPAD-reducing measures such as 100% professional driving, clearing and preventing SPAD traps, improving signal sighting and improving drivers' route knowledge.

>The CIRAS National Steering Group oversees the industry's confidential reporting system, now fully operational across the UK and believed to be the largest of its type in the world. Railway Safety has supported the national roll-out of CIRAS and provides project management resources for the steering group.

>The CIRAS Charitable Trust was established to act as an independent custodian of the data collected by the system, and to endorse major policy issues defined by the national steering group.

TSI Technical Specifications for Interoperability
AEIF Association Européenne pour l'Intéroperabilité Ferroviaire
SPAD Signal Passed at Danger
CIRAS Confidential Incident Reporting and Analysis System

developing

Railway Safety is responsible for developing and maintaining national safety standards, railway approved codes of practice, and guidance notes for advising the industry on their application.

railway group standards and system authorities 5

One of Railway Safety's key activities is to manage the suite of mandatory Railway Group Standards. These set out the minimum requirements to ensure system safety, and safe interworking, on the UK main line railway. We develop and issue new or revised standards, based on industry consultation, and manage the process of change. In our first year of operation we issued 31 new standards, revised 22 and withdrew 22. Many of the improvements recommended by the Southall and Ladbroke Grove inquiries have now been implemented.

Railway Safety is also responsible for managing necessary or unavoidable deviations from the requirements of Railway Group Standards. These are regularised as either temporary non-compliances, non-compliances pending review of the standard, or permanent derogations. During 2001, we handled a total of 382 requests for such regularisation, of which 290 were approved. Such deviations are only allowed when it can be demonstrated that safety is not compromised, if necessary by implementing alternative safety measures.

System authorities

The fragmented nature of the post-privatisation railway makes it difficult to resolve issues that cross organisational boundaries. Railway Safety has introduced the concept of the system authority to provide 'virtual integration' when dealing with specific railway systems. Legally incorporated and mandated, the system authorities provide a mechanism for the various parties to find safe, cost-effective and legally binding solutions. Both the Southall and Ladbroke Grove public inquiries commended this approach and recommended its further development.

Railway Safety is supporting the creation of these bodies. The first two are the Wheel/Rail Interface System Authority (WRISA) – dealing with issues such as rail failure through rolling contact fatigue, that was involved in the Hatfield accident – and the Train Protection and Warning System Authority – which is managing the technical aspects of this key new system to prevent and mitigate the effects of signals passed at danger (SPADs). Both have been set up as companies limited by guarantee with an independent chairman and directors representing all relevant parts of the industry.

We provide administrative support for these two authorities, which are registered at our own company address. Their representatives meet regularly to discuss current issues, with observers from HM Railway Inspectorate, the Strategic Rail Authority, the Rail Regulator and Railway Safety to ensure open discussion.

We are also helping to develop the system authority for the new European automatic train protection system (known as ETCS). Two further authorities are in the early stages of development, for the GSM-R radio system on European railways and the monitoring system for high-speed tilting trains.

WRISA Wheel/Rail Interface System Authority
ETCS European Train Control System

Supporting

Railway Safety supports the industry's continuing safety improvement efforts by building and maintaining risk models and databases, and by publishing expert reports on safety and risk.

safety strategy and risk 7

Rail companies throughout the industry use Railway Safety's detailed reports to drive their safety improvement initiatives. We issue both regular and special reports on key safety issues, providing performance information, analysis and guidance, most notably the annual safety performance report published in May 2001. We believe these are the most comprehensive reports on railway safety published anywhere in the world.

Our monthly SPAD reports also provide essential data for the Health & Safety Executive's (HSE) monthly report to the Government. Special topic reports published during 2001 included category B SPADs, fires on trains and trains striking obstructions. Railway Safety regularly holds briefings for both industry and other stakeholders on key safety issues.

These activities also serve to illustrate the openness of an industry which shares data between all its members, contributing to the rebuilding of public confidence in railway safety. The Railway Safety website, **www.railwaysafety.org.uk**, is seen as a focal point for safety information.

Safety Risk Model
We introduced a notable enhancement to our reporting in 2001, with the ability to apply risk considerations to performance data. With our Safety Risk Model (SRM) now fully operational, we can identify the risk associated with every event reported to us.

We have used the SRM to provide the industry with a risk profile bulletin covering all major areas of railway risk. This is now extensively used by Railtrack and train operators to support the use of risk-based techniques in safety management and planning.

In a further development, we have designed and implemented a method of assessing the risk associated with SPADs. After a period of calibration, this model will enable all SPADs to be ranked according to risk, greatly clarifying the extent and urgency of corrective action required. The model will also provide a means of measuring the effectiveness of the Train Protection and Warning System (TPWS).

Precursor Indicator Model
Following the SRM, we developed a Precursor Indicator Model (PIM), which identifies changes in underlying risk. By focusing on incident precursors, the PIM enables the industry to take prior action rather than reacting to events that have occurred.

Railway Group Safety Plan
Railway Safety is responsible for managing the production of the annual Railway Group Safety Plan (RGSP), setting out the industry's 10-year safety objectives. These are aimed at reducing the risks and absolute rates of fatalities and major injuries to passengers, staff and the public.

The Plan is developed through an ongoing process of consultation in the rail industry. Following publication of the 2001/02 RGSP in January 2001, a strategic review of this consultation process was completed and the results applied to the development of the 2002/03 Plan. This culminated in a conference in October, at which industry representatives agreed the new and revised objectives. After endorsement by the independent Safety Advisory Board and approval by the Railway Safety Board, the Plan was published in January 2002.

SRM Safety Risk Model
TPWS Train Protection and Warning System
PIM Precursor Indicator Model
RGSP Railway Group Safety Plan
HSE Health & Safety Executive

>evaluating

Railway Safety evaluates the effectiveness of risk controls, assesses and audits company Railway Safety Cases and manages accreditation for vehicle acceptance.

audit and evaluation 9

All companies operating the infrastructure, trains or stations in the UK main line railway environment must submit a formal Railway Safety Case (RSC). Railway Safety is responsible for assessing these RSCs and making recommendations on their acceptability to the HSE, who, as the state safety regulator, legally accepts them.

During 2001, we assessed 2 new and 19 revised Railway Safety Cases (including that of Railtrack), successfully meeting or improving on planned timescales in every case. We also participated in industry working groups to enhance the assessment and acceptance processes, drafted revised criteria for RSC assessment and produced guidance notes on the management of change, based on consultation within the industry.

Compliance auditing
Railway Safety also undertakes the annual audit of rail companies' compliance with their RSC and with Railway Group Standards. During 2001, we carried out 73 audits of train and station operators and a pilot audit of Railtrack. The audit of Railtrack was a new duty brought in by the Railways (Safety Case) Regulations 2000.

All operators are required to develop action plans to address issues raised during audit. Railway Safety has developed a standardised action plan format which focuses on systemic improvement and ongoing monitoring, helping companies to develop lasting solutions to non-compliance. We have also begun the development of a revised audit protocol which groups control under topic areas, with the aim of avoiding multiple non-compliances for the same issue.

Special evaluations
Our evaluation team carries out special evaluations of the effectiveness of the Railway Group's standard risk controls and special investigations on specific topics. For example, in 2001, we assessed delivery of the 22 SPAD actions required by HM Railway Inspectorate and the recommendations of the Ladbroke Grove formal inquiry.

We also assess the development of individual company safety plans in response to the Railway Group Safety Plan.

Accreditation
Railway Safety manages the accreditation process for organisations that carry out rail vehicle engineering certification and acceptance. We continued to develop and improve this during 2001.

The process now includes a formalised, continuous, professional development programme for individual signatories, and we are developing key performance indicators to measure the performance of acceptance bodies. Although Railway Safety does not seek to influence the commercial aspects of the acceptance bodies' activities, we did take significant action during the year to ensure that sufficient competent resource was available to the industry.

Promoting

Railway Safety promotes and manages safety research on key issues, as well as maintaining expert technical teams to support our own activities and those of the industry as a whole.

research and technical services 11

Our first year as an independent company also saw the launch of a major five-year, £75 million research programme aimed at helping the industry to reduce fatalities and injuries on the UK main line railway.

We have published a strategy document for this programme, set up the delivery team and established project management for all the projects. Research proposals from stakeholders across the industry are being fed into 24 research themes covering a wide range of topics. A number of earlier research projects were completed during 2001, including the second issue on CD of the Human Factors Catalogue, which indexes the huge amount of existing research information in this key area.

European Rail Traffic Management System (ERTMS)
European interoperability requirements specify that ERTMS and its train control element, ETCS, must be fitted when upgrading high-speed lines. It will later be required when upgrading signalling on any line. We have established a pan-industry team, which is working extremely well, to plan ERTMS implementation in the UK, including accelerated fitment as recommended in the Cullen/Uff joint inquiry report.

Technical Services teams
These teams constitute a professional resource pool for the company and the industry. The six teams together cover a huge range of activities which we can only touch on here. Please contact us if you would like more details about their work.

The human factors team supports this vital area throughout the industry. They have played an important role in ensuring that human factors are integrated into accident investigations and inquiries. During the year they completed a range of research projects including work which provided an understanding of visual attentional demands on drivers and factors influencing trackside safety. They actively participate in a variety of industry committees, forums and action groups on the subject.

ERTMS European Rail Traffic Management System
ETCS European Train Control System

The rail vehicles team has won a reputation as an authoritative, independent source of support for the industry. During 2001, they identified and cleared a critical bottleneck in engineering acceptance, developed the technical content of railway vehicle standards, assessed the vehicle elements of Railway Safety Cases and provided a variety of training courses and briefings.

The operations team during 2001, among many other activities, revised the train driving standard to meet Lord Cullen's recommendations, reviewed the safety responsibilities of train crew, completed a review of Rule Book forms, redrafted track safety rules for industry consultation and, in response to Ladbroke Grove inquiry recommendations, redrafted the rules related to SPAD management.

The signalling and telecoms team has developed a standards strategy for telecoms which went out for industry consultation in 2001. They drafted a revised electromagnetic compatibility standard and began work on one for GSM-R radio. Other achievements included the completion of a suite of signal sighting standards and a standard for assessing overrun protection risk, supported by nationwide briefing sessions; both were key responses to the Ladbroke Grove inquiry.

The electrification team has proposed, and published for discussion, a new methodology for electrification standards work. During 2001, they also completed an important standard on electrical protection for electrified lines, related particularly to high-speed train operations, and passed a major milestone in their work programme for DC electrified lines with the issue of revised instructions.

The track and structures team is also heavily involved in developing and revising Railway Group Standards, which in 2001 included changes in response to the Hatfield and Great Heck accidents. They play a continuing role in the development of European standards and specifications, including those for interoperability, and like the other teams provide expert input into Railway Safety's research programme.

managing

Railway Safety manages the rail industry's inquiry process to ensure that lessons are learned and promulgated and that effective actions are taken.

formal inquiries and finance 13

Events during 2001 demonstrated the value of Railway Safety's role in ensuring that serious railway accidents are investigated thoroughly and independently, and that lessons for safety are learned and acted on.

Railway Safety maintains a register of respected personnel with expertise in various railway disciplines, to act as independent chairmen in formal inquiries. During 2001, we were called on to provide chairmen for 17 inquiries.

In particular, we led the rail industry's investigations into the derailment at Hatfield on 17 October 2000 and the accident at Great Heck on 28 February 2001, caused by the incursion of a Land Rover on to the railway. Formal inquiry panels of independent specialists were assembled to investigate both these accidents, and we posted summaries of their reports on the Railway Safety website **www.railwaysafety.org.uk**

Revised standard for investigations
During the year, we reviewed the existing Railway Group Standard (GO/RT 3434/3) covering the requirements for the investigation of railway accidents and incidents. After consultations in the industry we drafted a revised standard (GO/RT 3473) and a supporting guidance note, which were issued in December 2001. The new standard incorporates revised requirements that enable the industry to comply with recommendations in Lord Cullen's report on railway safety (Part 1, recommendations 6 and 7).

Tracking remedial actions
After a formal inquiry, Railway Safety coordinates and tracks the industry's responses to recommendations made in the inquiry report. An industry working group has been established to assist with the development of a database that will enable more effective tracking right through to the close-out of recommendations. The database is expected to be operational in spring 2002.

Railway Safety finance
Full details of Railway Safety's corporate audited accounts will be published in our annual report at the end of the financial year.

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