

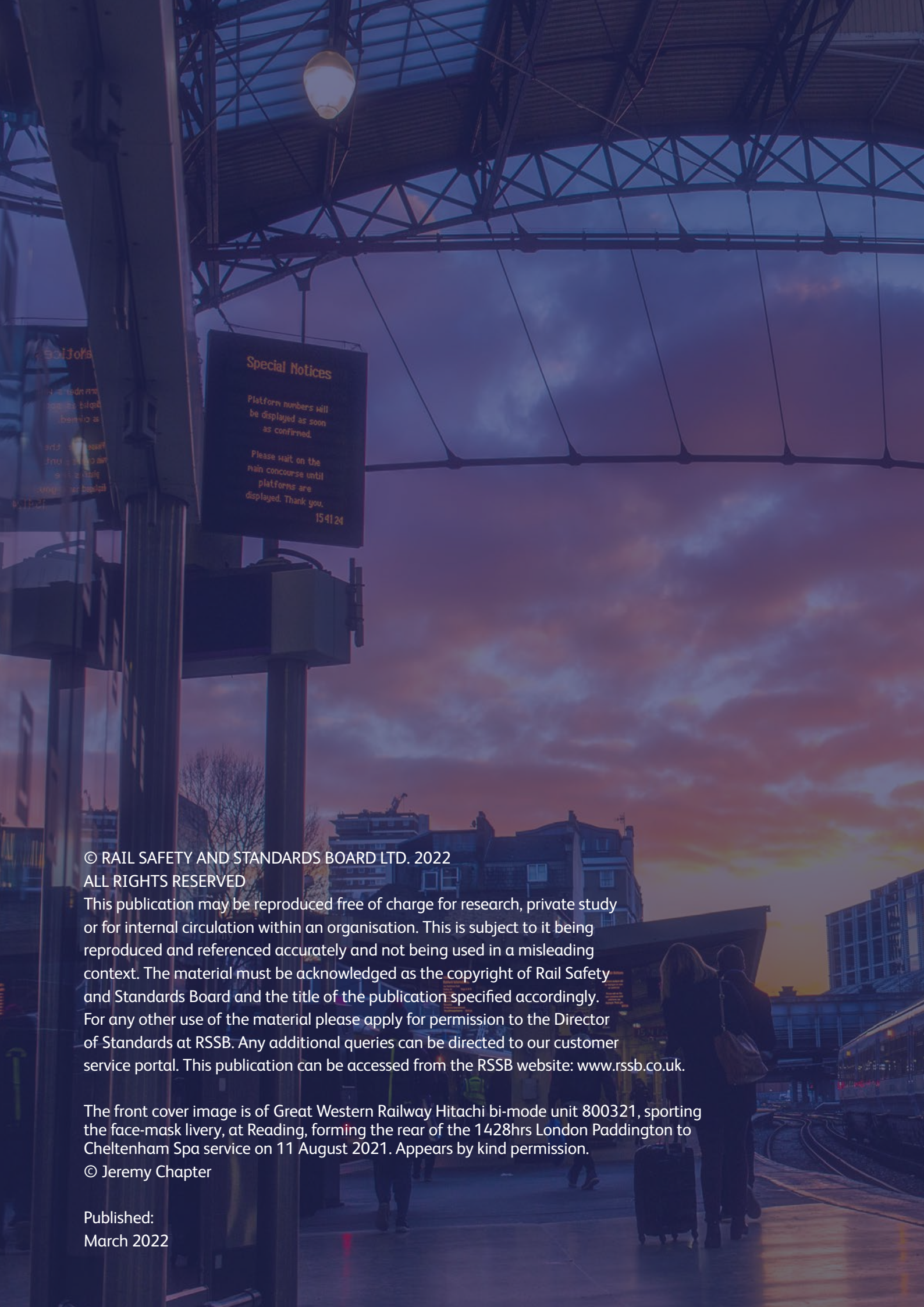


A Better,
Safer
Railway

Standards Annual Report

January to December 2021





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The front cover image is of Great Western Railway Hitachi bi-mode unit 800321, sporting the face-mask livery, at Reading, forming the rear of the 1428hrs London Paddington to Cheltenham Spa service on 11 August 2021. Appears by kind permission.

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Foreword

2021 has followed 2020 in being an unusual year. Fortunately ISCC and all the standards committees have continued to demonstrate their resilience, meeting at least at their usual periodicity, albeit online. Attendance has continued to be very high with virtual meetings proving to be effective. ISCC now meets four times a year and has welcomed all the respective standards committee chairs to present during the year.

ISCC formally reviewed its membership in October, in accordance with its remit and The Code. New members have been welcomed in the infrastructure contractor and infrastructure manager categories and representation for the non-passenger train operator category has been re-elected.

The February 2021 edition of Modern Railway Magazine published a letter about over-prescriptive standards. This gave a good opportunity to encourage standards challenge and I replied to the editor, with support from Tom Lee, RSSB Director of Standards, and Karan Kapoor, then-Head of Compliance and Capability at Network Rail. The letter was published in the following edition.

In November the general assemblies of European standards bodies European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC) voted overwhelmingly to support BSI's continued membership of their organisations. This followed new statutes approved in June to permit membership of countries formerly part of the EU. This concludes the arrangements necessary for the UK to legitimately continue to provide a strong role in European standardisation. UK contribution to international standardisation (including International Organization for Standardization, ISO and the International Electrotechnical Commission, IEC) continues to

be significant and I personally continue as Chair of the senior rail standardisation group in CEN (TC 256 Railway applications).

Following the end of the transition period of the UK's exit from the EU, the EU Technical Specifications for Interoperability (TSI) have been adopted in the UK as National Technical Specification Notices (NTSN). As 2021 closes we're starting to see the change control process for NTSNs take effect. Possible changes originating from the UK, and changes from the EU, need to be evaluated and decisions taken with respect to alignment or divergence from the EU. There are government commitments to maintain alignment, but there is now greater opportunity to diverge where there is a justified case to do so.

ISCC has been encouraging organisations to share information where, through their own internal processes, they have managed deviations against Rail Industry Standards. This is important as it provides valuable information about the suitability of standards. Network Rail now routinely supplies this, and the Rail Delivery Group (RDG) has been encouraging train operators to do likewise.

As is customary, on behalf of ISCC, I'd like to thank all those across the industry, as well as those in RSSB, for their continued high quality engagement and support to standards in the UK and worldwide.



Cliff Cork

Independent Chair of the Industry Standards Coordination Committee

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£15.7m
benefit from
standards
published in 2021

Introduction

While 2020 was hard to predict, 2021 has been similarly hard! Contribution to standardisation has continued to be excellent with fantastic teamwork across various organisations, within RSSB and the standards committees. The standards catalogue has developed, including an important new standard to support operation of multi-mode trains, and the first major revision for many years to the operational rules and company arrangements for the management of dangerous goods. You can read more about these in this report.

How to use this report

This report summarises the key activities in 2021 and is divided into sections:

- **Section 2** showcases five representative new and revised standards published in 2021 explaining the objectives and benefits being delivered.
- **Section 3** provides a narrative from the chairs of the six standards committees, discussing key areas of interest in the year, including international standardisation. The list of committees is in section 7.
- **Section 4** gives a summary of the delivery of the first year of the Rail Standards Strategy following its approval in late 2020.
- **Section 5** demonstrates, through detailed figures and analysis, the effective stewardship of the standards catalogue, specifically how the requirements of the Railway Group Standards Code are being met.
- **Section 6** includes information about how standards and changes to them are communicated.
- **Section 7** lists the standards committees and their subgroups.
- **Section 8** provides information on how to get in touch to seek help and provide feedback.

Benefits

The primary benefit of standards is mainly economic. Adopting standards helps organisations reduce risk, primarily safety risk and risk of technical and operational incompatibility. They also variously help demonstrate compliance with legislation, improve reliability and performance, support sustainability and provide better customer experience. These factors are taken into consideration when assessing the business benefit for standard change and are published with new and significantly revised standards; this includes a monetary assessment of the value.

Pessimistic views on the value of standards change means that the claims are credible, although probably at the lower end of the range of the true benefit. RSSB consults the wider railway not just on the content of the standard but also the value of the benefits, and standards committees include this in their decision making. The benefits are normally assessed over several years, at least five, as it can take a while for standards truly to have an impact.

The new and revised standards published in 2021 had a combined estimated **benefit of about £15.7m over five years**. The true value is probably much more than that. Importantly, this value dwarfs the cost of producing the standards.

Communication

From 2020 the mandatory pandemic lockdown forced us to think differently about communication and we established briefing webinars following the quarterly updates to the standards catalogue. These have proved very effective and popular, enabling the standards authors and key industry stakeholders to collectively address the user community. Hundreds of people are now watching these

webinars live or the recordings to understand the aims and content of standards better.

A range of materials are routinely produced to support standards change, with our standards briefing presentation continuing to be popular. Available on our website, this can be adapted by users and incorporated into other briefing packs.

Through the year we've also done several specific briefings to individual members and user groups, including those managed by the Rail Delivery Group (RDG) and the Railway Industry Association (RIA).

National Technical Specification Notices

Over the last twenty years or so, we've become familiar with TSIs published by the European Commission. In the post-Brexit world for Great Britain these have been incorporated into domestic legislation as NTSNs. TSIs continue to apply in Northern Ireland.

The NTSNs presently mirror the TSIs with minor changes to make them work in a national context; there is no material change in the specification. However, Brexit gives us more freedom and the EU TSIs are evolving, so a change control process has been established. This is now underway, with the operations NTSN being the first that is being scrutinised in detail.

Even for relatively minor revisions, the effort required to manage change to the NTSNs is appreciable. With no additional funding or resource available this will impact and reduce delivery of standards in future.

Rail Reform

The Williams-Shapps Plan for Rail was published in May. It was heartening to see that standards were seen in a positive light and ISCC noted in July that the content "is a strong commendation and recognition of the effective governance and



production of industry standards that ISCC oversees".

As the plan for Great British Railways (GBR) develops, RSSB will ensure that the role and value of standards is effectively considered by the

GBR Transition Team through contribution to the Whole Industry Strategic Plan (WISP).

Rail Standards Strategy



The Rail Standards Strategy was approved by the RSSB Board at the end of 2020 and the first year has been delivered. Section 4 contains further specific information. Much of the rest of the content of this report has also been delivered in support of the strategy.

A key aspect of the strategy is to 'develop mechanisms to attract a more diverse range of people to join standards committee as a member'. I'm pleased that this is actively underway. The Traffic and Operations Management Committee is leading on behalf of other committees, as can be seen in section 3.

Challenging standards

There is a balance between being responsive and changing standards to meet emerging requirements, and providing continuity and certainty through stability of standards. Increasingly, to help users, we're making use of 'point releases' (for example 'issue 2.1') to make minor changes, often non-material, so

that references to other standards and legislation are current. The issue summary, on the second page of every standard, always details the nature of changes.

We're not complacent and we're always eager to hear if our standards are overly burdensome and there are smarter ways of doing things. Getting in touch is easy, section 8 explains how to do this. Even if a change is not appropriate, we can provide members with help and advice, supporting a deviation if that is the most suitable course of action.

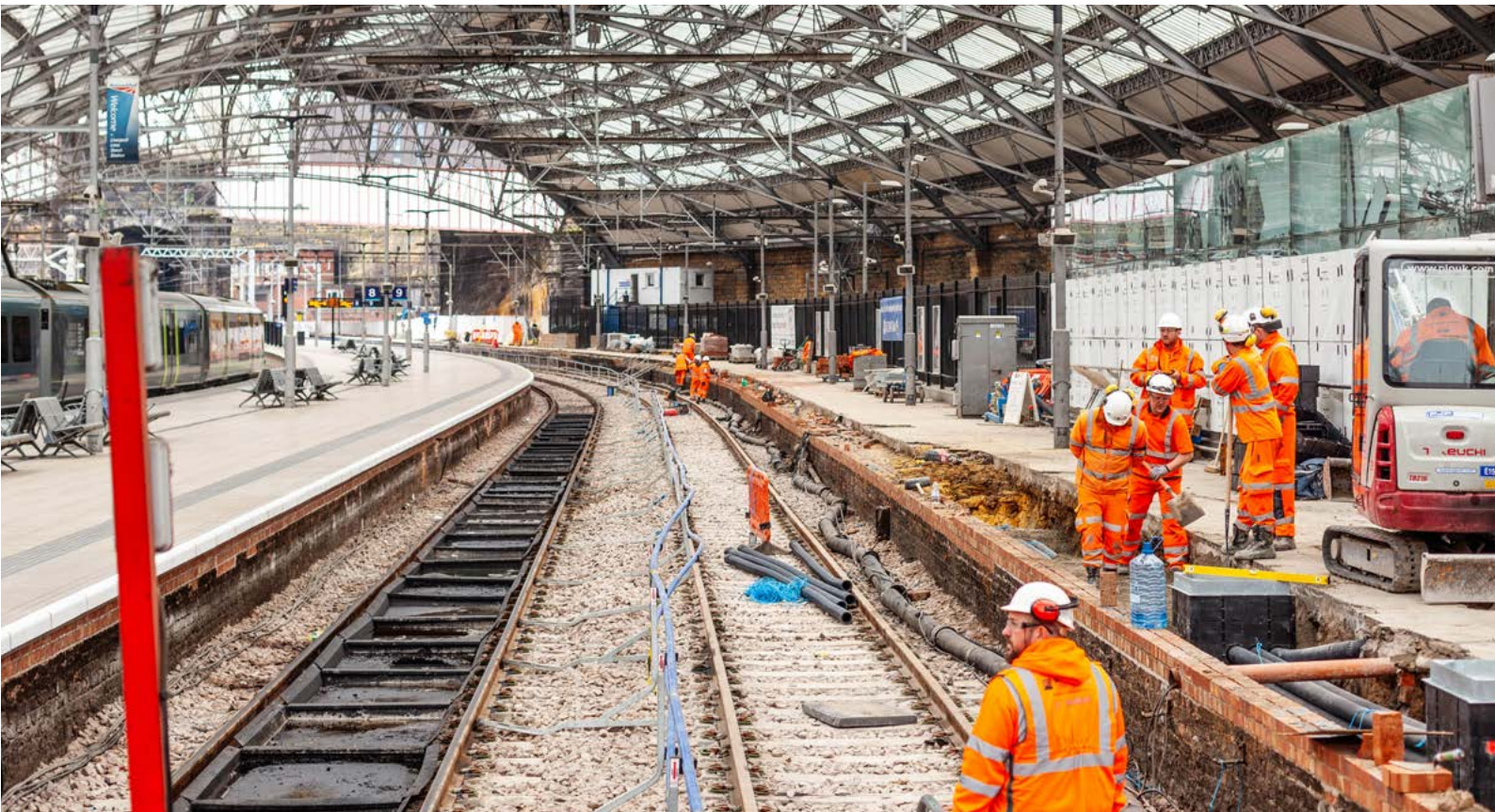
Collaboration

Standards are a team effort. RSSB has a dedicated team of specialists delivering standards, and they are supported by colleagues across RSSB, especially from the System Safety & Health, Research & Development and Communications & Engagement teams. Without this complementary resource it would not be possible to deliver the standards.

We are also indebted to colleagues and organisations from across the industry. For example, Network Rail funded and made possible the detailed risk analysis work to underpin the significant new guidance note on electrical risk assessments (see section 2). Network Rail and train operators, especially East Midlands Railway, made significant contributions to the *System Requirements for the Introduction and Operation of Multi-Mode Rolling Stock* rail industry standard (also in section 2). In addition, we receive significant mutual support from other organisations, notably RDG and RIA, for which we are most grateful.



Tom Lee
Director of Standards, RSSB



2: Key achievements in 2021

CCS System Transitions

A key achievement for CCS SC in June 2021 was the publication of **RIS-0036-CCS** issue two *CCS System Transitions*. It was necessary because the roll out of digital CCS systems across the GB mainline railway will increase the number of locations where a train changes from using one type of signalling system, or train protection system (or both), to another, known as a CCS transition.

The standard was completely revised and rewritten to enable a consistent design approach for transitions to be achieved and support the safe integration of CCS transitions

with train operations.

The content is applicable to any type of signalling or train protection technology including European Railway Traffic Management System (ERTMS) / European Train Control System (ETCS) and covers CCS system transitions when a train is moving or at standstill.

RIS-0036-CCS is intended for people who design, review, risk assess and implement changes to signalling and train protection systems that include CCS system transitions. The standard is expected to provide a total value of industry opportunity of £2.7 million over a five-year period.

RIS-0036-CCS issue two
CCS System Transitions





Platform tactile surfaces

The Rail Accident Investigation Branch (RAIB) report for the person struck by a train at Eden Park station was published in February 2021. The report has six recommendations, which cover various activities. Specifically, the first recommendation requires the industry to work together for a clear policy and process for provision of tactile surfaces.

The recommendation includes associated processes such as effective risk management, covering explicit consideration of safety and accessibility for all passengers (with adequate consideration of passengers at greater risk, such as visually impaired passengers), determining when installation of tactile surfaces is justified at particular locations, identifying stations where installation of tactile surfaces would give greatest benefit, and identifying and remedying locations where tactile surfaces have been installed incorrectly.

The recommendation intends that the rail industry has an improved process for considering when to install tactile surfaces at the edge of station platforms. So that the benefits could be realised quickly, implementation was based on information already available to the UK rail industry. RSSB worked with the Department for Transport (DfT), the RDG and Network Rail to update the relevant Rail Industry Standards (RIS) to improve clarity of the requirements.

RIS-7016-INS and **RIS-3703-TOM** were revised and issued as a point release out of sequence from normal standards catalogue updates in July 2021. This expedient method removed ambiguity as to where and when platform edge tactiles are to be installed. There has been close engagement with colleagues in Network Rail to ensure the requirement and the applicability of the requirement is practical for, and adopted quickly by, the industry.

RIS-7016-INS issue 1.2

Clear Policy for Platform Edge Tactiles

RIS-3703-TOM issue 4.1

Passenger Train Dispatch and Platform Safety Measures

Guidance Note on Management of Electrical Risk

The Electricity at Work Regulations 1989 set out obligations for employers and employees requiring precautions to be taken against the risk of death or personal injury from electricity in work activities. The regulations, which are not railway specific, are goal based and contain high level obligations to prevent harm.

The extensive use of uninsulated live parts, either above the running tracks (in the case of an overhead contact line usually at 25,000 volts AC) or adjacent to running tracks at ground level (in the case of a third rail system with a conductor rail at 750 volts DC), and the multiple employers involved in the environment, means that complying with these obligations can be challenging.

Due to their need to interact with rail vehicles, these live parts are situated in closer proximity to staff than might typically be the case in some

other sectors. Consequently, there are challenges in preventing harm to staff arising from either touching or being too close to the live parts when undertaking normal operational tasks. Interest in how employers are meeting these regulations has increased over time, especially those whose staff are involved in the operation of stations and the operation of trains on electrified lines, for example train crew and platform staff. This highlighted the need for sector-level guidance to assist these employers.

The production of this guidance has been a long and complex process, involving engagement with a range of actors from across the sector including the regulator. Aligning disparate views took time to understand and resolve, in order to achieve a consensus, industry-agreed, robust position. This level of engagement and challenge has undoubtedly enhanced the quality of this document. The result is a methodology which enables a systematic and proportionate approach to the assessment of electrical risk.



Over
£1.5m
benefits



Templated **risk** assessments

Worked **examples** of risk assessments

The risk assessment process is set out in three steps, based on a zonal approach for proximity to live parts. It uses questions to prompt the user, with numerous illustrations to aid comprehension. In addition, it also includes risk assessment templates and some worked examples.

This project also identified a need to undertake

modest consequential changes to two Rule Book modules and two associated Handbooks. These were published alongside the guidance note.

This guidance will help railway undertakings to manage electrical safety risk proportionately and more effectively, saving at least £1.5million over the next five years.

GEGN8575 issue one

Guidance Note on the Management of Electrical Risk Related to Operational Tasks on Electrified Lines

GERT8000-AC issue seven and GERT8000-HB16 issue five

AC Electrified Lines

GERT8000-DC issue five and GERT8000-HB17 issue four

DC Electrified Lines

System Requirements for the Introduction and Operation of Multi-Mode Rolling Stock

Multi-mode rolling stock is equipped with combinations of internal and external power sources. This provides the capability to use combinations of overhead contact line (OCL), conductor rail, diesel, batteries and other alternative traction energy sources such as hydrogen.

Multi-mode rolling stock is being introduced to the GB mainline network, to support decarbonisation by maximising use of available electrical infrastructure. Multi-mode rolling stock provides operational flexibility allowing trains to operate over routes which involve both electrified and non-electrified sections, taking advantage of electrical infrastructure where available.

To support the introduction of multi-mode rolling stock, a new RIS, **RIS-2713-RST** issue one *System Requirements for the Introduction and Operation of Multi-Mode Rolling Stock*, has been produced to support industry to identify a consistent set of requirements that can be used by duty holders and their suppliers and contractors. It sets out the approach for multi-mode rolling stock and infrastructure on the GB mainline.

These requirements are useful in supporting route compatibility assessment between vehicle and infrastructure, with the potential to reduce abortive work and provide efficiencies through standardisation across the industry. The expected benefits of this standard are about £2.5 million over the next five years, with the largest proportion targeting savings in design and maintenance of related equipment.

RIS-2713-RST issue one

System Requirements for the Introduction and Operation of Multi-Mode Rolling Stock



Over
£2.5m
benefits



Freight train operation and the handling / carriage of dangerous goods

RSSB completed a fundamental review of the operational standards targeted at those involved in the operation of freight trains and/or the handling and carriage of dangerous goods.

The review concluded that there was a need to rationalise the published content, separating out organisational requirements from end-user instructions and information more relevant to training and competence. As a consequence, the existing suite of standards were replaced by a new rail industry standard, **RIS-3781-TOM** issue one, *Requirements for the Operation of Freight Trains and the Conveyance of Dangerous Goods by Any Train*. This was complemented by a new

Rule Book module, **GERT8000-TW4** *Preparation and Working of Freight Trains*, and handbook, **RS524** *List of Dangerous Goods and their United Nations (UN) Numbers*.

The new suite of standards provides the target audience with relevant requirements and instructions, supported where necessary by guidance. It can be disseminated using a variety of channels, including the Rule Book App.

Furthermore, the review delivered a new tool for dangerous goods incident risk ranking that is simpler, easier to use and more intuitive than that previously published in **RIS-8047-TOM** *Reporting of Safety Related Information*. Finally, the J Tables have been extracted from the standards and published on the RSSB website to improve accessibility and facilitate future change.

RIS-3781-TOM issue 1

Requirements for the Operation of Freight Trains and the Conveyance of Dangerous Goods by any Train

GERT8000-TW4 issue 1

Preparation and Working of Freight Trains

RS524 issue 1

List of Dangerous Goods and their United Nations (UN) Numbers

GERT8000-G1 issue 8

General Safety Responsibilities and Personal Track Safety for Non-Track Workers

GERT8000-OTM issue 10

Working of On-Track Machines (OTM)

GERT8000-HB14 issue 3

Duties of the Person in Charge of Loading and Unloading Rail Vehicles During Engineering Work

3: Standards committees updates



Plant

The committee has continued to hold virtual meetings and the committee members have demonstrated agile working

by undertaking reviews in correspondence between the scheduled bi-monthly meetings. This has improved the delivery efficiency of RSSB standards projects and has supported time critical deviation applications.

Activities underway

The revision of **RIS-1530-PLT** issue six, *On-Track Plant and their Associated Equipment and Trolleys* is ongoing. A key objective is to address the RAIB recommendation in report 08/2019: *Collision between road rail vehicles at Cholmondeston* concerning machines being driven in reverse. It will also address additional topic areas and points of clarification raised by the Mechanical and Electrical Engineering (M&EE) Networking Group and the Rail Plant Association, representing the owners and users of on-track plant. The revision will align with the Road Rail Machine EN 15746:2020-series *Road-rail machines and associated equipment* that has now been published.

European and international activities

The committee is maintaining oversight for, and coordinating the UK input into, the CEN working group for track construction and maintenance machines (CEN/TC256/SC1/WG5). This includes:

- Technical report TR 17498:2020 *Rail mounted railway maintenance and inspection machines and associated equipment: Explanation of machine type and compliance, including acceptance processes* explaining the different types of

rail mounted railway maintenance machines and their associated European standards has been published.

- Combining the EN 15954 *Trailers and associated equipment* and EN 15955 *Demountable machines and associated equipment* series was originally planned as a single document and for publication in 2021. This is now being reworked into two parts, one covering safety (Machinery Directive) elements and the other part covering specific railway requirements, with no current plan for the publication date.
- Light revision/corrections to standards for on-track machines (EN 14033 *Railbound construction and maintenance machines* series)
- New drafting group created to produce a new standard for 'Machines without Rail Wheels', which will include topics from **RIS-1701-PLT** issue five *Non-Railborne Plant*.
- Working with new international Ad hoc Group (ISO TC269 SC1 AG02) to consider whether EN 14033 could be used for a new ISO series of standards for on-track machines. The ISO Ad hoc Group has decided to start with an international technical report similar to TR 17498:2020.

The committee is also engaged with the CEN/TC256/WG43 working group on ground-based services (CEN/TC256/WG43) delivering new documents on AUS32 (AdBlue) refilling equipment, and separately, for new high flow rate hydrogen refuelling equipment being developed for railway applications.

Make-up of the committee

The 2021 refresh has resulted in changes to the infrastructure manager representatives. The



committee has welcomed new representatives from Network Rail and High Speed 2 (HS2). There have also been changes to the infrastructure contractor representatives and the ORR observer. The committee still has a vacancy for a representative of passenger train operators.

Other items of note

Recent collisions between items of on-track plant have highlighted a need to consider the benefits of the fitment of collision avoidance control systems. Potential systems are being trialled by Network Rail and these could lead to technical requirements being included in the revision of **RIS-1530-PLT On-Track Plant and their Associated Equipment and Trolleys**.

Decarbonisation of specialised rail mounted

railway maintenance machines with alternatives to diesel fuel are being considered. Civil engineering machines converted for use as on-track plant are now equipped with low emission exhaust treatment systems. There have been some developments in the use of alternative power sources that could potentially be used in railway plant applications, including hydrogen fuelled engines and battery operation.



Neil Halliday
Chair of the Plant Standards Committee



Rolling Stock

Eleven standards have been published in 2021, this includes several limited release updates taking the opportunity to update references to legislation following exit from the EU. Seventeen 12- and 60-month reviews were progressed in 2021, continuing the trend of a high number of reviews processed in the previous year. Work continues on the strategy for rolling stock standards.

Activities underway

There are fifteen active rolling stock standards projects at various stages of progress, with a focus on adapting to technological change and improving system interoperability. This is an increase of seven from 2020.

The project to revise vehicle gauging standards, cross-directorate workstream involving four rolling stock and infrastructure standards, has progressed well. Visits to respective standards committees are planned for January 2022 to



Eleven
new and revised
standards

seek approval to publish as scheduled in June 2022. This suite of standards bring benefit to the industry in several areas with expected savings of about £1.4 million over five years.

RIS-2700-RST issue one *Rail Industry Standard for Verification of Conformity of Engineering Change to Rail Vehicles* was revised to maintain alignment with other relevant standards and was published as planned in September 2021.

The project to revise **RIS-2711-RST** issue two *Rail Vehicle Lettered Differential Speeds* remains on plan to publish in September 2022 and will complete the industry consultation phase by the end of the year. This standard delivers a significant benefit to industry with expected savings of about £12.5 million over 10 years.

The rolling stock strategic plan is now in draft, taking into account the Rail Standards Strategy, and focusing on current and potential changes in technology.

A draft review of standards across the whole catalogue and their potential to be affected by, or to provide support to the introduction of, hydrogen vehicles has been undertaken. This also supports a live workstream with Northern Rail and discussions with several asset owners on the implication of hydrogen operation in the near future.

European and international activities

Support continues for CEN/TC256, CLC/TC9X, ISO/TC 269 and IEC/TC9. In addition, there is now RSSB representation on a EuroSpec working group for the technical specification to upgrade software. The standards committee is kept informed of developments via a new agenda item.

Make-up of the committee

Remote working continues and initial efficiencies have become embedded. Attendance remains consistent with several elections conducted this year; this has introduced new organisations into the committee, notably CAF, LORAM and HS2.

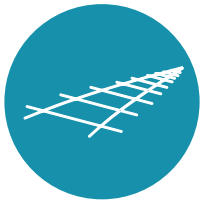
Other items of note

In July 2021 a highly valued RSSB colleague, and frequent standards committee attendee, Martin Osman, was tragically killed in a road accident. His loss has been felt by the rolling stock team and across the industry. We will work to ensure that Martin's considerable legacy, especially in gauging and vehicle dynamics standards, lives on.

The Rolling Stock Standards team welcomed two new members in 2021 and recruitment has just commenced for another post. These positions have become available following retirements and the loss of Martin Osman. Opportunity has been taken to strengthen the knowledge in the team, particularly in electrical systems. This increased capacity has enabled several new projects to start, hence the increase in projects as noted in the activities underway.



Mark Oakley
Professional Head of Rolling Stock



Infrastructure

Most infrastructure deviations continue to be against the platform height, offset and width requirements in

GIRT7020 issue 1.1 *Requirements for Platform Height, Platform Offset and Platform Width*. Overall the number of deviations are still low.

Activities underway

RAIB's report for the person struck by a train at Eden Park station was published in February 2021. The report has six recommendations, which cover various activities. Specifically, recommendation one requires the industry to work together for a clear policy and process for provision of tactile surfaces. Work has been done, with the DfT, RDG and Network Rail, to update the relevant

rail industry standards, **RIS-7016-INS** issue 1.1 *Interface between Station Platforms, Track, Trains and Buffer Stops* and **RIS-3703-TOM** issue four *Passenger Train Dispatch and Platform Safety Measures*, to improve clarity of the requirements. This was published in July and is estimated to deliver at least £2.5m of benefits over the next five years.

A project to develop a national policy, as well as a standards framework for all stations, will commence to update and combine:

- **RIS-7700-INS** issue three *Rail Industry Standard for Station Infrastructure*
- **RIS-7701-INS** issue one *Rail Industry Standard for Automatic Ticket Gates at Stations*
- **RIS-7702-INS** issue one *Rail Industry Standard for Lighting at Stations*.



£2.5m
benefits from
revised platform
standards

Discussions are underway with DfT and Network Rail to develop a project that will have a clear policy and legislative framework for a suite of station standards covering the area from public land to the platform train interface. The development of the suite will benefit projects, by ensuring requirements and responsibilities are set out clearly, and benefit passengers who will experience an inclusive environment.

GCRT5021 issue five *Track Systems* is being revised to align with other standards, taking into account research and industry knowledge since the standard was last published. It is estimated to deliver at least £1.8m of benefits over 5 years after it is published.

Work has started on **GERT7073** issue two *Requirements for the Position of Infrastructure and for Defining and Maintaining Clearances*, to update the standard, to add rationale and guidance as well as provide clarity on window box clearances.

Work has also started on **RIS-7706-INS** issue one *Process for Adding, Removing or Modifying Lettered Differential Permissible Speeds*, a new standard to provide processes and guidance for all those involved in reviewing, updating, adding or removing lettered differential permissible speeds on the network. With its complementary rolling stock document, **RIS-2711-RST** issue one *Lettered Differential Permissible Speeds Classification*, it is estimated to deliver at least £12.5m of benefits over five years.

European and international activities

The committee is kept informed of European and international standardisation. RSSB contributes to several committees and provides convenors for a number of working groups.

Work is ongoing on the nine-part suite of standards EN 13232 *Railway applications – Track - Switches and crossings*, which came out for enquiry early in 2020. It is anticipated that these

will be published in the first half of 2022 along with the five-part suite of standards EN 15273 *Railway Applications – Gauges*, anticipated to be published in the second quarter of 2022.

Make-up of the committee

Infrastructure contractor vacancies have now been filled as two representatives have been elected and have been attending since the March committee. Meetings have been well attended and members have responded positively to conducting meetings using digital meetings software.

Other items of note

A deviations surgery has been set up to help applicants with any possible submissions and to advise on what information is required for a successful submission. It is expected that this will improve the efficiency of robust decision making by increasing the quality of applications, reducing the time taken to reach a decision and reducing the likelihood of late submissions.



Anup Chalisey

Chair of the Infrastructure Standards Committee



Control Command and Signalling

Following the publication of six significant standards at the end of 2020, the focus this year has

been on the development of new standards. This includes two subjects where system modelling is being used to better understand and derive the requirements. Increasingly, system modelling is playing a part in our standards development work. With its structured approach and logical relationships, it's very valuable, because it can evidence that the requirements are traceable back to the identified hazards.

The only standard published this year was in June, when the rail industry standard on CCS system transitions was revised. This contains the requirements for safe design and operation of the signalling system to support trains travelling from one signalling system to another within a journey.

Activities underway

Development of the latest CCS SC strategy is currently underway, closely aligning with the industry-agreed Rail Standards Strategy (see section 4). Providing a focus for standards-related activities and addressing the broader industry challenges and opportunities, it is cognisant of the UK exit from the EU and the need to manage changes to the CCS NTSN. It takes into consideration the 'PESTLE'¹ analysis in the Rail Standard Strategy and the relevant industry strategies, plans and recommendations. The work is on schedule and the document is expected to be approved by CCS SC and then presented to ISCC in April 2022.

Standards currently under development comprise varied projects focused on level crossings, ETCS, software assurance, conventional signalling and defect recording analysis and corrective action systems (DRACAS):

- Developing the scope and requirements to revise the ETCS onboard requirements rail industry standard
- Developing the scope and requirements for a new high integrity software systems assurance rail industry standard
- Revisions to the ERTMS national identities rail industry standard and signalling layout and signal aspect sequence rail industry standard
- Development of the system model and system definition of a level crossing, which will lead to a new set of level crossing principles to be published in a rail industry standard
- Development of the model and the business case for revisions to the CCS DRACAS rail industry standard.

The National DRACAS project is being developed in two phases. Phase one is developing a system model to inform the DRACAS architecture and the process definition. Phase two sees the development and publishing of the rail industry standard content. The modelling is critical to ensuring that the benefits of a national DRACAS are understood better, discussed widely, agreed, and adopted by industry. An important part of this project is stakeholder communication and engagement since the net benefit only arises when the national CCS DRACAS is implemented with the wider roll out of digital CCS systems and ETCS.

There have been eight applications for a deviation since the last report update. Two were approved, two were extended, two received opinions (for deviations against rail industry standards), one application was deferred, and one was withdrawn. It is encouraging that the industry is coming to the committee to seek guidance for alternative approaches or technical opinions. In reviewing the register of deviation applications against Rail Industry Standards that Network Rail kindly supplies, the committee has not identified any concerns.

¹ Political, Economic, Sociological, Technological, Legal and Environmental



European and international activities

The CCS TSI Mirror Group regularly meets and reports to the committee. It continues to review and submit comments on draft changes to the 2022 CCS TSI. The new function to improve European influence now covers an agenda item called the EU Co-ordinator. It focuses on the Systems Pillar and the Innovation Pillar of the Shift2Rail programme, which is a significant European project on the future CCS subsystem. The long-standing open point about reliability and availability for the CCS onboard subsystem is now being scoped into a standards project following a formal request. Mandatory provision of cold movement detection has been requested to be included in the CCS NTSN. The team is working with RSSB and industry colleagues to determine how best to meet this industry requirement.

Make-up of the committee

There have been two notices of retirement, one from the Infrastructure Manager category and the other a co-opted specialist; the committee is currently recruiting for new members. Throughout the year, committee meetings have remained quorate.



Ged Neacy

Professional Head of Control, Command and Communications



Energy

Major route upgrade projects involving new AC electrification are recently completed or nearing completion. As a result,

the committee has gained feedback on the application of the Energy Technical Specification for Interoperability (ENE TSI) and the associated national technical rules (NTR) contained in the Committee's portfolio of standards. The Committee recently received a presentation from members of the team involved in the electrification element on the London to Corby upgrade project (on Midland Main Line). The lines between Bedford and Kettering / Corby are newly electrified, and the team provided feedback based on their experience in applying these standards.

This year, following the UK's exit from the EU, the ENE NTSN came into force. This retains much of the technical content in the ENE TSI.

Activities underway

The committee previously indicated a need to update **GLRT1210 AC Energy Subsystem and Interfaces to Rolling Stock Subsystem** in two stages. This document contains NTRs for the Energy subsystem. The first stage, completed in 2019, improved requirements relating to pantograph/ OCL mechanical interaction. The second stage is being progressed as part of a wider project along with an update of the complementary standard, **GMRT2111 Rolling Stock Subsystem and Interfaces to AC Energy Subsystem** and will consolidate learning and experience since 2014 when the first issue was published.

With the support of the committee, RSSB developed a business case for change which scoped the second stage of the work. Drafting of standards content is underway. This is a comprehensive revision of both standards, which also takes account of the post-EU-exit legislative landscape. When complete, it will remove all duplication with the ENE NTSN and ensure the

remaining requirements meet the criteria for NTR. In addition, two new rail industry standards will be created which will contain any content which no longer meets the criteria for NTR, but which industry decides to retain.

The development of these standards takes account of industry application experience (e.g. from deviation applications and other forms of feedback) gained over the preceding years. Findings from research projects are being integrated where relevant. This update to the standards will deliver benefits across a number of areas including legal compliance and assurance, reliability and operational performance, and design. This is expected to bring industry benefits of at least £1 million over the next five years, probably more.

The committee have also actively supported work, in collaboration with Network Rail, their consultants and RSSB technical experts, on the assessment of electrical risk from electrified lines and compliance with Electricity at Work Regulations. This has led to the development of a new document **GEN8575** issue one, *Guidance Note on the Management of Electrical Risk Related to Operational Tasks on Electrified Lines* (published in December 2021). The consultation for issue one of this document generated a significant volume of comments, containing some disparate and challenging views. The RSSB project team has worked with stakeholders to address and respond to their comments. The committee also supported the project team's efforts in addressing the consequential changes needed to the associated National Operations Publications (NOPs) for AC and DC electrified lines (four documents), which were also published in December 2021 and will come into force in June 2022.

European and international activities

The committee continues to monitor and inform (via BSI and its committees) the UK's input to the drafting of European standards related to electrification undertaken by CENELEC. In several cases, reaching a European consensus on requirements is taking considerable time, as is the progression of standards through the CENELEC standards development stages. Much of the effort during this year has been focused on the resolution of comments from the enquiry phase for standards EN 50388-1 *Technical criteria for the coordination between traction power supply and rolling stock to achieve interoperability* and the EN 50122 series *Electrical safety, earthing and the return circuit*. These drafts form an important part of the European standardisation activities, and they support the Railway Interoperability Regulations (RIR) via the NTR and NTSN. The enquiry stage for these documents generated a considerable volume of comments. The European working groups have now addressed these comments, although some issues have been deferred. It is anticipated that these standards will progress to the vote stage in early 2022. If voted positively (sufficiently early in 2022) they could potentially be referenced within the next update of the Energy TSI and subsequently in the UK's Energy NTSN. This will improve clarity of requirements to support efficient implementation, avoid abortive or unnecessary work, and reduce cost by introducing designs better suited to meet UK needs, for example relating to bridge parapet height over AC electrified lines.

The committee also continues to monitor the activities of the European Union Agency for Railways (ERA) in relation to the revision of the Energy TSI. The process for updating TSIs is new, with regards to how the Agency engages with the European representative bodies such as EIM and CER. In addition, monitoring of the agency's activities are now undertaken at arm's length, following the UK's exit from the EU.

The European Commission intends to publish the next TSI update package in late 2022 with changes mainly focussed on the EU's policy pillars of 'digital rail' and 'green freight'. The TSI will be analysed as part of considering future changes to the UK-equivalent NTSN.

Make-up of the committee

For the majority of the year, the committee has generally been operating with full representation for each member category. In addition to the routine refresh, we welcomed a new member for the category 'non-passenger operator' during the first quarter of 2021, filling a long-term vacancy.

Other items of note

The committee has worked with RSSB and a number of stakeholders on deviations that have the potential to reduce the cost of electrification while remaining safe and consistent with the best long-term interests of the GB mainline railway. For example, RSSB worked in closed collaboration with the DfT, the ORR and Network Rail on a first-of-a-kind deviation which limited reconstruction of existing bridge parapets where new electrification is being installed, saving cost and time. Another example was a deviation

to use voltage-controlled electrical clearance designs at a tunnel with limited space. The challenge was to accommodate running rails with a deeper profile within this constrained environment, while maintaining satisfactory electrical clearances and without undue limitations on the types of vehicles which could pass through the tunnel. These deviations were based on site-specific solutions being developed, which provided a fit-for-purpose-alternative to the normal standard requirements. This helped save approximately £7million.

The committee and a number of its members also actively contributed their expertise to support the development of RSSB's other standards projects such as the new RIS for multi-mode vehicles (published June 2021, see section 2).



Mike Tatton

Chair of the Energy Standards Committee

Saving of
£7m
in a site-specific
deviation





Traffic and Operation Management

In 2021 the committee's portfolio of standards projects has focused on changes intended

to reduce exposure to operational risk, loss resulting from damage caused to fixed assets due to human error or litigation arising from cases involving impaired performance due to alcohol or drugs. In addition, changes have supported the industry's endeavours to improve the quality of accident and incident investigations, facilitate the introduction of multi-mode trains and support the effective management of known low adhesion sites. This portfolio of standards projects delivered and underway in 2021 provides the industry with the opportunity to realise more than £18.1m worth of benefits over the next five years.

The scope of change delivered in 2021 included a fundamental review of the standards relating to the operation of freight trains and the carriage of dangerous goods, a summary of which is included in the key achievements' section of this report. Minor revisions to the Operations Concept for the GB Mainline Railway were published. A new guidance note was produced, to support organisations to incorporate best practice relating to human performance within safety management systems, **GEN8613** issue 1 *Application of Human Factors within Safety Management Systems*. Potentially this will deliver £600k worth

of benefits over the next five years. Furthermore, a range of minor amendments were published resulting in a further twenty-six documents being reissued, the majority of which affected the National Operations Publications (Rule Book modules and handbooks). However, one rail industry standard (**RIS-3703-TOM** issue four *Passenger Train Dispatch and Platform Safety Measures*) was amended using the small-scale change process along with two data collection forms associated with **RIS-3119-TOM** Issue 2.2 *Accident and Incident Investigation* (forms RT3119 B and D).

The committee also approved the withdrawal of **RIS-8217-TOM** issue one *Introduction and Use of Axle Counters - Managing the Risk*, as the content was either already covered by safety legislation, covered by other standards, or referred to obsolete communications systems.

Activities underway

The committee's priorities for 2022 include the approval for publication of:

- Strategic Direction for the Traffic Operation and Management SC, March 2022
- Amendments to National Operations Publications, September 2022
- **RIS-3119-TOM** issue three *Rail Industry Standard for Accident and Incident Investigation*, March 2022



£18.1m
benefits

- **RIS-3437-TOM** issue three *Defective On-Train Equipment*, September 2022
- **RIS-3784-TOM** issue one *Multi-Mode Train Signage*, March 2022
- **RIS-8040-TOM** issue two *Low Adhesion Between the Wheel and the Rail – Managing the Risk*, September 2022
- **RIS-8070-TOM** issue two *Testing Railway Safety Critical Workers for Drugs and Alcohol*, March 2022
- **RS525** issue one *ERTMS Handbook*, September 2022

European and international activities

The current OPE NTSN reproduces the OPE TSI as it applied in the UK at the end of the transition period on 31 December 2020, but with the changes necessary to make this relevant in a GB-only context. However, an updated OPE TSI that was published in 2019 applied in the EU from June 2021, and hence there are now areas of difference from the OPE NTSN. Assessment and draft proposals to propose what should be reflected in the OPE NTSN have been developed over the last few months and endorsed by the OPE TSI/NTSN mirror group. These proposals will be consulted on, to produce final rail sector recommendations for changes to the DfT in early 2022, with a view to DfT approvals and publication in the first half of 2022.

Make-up of the committee

The committee has seen changes in 2021, with the election of new representatives in the categories of infrastructure contractors, suppliers, and rolling stock owners and leasing companies.

The current vacancy in the infrastructure contractor category is being used as an opportunity to improve the diversity of gender and thought within the committee, and RSSB are collaborating with the Rail Industry Association (RIA) on this initiative.

Other items of note

The term ‘pilotman’, used in the Rule Book, has recently been raised as an issue as it is gender-specific. Therefore RSSB will be developing a proposal to replace this term using gender neutral language. However, implementation of the change will require industry coordination as there will be consequential changes to company processes, procedures, documents, systems, equipment and training materials.

Following the fatal accident at Margam on 3rd July 2019, Network Rail have asked RSSB to work collaboratively with them on a review of all situations that allow a lookout competency to be used, with a view to determining how alternative arrangements could be used to support the withdrawal of unassisted lookout competency from the Rule Book.

Following the publication of research project T1155 Reviewing the risks and benefits of detonator usage (2020), RSSB will be progressing the recommendations relating to failed / divided trains, emergency protection, line blockages / possessions and single line and temporary line working.

Operational learning emerging from investigations will continue to influence the committee’s priorities, where appropriate, with a keen focus on those incidents that have the greatest potential for harm or significant loss. For example, the following incidents investigated by RAIB:

- Passenger train derailment near Carmont, Aberdeenshire
- Derailment and fire involving a tanker at Llangennech
- Track worker struck by a train near Surbiton
- Buffer stop collisions at Kirkby and Enfield Town
- Collision between passenger trains at Salisbury Tunnel Junction
- Collision between train and engineering trolley at Challow.



Gary Portsmouth

Chair of the Traffic & Operation Management Standards Committee

4: Rail standards strategy

2021 marks the first year of implementation of the Rail Standards Strategy, our five-year vision for standards-related activities that sets out our plan to address broader industry objectives, challenges, and opportunities.

With so much political, economic, social, and technical change in the rail sector in the past few years, and much more to come, it is essential that we set a clear focus and direction for standards to facilitate this change and the associated opportunities in the face of unprecedented challenge. This will ensure standards continue to deliver economic benefits, embrace innovation, and remain compatible with changes to regulations post-EU-exit.

Long term vision

Just as important is making sure we deliver this through specific actions. To enable the long-term vision of standards, this year we have been:

- **Responding to needs and adapting to challenges** by supporting the industry with COVID-19 related rules and standards changes, including work related to ventilation systems, and by supporting Restoring your Railway schemes in navigating the standards and regulatory framework.
- **Enabling digitalisation, the use of alternative energy sources and better use of data** by publishing standards for multi-mode trains and taking steps to enable the introduction of hydrogen trains, and by developing standards to support digital signalling and the governance for data standards.
- **Adapting to a new regulatory landscape and managing greater choice** by establishing the post-EU-exit legal and standards framework, which includes the ongoing management of NTSN changes in response to industry challenges and the expected TSI changes next year, and utilising

alternative mechanisms of international engagement such as the Convention concerning International Carriage by Rail (COTIF).

Strategic focus

For the areas of strategic focus, we have been:

- **Gathering industry intelligence** through better linkages with industry projects such as Project SPEED and better involvement in industry groups for earlier sight of any challenges. To formalise industry links, we are pursuing a Memorandum of Understanding with ERA and BSI on coordination post-EU-exit. We are also assessing links between Leading Health and Safety on Britain's Railways (LSHBR), the Rail Technical Strategy (RTS) and our Rail Standards Strategy and ensuring links with the upcoming WISP and outcomes from the Williams-Shapps Plan for Rail.
- **Delivering standards** and providing more accessible and engaging content through quarterly webinars aligned with catalogue publications and setting out changes to standards. These have had strong attendance and very positive feedback. Work is also underway on the roadmap for requirements to be made available in different digital formats to integrate with project requirements databases, and we have already developed an index of requirements to support this.
- **Supporting implementation** through actively supporting and enabling critical and complex deviations such as on bridge parapets, OCL wire heights and required clearances. We have also engaged with the sector to alleviate challenges with implementation of the PRM NTSN requirements through planned updates, direct project engagement and new guidance to address RAIB recommendations. Through



this year, we have fully supported Project SPEED and simplification of the framework for infrastructure projects.

Enabling activities

To enable the strategy's delivery, we have been:

- Setting robust governance** through continually making Business Cases for Change more sophisticated and streamlined to embed these fully in industry decision making. All our procedures are aligned with the new regulatory framework, including updates to remits, templates and glossaries. Remaining inoperabilities in the RGS Code and Manual will be addressed shortly. We have supported others outside RSSB to make similar updates. We have also widened infrastructure manager representation at committees and undertake review and examination of the effectiveness of committees annually. We're also working with the railway community actively to increase diversity of thought at our committees by attracting valuable members who may not have otherwise joined the committees.

- Developing competence** through providing regular Standards Committee inductions for new and existing members. We have updated the content of this update to reflect RAIB recommendations, such as for the overspeed at Sandy South Junction. We are also developing further self-assessment tests and updating the current ones to reflect EU-Exit. To improve drafting competence further, training is being developed to cover systems definitions and whole system modelling.

Continued implementation

To build on the progress in 2021, individual standards committee strategies are being developed to address the challenges and opportunities with specific actions for each area. Through these, we will continue to respond to the evolving challenges for the rail sector while continuing to progress our vision which focuses on priority areas of supporting economic regeneration, enabling innovation, and making this work in a post-EU-Exit landscape for standards.

5: Meeting requirements of the code

Overview

This section provides a summary of the overall status of the standards catalogue to demonstrate adherence to the requirements of the Railway Group Standards Code and Standards Manual, and as an indicator of good stewardship.

Railway Group Standards Code

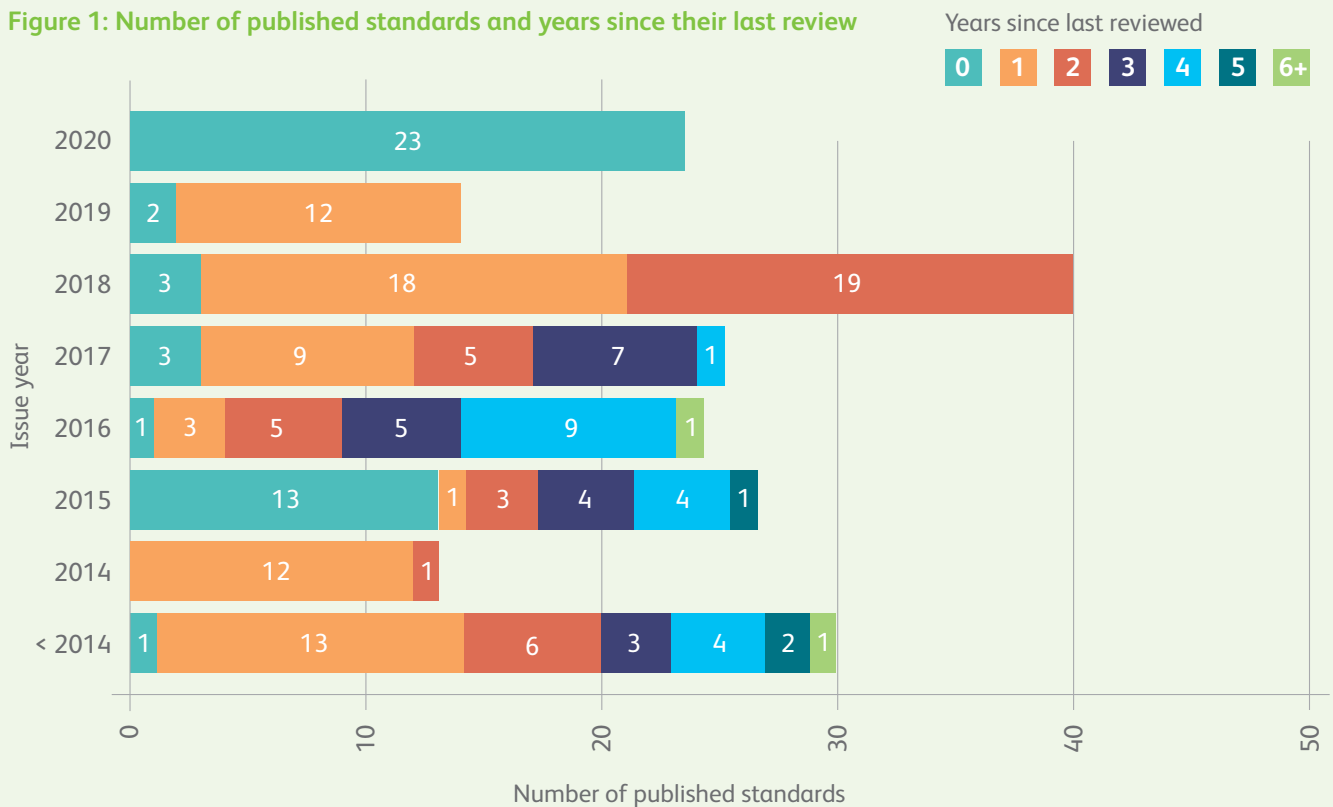
The 'Code' is set by the ORR. It defines the procedures by which Railway Group Standards (RGS) are created, revised or withdrawn, authorised and published. It also defines the procedures by which the effectiveness of RGS is monitored and reviewed and how to manage deviations. The Code is supported by a Standards Manual which describes how the requirements of the Code are to be delivered. This report meets a requirement of the Code.

Age profile of standards

We have regularly reviewed all of the standards we produced in the last six years. However, two standards from 2016 and earlier are overdue review. The first will be addressed when a new issue of RIS-2773-RST *Format for Vehicle Gauging Data* is published in June 2022. The second, RIS-3436-TOM issue 1 *Information for Safe Train Operation*, was published in December 2016, so is technically not yet overdue, although the content was last reviewed in its former context as a Railway Group Standard in June 2014. This standard was in scope of the changes to the working manual for freight, published in September 2021, but removed as little change was required. The next review will be undertaken in 2022.

Overall, standards reviews are being done continually, to schedule and earlier if the case

Figure 1: Number of published standards and years since their last review



merits it. The number overdue is maintaining its low position as with last year after a historic backlog was cleared in 2019.

Figure 1 shows each year with the number of standards that RSSB published. The colour indicates the number of years since the standards were last reviewed. For example, there are 26 standards that were published in 2015 that are still live and all have been reviewed in at least the last six years.

Deviations

Standards with 10 deviations or more

The number of deviations against a standard can be an indicator of its fitness for purpose. However, some standards encourage deviations to support trials and temporary works, so the measure is not always effective.

This is a list of live standards that have ten deviations or more, explaining why they have so many deviations and what we are doing to mitigate any issues. In previous years, several standards have been on this list, but for the second year running just one standard has met the criteria for inclusion.

GIRT7020 issue 1.1

INS June 2019

GB Requirements for Platform Height, Platform Offset and Platform Width

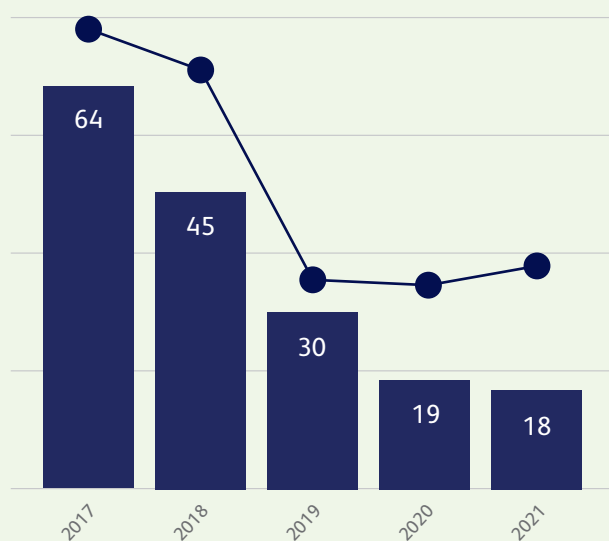
There are 22 live deviations against issues 1 and 1.1 (17 against issue 1.1). Nearly half of these are temporary deviations associated with reduced platform width when platform, footbridge and lift works are taking place on platforms.

Deviation applications

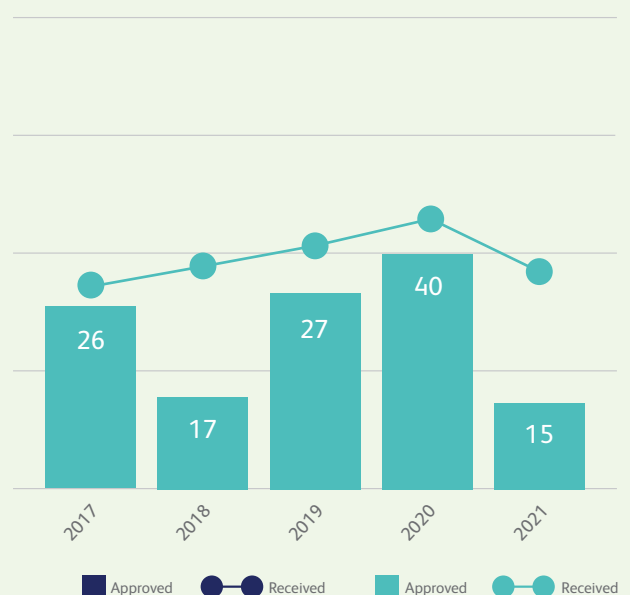
Figure 2 shows the number of applications RSSB receives each year and the number of applications that the standards committees approve in the same year. Some applications are either waiting for information from the applicant, or the committees have not yet taken a decision on the application. In any given year, the committees may also approve deviations received in previous years, as happens frequently at the beginning of a year. The difference between the quantity received and the quantity approved is mostly due to applicants withdrawing applications (see Figure 4).

Figure 2: Applications received and approved

Permanent applications



Time-limited applications

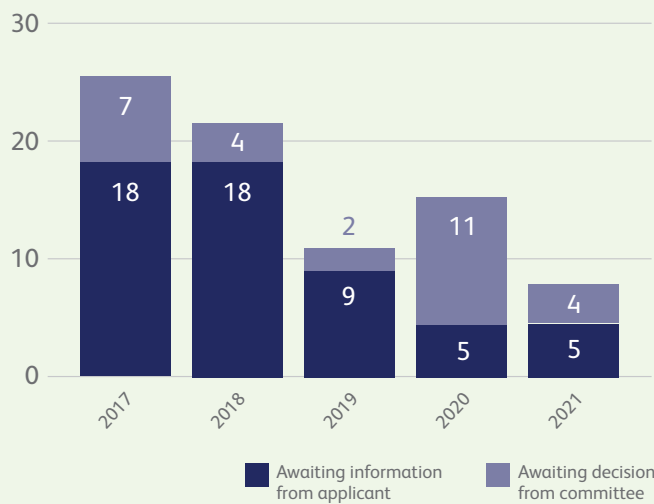


Unusually, in 2021 two applications for permanent deviations were rejected, the first since 2017. In total, over the last five years only four permanent and one time-limited deviation applications have not been approved.

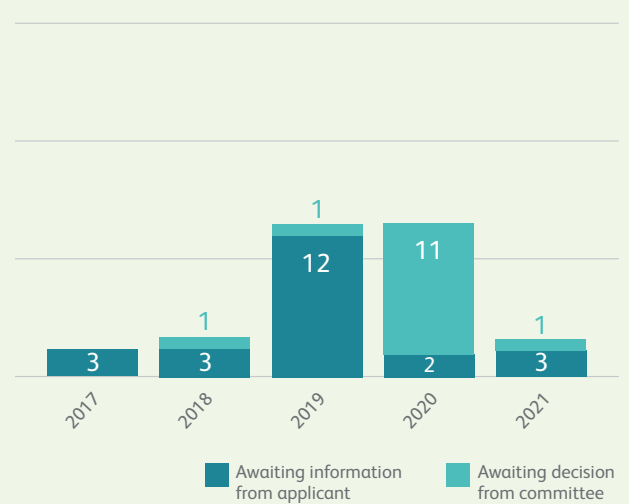
Figure 3 shows the number of applications, at the end of each year, that are on hold because the respective standards committee has not been able to make a decision. This is usually because the applicant has not yet been able to supply all the relevant information to support their application.

Figure 3: Deviation applications on hold

Permanent applications



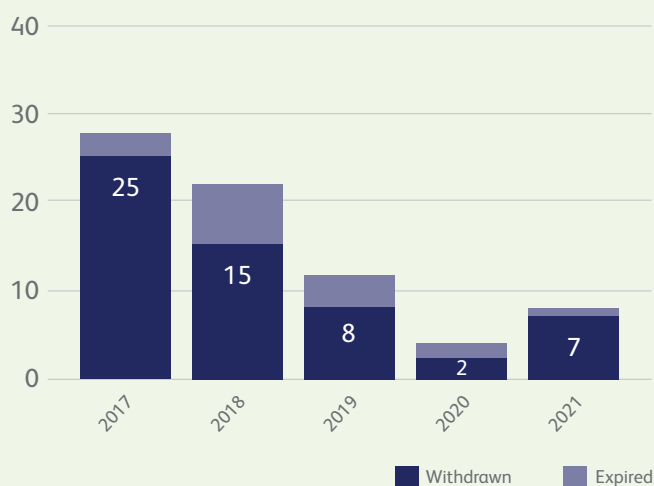
Time-limited applications



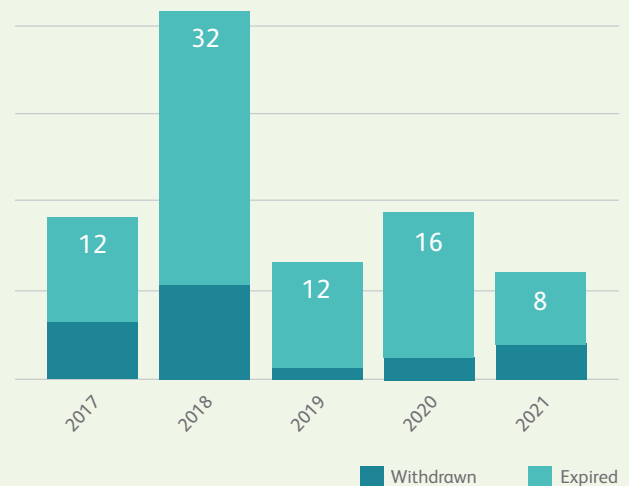
The number of applications that were withdrawn or that expired in each year are in Figure 4.

Figure 4: Deviation applications withdrawn or expired

Permanent applications



Time-limited applications



Standards Change

A revision to a standard is prompted by a proposal, which if supported by RSSB and the standards committees, is progressed to a project to change the standard.

Figure 5: Number of proposals received and withdrawn

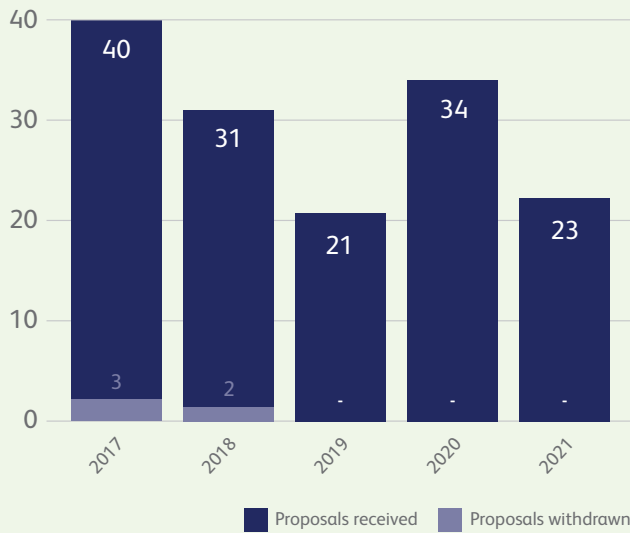
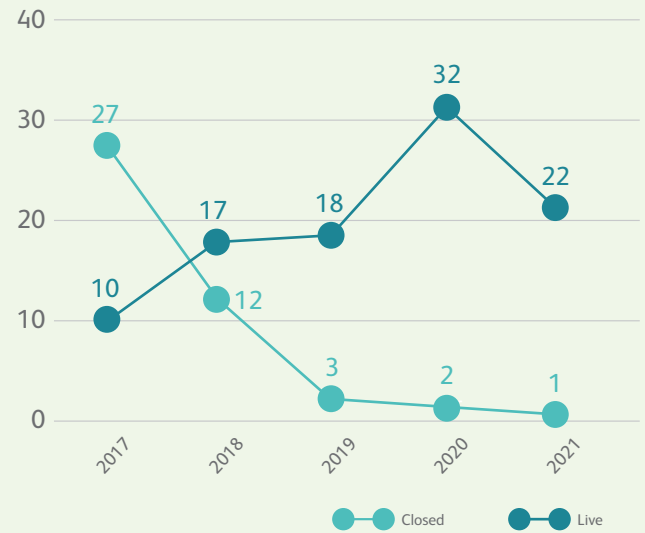


Figure 6: Closed and live proposals per year



The standards catalogue

At the end of 2021 the standards catalogue had 294 RSSB live documents. This is two more than 2020, an increase of three RIS and a reduction of one Good Practice Guides. Figure 7 shows the range of types of document.

RGSs make up 12% of all live documents in 2020, compared to 54% in 2005. In 2005, RIS were yet to come into being. Currently, their proportion is 36%. The change is a result of the implementation of the 2015 Standards Strategy.

Figure 8: Document types in the standards catalogue by year

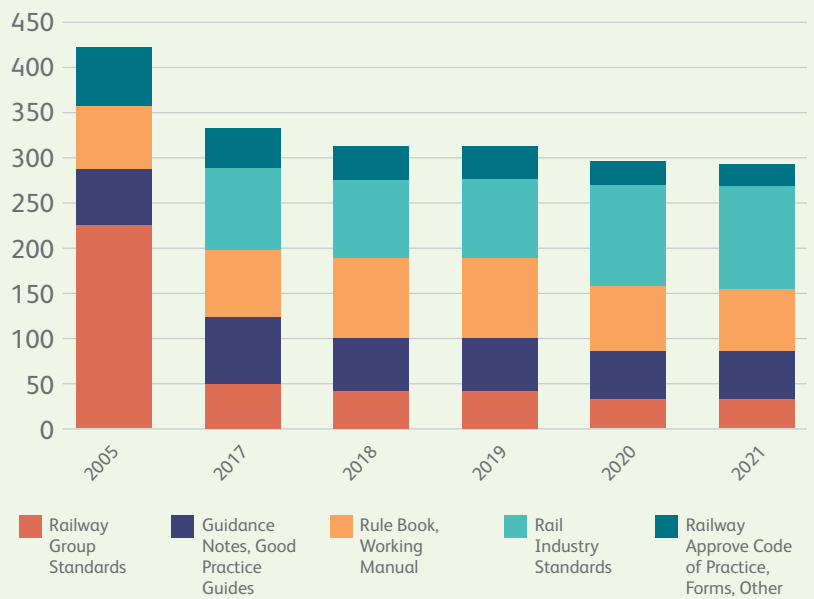
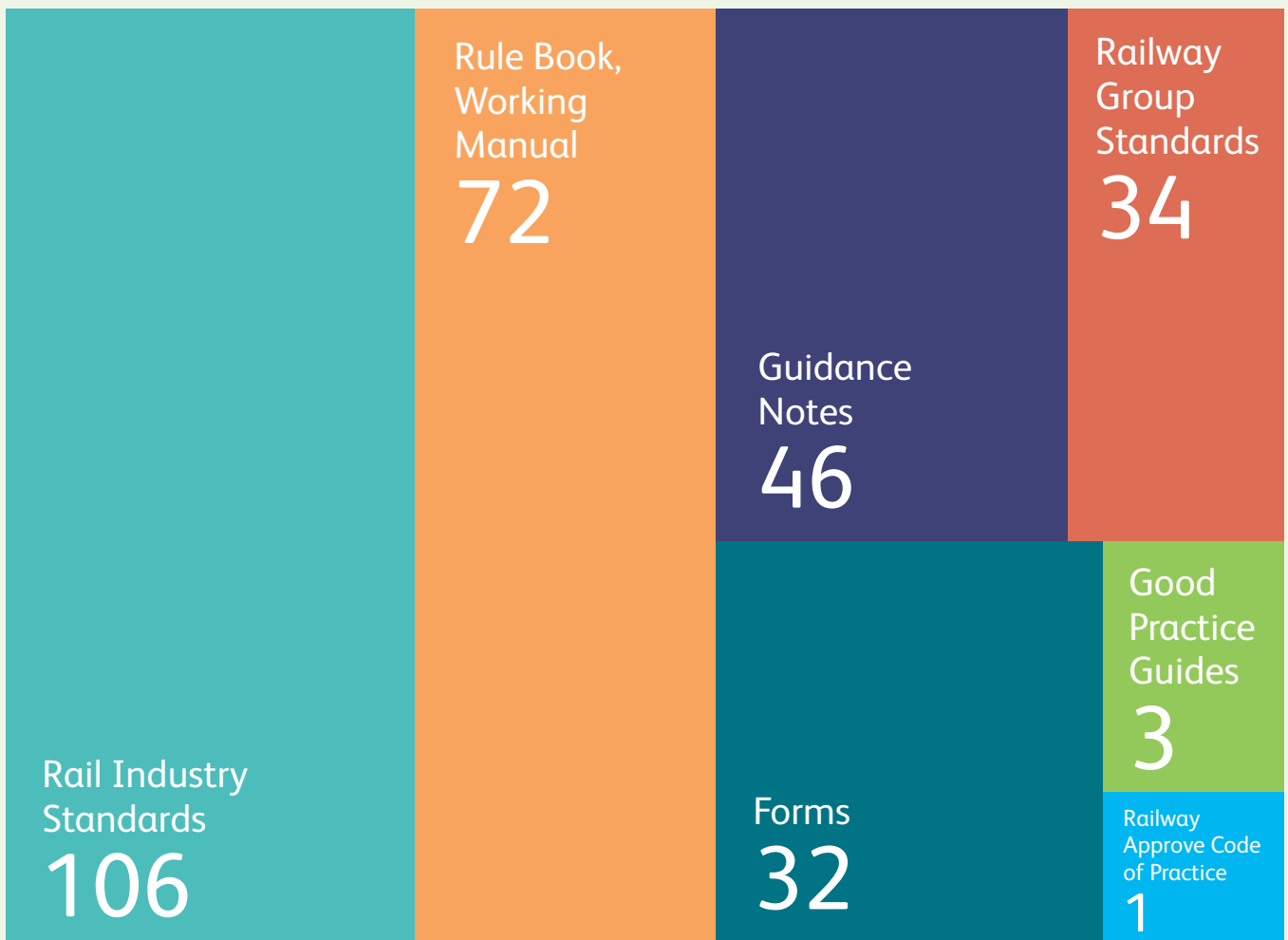


Figure 7: Documents in the standards catalogue



Request for help

The [Request for Help](#) process is the principal way in which standards users can initially engage with RSSB. This opportunity is available to anybody and a simple form helps to identify the user, define the problem and explain what good would look like.

RSSB reviews each request in detail to determine how best to support the applicant. The 'Request for Help' process is the primary means to request a change to a standard, or the user may just need support in understanding a standard and how to apply it. In other cases, the applicant might need a deviation to the standard, or sometimes it might be more appropriate to publish an amendment to the standard.

The simple 'Request for Help' process enables standards users to explain their challenges, the benefits they are seeking and to engage effectively with RSSB, without the user needing to have a comprehensive understanding of the standards framework.

The 'Request for Help' process is an indicator of the suitability of standards, especially if the outcome is a change to standards. RSSB received 77 requests in 2021, 37 more than in 2020; those that are likely to result in a change to standards are listed below, by standards committee. The increase in the year is believed to be due to wider promotion of the process and engagement with the user community, rather than indicating an increasing problem.

Request for Help applications resulting in changes to command control and signalling standards

In 2021 RSSB received fourteen requests in respect of control command & signalling standards, seven requests have resulted in changes being made, or planned to be made, to the following standards.

- **RIS-0707-CCS** issue one
Management of Safety Related Control, Command and Signalling System
- **RIS-0775-CCS** issue three
AWS and TPWS Application Requirements
- **RIS-0797-CCS** issue one
ERTMS/ETCS Baseline 3 Onboard Subsystem Requirements: Retrofit
- **RIS-0798-CCS** issue one
ERTMS/ETCS Baseline 3 Onboard Subsystem Requirements: New Trains
- **RIS-8048-CCS** issue one
Positioning of Lineside Telephones
- **RIS-8072-CCS** issue one
ERTMS National Identities Management
- **GMGN8646** issue one
Guidance on the Common Safety Method for Risk Evaluation and Assessment

Request for Help applications resulting in changes to energy standards

In 2021 RSSB received three requests in respect of energy standards, one request has resulted in changes being made, or planned to be made, to the following standard.

- **GLRT1210** issue two
AC Energy Subsystem and Interfaces to Rolling Stock Subsystem

Request for Help applications resulting in changes to infrastructure standards

In 2021 RSSB received nine requests in respect of infrastructure standards, three requests have resulted in changes being made, or planned to be made, to the following standards.

- **GIRT7073** issue two
Requirements for the Position of Infrastructure and for Defining and Maintaining Clearances
- **GERT8006** issue three
Route Availability Number for Assessment of Compatibility between Rail Vehicles and Underline Bridges
- **RIS-8706-INS** issue one
Route Level Assessment of Technical Compatibility between Rail Vehicles and Underline Bridges

Request for Help applications resulting in changes to rolling stock standards

In 2021 RSSB received eighteen requests in respect of rolling stock standards, thirteen requests have resulted in changes being made, or planned to be made, to the following standards.

- **GMRT2111 issue two**
Rolling Stock Subsystem and Interface to AC Energy Subsystem
- **GMRT2141 issue 4.1**
Permissible Track Forces and Resistance to Derailment and Roll-Over of Railway Vehicles
- **GMGN2460 issue one**
Guidance on Compliance with Noise and Vibration Legislation in the Railway Environment
- **GMRC2542 issue one**
Recommendations for Determination of Aerodynamic Rolling Moment Coefficient
- **GMGN2642 issue one**
Guidance on Wheel / Rail Low Adhesion Management
- **GMGN2643 issue one**
Guidance on Wheel / Rail Low Adhesion Simulation
- **GMGN2688 issue two**
Guidance on Designing Rail Freight Wagons for Use on the GB Mainline Railway
- **RIS-2702-RST issue two**
In-service Examination and Reference Limits for Freight Wagons
- **RIS-2708-RST issue one**
Rail Industry Standard Freight Technical Committee Audit Protocol
- **RIS-8250-RST issue one**
Reporting High Risk Defects
- **GEGN8628 issue two**
Preparation for and Operation during Winter
- New standard to be developed Alternative fuel sources for Rolling Stock [provisional title]
- New standard to be developed Testing of Diesel Engine Emissions [provisional title]

Request for Help applications resulting in changes to traffic operations and management standards

In 2021 RSSB received thirty-three requests in respect of traffic operation management standards, nineteen requests have resulted in changes being made, or planned to be made, to the following standards.

- **RIS-3350-TOM issue one**
Communication of Urgent Operating Advice
- **RIS-3703-TOM, issue 4.1**
Passenger Train Dispatch and Platform Safety Measures
- **RIS-3782-TOM issue one**
Car Stop Markers Provision on Station Platforms
- **RIS-3786-TOM, issue one**
Trespass Risk Assessment [New Standard]
- **GERT8000-G1 issue eight**
General Safety Responsibilities and Personal Track Safety for Non-Track Workers
- **GERT8000 HB12 issue eight**
Duties of the Engineering Supervisor (ES) or Safe Work Leader (SWL) in a Possession
- **GERT8000-P1 issue seven**
Single Line Working
- **GERT8000 P2 issue six**
Working Single and Bi-directional Lines
- **GERT8000-SP issue five**
Speeds
- **GERT8000-SS1 issue seven**
Station Duties and Train Dispatch
- **GERT8000-T3 issue ten**
Possession of a running line for engineering work
- **GERT8000-TS1 Issue fourteen**
General Signalling Regulations
- **GERT8000-TS3 issue ten**
Absolute Block Regulations
- **GERT8000 TW1 issue sixteen**
Preparation and Movement of Trains
- **GERT8000-TW1 issue seventeen**
Preparation and Movement of Trains
- **GERT8000-TW5 issue ten**
Defective On-Train Equipment
- **GERT8000-TW7 issue eight**
Wrong-direction Movements
- **NTSN: Operation and Traffic Management (OPE)**



Railway Group Standards Containing non NTRs

RGSs can only contain requirements that meet the criteria of NTR or national safety rules (NSR). Historically, the criteria for requirements in RGSs was different, and so some older standards contain requirements that are not NTRs. Currently, there are no NSR as safety requirements are addressed by other means.

NTRs and NSRs were part of the scope of the Interoperability Directive when the UK was within the EU. Having left the EU, the Railways (Interoperability) Regulations retains the concept. Effectively, NTRs and NSRs are requirements imposed by the state and are subject to the same provisions of requirements in NTSNs, for example in the context of authorisations of subsystems.

RGSs can be divided into three categories:

Category A:
RGSs where all requirements are NTRs

Category B:
RGSs where some of the requirements are NTRs

Category C:
RGSs where none of the requirements are NTRs

All new RGSs should only be in category **A**, but there are older RGSs that are in categories **B** and **C**. Those in categories **B** and **C** require attention to migrate the content so that they move into category **A** or are withdrawn. Category **A** standards are listed for completeness. The action being taken with all the category **B** and **C** standards as agreed by the relevant standards committees is summarised below.

This section contains all the RGSs that are live in the standards catalogue.

Category A:

RGSs where all requirements are notified

During the year, seven standards were revised as part of the normal standards review process (see dates below). Two standards that were previously in Category B have been revised so that they are now in Category A, GERT8006 Issue 3 *Assessment of Compatibility of Rail Vehicle Weights and Underline Bridges* and GMRT2461 Issue 4 *Sanding Equipment*. The requirements not in scope of NTRs in the previous standards are now in new complementary RIS.

BR1654 issue 2

Radio Electronic Token Block System
December 1986 Lead SC: CCS

GERT8006 issue 3

Route Availability Number for Assessment of Compatibility between Rail Vehicles and Underline Bridges
March 2021 Lead SC: INS

GERT8073 issue 4

Application of Standard Vehicle Gauges
December 2020 Lead SC: RST

GERT8075 issue 4

AWS and TPWS Interface Requirements
March 2021 Lead SC: CCS

GERT8402 issue 3

ERTMS/ETCS DMI National Requirements
March 2021 Lead SC: CCS

GIRT7020 issue 1.1

GB Requirements for Platform Height, Platform Offset and Platform Width
June 2019 Lead SC: INS

GIRT7033 issue 4

Lineside Operational Signs – Product Requirements
December 2020 Lead SC: CCS

GIRT7073 issue 2

Requirements for the Position of Infrastructure and for Defining and Maintaining Clearances
June 2018 Lead SC: INS

GKRT0028 issue 3

Infrastructure Based Train Detection Interface Requirements
September 2016 Lead SC: CCS

GKRT0055 issue 1

Block System Interface Requirements
September 2013 Lead SC: CCS

GKRT0057 issue 1

Lineside Signal and Indicator Product Design and Assessment Requirements
December 2014 Lead SC: CCS

GKRT0075 issue 5

Requirements for Minimum Signalling Braking and Deceleration Distances
December 2018 Lead SC: CCS

GLRT1210 issue 2

AC Energy Subsystem and Interfaces to Rolling Stock Subsystem
December 2019 Lead SC: ENE

GLRT1212 issue 1

DC Conductor Rail Energy Subsystem and Interfaces to Rolling Stock Subsystem
September 2015 Lead SC: ENE

GMRT2045 issue 4

Compatibility Requirements for Braking Systems of Rail Vehicles
March 2016 Lead SC: RST

GMRT2100 issue 6.1

Rail Vehicle Structures and Passive Safety
June 2021 Lead SC: RST

GMRT2111 issue 2

Rolling Stock Subsystem and Interfaces to AC Energy Subsystem
December 2019 Lead SC: RST

GMRT2113 issue 1

Rolling Stock Subsystem and Interfaces to DC Conductor Rail Energy Subsystem
September 2015 Lead SC: RST

GMRT2130 issue 5.1

Vehicle Fire Safety
September 2021 Lead SC: RST

GMRT2141 issue 4.1

Permissible Track Forces and Resistance to Derailment and Roll-Over of Railway Vehicles
December 2019 Lead SC: RST

GMRT2142 issue 4.1

Resistance of Railway Vehicles to Roll-Over in Gales

June 2019 Lead SC: RST

GMRT2161 issue 2

Requirements for Driving Cabs of Railway Vehicles

June 2020 Lead SC: RST

GMRT2400 issue 6.1

Engineering Design of On-Track Machines in Running Mode

September 2021 Lead SC: RST

GMRT2461 issue 3.1

Sanding Equipment

September 2021 Lead SC: RST

GMRT2466 issue 4.1

Railway Wheelsets

December 2019 Lead SC: RST

GMRT2477 issue 3

Compatibility Requirements for Track Circuit Assisters (TCAs) on Rail Vehicles

June 2018 Lead SC: RST

Category B:

RGSs where some of the requirements are notified

During the year, two standards that were in Category B have been revised as part of the normal standards review process and are now in Category A, GERT8006 Issue 3 Assessment of Compatibility of Rail Vehicle Weights and Underline Bridges (withdrawn requirements not deemed to fulfil the criteria of an NTR have been retained in a complementary RIS) and GMRT2461 Issue 4 Sanding Equipment. The other standards remaining in this category are either under revision or under review and/or the respective standards committees have supported no immediate action to be taken.

GCRT5021 issue 5

Track System Requirements

December 2011 Lead SC: INS

As planned, a project to revise this standard started in 2021. The change will incorporate

findings from RSSB research project T1073 Loading requirements for track systems on track quality and improve curving requirements. Requirements that do not meet the criteria of an NTR will be transferred to a new rail industry standard (RIS-7707-INS). Industry consultation is planned from May 2022, with publication anticipated in December 2022.

GERT8014 issue 2

Axlebox Condition Monitoring - Hot Axlebox Detection

June 2011 Lead SC: RST

An analysis concluded that this standard does not contain requirements that meet the criteria of NTRs despite the presence of LOC & PAS NTSN specific case 7.3.2.3 (axle box condition monitoring) for which rules have been previously notified in error. As planned, a standards project has commenced in 2021 to incorporate alternative methods of bearing condition monitoring and move any requirements that do not meet the criteria of NTRs into a new complementary RIS. Industry consultation will be from October 2022, with publication planned for June 2023.

GERT8018 issue 2

Mechanical Trainstop System Interface

September 2012 Lead SC: CCS

The five-year review concluded in June 2020. The only material comment from consultation was from a supplier who considered there would be no benefit in updating the standard because mechanical train stops are legacy systems that are unlikely to be installed again. Although the standard contains some requirements that do not meet the NTR criteria, this only impacts on the authorisation process of a new CCS subsystem utilising mechanical train stop technology. Such applications are expected to be infrequent, which means that there would be little benefit in committing resources to this standard change project.

GMRT2131 issue 1

Audibility and Visibility of Trains

December 2015 Lead SC: RST

A five-year review to determine whether

the requirements in the standard meet the criteria of NTRs was presented to standards committees in December 2021 as planned. Industry consultation will follow in early 2022. The review recommended that the standard is revised and requirements that do not meet the criteria of NTRs should be retained in a RIS. The future revision will update the standard in the current format with requirements, rationale and guidance and include other technical changes.

GMRT2132 issue 1

On-board Energy Metering for Billing Purposes
September 2010 Lead SC: RST

A five-year review was carried in October 2020. RST SC agreed with the recommendation to carry out a fundamental update of the standard after 1 January 2022, considering the UK position on implementation of requirements being enacted in the EU as part of the Commission Implementing Regulation (EU) 2018/868 for Member States, specifically the implementation of a ground energy data collecting system capable of exchanging compiled energy billing data.

GMRT2173 issue 3

Size of Vehicles and Position of Equipment
December 2019 Lead SC: RST

This standard is included in a wider project on gauging. Consultation on the revised standards was undertaken on schedule in late summer 2021, publication is planned for June 2022. As a result, all relevant NTR requirements will be in RGS with other relevant requirements in RIS.

GOOTS303 issue 1

Secondary Door Locking – Operational Requirements

January 1993 Lead SC: RST

The RST SC, at its March 2019 meeting, decided that this standard is to be reclassified as a RIS. This project is on hold as a low priority pending resource allocation.

Category C:

RGSs where none of the requirements are notified

The one remaining category C standard is part of an ongoing project and will be revised in 2022.

GERT8273 issue 1

Assessment of Compatibility of Rolling Stock and Infrastructure - Gauging and Stepping Distances
December 2015 Lead SC: RST

As part of a wider project on gauging, the intention is to withdraw this standard as it does not contain NTRs and to transfer requirements to a new RIS, RIS-8273-RST. Progress is being made on the wider revision of the vehicle gauging standards to consider more complex technical changes, involving GMRT2173 issue 3 Size of Vehicles and Position of Equipment and RIS-2773-RST issue 1 Format for Vehicle Gauging Data. Consultation on the revised standards was undertaken on schedule in late summer 2021, publication is planned for June 2022.

Progress of standards against plans

Please note: In this section, the numbers in parentheses provide the equivalent figures for 2020 and 2019 (in that order).

On entering 2021, **74** (52, 34) standard change projects were already underway. Throughout 2021 a total of **98** (85, 59) standards change projects were active. Of these projects, **24** (24, 6) were placed on hold either because the technical resource was not available or because the projects were awaiting input from the industry. As of December 2021, there are **76** (74, 39) projects underway, of those **18** (12, 22) are already scheduled to be delivered during 2022.

Standards project delivery is measured based on the publication date, in line with a baselined schedule. A total of **17** projects were delivered in 2020 (23, 14), involving **88** (76, 81) documents. Of those projects, **all** (all, 12/14) were delivered on time or early. All of these were supported by RSSB's stakeholders through the respective standards committees.

6: Keeping you informed

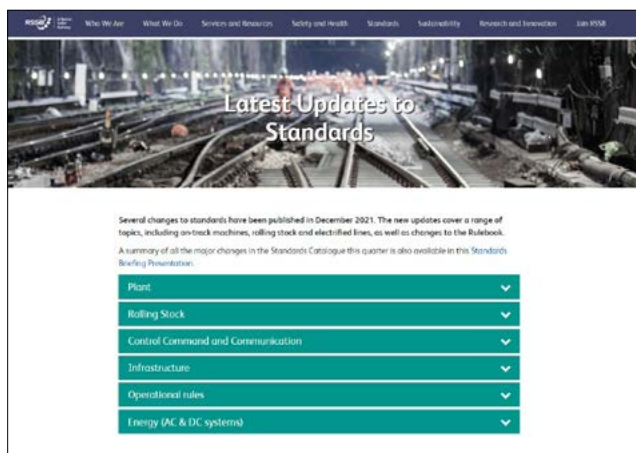
RSSB provides a rich source of material to help drive engagement, understanding and ultimately realisation of the benefits of standards. Here is a summary of some of the resources available.

Webinars

RSSB has continued to run webinars associated with the publication of the new catalogue, every three months. These are proving very popular, with over 820 people signing up for the September event, of which 350 watched live. This is a powerful and effective platform for engaging with the standards community, as it provides those who use our standards to hear first-hand from the authors and key users across industry. It also provides an opportunity to ask questions and get real time responses from those who were involved in the drafting process.

Web pages

The latest updates to the standards page on the RSSB website has been improved with a simple interface. Users can now find summaries of all standards issued in the last catalogue and any point releases issued in the last three months collated under one of the six standards topic areas.



Update briefing presentation

A slide version of the current update on standards is also available on the 'latest updates' page of RSSB's standards webpages. This format enables the user to navigate through the material that is most relevant to them.

Briefing notes

All new or updated standards are now published with a single-page briefing note, providing an at-a-glance overview of the contents in the standard, details of any changes made as well as a summary of the quantified benefits the standard will make to industry.



Briefings

On request, RSSB has continued to provide tailored briefings to members on the standards framework, explaining the role of standards, how to get the best out of them and detail around specific standards. This helps to increase members' understanding, ensuring that they get the most out of RSSB standards and the supporting content on the website.

7: RSSB-facilitated groups and committees

The Industry Standards and Coordination Committee (ISCC) is the senior stakeholder group dealing with matters related to standards for the GB mainline railway. It oversees the work of the standards committees and provides direction, advice and guidance on:

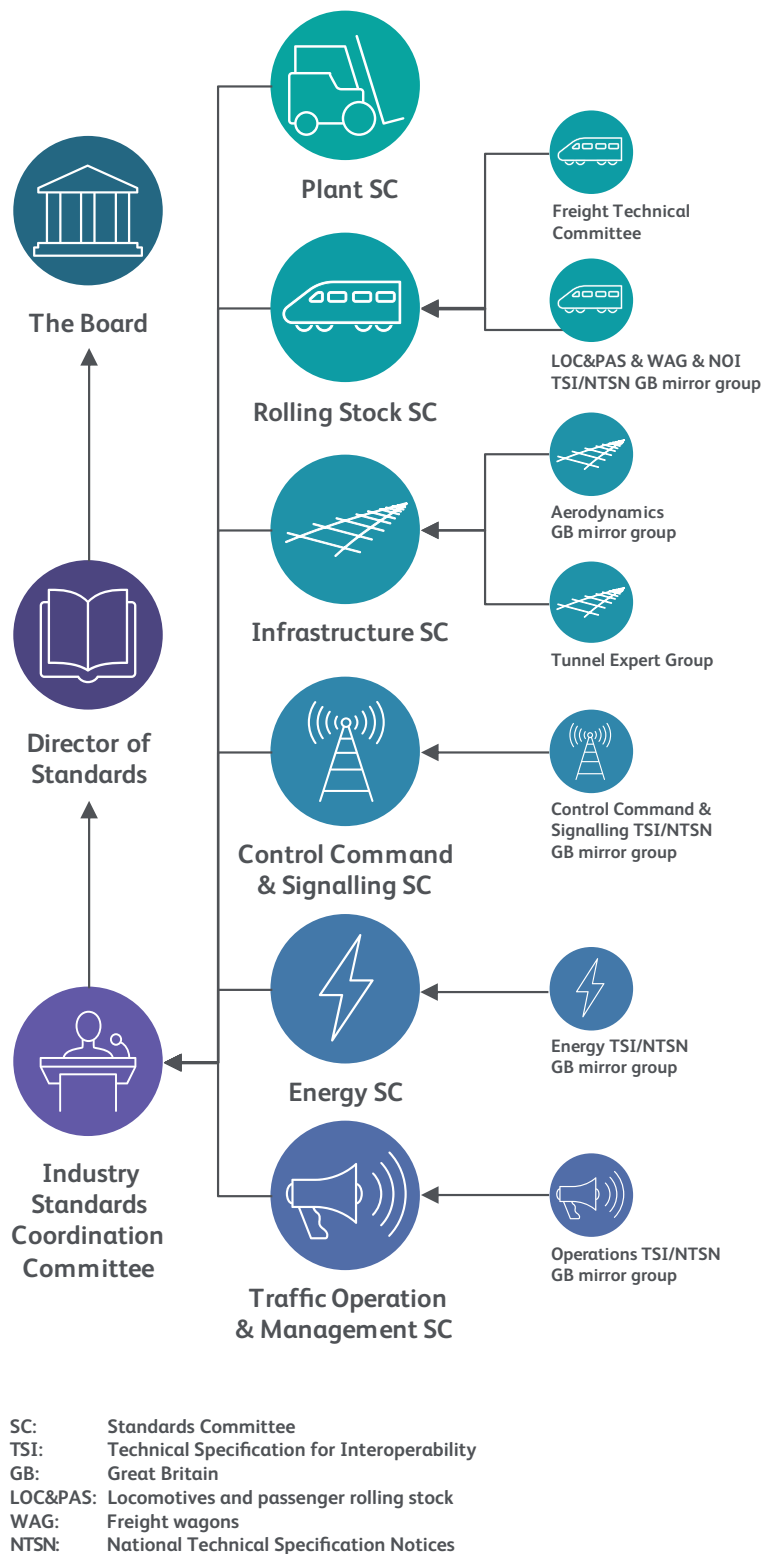
- The management and effectiveness of standards
- European standards relevant to the GB mainline railway
- Strategic and legal matters associated with standards.

Additionally, ISCC provides advice to the DfT and the ORR regarding the role of requirements as national rules, and their implications for the management of the GB mainline railway. ISCC reports to the RSSB board through the Director of Standards.

The RGS Code and the Standards Manual (see section 5) govern ISCC's activities. Six standards committees decide the content of standards and deviations under the direction of ISCC, as shown in Figure 9.

Membership of standards committees and ISCC is by election under arrangements set out in the Code and Manual. Details of current members of all the committees are available on RSSB's website.

Figure 9: Relationship of standards committees and subcommittees



8: Need help?

RSSB manages RGSs, RISs, Rail Industry Guidance Notes and the Rule Book, as well as associated documents and tools on behalf of the GB mainline railway. RSSB, in conjunction with BSI, facilitates and coordinates rail-specific input to European and international standards. Principally this covers the following: European Committee for Standardization (CEN), European Committee for Electrotechnical Standardization (CENELEC), International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC).

Details of our standards activities are available on our website. Please get in touch if you would like to know more. For any general enquiries please follow the 'Contact us' link at the bottom of our homepage and complete the simple form. This allows us to expedite and track your enquiry.

If you have a problem with a standard or have suggestions for improvement, we recommend using our [Request for Help](#) process. By completing our simple 'Request for Help' form and providing some simple information, you will enable us to work with you effectively. We can help you to determine the most suitable course of action which might range from advice, a deviation application or a change to a standard.

If you know that you require a deviation, [you can apply](#) for one directly. On our website, we explain the process for considering your application and provide guidance on what your application needs to be successful.

Membership of RSSB provides companies with access to a broader range of products, services, support and discounts on the additional services that we provide, such as training. Please visit our website for more information.

Homepage:
www.rssb.co.uk

Relevant areas in our website can be found using the search function, they include:

- Understanding and applying standards
- Changing and responding to standards
- Standards self-assessment test
- Deviating from standards
- Becoming a member of RSSB
- Rail Standards Strategy
- Standards consultations

Get in touch:
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