



A Better,
Safer
Railway

LHSBR - Quarterly Progress Report March 2021



Leading Health and Safety on Britain's Railways

Safertogether Healthiertogether

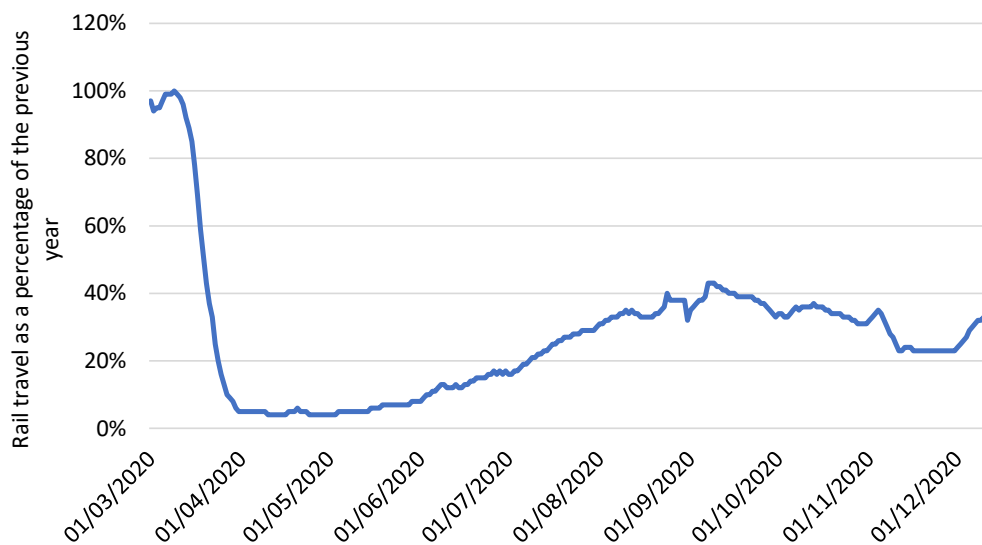
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1 Introduction

Another quarterly update and we're still in a Covid lockdown. Quarter 1 2020/21 felt the effects of the first, which began on 23 March and started to be lifted from 4 July. Despite traffic upturns evident in Quarter 2, we now find ourselves in a similar situation to Quarter 1, in which fewer people are travelling, yet where the risks we faced before the pandemic are still evident. This report therefore reflects a period in which we are far from 'normality'. As such, it needs to be taken on its own terms and not necessarily as the presentation of a continuing trend. The impact of the pandemic on rail usage, compared to the same week in the previous year, is shown in Figure 1.

Figure 1 Rail usage as a percentage of the same week in the previous year (DfT)



RSSB will continue to monitor the situation and continue to report. The need for vigilance remains.

1.1 Purpose of this report

The updated rail industry's health and safety strategy—Leading Health and Safety on Britain's Railway ([LHSBR](#))—was published in April 2020. LHSBR sets out a clear framework for how the industry will work together to make the railway better and safer.

The strategy covers 12 priority risk areas and 5 areas of capability improvement. This report provides a [strategy implementation](#) progress update for Periods 7 (20 September) to 9 (12 December) of the 2020/21 fiscal year (hereafter Quarter 3).¹ Analysis included in the report makes use of the [new injury weightings](#), which were launched on 21 January 2021. Key incidents are also provided. These are mostly derived

¹ Some charts in the document are updated monthly and therefore show progress up to the end of December.

from Network Rail's daily logs and therefore do not include as much causal information as those that have been investigated more fully.²

Published by RSSB, with input from industry and support from the LHSBR Executive Advisory Group (LEAG), System Safety Risk Group (SSRG) and the Rail Wellbeing Alliance (RWA), this update aims to:

- Share information
- Provoke discussion
- Elicit feedback
- Monitor cross-industry activity
- Improve safety, health and wellbeing

RSSB welcomes feedback, particularly where stakeholders are aware of significant industry activity relevant to the strategy. Contact details may be found in Appendix A.

1.2 Health, safety and wellbeing collaboration

The SSRG promotes industry collaboration on safety issues, while the RWA promotes industry collaboration on health and wellbeing issues. Figure 2 shows these relationships.

² Members can download RSSB's weekly summary of these logs via the SPARK website.

Figure 2 SSRG and RWA in context

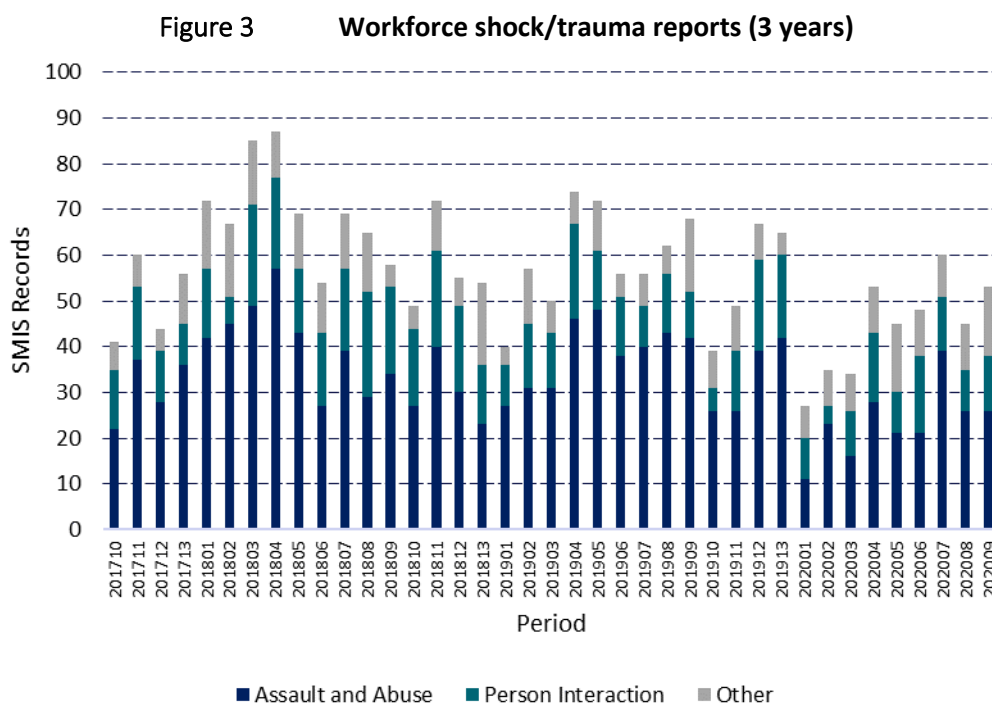


2 Workforce health and wellbeing

RSSB has established an operating model and centre of excellence to deliver a roadmap of industry agreed health and wellbeing (H&W) projects. Awareness of the social and financial impacts of wellbeing has also been raised, while a greater focus has been placed on the understanding and management of mental health.

2.1 Key data

The collection and sharing of information related to health and wellbeing is less mature than it is for safety. The health and wellbeing data that we have relates to cases of shock and trauma.



There were 158 reports of shock/trauma in Q3, compared to 146 reports in Q2 (P04-P06), showing therefore a slight increase. Of these, the majority of reports continue to be as a result of assault and abuse, with 91 reports stemming from this cause. In Period 7, there was a sharp increase in assault and abuse reports, which then fell again during Period 8. Most of the person interaction incidents involved workforce members witnessing people being struck by trains.

2.2 What's being done?

In November, RSSB and the wider industry held the first virtual Rail Wellbeing Live conference. The event spanned two days and hosted talks and workshops covering a wide variety of health and wellbeing topics.

The event was a great success, with positive feedback from attendees.

If you were unable to attend, a number of sessions are still available to stream through the Wellbeing library on the [Rail Wellbeing Live](#) website.

2.2.1 Data Improvement

RSSB began piloting the recently developed Health and Wellbeing Index (HWI) with nine rail organisations from various sectors. Based on the well-known Fatalities and Weighted Injuries measure (FWI), the HWI combines a series of metrics, including sickness absence and key health conditions to produce a single measure of employee health and wellbeing. HWI boasts a number of benefits for the industry, including the ability to:

- Compare health outcomes of different conditions
- Compare health and safety in combination with FWI
- Facilitate benchmarking
- Monitor progress over time.

The HWI will allow the industry to apply an evidence-based approach to inform investment priorities. Further information can be found on the [RSSB website](#).

RSSB has launched a project to identify and agree a set of cross-industry health and wellbeing key performance indicators (KPIs). The project aims to incorporate the final KPIs into a cross-industry dashboard that organisations can use to benchmark against similar organisations. It will allow organisations to quantify their own health risks and chart progress. To get involved, please contact Noodhir Sobun (noodhur.sobun@rssb.co.uk).

2.2.2 Mental Wellbeing

The RWA's Mental Wellbeing Subgroup has developed a new four-year plan, which will soon be published on the RSSB website.

RSSB presented on 'designing for mental wellbeing' at a recent industry engagement day. The session included information on projects in progress and those scheduled, and featured feedback from GTR's Health and Wellbeing Manager, Jamie Blower, regarding their participation in RSSB's mental wellbeing training.

RSSB is developing a new research project to explore the use of peer support to assist workforce mental wellbeing. A knowledge search has been coordinated focussing on mental health first aid, trauma risk management, sustaining resilience at work, among other facets of the subject. You can find the outcome of this work on the [SPARK](#) website.

RSSB's mental wellbeing team have generated a new rail industry definition for 'lone working' through a research project conducted to understand the health, safety and wellbeing risks to lone workers (T1213). A lone worker is 'someone who works physically alone for a number of hours, with low levels of contact with other colleagues.' The

project will develop guides for lone workers, line managers of lone workers and human resource departments in February-March 2021.

2.2.3 Healthy Cultures

RSSB are in the process of developing a 'Healthy Cultures Framework'. The framework will provide a strategic roadmap for organisations looking to incorporate preventative health interventions and healthy lifestyle behaviours into their wellbeing strategy. It will also encompass a process for '*taking healthy decisions*'. For more information, please contact Deborah.Archibald@rssb.co.uk.

2.2.4 Musculoskeletal Disorders

Back pain is one of the causes of MSD-related sickness absence in the rail industry. RSSB's 'Back Pain Myth Busting' poster helps to educate the workforce and highlight the combined responsibility of managing backpain between the employee and employer. You can find the poster on the [RSSB website](#).

2.2.5 Occupational Hygiene

RSSB is developing the Occupational Hygiene Strategy for Rail. During Q3, the first draft of the strategy was developed and underwent the first two rounds of peer review, which included members of the Occupational Hygiene Management Group. The document is undergoing its final round of review and is due to be published by the end of Q4. For more information, please contact Ian.Mulhall@rssb.co.uk.

2.2.6 Occupational Health

RSSB is developing an Occupational Health in Rail course, due to launch for the first term of the 2021/22 academic year.

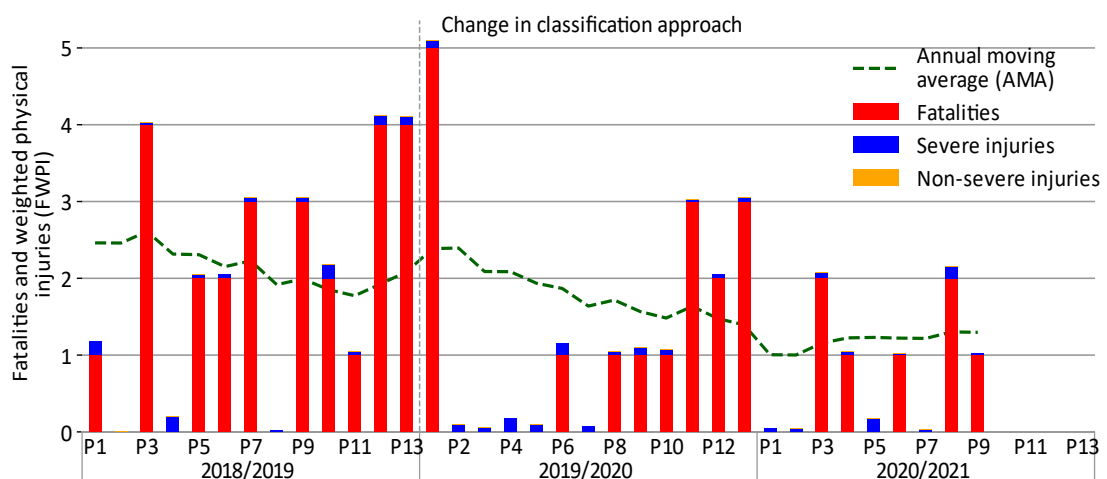
3 Public behaviour

The railway recognises the duty of care it has to passengers affected by trespass events, and to those harmed while trespassing. It also recognises the impact on the safety, health and wellbeing of staff who have to deal with fatalities, performance problems and all that goes with them.

Trespass

3.1 Key data

Figure 4 Harm due to trespass



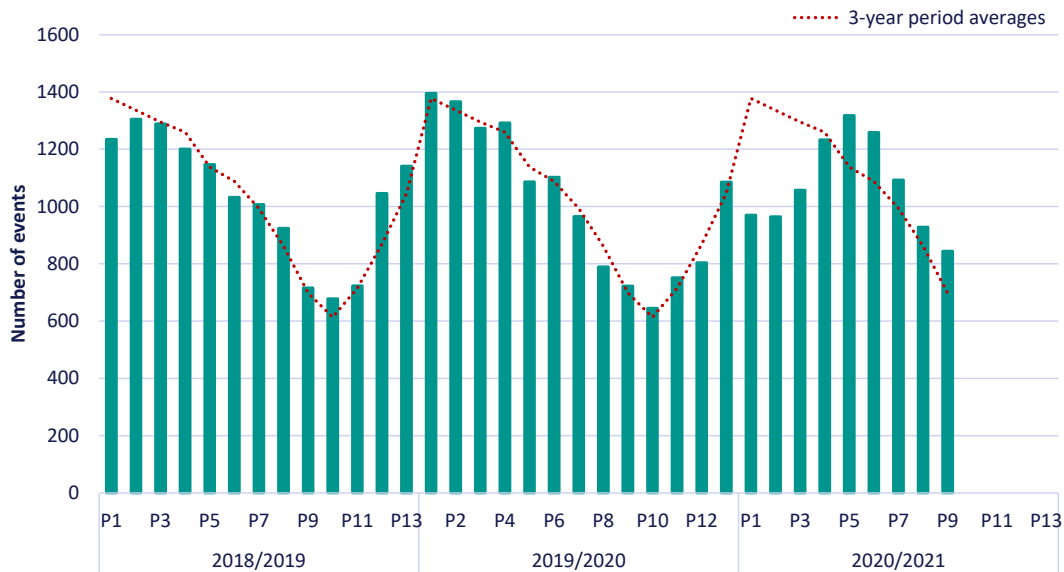
There were three trespass-related fatalities reported in Quarter 3 2020/21. The total for Periods 1 to 9 is seven, one fatality fewer than last year's figures (2019/20). There have been two fatalities this year involving under-18s.

At the start of 2019/20, RSSB, the British Transport Police (BTP) and Network Rail, implemented a new process for fatality classification. This enables more detailed information to be shared on a periodic basis and also aids consistent categorisation.³

This new approach allows events to be better classified using the Ovenstone criteria when there is limited information about the person's intent. It has not been applied retrospectively and so has not directly impacted how fatalities before Period 1 2019/20 were classified. RSSB continues to review and update classifications from previous years when additional information becomes available (e.g. Coroner's verdict results). A small difference in the total figures reported by industry and BTP remains, but this is understood and accepted due to differences in reporting scopes and purpose of use.

³ This is reflected in Figure 4 with a dotted line.

Figure 5 Trespass trend



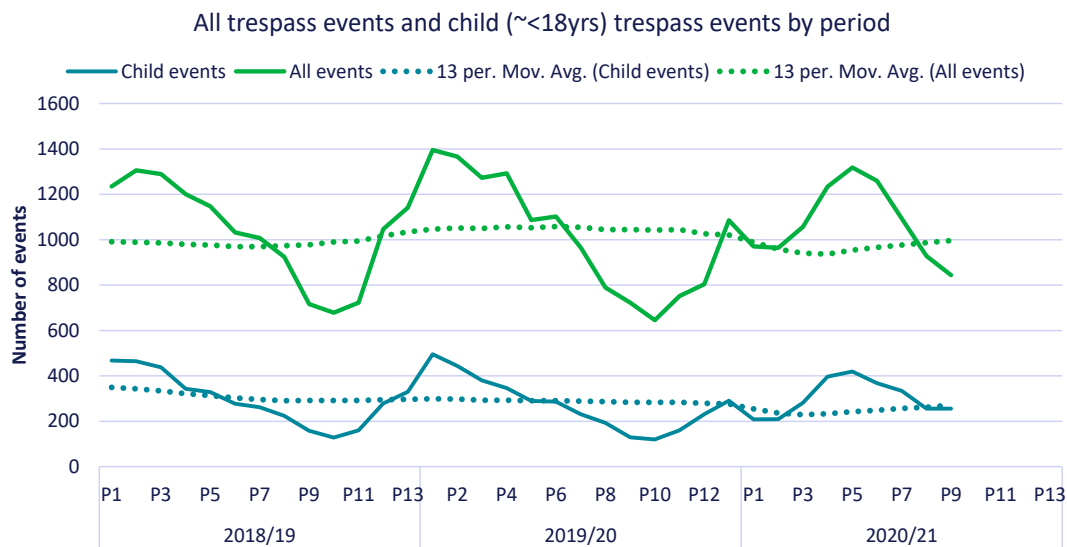
The total number of reported trespass events into the Safety Management Intelligence System (SMIS) for Q1-Q3 2020/21 is 9,666. This is a 3% reduction in reported events compared to the previous three-year average, which is mainly due to the lower-than-average number of events reported in Q1—the first national lockdown.⁴

There were significantly lower figures for Periods 1 and 2, but the number of events increased from Period 3 onwards, peaking at Period 5, during which over 1,300 trespass events were reported. The number of reported trespass events has been gradually decreasing since Period 6, in line with the seasonal pattern seen in previous years.

Q3 saw an approximate 12% increase in the number of reported trespass events, compared to the expected Q3 average.

⁴ RSSB’s Covid-19 data insights work discovered that between Periods 1 and 2 2020/21, the number of trespass events reduced by approximately 29%, compared to the same periods the previous years. Overall, however, the reduction was not as much as expected, further information can be found in the [September 2020 update](#).

Figure 6 Trend in reported child trespass events



The total number of child-related trespass events (under 18 years of age) year to date is 2728. These incidents have seen a general reduction compared to the previous three years. However, Q3 saw a 27% increase compared to the three-year Q3 average. At the same time, adult-related trespass events increased by approximately 7%.

3.2 Trespass fatalities and other key incidents in Q3

- On 29 September, an intoxicated trespasser climbed the palisade fencing near Melling Way, Kirkby, in an attempt to access the line and use it as a shortcut. They became caught on the fencing and broke their leg when trying to descend to the other side.
- On 29 October, overhead line equipment (OLE) wires were down near King’s Cross, which led to Emergency Switch Offs (ESO) being applied and numerous trains stranded as a result. Almost two hours after the ESOs were put in place, a group of 12 passengers on board one service self-evacuated.
- On 29 October, a trespasser was walking along in the cess near Whifflet when they were struck by a train and suffered fatal injuries.
- On 30 October, a body was found on the line approximately 50 metres beyond the platform ends at New Malden. The person may have been trespassing on the line and suffered conductor rail electrocution injuries before being struck by a train.
- On 4 November, an intoxicated person had jumped off the platform onto the tracks and into the cess at Mossley Hill station. They were clipped by a train and suffered non-fatal head injuries.
- On 5 December, a person was standing on the line near Hadfield, Derbyshire, when they were struck by a train and suffered fatal injuries.

3.3 What's being done?

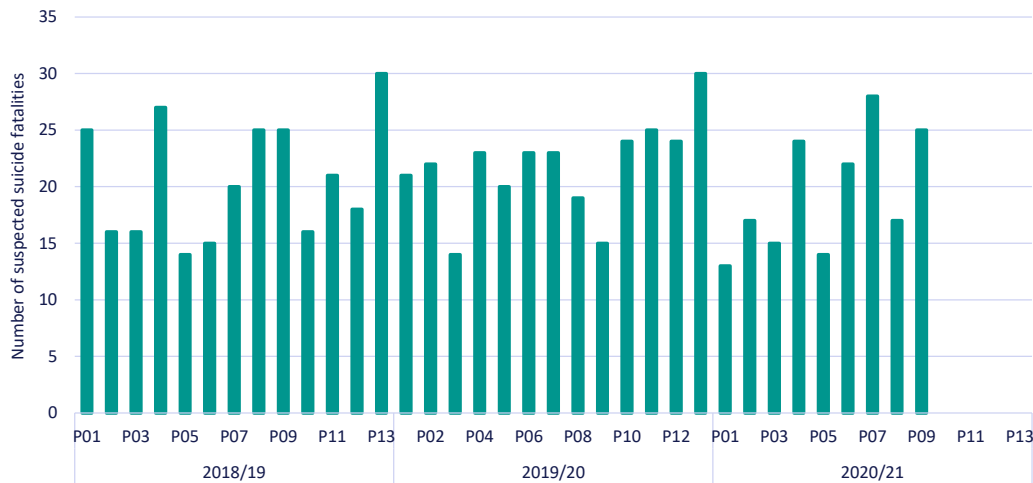
- The initiative to reduce the number of people who reach high frequency presenters' status and the incidents they are involved in across the network is progressing. A trial of the [Serenity Integrated Mentoring \(SIM\) model](#) is to be set in motion to mitigate risk and management of the HFP demand across the network. The recommended option involves dedicated teams of specially trained SIM officers in London and Birmingham, supported by a national coordination team.
- BTP reviewed best practice and lessons learnt for those involved in trespass prevention on the railway. Case studies and recommendations are available in a report on [SPARK](#).
- In December 2020, the Rule Book was revised to provide consistent rules for drivers and signallers reporting trespassers and cautioning trains. The changes are explained on our [website](#).
- RSSB has produced *Trespass kills*, a three-part Podcast about trespass prevention:
 - The first episode, "[Its impact on a better, safer railway](#)", discusses the human, safety and operational impacts that trespass can have on the railway.
 - The second, "[Assessing trespass risk](#)", relates to the new guidance on trespass risk assessment and 'what good looks like' for trespass prevention measures.
 - The final episode is "[The ORR perspective](#)" on what the regulator deems to be 'as low as reasonably practicable' when managing trespass risk.
- The second rail industry [Trespass Prevention Virtual Conference and Trade Fair](#) will be held on 16 March 2021. The event will share examples of best practice, new partnerships, current activities and the trespass prevention and mitigation work done last year.

The event will also coincide with the next release of *You vs. Train*, which continues with the theme of showing the wider impacts of trespassing on the railway and show the impact of near-miss incidents on train drivers.

Suicide

3.4 Key data

Figure 7 Suicide fatalities



Although this quarter had greater than the average Q3 figures, the total number of reported suicide fatalities is similar to the typical figures reported over the previous three years. There were 175 suspected suicide fatalities reported between Periods 1 and 9 of 2020/2021, which is five fewer than recorded during the same nine periods of 2019/20.

3.5 What's being done?

- The Department of Transport (DfT) and Network Rail held the first virtual transport sector suicide prevention 'Dissuasion Workshop' in November 2020. This came from research to identify if people in emotional crisis can be dissuaded from taking their lives on the railway.
A supporting campaign aimed at targeting high risk individuals and signposting them to the right support will be launched in March 2021.
- In November 2020, Time to Change launched their "Ask Twice" campaign. The aim is to encourage more men to talk with their friends and show support. One in four people experience mental health problems; sometimes asking 'How are you?' can open up the conversation.
- In December 2020, RSSB produced "Could you help save a life?", a podcast discussing the partnership between Samaritans and Network Rail and their aim to reduce the number of suicides on the railway.
- The Office of Rail and Road (ORR) and Northern Railway also produced podcast episodes in partnership with Samaritans:

- The ORR's [“The Rail & Road Pod” podcast](#) discussed about mental health and the railway, and the Million Hour Challenge.
- Northern Railway's [“Proud to be Northern” podcast](#) discussed the advertising campaign with Samaritans across its stations in December 2020.
- In January 2021, RSSB hosted a [Suicide Prevention webinar](#), where members of the Suicide Prevention Duty Holders Group, a risk area identified in LHSBR, talk about collaborative activities and successes in addressing the challenges set out around suicide.

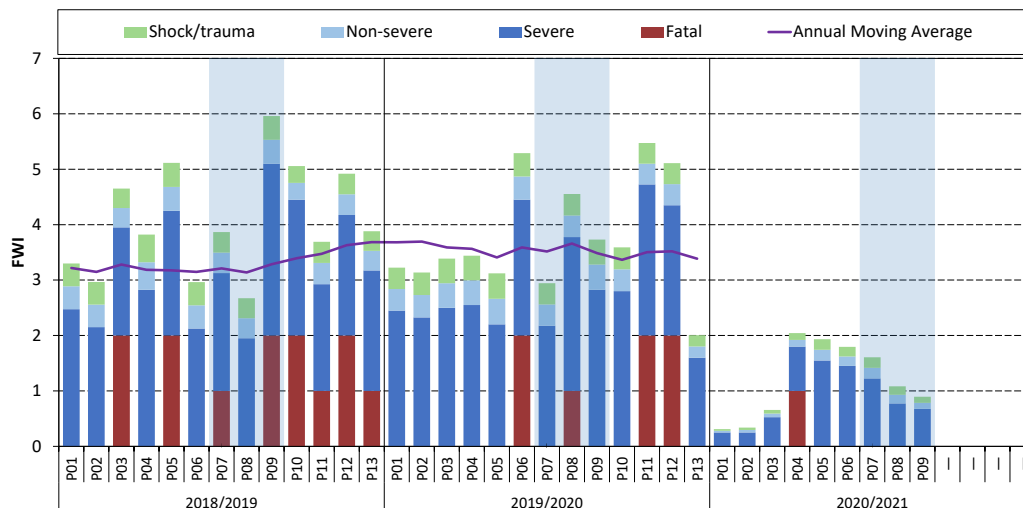
4 Station operations

There are over 2,500 stations on the mainline network, from which—in a non-Covid year—more than a billion journeys begin and end annually. Many people also enter station concourses without the intention to travel, in order to meet friends or use the retail facilities on offer.

Whether passenger numbers rise or fall, the onus remains on the individual in the station environment. However, the industry is aware of, and understands, the risks. Through the People on Trains and in Stations Risk Group (PTSRG) operators share good practice and steer initiatives to help keep passengers, workforce and public safe as they go about their business.

1.1 Key data⁵

Figure 8 Overall harm to passengers and the public in trains and stations⁶



There have been more injuries in stations and trains in Periods 7 to 9 than there were in Periods 1 to 3. However, the amount of harm is still below pre-Covid-19 levels. Rail usage across Periods 7 to 9 was similar to Periods 4 to 6 (see Figure 1), although the level of harm was lower.

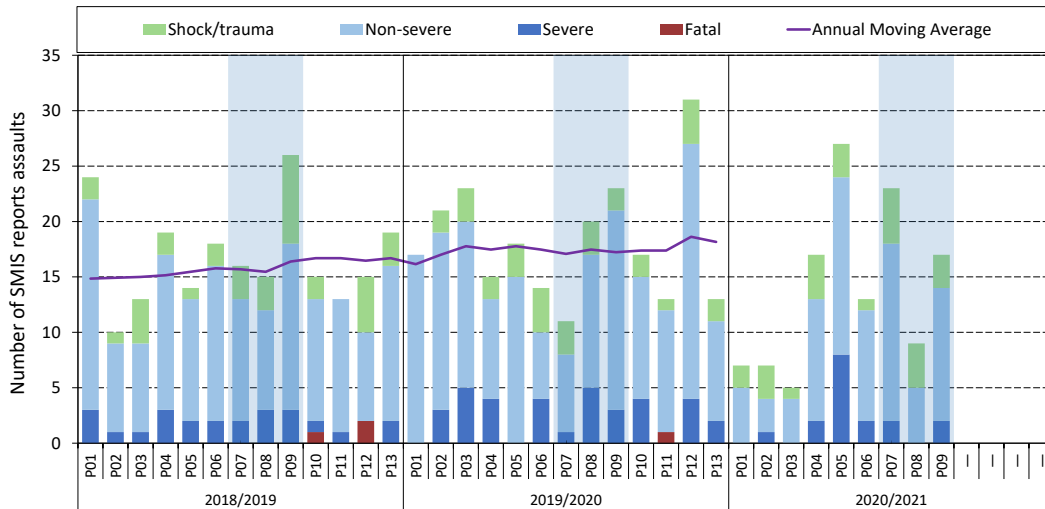
Analysis on the impact of Covid-19 on railway safety found that the reduction in reported incidents was not as big as the reduction in the number of passengers travelling. This was particularly so for minor injury or no injury, which may be due to improvements in reporting as staff have more time to address lower-impact behaviours.

⁵ The charts in this section include on-train injuries, as well as harm sustained in stations. This is to cover the full remit of PTSRG.

⁶ The charts in this chapter show trends in a rolling average over the previous 13-periods (one year). The rolling average trendlines are not displayed for 2020/21 until further notice, due to average trends for that year being dominated by the reduction in passengers, rather than reflecting any normalised safety improvement.

A large increase was noted in the number of assaults reported per passenger journey, partly as a result of the increase in reported low-consequence assaults.

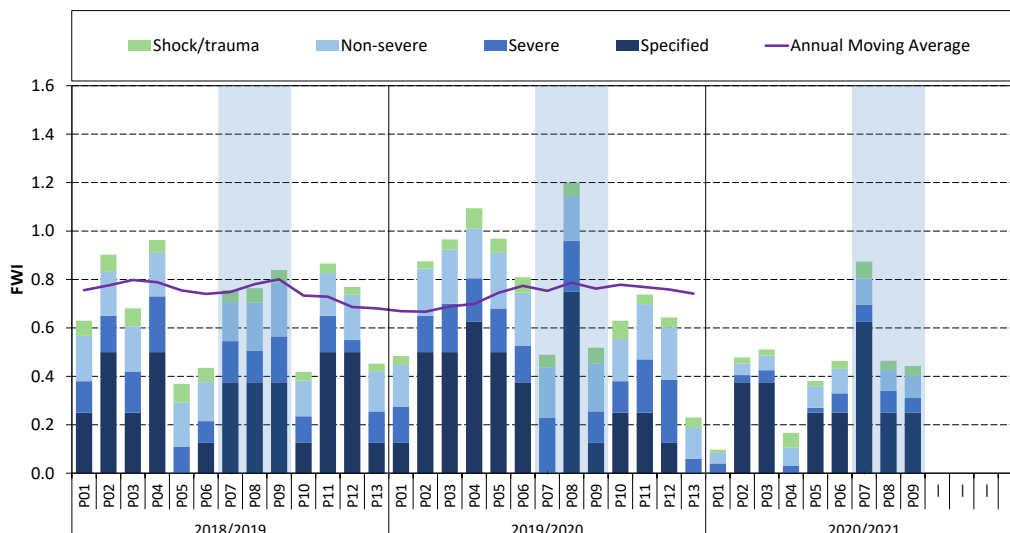
Figure 9 Reports of assault and abuse to passengers and members of the public resulting in harm by degree of injury



After the drop in the number of assault and abuse injuries seen in Periods 1 to 3, the number of assault and abuse injuries to non-workforce rose to a similar level of that seen before the effects of Covid-19 were felt in the UK.

Note that, historically, SMIS assault and abuse data has not been considered to be as complete as other data sources. For the Annual Health and Safety Report (AHSR), data is sourced from the BTP, so the trends seen in Figure 9 may not match.

Figure 10 Overall harm to members of the workforce in trains and stations



The level of harm reported to members of the workforce in trains and stations over Periods 7 to 9 is the highest seen since the pandemic began. The amount of harm is still

lower than the pre-Covid-19 levels but reported harm to the workforce has not dropped by as much as reported harm to passengers and the public. This is because many members of the workforce have been working, and have been exposed to the same risks as before. This is in contrast to the substantially lower passenger rail usage for passengers and the public.

It will be difficult to draw conclusions on how the risks have changed until the effects of the pandemic are better understood. This will be explored further in the Annual Health and Safety Report 2020/21.

1.2 Key incidents in Q3

- On 4 October, a passenger was injured after falling between a train and the platform at Euston. A similar incident occurred at Potters Bar on 27 November.
- On 8 October, a passenger suffered an electric shock on a Class 377-formed service after removing a mobile phone charger from a socket. Analysis around on-board electric shocks found that many of these types of events were from objects getting stuck in electrical sockets. This was exacerbated by poor quality chargers.
- On 13 October, four members of rail staff and a passenger were taken ill aboard a Leicester–St. Pancras service after taking refreshments on board. A sample of the drinking water was taken and found to be contaminated with chlorine.
- On 15 October, there was a near miss with two people dangling their legs over the platform edge at Garston. One person moved after the driver sounded their horn, but the other failed to do so, resulting in an emergency brake application. A similar incident involving three people occurred at Eden Park on 28 November.
- On 21 October, an inebriated person attempting to take a selfie struck their hand against a passenger train as it arrived at Woking.
- On 12 November, the conductor aboard a Wolverhampton–Euston service reported an assault on both themselves and two members of dispatch staff at Sandwell & Dudley station. On alighting the train, a passenger began an incident with the conductor. The two members of the dispatch staff tried to assist their colleague, at which point the perpetrator hit them and pushed them to the ground.
- On 4 December, passengers boarding a Farnham service reported that a member of the public had been pushed from the platform onto the line during an altercation with another member of the public at Guildford. The person suffered a burn to their hand after coming into contact with the conductor rail.
- On 11 December, a group of youths attacked a passenger on an Alton–Waterloo service with a machete. Two suspects were removed at Woking. The injured person was treated by paramedics and taken to hospital in an ambulance.
- On 18 December, station staff at Burnham stopped a Reading–Paddington service as it was departing, due to a passenger trapped within a door set.

- On 30 December, the Train Manager working a London St. Pancras–Nottingham service opened their local door to let a passenger alight at Leicester whilst the train was moving. Station staff had seen the passenger and gave the emergency stop signal to the Train Manager, who opened their local door without giving the driver the notification to stop the train.

1.3 What's being done?

- Links between the People on Trains and in Stations Risk Group (PTSRG) and the RDG Passenger Operations Safety Group (POSG) are being strengthened—with POSG being informed about the LHSBR strategy and the PTSRG's work plan. In addition, POSG can update PTSRG in meetings agenda on their progress. This will help the groups align workplans and increase combined effectiveness.
- Research project T1202, on the management and implementation of Selective Door Operation (SDO) is now being developed into an interim report. The project will help industry realise the benefits of new technology and address LHSBR Strategic Challenge 5.⁷
- The new standard RIS-3782-TOM, Design, Positioning and Use of Car Stop Markers on Station Platforms has been issued and is available on the [RSSB standards catalogue](#). An introductory video is available on the [RSSB website](#) from the December 2020 [standards update webinar](#). RSSB will work with TOCs to get feedback on the use of the new Standard and gather case studies. The work addresses Strategic Challenge 3, through a collaborative process for managing and improving the provision of car stop markers on station platforms.⁸
- As part of RSSB's Risk Bowties project the Platform Train Interface Working Group (PTI WG) has endorsed work to refine the three PTI Bowties and make them accessible via the BowTie Server. Users will be able to collaborate on PTI risk management using the bowtie, RSSB is holding workshops in March to agree the next steps. Although this project does not directly address the strategic challenges within the Station Operations area of LHSBR, it does contribute to Strategic Challenge D1 (*Improving our Capability* chapter).⁹
- The pandemic has led to a mass postponement of face-to-face training. T1238, *Transitioning driver and conductor training to remote delivery*, looks into how remote training can and should be utilised and reviewed approaches, challenges and enablers to effective remote learning. The project can help address Strategic Challenge 1 (to enhance the non-technical skills and knowledge of employees). An industry workshop

⁷ Strategic Challenge 5: Industry is not fully using and realising the benefits that technology can bring to station operations.

⁸ Strategic Challenge 3: Change that affects station operations is not always managed in a collaborative manner.

⁹ Strategic Challenge D1: Effective health and safety management needs to be built on a good understanding of risk controls and their effectiveness.

was held to understand how remote learning can be utilised. A good practice guide for transition to remote learning is now under review.

- A new Guidance Note GEGN8615 has been developed to help apply the Technical Specification for Interoperability for Persons with Reduced Mobility ([PRM TSI](#)) or National Technical Specification Note ([NTSN](#)), depending on which is in force. These address infrastructure and rolling stock requirements and helps with interpretation and application of the PRM TSI/NTSN, particularly where vehicles or infrastructure are being modified in such a way that it does not constitute an upgrade. Consultation is now open on the guidance, which will be published in due course.
- Good health and safety management relies on good data and analysis. As part of [our strategy to exploit the advances in technology and the availability of data](#), RSSB is developing capability to quickly deliver novel insights. Analysing data from SMIS and many other sources, the aim is to generate safety insights which support industry decision making and provide the direction for risk management activities. To support the Station Operations part of LHSBR, the latest analysis is focussing on station safety.
- A new working group has been formed to assess the use of whistles in the dispatch process. The group aims to understand the risks addressed by the use of whistles and the additional risks they may introduce, recognising the impacts they have on passenger behaviour and the potential for confusion between whistles on different platforms (for both passengers and drivers). The group would like to collect good practice in the use of whistles and improve the consistency of their use across industry. This will include the use of electronic whistles, which have been taken up in parts of the network in reaction to Covid-19 concerns around manual whistles. The group's activities address Strategic Challenge 3, to use the Taking Safe Decisions framework to enhance collaboration across industry.

5 Road risk

Our emphasis where occupational road risk is concerned has always been on the risk to staff members. Since 2009/10, 10 out of 28 workforce fatalities have resulted from road traffic accidents. This is why the cross-industry Road Risk Group (RRG) was established.

Yet in November 2020, it was reported in the press that an elderly woman out walking her dog had been struck and killed by a staff vehicle. Investigations are ongoing, as you would expect. But one thing we can say now is that road risk goes beyond our industry and can affect anyone who happens to be in the wrong place at the wrong time at any time. Vigilance is everything.

THE WIDER CONTEXT

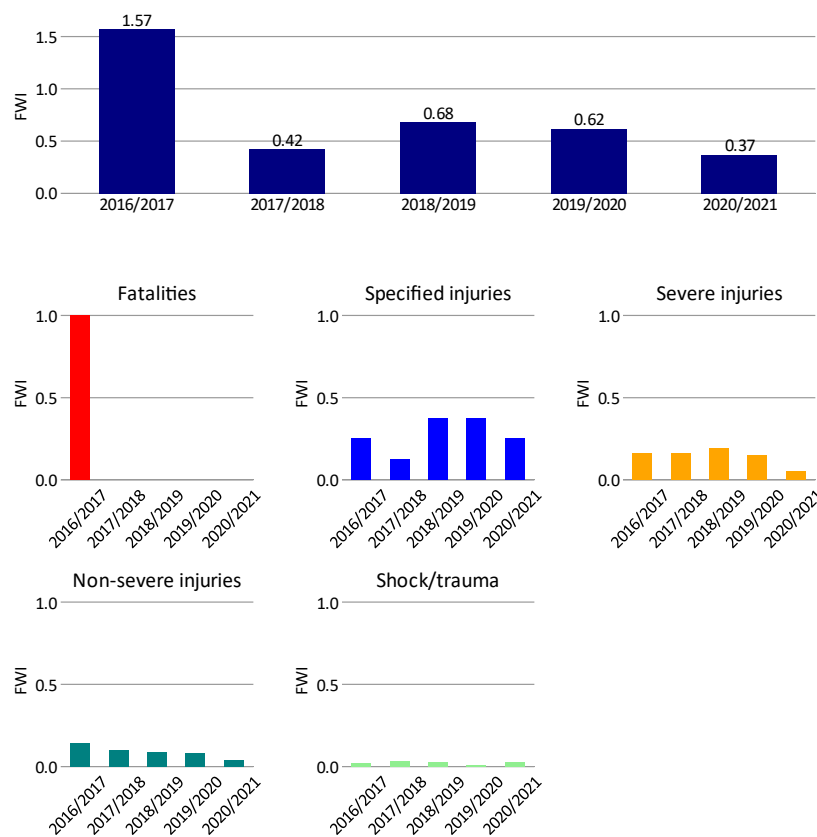
A third of road deaths and a fifth of major injuries are sustained in accidents involving a working driver or rider, according to research by UCL.

Out of 520 fatalities recorded by the police in 2018 from road collisions involving a working driver/rider, 432 (83%) were other road users. Working drivers and their passengers accounted for 88 fatalities (17%).

Between 2011-18, 39% of pedestrians killed in Great Britain were hit by a working driver.

5.1 Key data

Figure 11 Trend in harm Q1-3 2020/21



In most of the road driving incidents recorded, the cause of around 50% is identified as third-party action. The narratives suggest that rear-end collisions occur most frequently.

Figure 12 presents the causal information in SMIS with the third-party and unknown incidents removed. This chart shows the most common causes of road traffic collisions resulting in injury are from the use of taxis, driving conditions and driver error. The staff use of taxis is up on the Q2 figures, which may reflect on improvements in reporting. Although in Figure 13 we can see that the levels of reported harm to passenger and freight operator staff remains low in comparison to Network Rail and the contractor community. This is likely to reflect a lower maturity in reporting as well as differences in risk and exposure.

Figure 12 Number of injuries by cause (excluding third party and unknown), Q1-3 20/21

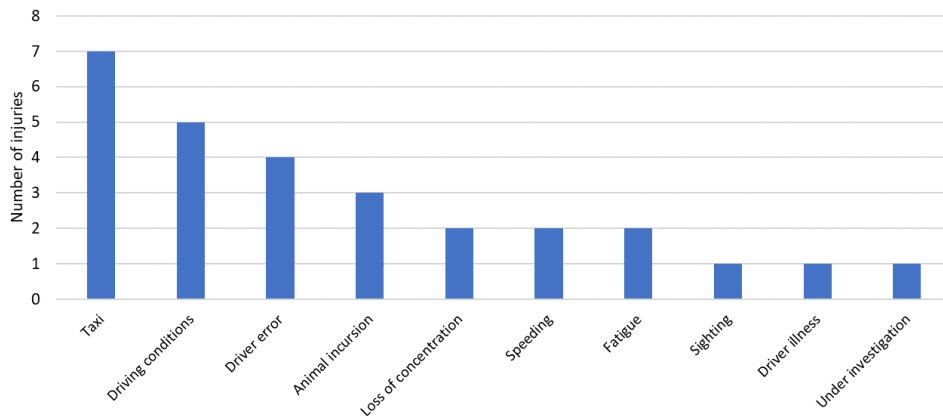
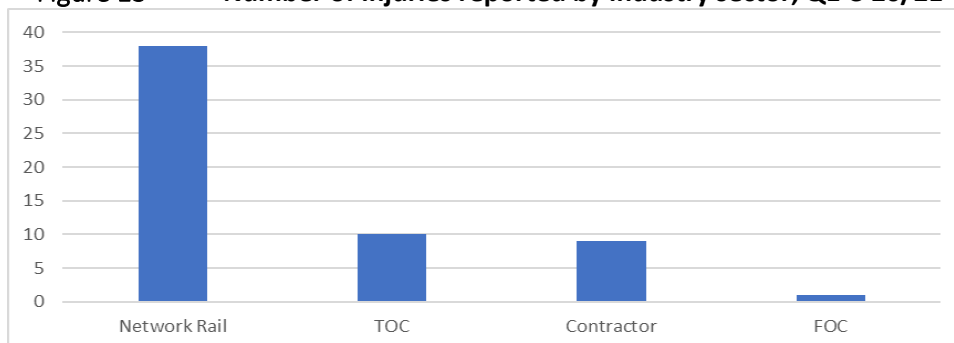


Figure 13 Number of injuries reported by industry sector, Q1-3 20/21



When it comes to the types of road vehicles involved in incidents, light goods vehicles are the most recorded type. However, the dataset is not complete enough to make a wider claim. The RRG continues to urge companies to input more detail into SMIS to allow richer analysis on this aspect of road risk.¹⁰

¹⁰ This—indeed all the figures in this chapter—reflect Strategic Challenge 3, which notes that ‘road risk safety performance data is unreliable and cannot be used to fully inform business and collaborative management decisions’.

One type of vehicle not included in the data reported is the rail replacement bus, on which our staff and our passengers have to travel from time to time. The following table shows the high-level figures reported for the fiscal year to date. Note the number of bridge strikes, which often get much media attention.

Collision with other vehicle	4
Bridge strikes	3
Collision with pedestrian	1
Collision with object/structure	1

5.2 Selected incidents in Q3

These incidents have been selected to show the range of issues being faced by staff on Britain's roads:

- On 11 September, a staff vehicle struck the rear end of a lorry on the M4 near Port Talbot. During their shift, the driver had received a call from their partner regarding their child being unwell. They left site at approximately 00:30. During interview, the staff member said they assumed they must have entered into a microsleep.
- On 7 October, a parked staff vehicle was struck in rear by a lorry in Liverpool. The staff member did not require first aid, but did suffer a sore back and leg.
- On 16 October, a staff member was travelling towards the northbound A1 slip road in Newark when a car turned across their path, resulting in a head-on collision. The staff driver suffered whiplash. The third-party driver admitted they were unfamiliar with the area, but said they thought they had right of way.
- On 31 October, a member of staff was travelling in a taxi along York Road in Leeds when the driver made an emergency stop, having not seen a red traffic light until the last moment. The member of staff was wearing a seat belt but was thrown forwards and sustained a shoulder injury.
- On 3 November, a member of staff was reversing in the car park at London Charing Cross when they collided with a third-party vehicle. The member of staff reported a shoulder pain, but wished to avoid hospital due to Covid-19 concerns.
- On 26 November, a member of staff was in slowing in traffic on the approach to a set of traffic lights in Taunton, when a third-party vehicle struck the staff vehicle in rear. The member of staff suffered whiplash but was able to remain at work.

5.3 What's being done?

Infrastructure Safety Leadership Group (ISLG)

- Road risk has been written into ISLG's key delivery manual, with fatigue and road risk identified as the main areas of focus. As a result, ISLG has decided to form a road risk improvement group. Work is progressing to identify membership after which a work

programme will be prepared to support the aims of the LHSBR strategic challenges, and help ISLG members improve their management of occupational road risk.

National Freight Safety Group (NFSG)

- “Road Safety Week 2020” was a success with cross-industry collaboration. Focus for the Freight Road Risk Champions group is to support freight companies in implementing and demonstrating effective occupational road risk management processes and procedures. A high-level document, “Guidance for Managing Occupational Road Risk”, will act as a signpost to show the progress each freight company is making to reach the requirements set out in the Driving for Better Business (DfBB) Gap Analysis tool. The Freight Road Risk Champions group will also produce a road risk case study on DfBB.

Passenger Operator Safety Group (POSG)

- East Midlands Railway (EMR) has elected to implement the DfBB programme, to support the management of occupational road risk. This has been approached within a governance structure that includes RM3 training for managers. The DfBB gap analysis has undergone a first pass and will form the backbone of the EMR working group’s action plans.

Network Rail Road Safety Risk Group

- For trials in February 2021, 250 trial telematic units have been ordered. Electric vehicles are also to be trialled, with charging points installed at the Hawksworth facility in Swindon initially, and other sites across the country identified in readiness.
- Positive feedback has been received on the company’s pilot electronic vehicle check app. The medium- to long-term plan is to have the driver’s handbook available electronically, with a digital acknowledgement form to prompt drivers to confirm that they have read and understood it.

RSSB, Association of Road Risk Managers (ARRM) and Highways England

- Highways England (HE) has been working closely with RSSB to develop the equivalency matrix for the different road risk accreditation schemes. To support this, HE is drafting guidance to advise procurement teams, companies with supply chains, and sub-contracted supply chains.
- The Covid-19 transport toolkit has been re-focused to the issues around driver training and inductions. The new resources section will include over 200 documents including best practice case studies.
- A road risk webinar sponsored by CIRAS was held on 26 January to promote the work across the rail sector as an industry leading road risk collaboration.
- The 2021 Annual Rail Industry Road Safety week will be held between 13 and 17 September 2021, themed around “Fit for the Road”. This event will cover driver health and wellbeing, fatigue management and the roadworthiness of vehicles. The Police and Fire Service will be supporting the week, along DfBB and ARRM.

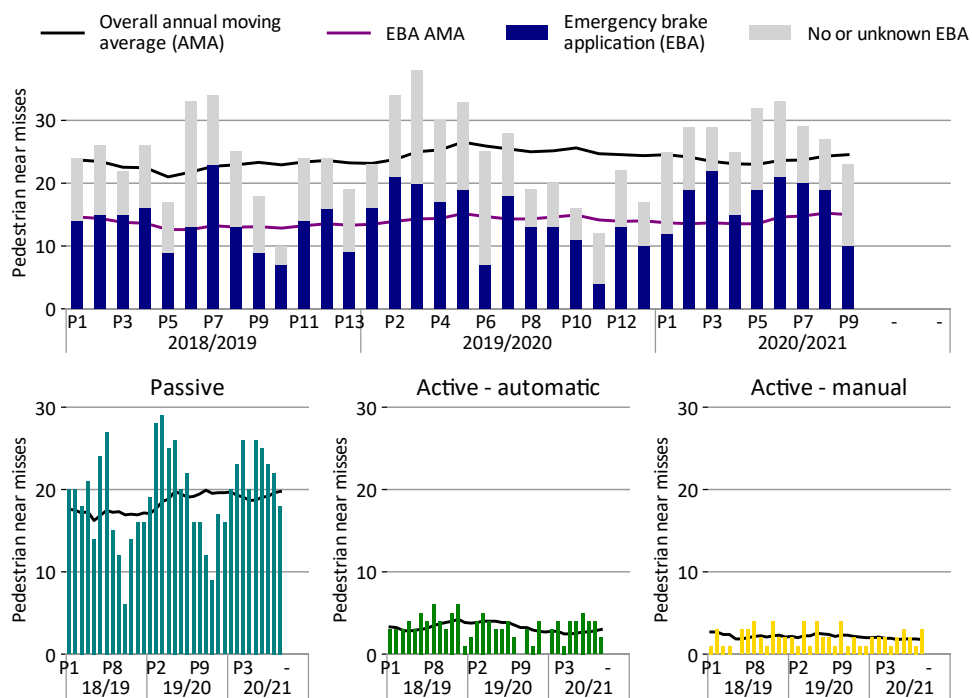
6 Level crossings

Level crossings link parts of the country severed by railways without the expense of a bridge or tunnel. The risks they create are obvious, which is why they are monitored very closely by the industry, the investigator, the regulator, and RSSB.

6.1 Key data

There was one accidental fatality (not involving a train) and one road vehicle strike at level crossings during Q3 (see Section 6.2). These incidents bring the annual totals to 2 fatalities, 1 involving a train, and 2 road vehicle strikes. This is an excellent achievement, but the relatively small numbers make it difficult to monitor trends and identify patterns from the accident data alone. However, near miss data and data on incorrect crossing usage provide further insights. Figure 14 and Figure 15 show the trend in near misses with pedestrians and road vehicles respectively.

Figure 14 Near misses with pedestrians and cyclists

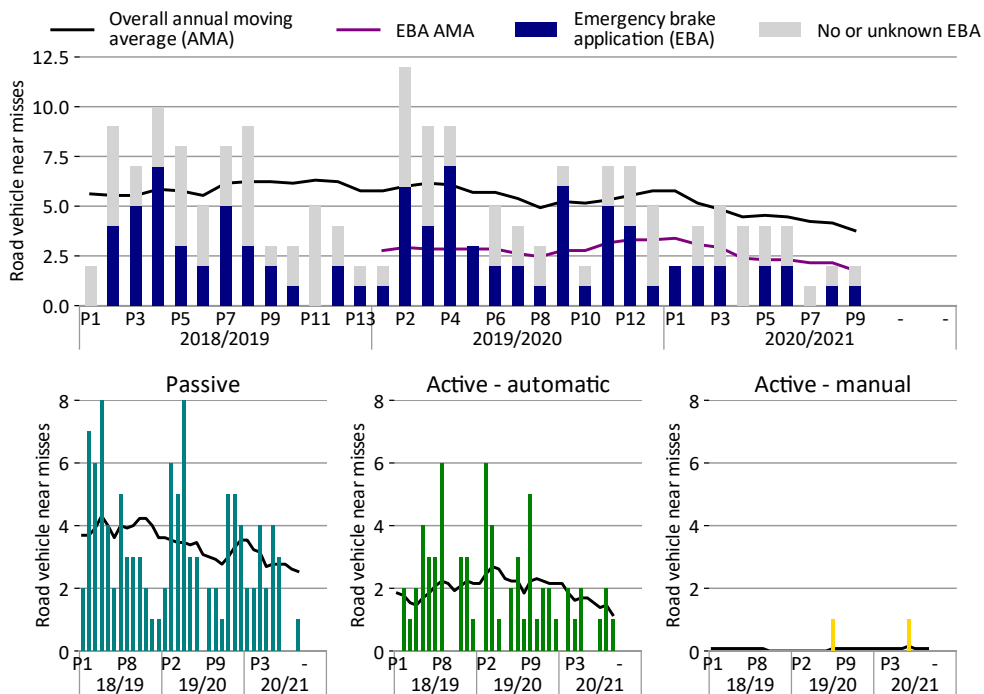


During Q3 2020/21, 79 near misses with pedestrians were reported, an increase on the previous year (67). Since service levels remain lower than they were last year, this raises some concern. In the last two updates, we have discussed some potential causes for this, including a larger—and different—level crossing user profile. To date 41 near misses in 2020/21 involved cyclists; this is 20 more than the same period last year.

Figure 14 also provides an insight into when the emergency brake is applied or would have been applied given more time. This indicator—**Emergency brake application**

(EBA)—provides a more objective view of the trend in near misses, although it still relies on reports received from front-line staff.

Figure 15 Near misses with road vehicles



The number of reported road vehicle near miss events in Q3 2020/21 (5) is a decrease from Q3 2019/20 (14).

In addition to near misses, we also track the number of incorrect usage events. The overall frequency of these events had been decreasing over the year – this is thought to relate to a reduction in the number of train services. But incorrect usage events in Q3 2020/21 are back to a similar level seen in Q3 of the previous year, despite service levels comparable to Q1 and Q2. This, alongside Figure 14, may be cautioning a deterioration in safety performance. Much of this relates to changes in user behaviour and how this will impact safety at level crossings as train services begin to return to levels seen in previous years. Some changes to user behaviour include:

- Higher proportions of inexperienced level crossing users¹¹
- People straying from public rights of way
- A different profile of level crossings users, eg leisure users (pedestrians, cyclists and horse riders)
- Possible reluctance to touch crossing equipment due to Covid-19 infection risk
- Not recognising the benefits of calling signallers back or closing gates or barriers.

¹¹ This has already been reflected in Strategic Challenge 3, which recognises that ‘many level crossing users are unaware of the risks associated with level crossings and how to use them properly’.

- Usage of lineside buildings may have increased, which may have an adverse effect on level crossing usage and user behaviour.

6.2 Key incidents in Q3

- On 20 November 2020, a road traffic collision occurred between a cyclist and a road vehicle at Botany Bay CCTV crossing. Initial reports suggest that both the cyclist and road vehicle proceeded past the crossing lights and around the lowering barriers when the collision occurred. The cyclist was killed as a result of the collision.
- On 19 October 2020, two people under the age of 18 were struck by a train on Ballinger's footpath crossing. The person who was fatally injured is being treated as a suspected suicide; and the other person received life-changing injuries (this is being treated as accidental).
- On 18 November 2020, a car struck the side of a freight train at Walkers User Worked Crossing (UWC). The car driver had not contacted the signaller to request permission to cross. The vehicle sustained damage, but no injuries were reported.
- On 11 October, a near miss was reported with 3 adults standing on Tidemills footpath crossing filming the train as it came to a stand in front of them. Incidents at this location have appeared in the NOC with some regularity since the March 2020 lockdown.
- On 30 October, a near miss occurred between a freight and a road vehicle at Canute Road automatic open crossing, locally monitored (AOCL), Southampton. The vehicle was the last of three that crossed in front of the train. It was later found that sand contamination had affected the track circuits and therefore the crossing equipment.
- On 19 November, a signaller gave permission for the crossing to be used by the crossing keeper but failed to apply any reminder appliances on the protecting signals or record the entry in the occurrence book. A second signaller then cleared the signal over the crossing for passage of a train while the crossing was still in use. The crossing keeper reported that they had finished using the crossing and closed the gates before the train arrived.

6.3 What's being done?

- Network Rail have temporarily closed some level crossings with whistle boards. This is in response to an assessment of horn audibility of rolling stock passing over these level crossings. RSSB's project, T1205 Relationship between horn test measure, will consider the audibility of train horns for track workers. RSSB and NR are exploring how learnings from this project can be applied for members of the public at level crossings to help NR improve their assessments.
- The Level Crossing Strategy Group (LCSG) is considering the impact of changes in public behaviour on the safety at level crossings. The group also recognises that this

issue is wider than level crossings and that links need to be made with other risk areas, such as trespass.

- A collaborative workshop will be set-up between Network Rail, the Institute of Public Rights of Way and Access (IPROW) and Association of Directors of Environment, Economy, Planning and Transport (ADEPT) to discuss issues around public behaviour at level crossings and agree next steps.
- The International Level Crossing Awareness Day (ILCAD) is planned to take place on 10-11 June 2021. The event will be hosted by NR with support from other industry organisations, including RSSB and BTP. LCSG is starting to consider topics for inclusion.
- ORR's new *Principles for managing level crossing safety* is out for public [consultation](#) from 20 January 2021. The new principles encourage thinking about why level crossing risk occurs and how it could be mitigated across the different interfaces.
- A prototype of the upgraded All Level Crossing Risk Model (ALCRM) has been built and aligned with RSSB's Safety Risk Model (SRM). The new version incorporates the narrative risk assessment and links to a new risk assessment app. User acceptance testing is currently under way and training for Level Crossing Managers will start to be rolled out from December. It is planned to go live in Spring 2021.
- [Issue 3 of the Level Crossing Digest](#) is now available for RSSB members to download from [our website](#).

7 Fatigue risk management

Fatigue is a key element in railway safety as it can be in the causal chain of an incident falling under almost any key risk areas considered by LHSBR, from train operations to road risk.

7.1 Key data

Fatigue does not map onto particular types of incident, despite often being a significant underlying cause. Therefore much useful data is not systematically collected at industry level, making any quantitative analysis limited in value. This is one of the strategic challenges identified in LHSBR, which the industry is working to address in CP6.¹²

Where fatigue was identified as a possible cause of incidents in SMIS this quarter, it resulted in slips, trips and falls, station stopping incidents, wrongside door release, errors in granting line blockages, and a road vehicle collision.

A review of Close Call data on fatigue revealed some reports of people becoming drowsy and, in some cases, falling asleep, while driving road vehicles or on site. The vast majority of fatigue-related close call entries in this quarter relate to staff exceeding limits on door-to-door hours. However, some close call reports related to other fatigue risk factors, or poor application of risk controls:

- Poor planning or rostering practices, including work or travel perceived to be disorganised or unnecessary
- Insufficient rest between shifts, or breaks during shifts
- Failures in record keeping supporting fatigue risk management
- Poor welfare provision
- Delays on site.

In addition, there were a number of entries within the close call database which relate to office or home workers feeling tired and unable to take breaks.

7.2 Key incidents in Q3

- Some fatigue-related incidents may be found in Section 5 (on road risk). RAIB also published a Safety Digest during this quarter on a passenger train derailment that occurred at [Bognor Regis on 22 October 2020](#). The incident occurred when a service to Littlehampton came off around 58 metres from its departure point.
- The signaller on duty had started work at 04:30. His previous duty was a night shift finishing at 06:00 on 21 October. The remainder of that day was rostered as a rest day, so he went home for a few hours' sleep before waking mid-morning to attend an

¹² Strategic Challenge 5: Fatigue-related data has quality problems and does not give a clear indication of the health of a Fatigue Risk Management System. There is no cross-industry agreement on what data should be collected and shared, or how.

appointment. He stayed awake for the rest of the day, having no work planned. However, on the evening of 21 October, the signaller’s manager contacted him to ask if he could cover the early hours at Bognor Regis, due to chronic staffing problems in the area. The signaller agreed and went to bed around 22:00, waking up at 03:50 to start work at 04:30. It is likely, say RAIB, that the signaller was therefore fatigued, and this played its part—coupled with existing damage to the infrastructure—in the incident’s causal chain.

7.3 What’s being done?

The cross-industry activities required to deliver the vision expressed in LHSBR are described in the CP6 Roadmap for Fatigue Risk Management. This has been in place for a year and the **Fatigue Co-ordination Group** has initiated a review to ensure that it is up-to-date and relevant. The group ran an ‘Industry Spotlight on Fatigue’ session at the Rail Wellbeing Live event, to publicise its work and promote the outputs that the rail infrastructure, freight and passenger train operator fatigue working groups have delivered. The event also featured a talk from the ORR about their recent [successful prosecution](#) of Renown Consultants in relation to fatigue management failures.

The following activities took place in sector-based groups this quarter:

- The **TOC Fatigue Working Group** continued with its work on health conditions impacting on fatigue. It also drafted a plan for its workstream on fatigue key performance indicators.
- The **NFSG Fatigue sub-group** has created fatigue awareness education materials, including slides and facilitator guide. These materials, developed with support from RSSB and other sector fatigue groups, will be rolled out to all Freight Operating Companies for staff briefing. The Freight Fatigue Group will monitor and receive feedback, which will be gathered and shared with their counterparts in other sectors.
- The **ISLG Fatigue Working Group** is working on producing guidelines and recommendations for fostering a fair culture so all staff can report and discuss fatigue openly and proactively. The group is also building on the work of colleagues in the freight sector to create fatigue education materials for managers and control staff.
- **The Fatigue Co-ordination Group** brought together the chairs of the sector-based groups to ensure learning from these activities are shared and to capitalise on the synergies that exist.
- **Network Rail** has continued to progress with the development and adoption of practices aligned to its new Standard (NR/L2/OHS/003). It has employed a specialist on fatigue risk management to support its work in this area. It has also continued with the development of e-learning for fatigue awareness, and has engaged Fresh Air Training to develop and deliver fatigue-related training for its senior leaders. In this quarter, the first ‘Excess Hours’ report, in line with the standard, has been developed

within one of its main directorates, which provides management with exceedance information for their staff.

RSSB continues to support cross-industry workstreams and in the last quarter has:

- Continued with research into alertness monitoring technologies and initiated discussions with stakeholders regarding next steps. This will help the passenger and freight train operators meet Strategic Challenge 5: Fatigue-related data has quality problems and does not give a clear indication of the health of a Fatigue Risk Management System. There is no cross-industry agreement on what data should be collected and shared, or how.
- Continued with research into fitness for duty decision aids within the rail infrastructure sector and is beginning to trial at a train operating company in January. This will help the industry meet Strategic Challenge 3, which states that ‘fatigue and sleep are not always fully integrated into fitness for duty checks or declarations.’
- Initiated a new research to make recommendations aligning ORR and RSSB good practice guidelines on rostering to minimise fatigue risk, and to produce examples of ‘fatigue friendly’ rosters which are devised to consider cost implications. Supplier selection is under way for this work. This work could help the industry meet some of Strategic Challenge 1, which states that ‘new good practices are often not applied to actual working patterns, overtime and on-call work’.

8 Workforce safety

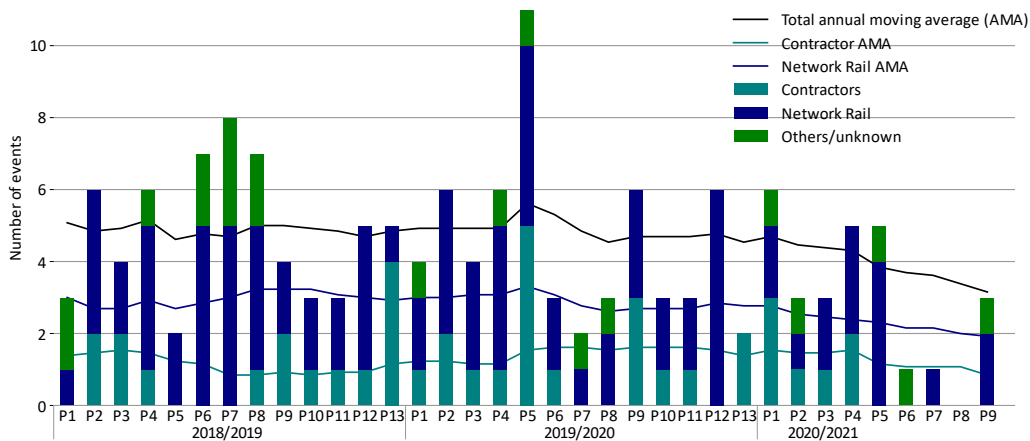
On 9 February 2021, a track worker was struck and killed at [Surbiton](#). Our thoughts are with the family and friends of all involved.

[LHSBR](#) sets out the Strategic Challenges for improving workforce safety. The latest activities to address them can be found in Section 8.3.

8.1 Key data

A near miss occurs when a member of staff is almost struck by a moving train, often with only seconds to spare. Under slightly different circumstances, each incident could have had life-changing or life-threatening consequences. The number of near misses with trackworkers is shown in Figure 16.

Figure 16 Near misses with trackworkers



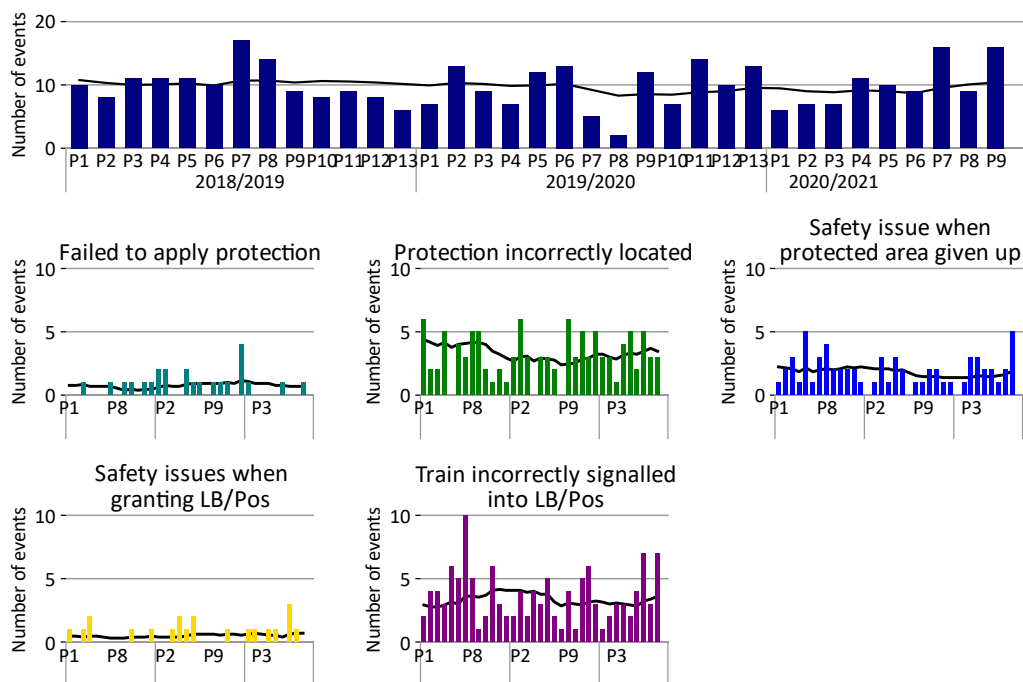
In Periods 7 to 9, the annual moving average of total near misses continued its recent falling trend. No members of the contracting community have been recorded as being nearly struck by a train since Period 4, while no near misses with trackworkers were recorded in Period 8. However, two near misses in Period 9 show the hazard presented by moving trains has not been eliminated and there is no room for complacency.

The reduction in the total number of near misses reflects the efforts made by NR's Trackworker Safety Task Force (TSTF) in reducing unassisted lookout working and increasing the use of line blockages. [Network Rail's Safety, Health and Environment Performance \(SHEP\) Report](#) for Period 9 reported that unassisted lookout working is now used in 10.5% of work orders. This is down from 13.4% in Period 6 and an all-time low. While the service reductions during the Covid-19 pandemic may have contributed to reductions in near misses, infrastructure work has continued during the crisis and Network Rail has delivered the majority of its of maintenance work in spite of it.

The TSTF is also consulting on the roles and responsibilities around unassisted lookout working. The intention is to realign the Controller of Sight Safety (COSS), Person in

Charge (PIC) and Safe Work Leader (SWL) competences and amalgamate them into a single new competence. This will result in a clearer set of roles and responsibilities for those working on the running line.

Figure 17 Line blockages and possession irregularities



The TSTF aims to complete more work orders using line blockages and possessions, therefore line blockage and possession irregularities (and their causes) are important in spotting opportunities for improvement. Figure 17 shows the trends in various types of line blockages irregularities. Included in each sub-chart is:

- **Failed to apply protection:** No protection applied before starting work
- **Protection incorrectly located:** Protection applied to the wrong location
- **Safety issue when protected area is given up:** Objects or equipment left on the line when handing back said line
- **Safety issue when granting line blockage and possession (LB/Pos):** Signaller issues when granting LB/Pos
- **Train incorrectly signalled in LB/Pos:** Trains signalled into LB/Pos

The annual moving average of line blockage and possession irregularities has remained relatively constant at approximately 10 recorded incidents per period. However, within each irregularity type the trends differ. The moving average of trains incorrectly signalled into line blockages / possessions has increased over the last four periods. Furthermore, there were five cases of objects and equipment left being on the line in Period 9. This is the highest figure since Period 5, 2018/19.

8.2 Key incidents in Q3

- On 19 November, the signaller at Aylesbury cancelled the wrong one of two line blockages and then signalled a train into the one that should have been active. Staff and equipment on site were in a position of safety at the time.
- On 30 November, a member of staff working the conveyer within the long-welded rail facility at Dutton Lane Yard, Eastleigh was killed while operating the machine. Inquiries into the causes are ongoing.
- On 16 December, two members of staff were injured after a wood chipping machine being used in connection with de-vegetation works fell on them. The chipper struck one staff member on the chest and landed on another's leg, breaking their ankle.
- On 2 December two trackworkers were involved in a near miss between Darlaston Junction and Pleck Junction. They were reported to have been standing in the six-foot and had to cross the Up Darlaston line to a position of safety on the Up cess.

8.3 What's being done?

8.3.1 Depot Data Essentials

One of the strategic challenges for depots identified in [LHSBR](#) is that *there is no clear industry-wide picture of risk and safety performance in depots*. To help address this challenge, the POSG depot working group has tasked RSSB's data essentials team to review a mix of industry data bases to develop clearer picture of TOC Engineering Depot Risk. The full report and supporting dashboards from the data essentials work will be delivered in February. A review of the near complete work has been well received by the POSG Depot Working Group.

8.3.2 Network Rail's planning for delivery hub and ISLG support

The Planning4Delivery programme is delivering technology to simplify how work on or near the line is planned and carried out. Once built and tested, the technology will be rolled out from April 2021 and will:

- Enable the digital creation, authorisation and monitoring of safe work packs (SWP)
- Allow track access to be viewed and booked through a new industry-wide line blockage solution
- Contribute to meeting a number of ORR improvement notices and RAIB recommendations

ISLG will support the change project of line blockage solution and the resulting nationwide change to move the industry onto the new system.

8.3.3 ISLG will engage subgroup to consider contractor assurance regime

SPL Powerlines and Network Rail shared the outputs from a recent joint review of sub-contractor management assurance processes. Along with the work that the Safety, Health and Environment Leadership Team (SHELT) has been progressing, the report identified industry improvements and ISLG will establish a working group to produce best practice arrangements for the management of sub-contractors. Including the aims of Project SPEED and the PACE (Project Acceleration in a Controlled Environment) to bring forward proposals to deliver government's public investment projects more strategically and efficiently and to reduce the time it takes to develop, design and deliver vital infrastructure projects.

8.3.4 ISLG and the Mechanical and Electrical Engineering Group tackle risk

At the January ISLG meeting, RSSB presented the latest round-up of data and qualitative information on near misses, isolation incidents and line blockage irregularities. As signaller error continues to be one of the main contributors to line blockage irregularities, ISLG agreed to escalate the issue to SSRG. An update on the Line Blockage Working Group activities will also be requested from Network Rail.

The update represented a continued refinement of the risk picture in areas requested by the group. A memorandum of understanding will be also set up between ISLG and the Mechanical and Electrical Engineering Group to enable both to collaborate in tackling shared risks such as these.

9 Infrastructure asset integrity

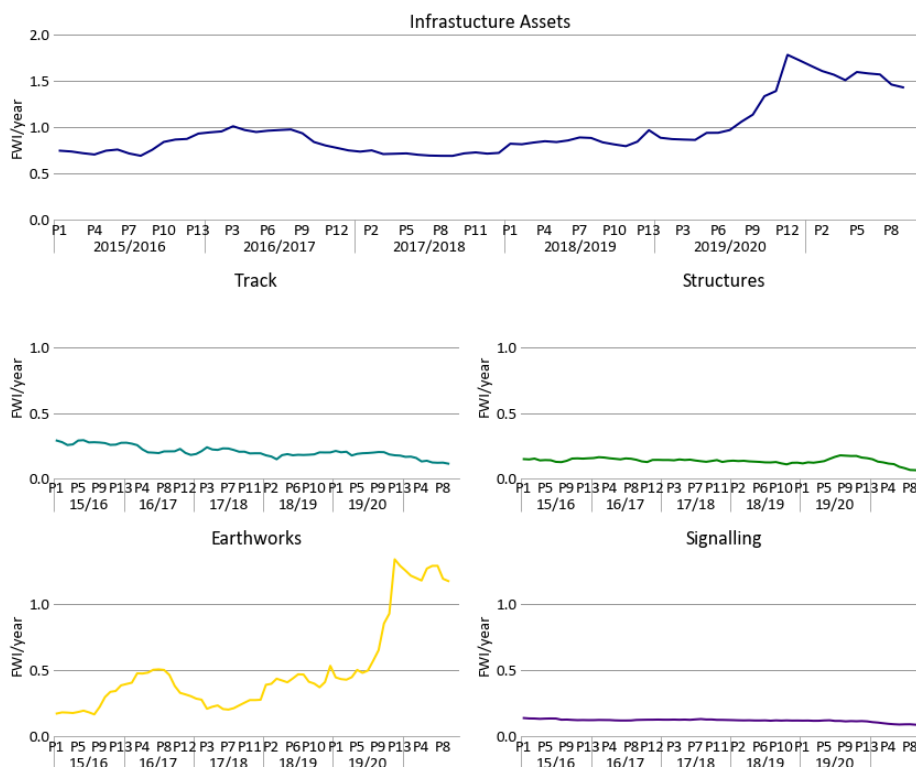
The recent [LHSBR](#) strategy is clear on the challenges facing the industry in the field of infrastructure asset integrity. It notes, the ‘inconsistent understanding about the key safety requirements for infrastructure assets’,¹³ and points to the lack of ‘collaboration across industry to report and address emergent hazards and risks associated with infrastructure resilience and integrity at the interfaces with rolling stock assets’.¹⁴

As noted in the [Annual Health and Safety Report for 2019/20](#), the Asset Integrity Group (AIG) was set up to face – and meet – these challenges.

9.1 Key data

The charts in Figure 18 are taken from the Precursor Indicator Model (PIM), which models the risk from catastrophic train accidents. At the end of Period 9 2020/21, the risk from infrastructure failures stood at 1.43 FWI per year. This is 30.4% of the total risk measured by the PIM, which is an increase of 1% on the previous quarter. The PIM estimates risk based on train accident precursors from the previous 13 periods and the main contributor to infrastructure risk has been earthworks failure.

Figure 18 Train accident risk associated with infrastructure assets



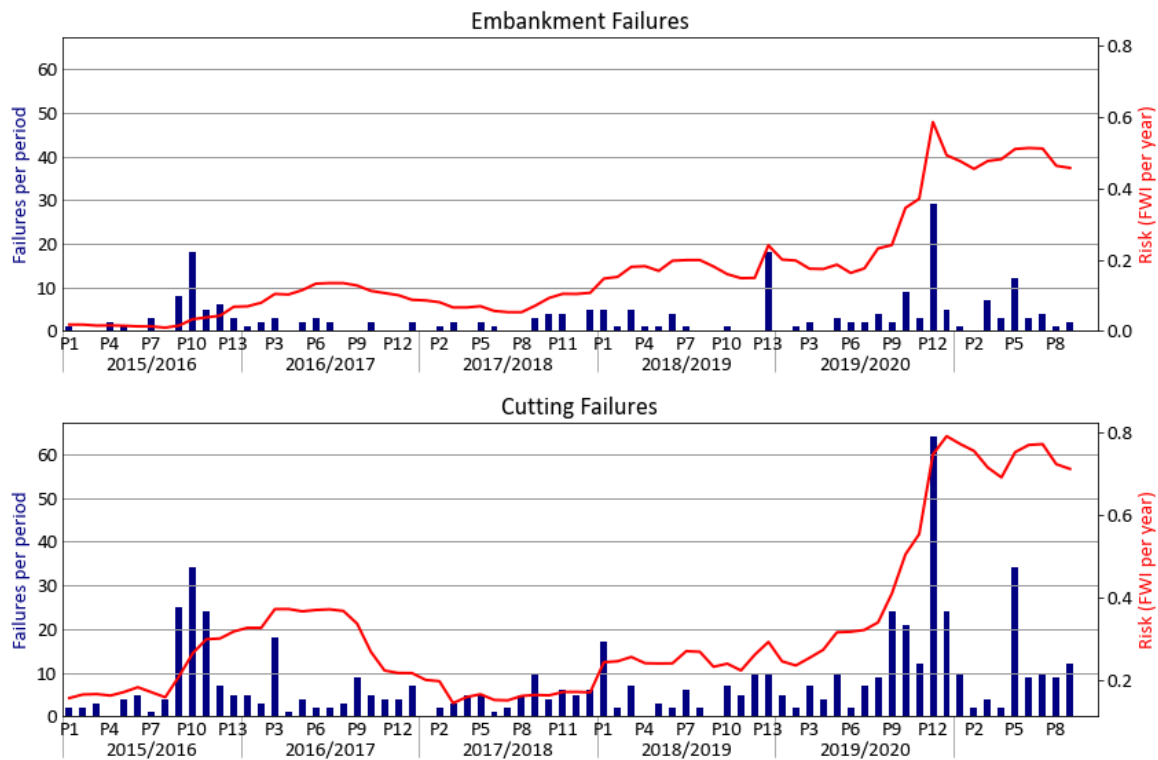
¹³ Strategic Challenge 1.

¹⁴ Strategic Challenge 2.

Overall, the risks due to **Track**, **Structures** and **Signalling** seem to have been following a broadly downward or stable trend over the last 5 years.

Figure 18 also shows risk due to **Track**, **Structure** and **Signalling** failures has fallen at a faster rate since P12 2019/20. One influence on this is the effect of Covid-19. This reduced train services across the country and impacted other risk-influencing factors.

Figure 19 Embankment and cutting failures



The PIM categorises earthworks failures as either embankment or cutting failures. A more in-depth look at these failures can be seen in Figure 19.

The large peak in frequency and FWI per year seen in Period 12 2019/2020 was attributed to the large amount of rainfall and the unusual number of storms during that period (Ciara, Dennis and Jorge). Extreme weather conditions are predicted to increase in frequency and severity as the Earth's climate changes. The 2020 [AHSR](#) highlighted earthworks failures as one of the main risks facing GB rail, its Infrastructure Asset Integrity section contains further analysis.

During the last quarter there was a consistently high number of cutting failures across Periods 7 to 9. These were concentrated around October, during which the UK saw the fifth wettest October since 1862, with 142% of the average rainfall.¹⁵

¹⁵ See <https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index>

Despite the statistical emphasis on earthworks, the following section shows the wider gamut of incidents that fall under the infrastructure asset integrity category.

9.2 Key incidents in Q3

A number of earthworks-related incidents were reported during Q3, all of which resulted in line blockages and delays to services. No injuries were reported in any of the cases:

- On 5 October, a landslide occurred at Roby between the railway boundary of the Chat Moss lines and the side of a private property.
- On 6 October, a landslip occurred at Crabtree crossing, between New Lane and Burscough Bridge. As a result, a block was placed on the Up Main line and a 20-mph caution was imposed on the Down.
- On 21 October, a landslip blocked the line between Chorley and Buckshaw Parkway.
- On 16 November, an unprotected rock face spilled debris on the Up East Coast Main Line at Grantshouse.

Despite the understandable emphasis on earthworks, particularly since the accident at [Carmont](#), broken rails continue to occur. And if there are issues with broken rails, there are also issues with points.

At 02:45 on 11 November, a freight train derailed at Sheffield station. [RAIB is investigating](#). Its preliminary examination found that a series of rail fastenings, intended to maintain the correct distance between the rails, had broken. Initial evidence suggests that some of these were already broken before the derailment.



Source: Image provided by RAIB

The following signalling-related incident was also recorded:

On 27 September, a faulty signalling card knocked out signals between Camden and Park Street. The incident was reported at 10:39 and led to several diversions and one trapped train. The issue was finally resolved at later in the evening.

9.3 What's being done?

- Managing the infrastructure is of course primarily the responsibility of the infrastructure manager, principally Network Rail. Because of the tragic incident at [Carmont](#), as we noted in the Q2 report, emphasis is currently (and understandably) on earthworks. To this end, Network Rail established two Task Forces. One is reviewing the company's management of earthworks; the other is helping it make the best use of weather data in its operational arrangements. RSSB continues to offer its support to these groups:

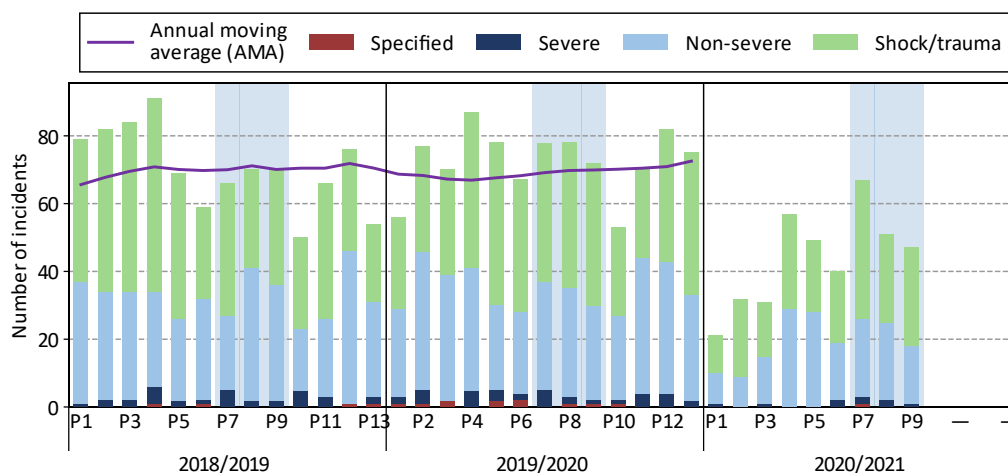
- A briefing was given in September 2020 to explain the function and services provided by RSSB and to offer technical assistance. A further briefing was made in October 2020.
- Additional discussions were held with the Network Rail Geotechnical Technical Authority, which asked RSSB to continue its ongoing programme to improve the Precursor Indicator Model (PIM) and support to consequence modelling.
- The AIG has produced a 'roadmap' to identify specific activities that the group will undertake in order to start meeting the LHSBR strategic challenges. In brief, they are concerned with:
 - Identifying areas needing attention based on analysis, accident investigations, industry consultation and 'horizon scanning'.
 - Supporting initiatives to address challenges facing the industry.
 - Monitoring progress with delivering initiatives and evaluating their effectiveness.
- RSSB continues to support Network Rail and the wider industry in addressing Recommendations 1 and 3 from RAIB's report on the [Cambrian](#) incident. This support includes planned development of a Rail Industry Standard (RIS) to support procurement of software throughout whole lifecycle. Preparatory scoping workshops have been held with both parties. A range of case studies have been developed, which will be used to increase understanding of software-related failures (which can support a 'digital competency' programme) and are also input to the development of the RIS.
- As part of [RSSB's Data Insights initiative](#), a small dedicated team will carry out a 'deep dive' into earthwork and extreme weather specifically focused on the Scotland Route for Abellio.
- The prototype research project [T1143 Devices to guide trains](#) is due to be published in March. Part of this work has been to develop a risk-based methodology to assist in decision making over the fitment of derailment containment devices on infrastructure assets.
- In December, RSSB carried out a derailment risk assessment on an intersection bridge. RSSB is now considering using this risk assessment as a case study to supplement the guidance note GCGN5612 *Rail Traffic Loading Requirements for the Design of Railway Structures*, and to develop a risk assessment tool for online use.

10 Workplace violence and trauma

As we reported in the [Annual Health & Safety Report](#), workplace violence and trauma is, regrettably, a perennial issue in the rail industry. Before the first national lockdown in March 2020, the overall trend in reported workforce assaults appeared to be relatively static. Since then, problems appear to be on the rise – with a high number of reported assaults relative to the number of rail passengers.

10.1 Key data

Figure 20 Assaults to the workforce in trains and stations



The number of assault and abuse incidents occurring to members of the workforce in trains and stations has dropped markedly since the onset of Covid-19 in P13 2019/20: many fewer passengers travelling means that there aren't as many chances for violence to take place.

However, the number of assaults occurring to staff has not matched this reduction: the number observed in Periods 7 to 9 this year was 73% of the levels seen during the same bracket last year. For comparison, passenger journeys were measured at 31% of those seen during Periods 7 to 9 2019/20, which means that the number of assaults reported per passenger journey has actually risen.¹⁶

10.2 Key incidents in Q3

- On 26 October 2020, the conductor on a Lichfield Trent Valley–Bromsgrove service was punched in the face by a youth at Lichfield City station. BTP were informed and met the train at Birmingham.
- Late on 12 November 2020, a passenger alighted a Wolverhampton–Euston service at Sandwell & Dudley and began an incident with the conductor. Two members of

¹⁶ <https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>.

dispatch staff tried to assist, at which point the perpetrator hit and pushed them to the ground. BTP were advised and deployed to the scene. The control logs suggest an increase in incidents involving knives, although thus far passengers (as opposed to staff) appear to be the most affected.

10.3 What's being done?

The Work-Related Violence Strategic Group is developing a strategy to support reduce work-related violence in the coming years.

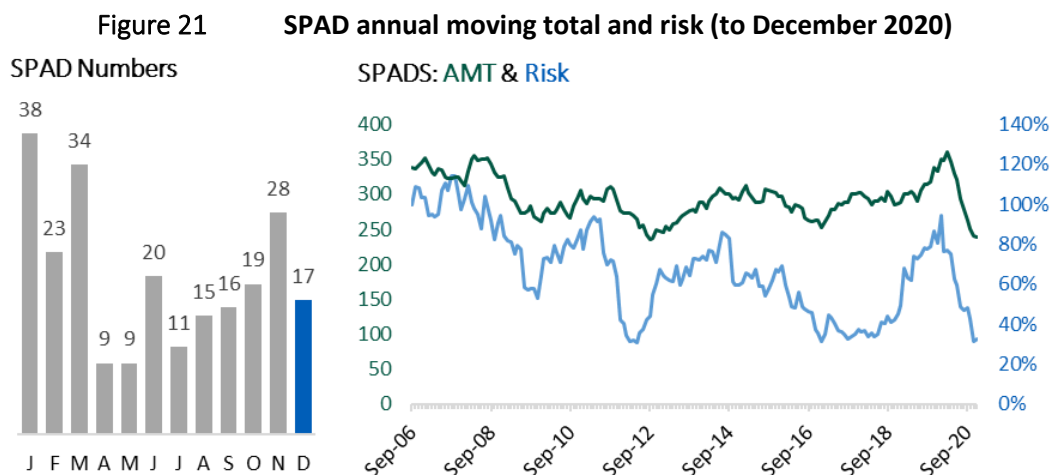
- T1173 *Identifying Measures to Prevent Customer-On-Staff Work-Related Violence in the UK Rail Industry* will determine the most promising workplace interventions for the prevention and management of work-related violence. The project will contextualise insights by interpreting data from SMIS and BTP and critically reviewing rail organisations' work-related violence training and incident management processes. A framework has been developed for evaluating work-related violence policies and will be part of the final report outputs. The project is due to be delivered in May 2021 and will lay the foundation for responding to challenges around the effect of the physical environment on behaviour as well as the inconsistent effectiveness of organisational policies.¹⁷
- Last year, a cross-industry workforce mental health survey examined exposure to psychological hazards and the prevalence of mental ill health. The first survey of its kind, it collected industry specific data to allow companies to prioritise measures for exposure prevention and/or investment in appropriate controls. It will also provide a baseline against which industry initiatives can be measured. The survey is supported by TSSA, ASLEF and the RMT. As of December, the survey has been closed and results are expected to be published in July 2021.

¹⁷ Strategic Challenge 3: The physical environment influences emotional states and behaviour. Good workplace design plays a key role in preventing and reducing the impact of incidents. Insufficient evidenced-based environmental controls have been identified and adopted.
Strategic Challenge 5: Chain-of-care and post-event support is inconsistent with industry guidance at an individual and organisational level.

11 Train operations

Fatal derailments, collisions and buffer stop collisions have become increasingly rare over the last 60 years, thanks to improvements not only in the integrity of our equipment, but also in our training, processes and safety management system arrangements. However, recent accidents have reminded us that there is no room for complacency and that the need to keep analysing and learning remains.

11.1 Key data



At the end of December, the annual moving total number of SPADs stood at 239 and the SPAD risk stood at 49% of the September 2006 baseline level.

Since April 2020—the first full month when measures to respond to the pandemic were introduced—monthly SPAD numbers have been between 30% and 65% lower than the equivalent average month over for the previous five years (2015-2019).

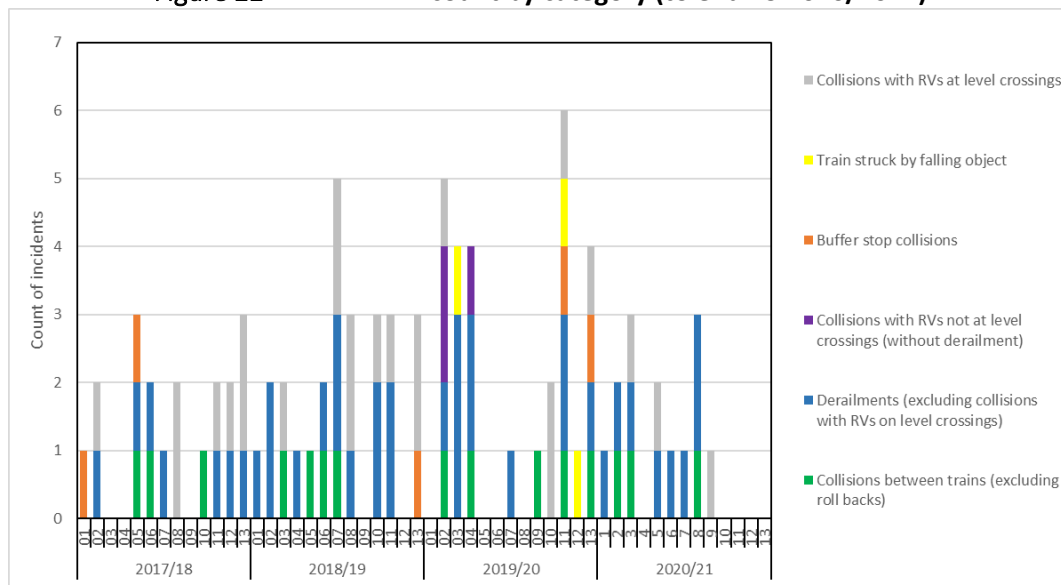
Despite the service reductions, November 2020’s SPAD count of 28 matches the average number over the 5 previous Novembers. This was driven by an unusually high number of empty coaching stock (ECS) SPADs. There were five more ECS SPADs in November 2020 than we normally expect to see.

There were five incidents classified as potentially higher risk train accidents (PHRTAs) during Q3 2020/2021

- On 29 September, a rail head treatment train derailed due to tack spread at Bristol Kingsland Road. There were no reported injuries.
- On 22 October, a passenger train derailed on catch points at Bognor Regis. There were no injuries. [RAIB has published a safety digest on this incident.](#)
- On 3 November, a train rolled back in a platform at Salisbury Station and collided with a unit which had been detached from the service. There were no injuries.

- On 11 November, a freight train derailed at Sheffield station. There were no reported injuries. One wagon overturned and split its (non-hazardous) cargo onto the track. [RAIB is investigating](#). Its preliminary examination found that a series of rail fastenings had broken. Initial evidence suggests that some were already broken before the derailment. Consequently, as the train passed, the rails moved apart.
- On 18 November, a car drove into the side of a freight train at Walkers user-worked crossing, near Yarm. There were no reported injuries.

Figure 22 PHRTA count by category (to end P9 2020/2021)



11.2 Key incidents in Q3

There were no fatalities or major injuries from train accidents in Q3 2020/21, however the following incidents were reported via the daily control logs:

- On 19 October, a 12-car Alton–Waterloo service was routed into Platform 7 at destination, which can only accommodate 10 coaches. The route had not been questioned by the driver. The trainee signaller had wrongly believed the train to have been formed of eight coaches.
- On 30 October, an Upminster–Romford service struck the buffer stops in Platform 1 at Romford station at slow speed. The driver reported that the impact was slight and that there were no passenger injuries. The driver reported the collision was as a result of low railhead adhesion.
- On 11 November, the driver of a Class 802 set the limiter to 145mph instead of 125, causing the train to reach the higher speed near Thirsk.
- On 4 December, two passenger trains passed through a 40-mph emergency speed restriction (ESR) between Laurencekirk and Portlethen at speeds of up to 100 mph. [RAIB is investigating](#) and noted that, until the second overspeed was identified by the

signaller, the only notification to drivers was a printed notice at their booking on points. Lineside signage was not provided.

- On 20 December, a passenger train entered a 5-mph ESR near Beattock, at about 45 mph. The speed restriction was in place because of the earlier failure of an embankment. [RAIB is to produce a Safety Digest on the incident.](#)

11.3 What's being done?

Management of overspeeding

- The Task and Finish Group on overspeeding has begun with the aim of better understanding the controls, risks and hazards associated with the issue. The group will use bow-tie methodology to represent these factors across a number of different types of speed restrictions. It will seek assurance that the recommendations from the previous work on overspeeding in 2014 have been closed.
- An Idea Development Meeting has been held for a project to consider the technologies available to help manage overspeeding more effectively. This project should be completed by summer 2022.

SPAD management

- In-depth analysis into the SPAD data is under way to better understand the causes, types and any other relevant features of the November 2020 SPAD count, which was higher than other months.
- Following the industry SPAD engagement work, a draft SPAD self-evaluation checklist is being developed to help member companies understand how they are performing in the different areas of SPAD management. Additionally, guidance is being developed on the management of multi-SPAD signals.

Train protection

- The Train Accident Risk Group (TARG) and the Train Protection Strategy Group (TPSG) are due align their work more effectively and specify roles and responsibilities to further manage the rollout of an industry train protection strategy.
- Work has continued on the development of an enhanced version of the Red Aspect Approaches to Signals (RAATS) toolkit. The tool's algorithms are being refined and extended so a more comprehensive classification of signal approaches will be possible along with the ability to view the data by operator. The user interface will be updated to take advantage of this new data and will be released later this year.

General group activities

- TARG, the SPAD Risk Sub-Group and Heritage Trains Risk Group have all been working on their roadmaps of work planned for CP6 to deliver against the challenges in LHSBR. These will be available in each group's website once completed.

12 Freight

Since March 2020, we have been reminded of the importance of rail-borne freight. We also note that freight trains are vital to the lowering the country’s carbon emissions in the future. This Q3 report focusses on one of the chief concerns of any operator, derailment. It also looks at other issues affecting freight, along with the work of the National Freight Safety Group (NFSG) in building the sector while maintaining safe operations in these still-difficult times.

12.1 Key data

Figure 23 Freight train derailments

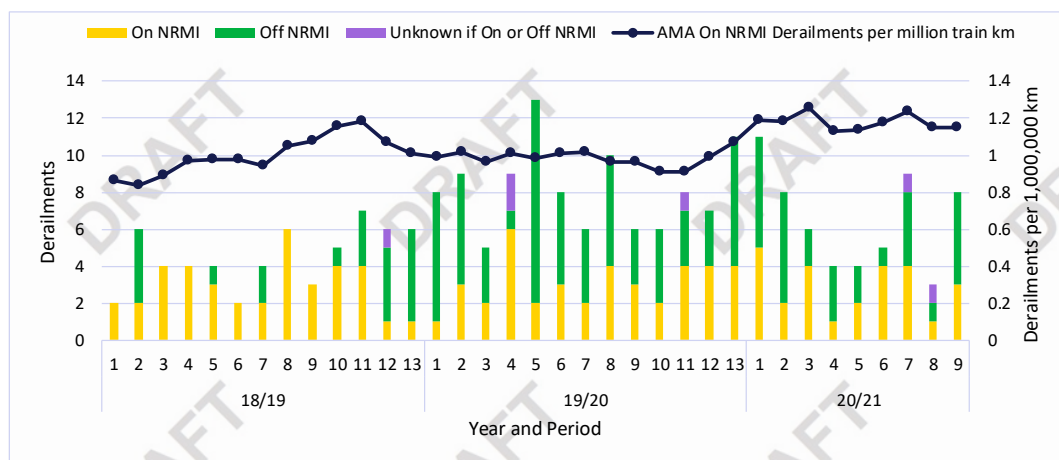
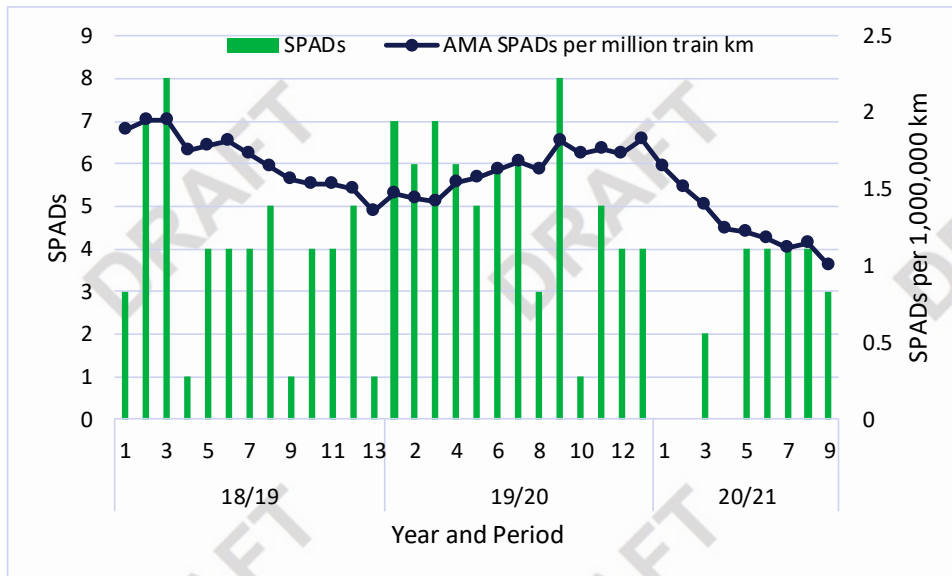
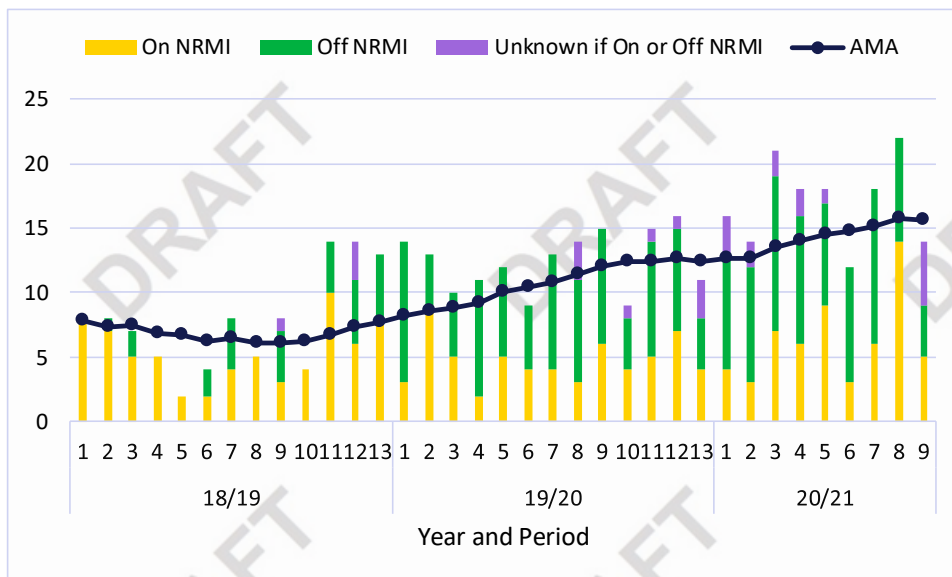


Figure 24 Freight train Signals Passed at Danger (SPADs)



There were 11 SPADs involving freight trains reported in Q3, which is three more than reported in Q2. In Q3 2019/20, there were 17 incidents reported in total. It is worth noting that Q3 2020/21 only saw a 1% reduction in train miles run, compared to Q3 2019/20.

Figure 25 Trespass and Vandalism (Freight)



There were 54 incidents of trespass and vandalism reported in Q3, which is six more than reported in Q2. The annual moving average has been on the rise since Period 9 2018/19 and it peaked in Period 8 2020/21. It is thought that there are many more cases occurring than are reported into SMIS. Trespass is a focus for freight operators,

particularly in light of recent accidents and prosecutions and NFSG, are promoting better reporting and sharing of trespass event information. This is likely to have caused an increase in reported events, particularly for events occurring off network.

12.2 Key incidents in Q3

- Most derailments during the reporting period occurred in or around yards, depots or sidings. At Millerhill Yard on 11 October, for example, a wagon came off during a shunt move, damaging a set of handpoints in the process. On 15 October, a trainee driver took a locomotive onto an unused section at Woking Yard, traversed over the flag and sleepers protecting it, and derailed on the substandard track beyond.
- NFSG is also set to take a closer look at incidents involving ground frames, which are many and varied in type across the network. On 10 December, for example, a train derailed on a de-railing device at Briggs Ground Frame. The train was moving at low speed under the control of a shunter. The driver reported seeing the point lever for the de-railer move at the time of the incident.

- RAIB has also published two reports on derailment incidents during the reporting period:

On 23 January 2020, a wagon in a heavily loaded freight derailed on a small radius curve near [Wanstead Park](#). RAIB found that the condition of the timbers at the point of derailment had severely deteriorated because of rot, but that this was concealed by their good exterior condition. Examination of the first wagon to derail and its maintenance records indicated that it had experienced unusually rapid wheel wear over several years. It is possible that this meant it was imposing higher than normal lateral forces on the track. This incident highlights the impact of asset integrity on freight operations. This is also reflected in the incident at Sheffield on 11 November 2020, which involved broken rail fastenings, and which is discussed in Section 9.

On 23 March 2020, a passenger train struck a locomotive that had derailed after colliding with the buffer stops at the end of a siding south of [Bromsgrove](#) station. The driver did not stop the locomotive because he became distracted by personal issues arising from the national Covid-19 lockdown announced earlier that evening. This incident shows the impact societal issues can have on the railway.

- RAIB also published its report on the wagon runaway, which occurred at [Clitheroe](#) on 9 March 2020. This incident is also covered in Section 9.
- Aside from derailments, a number of operational incidents also occurred during the reporting period. Two involved wrong routing: on 17 November a freight was sent the wrong way at Wimbledon West Junction. The driver took the route and came to a stand at Wimbledon Chase. On 15 December, a similar incident occurred, in which a train was routed onto the Up Fast instead of the Goods line at Peterborough. The train was unable to proceed as a possession was in place.

12.3 What's being done?

Condition of Freight Vehicles on the Network (CFVN):

- Information has been gathered by individual stakeholders regarding freight vehicle management and the status of in service freight vehicle management and Entity in Charge of Maintenance (ECM) application, including facilitating a workshop with all FOCS to review and understand the freight train preparation process and how this is applied consistently within the sector.
- RSSB are developing a prototype freight dashboard to support the CFVN project. The dashboard will provide data from SMIS on derailments, collisions, handbrakes left on and wagon defects. The dashboard will be a foundation step to supporting the freight community in more easily identifying safety trends and directing resources to investigate them. The project manager for CFVN will have the opportunity to use and feedback on the dashboard during Q4.

Freight Derailment Prevention Group:

- This group is now fully established and providing monitoring on key data around lateral and longitudinal imbalances, Wheel Impact Load Detection (WILD) & Lookup Headcodes Easily (LUCY) data quality and track monitoring. The lead of the Freight Derailment Prevention Group is reporting progress findings and risks into the NFSG.

Freight SPADs:

- NFSG have now appointed a project lead for the project charter commissioned to review freight SPAD performance. The representative from RFOG will also represent the Freight sector on the SPAD Risk Sub Group (SPAD RSG).
- As part of the SPAD precursor work RFOG have carried out a review of the FOC's process and procedures for managing TPWS activations. Project delivery will be monitored by NFSG through their risk project charter and have set key objectives in the development of a collaboratively agreed Freight SPAD strategy which is aligned to the Industry SPAD strategy.

Trespass at Freight Locations:

- NFSG are working collaborative with industry stakeholders. Two stakeholder sessions have been conducted with freight operators, Network Rail, BTP, RSSB and Freight End Users (FEU) regarding the outputs from the industry research programmes T1168, T1182 and T1183. The sector will be aiming to hold a trial at a freight location in the early part of 2021 (Covid-19 restrictions permitting) to apply collaboratively the new trespass risk assessment.

SMIS users:

- SMIS data health checks were completed with freight operators. These checks provided an opportunity for data inputters to provide feedback on their SMIS experience and for RSSB to provide help with any known issues. As a result of these health checks, RSSB are now planning freight specific SMIS user groups for Q4.

13 Rolling stock asset integrity

Stakeholders in the industry and its supply chain work together to minimise the incidence of unsafe failures of rolling stock assets. Recent RAIB reports have highlighted issues of compliance with standards, compatibility with existing technologies and software integrity. Digital asset integrity on board rolling stock has come into focus recently due to the release of RAIB's report into the loss of safety critical signalling data on the [Cambrian line](#) in 2017. This highlighted the need for an industry wide focus on improving safety assurance for high integrity software-based systems and to improve safety learning from failures of such systems.

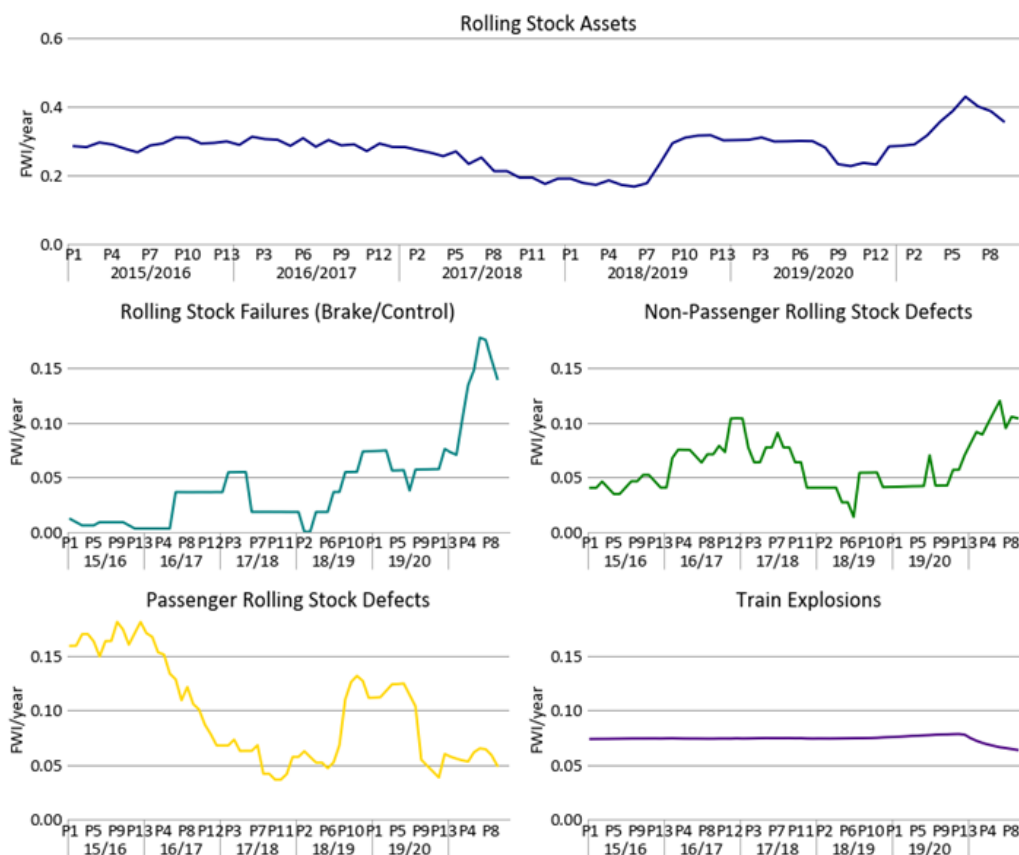
As noted in the [2019/20 AHSR](#), the AIG was set up to face and meet these challenges.

13.1 Key data

The charts in Figure 26 are taken from the Precursor Indicator Model (PIM), which presents the risk from catastrophic train accidents.

Rolling stock failures accounts for 7.6% of all the risk calculated by the PIM. The consistency and quality of rolling stock defect reporting into SMIS remains an issue and data quality impacts this component of the PIM to a far greater extent than the others. The PIM uses precursors over the past 13 periods to estimate risk. Currently, the largest contribution comes from ***Brake/Control failures***.

Figure 26 Train accident risk associated with rolling stock assets



There is inconsistency in reporting of rolling stock faults – especially RIDDOR-reportable ones – and reporting practices vary between operators. Some of this inconsistency arises from RIDDOR reporting requirements and RSSB and ORR are working to bring greater clarity to reporting guidance.

From Figure 26 we can see that there has been a sharp increase in the modelled risk from rolling stock over the last six months. The driving force behind this increase is the number of reported **Rolling Stock Failures (Brake/Control)**.

The recent increasing trend of **Brake/Control** failures was attributed to an increase in reporting by a single train operating company. Points to note are:

- This component of the PIM is based on relatively few precursor events
- Brake/control failures are not risk-weighted within the PIM to account for the potential severity of each incident (unlike some other precursors)
- Reporting practice can vary between operators and over time (see Figure 26).

The category **Passenger Rolling Stock Defects** covers all failures associated with rolling stock that are not to do with brakes/control. There was a clear downward trend in estimated risk over the financial years 2016/17 and 2017/18. However, between P6 of

2018/19 and P9 2019/20 there was a bulge in risk calculated. During this period, 11 of the 24 passenger rolling stock defects occurred during November 10 were described as wheel flats.

The risk due to **Train Explosions** is relatively low. This component of the PIM is based on an estimate of the risk from train explosions from the Safety Risk Model and the recent modelled reduction is an artefact of how the model accounts for reduced activity due to Covid-19.

13.2 Key incidents in Q3

The following incidents have been recorded during the reporting period, all involving freight stock:

- On 9 October, a freight train divided at Maidenhead.
- On 13 October, a panel on a wagon peeled possibly foul of adjacent line as the train passed through the Norton Bridge area. The train was allowed to proceed to a loop with the adjacent line blocked.
- On 28 October a bent spreader bar forced a wagon's brakes onto the wheels, causing sparks to fly at Thurston.
- On 30 October, two coupling housings from two wagons fell to the track and were struck by a passenger service at Albany Park.
- On 4 December, a Wentloog–Daventry freight was found to have an unsecured load curtain as it was standing at Worcester. The driver carried out an inspection and reported the curtain secure at 21:40. The train came to a stand again on the Up Stourbridge line at Lye with the load unsecured again and a metal pole fouling the platform. The driver secured the load once more, having sourced two ratchet straps.

Two RAIB reports were also published during the reporting period with implications for rolling stock integrity:

- On 24 November 2019, the barriers at [Norwich Road level crossing](#), near New Rackheath, Norfolk, lifted as a Class 755-formed passenger train was approaching. Two road vehicles crossed in front of the train, which reached the crossing less than half a second after the second road vehicle was clear.

RAIB found that there was contamination of the railhead in the area caused by leaf-fall and atmospheric conditions. Furthermore, there was a narrow running band on the railhead, because the newness of the rolling stock meant it had wheel profiles in similar condition. This left the wheel-rail interface vulnerable to a poor electrical contact in the event of contamination and caused the level crossing equipment to misinterpret the position of the train.

- On 9 March 2020, a loaded wagon ran away from a siding located within the Hanson UK cement works in [Clitheroe](#). It travelled about 0.75 miles on a falling gradient,

before it derailed at Horrocksford Junction, where the freight-only branch from the works connects to the main lines.

As it ran away, the wagon broke through the gates at the exit from the works and ran over a level crossing on a public road, causing two cars to stop. Soon afterwards, the wagon passed over a second crossing on a private road. On arriving at Horrocksford Junction, the wagon derailed at a set of trap points¹⁹ (designed to protect the main lines). The derailed wagon stopped clear of the nearest main line and no trains were nearby at the time of the derailment. No one was injured in the accident, although there was minor damage to the wagon and severe damage to the track.

RAIB found that the wagon ran away because its handbrake was not effective at holding it in place on the gradient where it had been stabled. This was due to a combination of insufficient brake force being provided by the applied handbrake and the fully laden wagon being stabled on its own and on a gradient falling towards the exit from the cement works. The staff who stabled the wagon did not know the handbrake would not hold the wagon in place after they applied it, as the wagon's brakes were already pneumatically applied when they did this, and over time, the air in the brake system leaked away until the air brake was released. It is possible that a maintenance examination that was due before the accident, but which was not carried out, would have found the problem with the handbrake's effectiveness.

13.3 What's being done?

- RSSB continues to support Network Rail and the wider industry in the resolution of the Recommendations 1 and 3 from the RAIB report on the loss of temporary speed restrictions on the Cambrian line. The incident involved software on infrastructure, which also influenced rolling stock operation. This support includes planned development of a Rail Industry Standard (RIS) to support the procurement of software throughout its 'whole lifecycle'.
- In November, the [strategy to define future standards requirements](#) was launched. This focuses on three main areas:
 - **Supporting economic regeneration, by increasing freight.** Standards will support economic regeneration by facilitating a reduction in the cost of designing and operating the railway. This will help the railway recover from Covid-19, increase freight competitiveness, and support government and industry initiatives to invest in infrastructure and the regions.
 - **Enabling innovation.** The strategic vision for rail supports the use of digital technologies to make better use of the existing infrastructure and capacity. Standards will support the introduction and safe integration of innovative technologies, for example low-carbon options such as hydrogen, multi-mode trains and battery technology.

¹⁹ A set of points designed to derail runaways like this in order to protect the main running lines.

- **Post-Brexit standards landscape.** RSSB will support the Secretary of State for Transport's decision-making process for alignment or divergence from European regulations by using existing industry-agreed governance arrangements, taking advantage of new opportunities or maintaining alignment, based on impartial, objective analysis and industry consensus.
- In December, RIS-2646-RST issue 1 (*Axle bearing maintenance*) was published. The standard has been written by a panel of experts from the BSI Bearings and Lubricants mirror group and addresses maintenance policies, plans and competence management with an additional section for post-UAT axle end reassembly.
- RSSB has recently been supporting the Rail Delivery Group (RDG) to prepare a business case for the national rollout of Double Variable Rate Sanders (DVRS). This uses detailed research findings on braking distance, time and consistency improvements to model operational performance benefits and estimate costs and payback timescales. The business cases are being presented to Regional Performance Boards and a range of operational and engineering groups. These recognise that priorities for funding and opportunities for retrofitting will vary across operators and devolved routes. The focus is now on the logistical and procurement steps of a national DVRS rollout. Train operator Northern is working with the vehicle owners to look into fitting DVRS to its Class 195, 323, and 333 fleets.
- RSSB is currently in discussion with ORR regarding the ambiguity and inconsistencies in the reporting of train faults as required by the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (**RIDDOR**). A strategy to address this issue is duly being formed. RSSB, supported by AIG and NFSG in particular, will focus SMIS data improvement efforts on rolling stock faults and failures.

14 Capability improvement

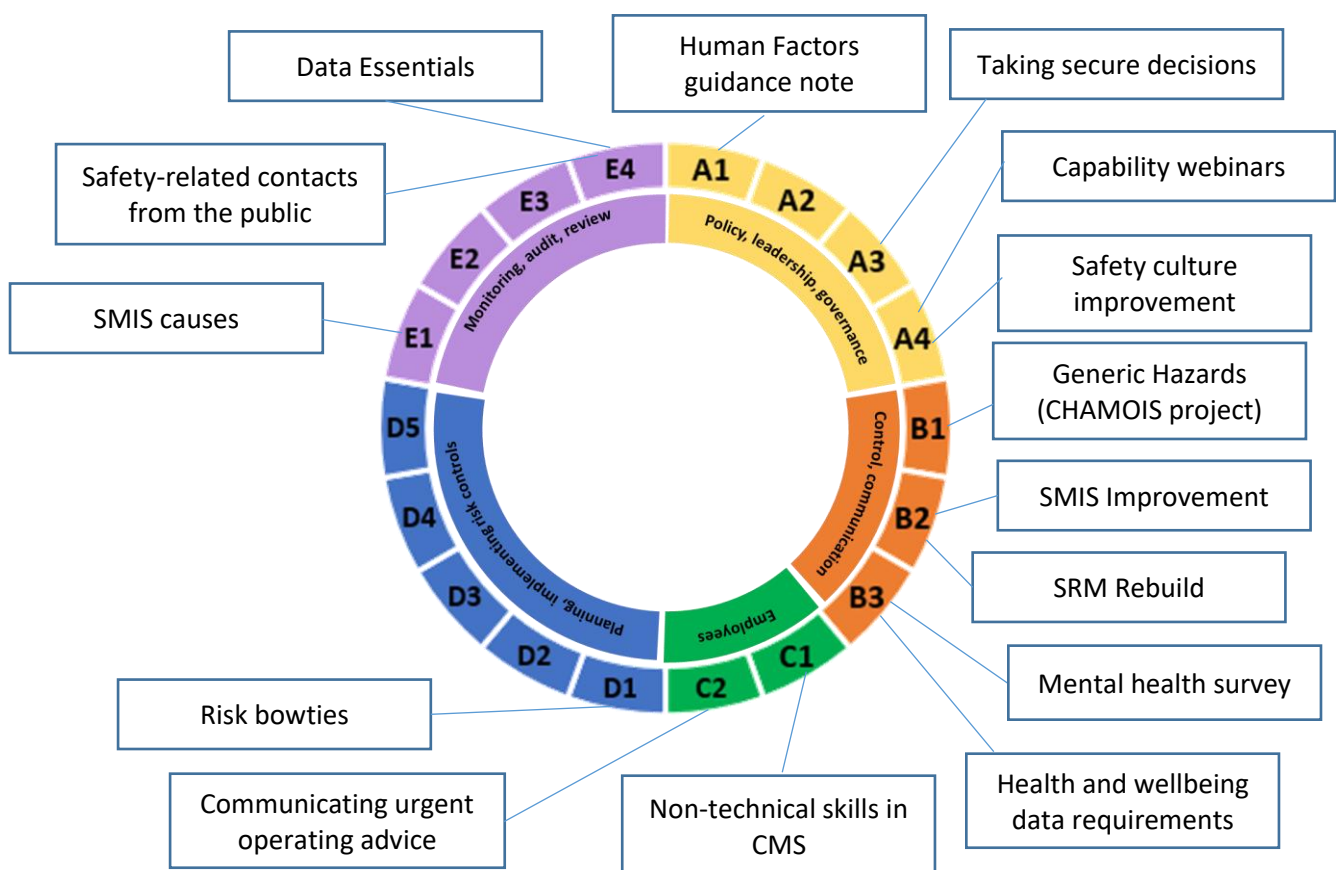
The **Risk Management Capability Group (RMCG)** oversees cross-industry initiatives to improve risk management capability and meet the strategic challenges in the **Improving our capability** section of LHSBR.

Its programme of work:

- Provides the essential foundations for a risk-based approach to health and safety management.
- Supports and enables the other LHSBR risk groups to meet their strategic challenges, for example through the application of human factors and risk assessment expertise.
- Helps rail operators manage health and safety risk more effectively, for example through direct support, training, guidance and tools.

Figure 27 shows the activities discussed in this chapter mapped to the strategic challenges identified in LHSBR.

Figure 27 Current initiatives to improve our risk management capability²⁰



²⁰ The references provided in the diagram refer to the sections in the Improving our Capability chapter of LHSBR.

14.1 What's being done?

14.1.1 Publication of Human Factors Guidance Note

The guidance note, "Application of human factors within safety management systems" has gone through the standards process and, following incorporation of consultation comments, will be published in March 2021. RSSB will utilise its Human Factors operational experience to understand members' Human Factors needs and support the implementation of the guidance note in 2021/22.

14.1.2 Integrating Non-Technical skills within a competence management system

This project will establish guidance for organisations across the industry to integrate non-technical skills (NTS) within a competence management system (CMS). Interviews with 30 representatives from 15 rail organisations identified strong support for the research and areas for further NTS implementation. Some areas for development include:

- Simplifying and clarifying the language and messaging around NTS for all staff
- Helping companies communicate the value of NTS to senior leadership
- Producing more practical resources for developing NTS (e.g. toolkits)
- Reviewing the existing work on NTS and update the science
- Producing materials tailored to different groups or levels of end user
- Outlining and promoting the benefits of NTS.

These areas will be fed into the research and implementation of this project.

14.1.3 Safety culture improvement

Safety culture is often highlighted as a causal factor in accidents, but it is not currently clear how safety culture is being developed across the rail industry. The proposed programme of work to improve safety culture will consist of three phases in 2021/22. Phase 1 will cover the consolidation of safety culture knowledge within safety critical industries, including rail. Phase 2 will identify the industry requirements covering members of LHSBR risk groups, industry organisations and stakeholders. The outputs from this work will define the materials and support to develop industry improvements in member safety culture.

14.1.4 SMIS improvement

SMIS is GB rail's solution for structured, high-quality safety event information. RSSB manages the system and events are input by operators from across the industry.

New personal accident form

The new SMIS personal accident form went live on 21 January. This combines eight reporting forms into one simpler form. The aims of the new form are to make input more efficient and improve data quality.

SMIS improvement programme

RSSB is undertaking further work to make SMIS quicker and easier to use, improve data quality and secure SMIS as the trusted source of industry safety event data. The programme will extend the work personal accident form simplification to all other areas of the SMIS data model. It will also define and pilot a method for automatically transferring data from company systems into SMIS.

SMIS data quality

The SMIS annual data quality health checks have been completed. Each SMIS reporting organisation has received a health check report, the results have been shared with RSSB Board and will be summarised in the 2020/21 AHSR.

14.1.5 Data Essentials

RSSB is undertaking a six-month project on Data Essentials. This will deliver novel data-driven insights at pace while building the foundations of new data sources, tools, techniques, and ways of working for an improved data offering. The team is working closely with experts from RSSB, its industry groups and member companies.

The first two areas of focus are:

- Depot safety: 11 January to 6 February (see workforce safety chapter)
- Station safety: 9 February to 12 March (see station operations chapter)

The team has also been developing a freight safety dashboard.

14.1.6 Safety Risk Model rebuild

RSSB has started work to rebuild the Safety Risk Model (SRM), which provides quantified estimates of the risk from rail operations and maintenance. The overarching principle of the rebuild is to create a simpler SRM structure that is more flexible than the current model and better meets requirements for localized risk assessment. This can be used as a starting point for further development to meet specific needs. The project will take a modular approach to structuring and building the model, which will allow delivery of incremental benefits prior to full completion in autumn 2022.

14.1.7 Change to injury categories and weightings

On 21 January, changes were introduced to how injuries are categorised and weighted to bring injury categories into line with current RIDDOR requirements. The new weightings have been incorporated into this LHSBR progress update (see Appendix B).

14.1.8 Health and wellbeing data requirements

The aim of this project is to identify appropriate data, incentivisation mechanisms, system architectures, design requirements and technology to support the collection and monitoring of key employee health and wellbeing data and KPIs. Engagement has been undertaken with rail companies and health technology organisations. The ORR and DfT have indicated that endorsement of the identified health KPIs should be possible to incentivise uptake. Publication of the project findings is expected in March 2021.

14.1.9 Cross-industry mental wellbeing survey.

This will examine the prevalence of exposure to psychosocial hazards and mental ill-health in rail industry workers, examining the association between psychosocial hazards and mental health outcomes. This is the first attempt at a rail specific cross-industry health survey. It is anticipated that it will yield learning on the viability of this approach to data collection, informing how capability can be improved. Data collection is now complete with over 3,900 respondents. Outputs will include sector specific analysis of mental health and workplace risks. Delivery is expected in July 2021.

14.1.10 Improving the communication of urgent operating advice

[RIS-3350-TOM](#) defines the requirements for reporting and disseminating urgent operating safety information arising from operating incidents and misunderstanding of operating rules, regulations or instructions and [Rail Notices](#) system is provided by RSSB as a central system through which railway undertakings can share urgent operating advice. RIS-3350-TOM and the Rail Notices system are not well used. To understand why, a short survey was sent to contacts listed in the system in January 2021.

The initial results suggest a possible lack of awareness as well a lack of clarity around the scope of RIS-3350 and under which circumstances it should be used. Actions will be defined to address concerns raised by the Rail Notices users by increasing clarity on the scope of RIS-3350, raising awareness and promoting its use. There will also be a need to monitor the usage of RIS-3350 and provide suitable challenge when it should have been used, possibly through the LHSBR risk groups.

14.1.11 Managing safety-related contacts from members of the public

Research identifying the current practices in managing safety-related contacts from members of the public has been completed. The project was triggered by learning from the fatal tram derailment at [Sandilands Junction](#) in 2016.

The work – comprising interviews and an industry workshop – identified that:

- Effective processes for managing reports from the public exist but are not consistently and universally applied

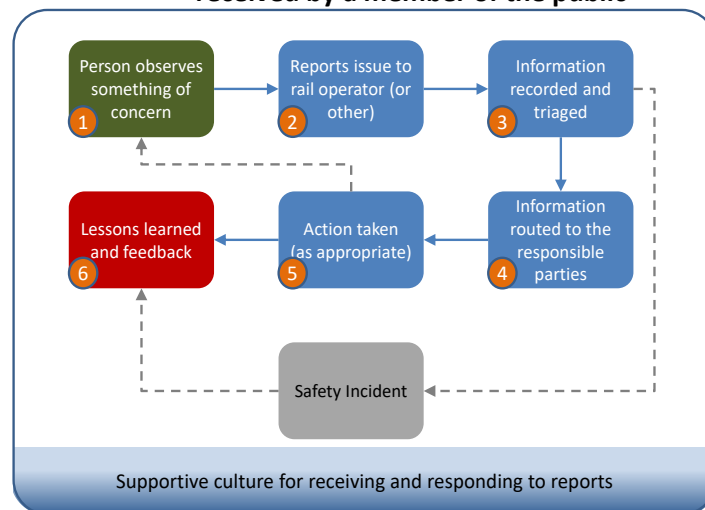
- Their successful application is reliant on a supportive culture that prioritises safety and supports staff in responding appropriately

The reports of the research will be available from both the [RSSB website](#) and from [SPARK](#).

Based on the findings of the project, RSSB will produce high-level guidance that organisations can use to review their current processes and practices for handling safety-related contacts from members of the public. This will be structured around the six-stage process shown in Figure 28, with questions and supporting material to help identify barriers and how to overcome them.

The project team have been engaging with the ORR team that is updating its complaints handling guidance.

Figure 28 The broad process followed by the rail industry when a report is received by a member of the public



14.1.12 Risk bow ties

Risk bowties can aid understanding of threats, risk controls and their effectiveness. RSSB—supported by an industry working group—is producing good practice guidance on the use of risk bowties and developing a library of industry-level bowties. The guidance will be available around the end of March 2021.

The project is also establishing Bowtie server software so that RSSB members can share, adapt and collaborate on risk bowties. The work aims to engage a wide audience, including experienced practitioners, those who want to use bowties more, and those who are unfamiliar but could benefit from using them.

14.1.13 Generic hazards project

The Common Hazards for the Management of Industry Safety (CHAMOIS) project is developing a list of generic hazards to cover the railway system to support effective and

efficient risk assessment and allow linking between hazards and requirements in Standards. The project is under way and should be completed by the end of 2021.

14.1.14 Taking Secure Decisions

There is no mature and commonly accepted combined methodology for safety and security risk assessment, nor a combined set of legislative requirements.

RMCG commissioned a position paper to review the current position, including legal frameworks and how security-informed safety is managed in practice, and to propose options for further work to improve coordination and cooperation between the safety and security assessment processes. This will be progressed in co-ordination with other parties, including AIG.

14.1.15 Capability webinars

A capability webinar will be taking place at 11:00 on 29 March 2021. The theme is *Managing risk through the pandemic and beyond*. With speakers from Southeastern, LNER and RSSB, it will cover:

- An operator perspective on how we managed risk through the pandemic and what the pandemic has taught us about risk
- Understanding hazards and risk controls using risk bowties
- Modelling and forecasting risk, from safety to Covid-19 and back again.

Registration for the webinar is opening soon and will be available on the [RSSB website](#).

The capability webinar is also supported by a [human factors capability webinar](#) on 19 March 2021, with speakers from Network Rail, Transport for Wales Rail Limited, GB Railfreight and RSSB.

Appendix A Risk Groups and Contacts

Risk Area	Lead Group	Contact
LHSBR governance	LHSBR Executive Advisory Group Chair – Johnny Schute, RSSB	Ann.mills@rssb.co.uk
System safety risk (overview of all safety risk areas)	System Safety Risk Group Chair - Steve Murphy, MTR Crossrail	SSRG@rssb.co.uk Ann.mills@rssb.co.uk
Workforce Health and Wellbeing	Rail Wellbeing Alliance (RWA) Chair – John Halsall, Network Rail	Health&Wellbeing@rssb.co.uk Michelle.O'Sullivan@RSSB.CO.UK
Public Behaviour	Suicide Prevention Duty Holders Group (SPDHG) Chair – Patrick Verwer, GTR Trespass Risk Group (TRG) Chair – Oliver Bratton, Network Rail	SSRG@rssb.co.uk Trespass-Risk-Group@rssb.co.uk Siona.Vass@rssb.co.uk
Station Operations	People on Trains and Stations Risk Group (PTSRG) Chair - David Wornham, South Eastern Railway	PTSRG@rssb.co.uk Katherine.Haylett@RSSB.CO.UK
Road Risk	Road Risk Group Chair - Steve Enright, Abellio Group	RRG@rssb.co.uk Tavid.Dobson@RSSB.CO.UK
Level Crossings	Level Crossing Strategy Group (LCSG) Chair – Rob Wainwright, Network Rail	SSRG@rssb.co.uk Jay.Heavisides@rssb.co.uk
Fatigue	Health & Wellbeing Policy Group (H&WPG) Fatigue lead - Dan Basacik, RSSB	Dan.Basacik@rssb.co.uk

Risk Area	Lead Group	Contact
Workforce Safety	Infrastructure Strategy Leadership Group (ISLG) Chair – Andrew Adams, SPL Powerlines UK Limited	ISLG@rssb.co.uk Darryl.Hopper@RSSB.CO.UK
Infrastructure Asset Integrity	Asset Integrity Group Chair – George Bearfield, Rock Rail	SSRG@rssb.co.uk Emma.Taylor@rssb.co.uk
Workforce Assaults and Trauma	People on Trains and Stations Risk Group (PTSRG) Chair - David Wornham, South Eastern Railway	PTSRG@rssb.co.uk Katherine.Haylett@rssb.co.uk
Train Operations	Train Accident Risk Group (TARG) Chair - Justin Willet, GTR	TARG@rssb.co.uk Philippa.Murphy@rssb.co.uk
Freight	National Freight Safety Group Chair – Dougie Hill, Direct Rail Services	SSRG@rssb.co.uk James.Lonergan@rssb.co.uk
Rolling Stock Asset Integrity	Asset Integrity Group Chair – George Bearfield, Rock Rail	SSRG@rssb.co.uk Emma.Taylor@rssb.co.uk
Capability improvement	Risk Management Capability Group Chair – Ali Chegini, RSSB	RMCG@rssb.co.uk Marcus.dacre@rssb.co.uk

For more information please
visit our LHSBR web page **here**.



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