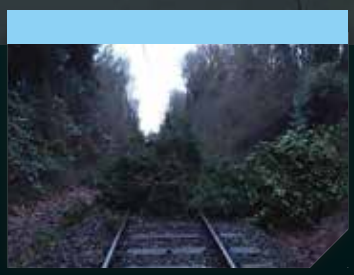
RIGHT track

ISSUE 11 // FEBRUARY 2015

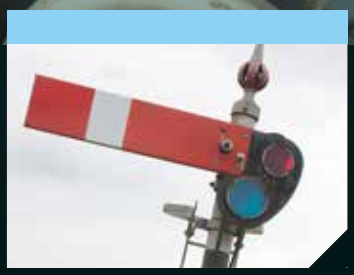
stepping up

HOW THE RAIL INDUSTRY IS WORKING TOGETHER TO TACKLE RISK AT THE PLATFORM-TRAIN INTERFACE



HOW WAS AUTUMN FOR YOU?

LESSONS FROM BRIDGEWAY CROSSING



TACKLING MULTI-SPAD SIGNALS

RSSB

Part of the operational safety programme sponsored by industry

RIGHT track

headlamp

Welcome to Issue 11 of Right Track

Believe it or not, rail passengers in Britain have stepped on and off trains more than 15 billion times over the past five years.

So when a combination of maths and experience tells us that the biggest risk to passengers is at the platform-train interface (PTI), it's tempting to draw comfort from the fact that the vast majority of journeys start and end without incident.

And why not? In a period when Clapham Junction saw 25,287,250 entries and exits, only 40 incidents at the PTI occurred. Similarly, just 19 incidents occurred for 27,152,622 comings and goings at Glasgow Central.

However, nonchalance and overconfidence cannot hide the fact that there are between 1,250 and 1,500 injuries a year at the PTI, with around 96% involving passengers coming into contact with trains. In the last five years (April 2009–April 2014), there were 18 fatalities as a result of PTI incidents.

The prospect of greater passenger numbers combined with experience of high-profile accidents has prompted industry to join up on strategy. Indeed, the very first edition of Right Track nearly three years ago covered PTI in-depth including an industry workshop which led ultimately to the strategy and media campaign you can read about on page 6.

Rail is rightly regarded as a safe way to travel. But it's uplifting to be part of an industry committed to improving itself, and alert to the risks to its future performance.

In this issue

We look at the collision at Bridgeway user-worked crossing in our RAIB report review and explore how train operators manage the road-driving risk in taxi use for staff transit. We also look at station safety, PTI, SPADs, speed restrictions and adhesion and the recent level crossing collision in New York. It's all part of *your* Right Track...

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Right Track can be downloaded from Opsweb -

www.opsweb.co.uk

Right Track is produced by RSSB through cross-industry cooperation. It is designed for the people on the operational front-line on the national mainline railway, yards depots and sidings and London Underground. Their companies are represented on various cross-industry groups, including the System Safety Risk Group, managed through RSSB, and Right Track is overseen by a cross-industry editorial group.

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tell us... how was autumn for you?

Photo: Network Rail

Autumn is a challenging time for the railway. We carry more people in autumn than at any other time, yet the conditions we have to operate in are sometimes the most challenging.

Rail companies get together to understand these issues better through the Adhesion Working Group (AWG). Huge amounts of time and effort go in to combating the effects of autumn, but we've still got a long way to go.

We want to get some insights into train drivers' experiences of autumn 2014. The aim is to work out where the gaps are in our knowledge so that we're in a better position to help prepare the train driving community for future autumns. Please tell us what you think via this short survey -

The deadline is 15 April 2015, so get your views in quickly!

You can find the survey on SurveyMonkey here: https://www.surveymonkey.com/s/autumn2014driversurvey

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RAIB report brief: collision at Bridgeway crossing

Bridgeway user worked crossing Photo: RAIB

Such a quiet place, Bridgeway crossing. Save for the noise of the trains, of course. And the cars. Just north of Shrewsbury, it seems almost in the middle of nowhere. But everywhere's somewhere, and tonight this somewhere's someone's place of work.

It's late in the evening, and a man is preparing himself for the shift ahead. He'd not had an easy year – a COSS, he'd taken a 12-month secondment to the track maintenance section, but had been off sick for half that time and had failed his last knowledge test. Back in the saddle due to someone else's illness for a change, it felt good to be a COSS again. It was like a new start…

Of course, he wasn't alone. There were two others: a track worker and a welder, who were to set about making a repair to the line.

When the COSS contacted the signaller to arrange protection, he decided to only ask for a block of the Down, though he agreed to use detonators because the team were planning to use an on-track trolley to take their equipment to site. When talking to the signaller, the COSS said he was unfamiliar with the new signalling system that had been commissioned while he was off sick.

The COSS put down the dets at the protecting signal himself. Meanwhile, the welder headed for Bridgeway UWC in his van, arriving there around 23:45. He opened the crossing gate, reversed the van towards (but not onto) the Up line, and waited for the COSS and the track worker. As the clock ticked on, he checked a job sheet and realised that the repair they had to do was actually on the Up line.

The others arrived about seven minutes later. The COSS gave authority for the welder to go on the line, and the track worker immediately began helping unload the van. The COSS, meanwhile, stayed with his own vehicle.

The welder and the track worker placed the trolley on the Up line. The latter then climbed onto the trolley while the former handed him tools and equipment. And all was well, until just before midnight, when a passenger train powered towards them at around 85 mph. Its driver sounded the horn when he saw a vehicle parked on the crossing. The track worker immediately jumped from the trolley and threw himself to the side of the van. Two to three seconds later, the train struck the trolley, missing the back of the van by a margin that was possibly as small as 100 mm.

The track worker suffered minor injuries. The train sustained significant damage to its front and underframe equipment, including the fuel tank. The trolley was destroyed.

RAIB investigated this incident and found that it occurred because the trolley was placed on a line that had not been blocked to normal train operations. The COSS had blocked the opposite line on the advice of the welder, who'd been misled by the Safe System of Work pack. However, although the welder later realised that the work was actually on the line that had not been blocked, he still placed his trolley on that line, believing that no train would approach because of engineering work taking place elsewhere in the area. The COSS was not directly supervising the workers when the trolley was placed on the line. Prior decisions made in work planning and resourcing, and the absence of relevant information in the paperwork about the location of the work, contributed to poor decision-making by the track workers on the night of the accident.

RAIB also found a number of deficiencies in competence management at Shrewsbury Maintenance Delivery Unit, and that welfare arrangements for the track workers in the immediate aftermath of the accident were poor.

RAIB identified three learning points and made three recommendations, all to Network Rail. The learning points relate to competence management practices and briefings at Shrewsbury Maintenance Delivery Unit, and the importance of staff relying on their own safe systems of work rather than making assumptions about work taking place elsewhere. The recommendations focus on the presentation of information in the paperwork describing the safety arrangements for the job, factors affecting planning decisions at Shrewsbury Maintenance Delivery Unit, and Network Rail's competence management processes for staff on secondments or returning to work from a period of absence.

Rule Book update

The Rule Book amendments that came into force in December saw some significant changes for track workers.

Two new Handbooks have been introduced for a new role called the Safe Work Leader (SWL). The SWL will perform the role of a Controller of Site Safety (COSS) when working outside a possession and the role of an Engineering Supervisor (ES) when working inside a possession.

There are also changes that allow trains to traverse power-operated points, switch diamonds or swing-nose crossings at 50 mph during Single Line Working (SLW) and Temporary Block Working (TBW) if they have been secured and padlocked. The pilotman has to tell the driver what speed has to apply.

The rule requirement of sounding the horn before entering a shed or building has been changed. There is no longer a requirement to sound the horn if this is authorised in your company instructions.

For more information, talk to your line manager or email enquirydesk@rssb.co.uk

RED 41: semaphore SPAD

In RED 41, released a few weeks ago, a dramatic reconstruction sees two track workers narrowly avoid being killed when a train passes a signal at danger, in a semaphore signalled area.

At the beginning of his journey, the driver had pulled into a station platform and changed ends. However, he had stopped his train in a position where the TPWS aerial was directly above the TPWS overspeed sensor. This caused the on-board TPWS to self isolate. The yellow warning light began to flash but the driver took no further action.

When the signaller incorrectly cleared a signal, the driver didn't anticipate the next signal – protecting two track workers - to be at danger, and the self-isolated TPWS did not activate. The situation was made worse when the signaller could not remember how to make an emergency call.

Tim Leighton, General Manager Western Route, Network Rail and Andrew Munden, Operations and Safety Director for Chiltern Railways help to explain what went wrong and the lessons learned.

Look out for RED 41 in a briefing near you soon.

Newswire...

Australia: Toddler injured as pushchair rolls on to line in Melbourne

On 4 December 2014, a small child was injured when her pushchair rolled from the platform and on to the line at Diamond Creek station in Melbourne. The incident occurred while the child's grandfather was using the ticket machine. A number of passengers ran to his aid as he jumped down to save his granddaughter.

Canada: Freight train derailment in Whiteshell Provincial Park

At around 17:00 (local time) on 9 December 2014, a freight train derailed near Brereton Lake, in Manitoba's Whiteshell Provincial Park. Dangerous goods were not involved, and there were no reported injuries. An investigation has been launched.

US: North Dakota Industrial Commission approves crude oil conditioning order

On 9 December 2014, North Dakota's Industrial Commission approved an order requiring Bakken crude oil to be conditioned before it is shipped by rail. The order requires compliance with a series of temperature and pressure parameters. The news came amid reports that crude production in North Dakota was dropping.

Canada: Derailment in Raymore, Saskatchewan – loading a possible cause

At around 09:45 (local time) on 12 December 2014, 35 wagons in a Canadian National (CN) freight derailed at Raymore, Saskatchewan. One wagon was carrying dangerous goods, but remained intact and did not leak. There were no reported injuries. Initial investigations suggest that a load of steel plates shifted near the locomotive prior to the incident, which may have created the forces required for the derailment. CN officials are looking into the claim, but do not believe the condition of the track or rolling stock to have been causal.

UK: Rail replacement bus struck by lorry, three injured

At 00:30 on 15 December 2014, a rail replacement bus travelling from Oxford to Didcot was struck by a lorry on the A34 near Drayton. Of the 50 aboard, three were taken to hospital; one sustained serious, but not life-threatening, injuries. Initial reports say that the bus driver followed the correct safety procedures. It also appears that the bus broke down moments before the collision. The police are investigating.

getting on board with a new strategy

Helen Costello talks about how the rail industry is working together to tackle risk at the platform-train interface

The train is a genuinely safe way to travel, especially when you compare it to the car or motorcycle – but that doesn't mean it's risk-free.

There are over 2,500 stations on the mainline network and 1.6 billion passenger journeys were made in 2013-14 alone. The vast majority passed without incident, but the platform-train interface (PTI) hosts almost a quarter of the injury risk and nearly a half of the fatality risk to passengers.

The risk at the PTI to passengers:

21% of injury risk

48% of fatality risk

There are between 1,250 and 1,500 injuries a year at the PTI, with around 96% involving passengers coming into contact with trains. In the last five years (April 2009–April 2014), there were 18 fatalities in well over 7 billion passenger journeys. Leaving aside for a moment the greater share of journeys made by car, in comparison 9,440 people died on Britain's roads between 2009 and 2014. The average frequency of fatalities at the PTI is not much greater than that of being killed by a lightning strike in Britain!

A poster from the 'helping hand' campaign

But the risk is still there, and it's still real. High-profile incidents, such as the accident at James Street, Liverpool, in October 2011, where a 16-year old girl died after she fell through the gap between the train and the platform, focussed attention on the regulator and the industry to do more about improving safety on stations in the long term.

Just as we strive to outsmart SPAD risk with vigilance, reporting and all-round better knowledge, more recently we've been giving similar attention to the PTI.

There's the prospect of more passengers as the industry grows, with ever more hectic lifestyles, and changes to the way they use technology on-the-go. Balancing the successful operation of train services with the management of risk at the PTI is an ongoing challenge.

The result of all this is a dedicated strategy for the platform-train interface.

It represents a great example of industry collaboration to sort out a consistent approach, combining the numbers, human factors, operations, and engineering matters. The strategy has been driven and sponsored by rail companies working together - both train operators and Network Rail.

But what will all this mean for people driving, dispatching and signalling trains?

First and foremost there's all-round commitment to reducing the overall risk. Targets have been set for the here-and-now, and into the future.

Secondly, later this year, a new risk tool will be released to allow people to assess the risk at the interface at particular stations. This will join a body of good practice that operational people can share on Opsweb.

Helen Costello, RSSB, has supported the PTI Strategy programme

Thirdly, we've launched a dedicated campaign aimed at passengers using posters, media, radio interviews and even celebrity announcements at stations.

The idea is to encourage passengers to 'lend a helping hand' and be more aware of their environment. Instead of giving direct instructions, we've used softer and more light-hearted messages. This will help passengers help rail staff do their jobs, hopefully making their lives easier, instead of causing unnecessary additional grief!

For more information talk to your operations or safety director, or contact RSSB – enquirydesk@rssb.co.uk. The strategy is available on the RSSB website – www.rssb.co.uk

The industry has already made changes including introducing the raised "Harrington Hump" at 80 stations in England and Wales (Network Rail)

taxis mean timely trains

TOCs rely on taxis to get drivers in the right place, but what's the risk and how can we manage it?

If you get hit by a train, the chances are you'll come off worse. Since the very dawn of railways, we've known about the problem, and learnt how to deal with it.

We're still learning. More recently, though, we've started to think more deeply about the risk from road vehicle driving. And that affects us all – from driver to shunter, signaller to track worker, train manager to MD.

The fact is that there'd be no rail without road. Why? Well, one train operator uses taxis to put 2,200 drivers per period where they're supposed to be – in the cab of a train, ready for the 'right away'. When you multiply this by the number of periods and the number of operators, the scale of road involvement becomes clearer.

CABS NOT COLLISIONS

Without taxis, Mr Smith wouldn't get to his important meeting, and Dr Jones wouldn't get to her operating theatre. In short, it would be damaging for the economy – and damaging for railway business. But taxis are only good when they're safe. There have been a number of fatal rail related road vehicle incidents, including one which occurred on Monday 9 June 2013, when a van crashed on the M4 near Bristol, killing three members of railway staff and critically injuring one more. A lack of seat-belts was in the causal chain – but so was fatigue! And what can be a factor for our train drivers, can be a factor for cab drivers too. So how do you assure the safety of the train driver riding in a taxi? How do you make sure they get where they need to be, when they need to be there, in order to keep your customers happy and your business solid? One company that's taken a good look at this – and done something about it – is Arriva Train Wales (ATW).

ARRIVA'S TAXI WORK

The first thing ATW did was set up a specific department to deal with road vehicles. The team was led by Andrew Danson and included 60 part-time rail replacement co-ordinators. It went live in November 2008 to sort out rail replacement buses, and all the taxis required for customers and train crew. It's a joined-up way of thinking transport, and involves continual interaction with Chiltern Railways, CrossCountry Trains and ATW itself.

Through a competitive tender process, there are now over 150 approved taxi suppliers across the whole country, with each train crew depot being allocated a main taxi supplier. On average, 520 pre-planned cab journeys are made per period for ATW alone, with around the same figure for ad hoc moves for customers and crew alike. So well does the system work that the success rate against complaints is 99.7%.

SAFETY ASSURED?

How is this achieved? Well, for one thing, ATW's contracts stipulate that taxi drivers mustn't carry any passengers after being on duty for 12 hours, and should have 8 hours' rest between shifts. In a bid to cut down on undesired practices, the use of agency staff is not allowed, unless agreed in writing by the operator. Vehicles and drivers must also be in position at least 5 minutes before their booked departure time and be available for staff or passengers to board from the point of arrival.

Vehicles must be supplied in a safe, clean, tidy and presentable condition, must display all signage provided by the operator (usually a 'Railway Taxi' sign), and must be less than 7 years old, thus helping to ensure maximum roadworthiness.

These measures have brought appreciable benefits, but they're just one example of best practice. If you have taken the same approach as Arriva, get in touch – email: roadrisk@rssb.co.uk . Let's share what we know today to make tomorrow safer.

For further information on the Arriva Road Transport Section call 02920 720582

The Arriva road vehicle team

not a SPAD effort

Photo: ATOC

A SPAD may mean Signal Passed at Danger, but danger doesn't always have to follow. More often than not, it's the potential consequences of an incident that steal the focus of attention rather than the actual consequences of the event.

On 5 October 1999, a DMU passed a signal at danger at Ladbroke Grove and struck an HST, killing 31 people and injuring 400 more.

Given the signal had been passed at danger 8 times in the preceding 6 years, you have to ask if the event could have been avoided.

A number of measures were undertaken after the incident to reduce chance of a similar one happening in the future. One measure was the development of a website to record all multi-SPAD signals on what is now Network Rail managed infrastructure.

Jargon buster

A multi-SPAD signal is defined as a one which has been passed at danger on 2 or more occasions within the last 5 years.

Network Rail maintains the multi-SPAD website and is currently in the throes of upgrading it to achieve a number of benefits including:

- An improved user interface
- The provision for Network Rail Route teams to input data directly
- An alert to highlight when a new SPAD signal has been added
- Added functionality, such as analysis capability and report extraction
- A historical data store of SPAD signals to provide a better indication of SPAD risk
- Extensions to the number and range of target user groups

The updated site is supported by a live database which records historical SPAD information dating back to the 1980s. Furthermore, all multi-SPAD signal records will now include the following core information as standard:

Photo: Network Rail

Photo: Network Rail

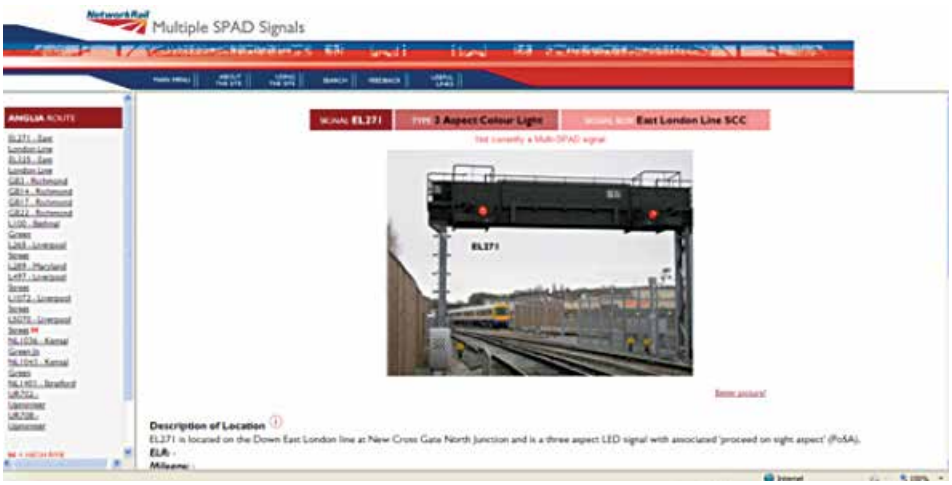
- The operating company involved in the SPAD incidents
- Immediate and underlying causes
- Signal Sighting Committee outputs and remedial action
- A photograph of the signal and a route location map
- Signal risk assessment information

Prior to this recent upgrade, the site was used to support a number of different activities, including route learning, the development of training materials, signal layout and design.

As part of the upgrade, internal and external users, both current and potential, were consulted to gain a better understanding of how they wish to use the current information, what additional information they wish to have available and what functionalities they would like to be incorporated.

A short time ago, the multi-SPAD site was a mere data repository, used by a very specific – and small – audience of train operating company driver managers and general rail enthusiasts. This project has allowed Network Rail to advance the site from an era of steam to electric operation, providing a faster, tailored and more effective data service. Not a SPAD effort, really…

For more information contact righttrack@rssb.co.uk



Newswire…

US: Freight train derailment dumps coal into Stoner Creek

At around 03:30 (local time) on 15 December 2014, three wagons in a 100-wagon consist derailed in Paris, Texas. They fell down the embankment, sending coal into the creek at its foot. There were no reported injuries, and the derailed vehicles had been recovered by the evening. The most likely cause of the derailment is currently thought to be soil under the tracks giving way.

US: Level crossing collision in Mebane kills one

At 12:45 (local time) on 16 December 2015, a passenger train struck a minivan at East Washington Street level crossing, Mebane. The 80-year old van driver – the vehicle's only occupant – was killed instantaneously. There were no injuries to anyone on board the train. Witnesses suggest that the van stalled on the crossing and its driver was unable to get it off the line before the train came along.

US: Woman killed after being dragged by Metro-North train in NY

At 20:38 (local time) on 19 December 2014, a woman was killed when she got caught between two carriages of a Metro-North service, which then dragged her along the platform at New York's Grand Central station. She was discovered lying beneath the platform after the train had left and was taken to a nearby hospital, where she was pronounced dead on arrival, having suffered a fractured pelvis. It is not yet clear whether the woman was attempting to board or alight from the incident train.

Canada: Derailment in Banff sends fly ash into local creek

At 14:00 (local time) on 26 December 2014, a Canadian Pacific freight carrying fly ash and grain derailed in Banff National Park, sending seven wagons down into a creek. There were no reported injuries, but though the resulting spillage is reportedly non-toxic, there are possible issues for local wildlife, the ash having the potential to cause sedimentation and decrease the water's acidity levels. The Transportation Safety Board of Canada is investigating.

diving in

Network Rail is in the process of conducting a programme of Deep Dive Risk Reviews at stations.

What kind of risk are passengers facing at our busiest stations? Network Rail is currently conducting a programme of Deep Dive Reviews to identify significant risks and provide assurance they are being appropriately managed.

The outcomes from these Reviews are:

- A common understanding of the risk and its causes
- An assessment on the level of risk reduction expected
- Clearly defined future strategy for managing the risk; and
- A robust process, actions and owners for the ongoing monitoring activity as detailed in the Management Response

The programme has included Deep Dives on several subjects, from SPADs and wrong side signalling failures, to track systems, earthworks level crossings and objects on the line.

The Station Deep Dive Review considered the risk to passengers, the workforce and members of the public due to accidents, incidents, near misses and close calls at Network Rail managed stations, including concourses, platforms, the platform train interface (PTI), stairs, lifts, escalators, footbridges, and 'short cut' trespass incidents.

A vast amount of data was analysed, which identified:

- A link between the number of passenger journeys and the number of accidents occurring at stations
- That 68% of injuries over the past five years resulted from slips, trips and falls
- That 14% of these were due to accidents at the PTI; and
- That slips, trips and falls have the highest severity of injury

During the analysis of incident data the majority of events were grouped into four main categories, with accident trends and key insights identified for each:

Slips Trip & Falls (STF)
Platform Train Interface (PTI)
Object and Vehicles
Assault & Abuse

STF data identified an increase in incidents on platforms during the winter when floor surfaces become wet, while STFs on escalators increase during the summer months and school holidays as a result of passengers travelling with more luggage.

STFs account for 83% of all injuries to passengers and 8% of workforce injuries. The most common reported causes being loss of balance, missed footing, wet surfaces and intoxication.

Photo: Network Rail

Photo: ATOC

Incidents at the PTI continue to rise, with 28% occurring when alighting, 28% involving falls between the train and platform, 17% involving passengers being caught in train doors and 16% occurring during boarding.

81% of injuries at the PTI were suffered by passengers and 19% by the workforce, with missed footing being the dominant cause. Intoxication was the primary cause of accidents involving falls from the platform edge.

Photo: ATOC

Incidents involving objects and vehicles affect both passengers and workforce equally. The largest categories of passenger accidents involve gates and barriers (38%) and contact with stationary objects (15%). These categories represent the highest proportion of accidents involving children under the age of 15.

86% of reported incidents involving assault and abuse involve the workforce, of which physical assault accounts for 87%. Despite

Photo: Network Rail

these figures, a long-term decrease in incidents of assaults and abuse has been seen.

A number of benefits have been identified as a result of conducting the Stations Deep Dive, including:

- A better understanding of the key risk areas within stations
- An insight into both passenger and workforce risk elements
- The identification of the age profiles of passengers for each accident risk
- Confirmation of the highest number of accidents on stations involving STFs
- Confirmation that PTI incidents involving trains at the platform have a distinct peak between 16:00 and 18:00, whilst falls from the platform occur throughout the evening
- Confirmation the largest proportion of workforce incidents involve objects and vehicles
- The consideration of relevant technology to eliminate/reduce risk
- Cross-industry learning and opportunity for sharing

Since the Deep Dive, an action plan has been developed to aid the reduction of the risks identified in stations.

Photo: Network Rail

Newswire...

UK: Train strikes trolley placed on open line near Heathrow

At around 09:55 on 28 December 2014, a Heathrow Terminal 5–Paddington service struck a trolley that had been placed on an open line in error. The driver had sounded the horn and applied the emergency brake; the members of staff moved out of the way, but left the trolley in situ. There were no reported injuries. RAIB is investigating.

US: One killed and 86 injured in Washington Metro train smoke incident

At around 15:15 (local time) on 12 January 2015, a Washington Metropolitan Area Transit Authority Metro train stopped after encountering heavy smoke in the tunnel near L'Enfant Plaza station. A following train stopped behind the first around ten minutes later. The passengers on both – and on the station platforms – were exposed to smoke, the inhalation of which led to the death of one passenger; 86 further passengers were taken to local hospitals for treatment. Investigators found severe electrical arcing damage to the third rail and electrical cables in the area.

Canada: Freight train derails in Jarrow, Alberta – no dangerous goods involved

At around 02:20 (local time) on 7 January 2015, a 114-wagon Canadian National freight heading from Edmonton to Sasktoon derailed near Jarrow, Alberta. Twenty-three wagons were involved, one of which leaked a non-dangerous substance. There were no reported injuries.

US: Level crossing collision near Odessa kills ten

On 14 January 2015, a bus carrying 15 people struck a train near Odessa, Texas, having fallen from an elevated roadway to the track below. At least 10 people were killed and five were injured (four critically). There were no injuries to the train crew. The bus had been traveling from Middleton Prison in Abilene to El Paso. Twelve inmates and three officers were aboard. 'It seems that there was an ice patch there on the overpass,' said Sergeant Elizabeth Barney, who added that the bus crashed into the moving train.

Canada: Glue spilled after freight derails in Alberta

On 7 January 2015, a freight train derailed near Wainwright, Alberta. There were no reported injuries, but environmental teams were summoned to clear up liquid adhesive, which had leaked from one of the wagons.

collision at Valhalla

Greg Morse talks through a recent level crossing collision near New York, which raised questions for British operators and infrastructure managers

Rush hour on 3 February 2015, and a road accident on the Taconic State Parkway has forced traffic to use a route that crosses the railway at Commerce Street, Valhalla, just north of New York City.

Shortly before half-six, an SUV edges on to the interface, and the barriers come down to damage its rear. The driver gets out to check the bodywork and the car behind reverses to provide an escape route. Inexplicably, the SUV driver decides to drive forward, into the path of a speeding Metro-North service.

The 58-mph impact pushes the SUV some 120 metres along the track; around 400 feet of third rail was also torn from its fixings, piercing first the SUV and then the front carriage of the train. Sparks from the rail acted with diesel from the SUV's fuel tank to create a fireball that gutted both it and the carriage.

The SUV driver and five rail passengers were killed; fifteen more were injured.

THE GB SITUATION

Regular Right Track readers will know that the GB rail industry frequently scans the globe for accidents and incidents to feed in to the various ways it controls risk. If you look at the numbers – and there are plenty who do – we have a very safe railway. But the four major incidents that occurred in July 2013 – the runway and explosion in Quebec, the derailment in Paris, the high-speed derailment in Spain and the dispatch-related collision in Switzerland – really gave us pause to consider whether they could happen here.

And it's certainly true that level crossing fatalities are not unknown to us. Indeed, the ten collisions between trains and road vehicles during 2013/14 resulted in the deaths of two road vehicle occupants. Yet the last crossing accident resulting in train occupant fatalities occurred at Ufton in 2004, when a passenger train derailed after striking a car that had been deliberately parked on the line. Furthermore, statistics suggest that the underlying rate of crossing collisions has dropped over the last decade.

What about fires? The last multi-fatality train fire in Britain occurred at Taunton in 1978, but this was the result of bed linen being left to smoulder against an unprotected heater. The SPAD and collision at Ladbroke Grove in 1999 also led to a major train fire, and involved an HST and a lightweight DMU, the leading carriage of which was totally destroyed. Three fuel tanks on the latter and the forward tanks of the HST were damaged, dispersing diesel fuel, which ignited in a fireball, causing a series of separate fires, particularly at the front of the HST (which was completely burnt out).

It seems likely that the fire in Valhalla was caused by the third rail igniting fuel from the SUV's ruptured tank. The third rail here is 'bottom contact', meaning that it sits higher than the 'top contact' configuration used on the main line in Britain – a fact which may be significant in terms of explaining how the collision could have dislodged it from its mounting. RSSB's statistics do not include any incidents of rails entering the passenger saloon, and most incidents concerning the third rail here involve the loss of shoegear because the rail is either out of alignment or knocked off its supporting 'pots'.

If you look at photos of Valhalla, you can see that several of the train's windows that have melted. This suggests the use of polycarbonate panes, which have markedly inferior fire properties. Broken, melted or missing windows allow fire to pass into a vehicle and also provide ample oxygen for any fire inside.

Most GB trains are now fitted with laminated windows; even after a collision, laminated glass is generally retained in position and helps prevent fire from entering railway vehicles. This – and the use of other fire-retardant materials – has helped reduce the risk in recent years, incident numbers having fallen by over 80% since 2004/05.

Could Valhalla come to Britain? We never say never, but the chances of a similar run of events running that way here are arguably minimal.

Photo: New York Daily News

sticky notes

Autumn. As well as harvest festivals, pumpkins and fireworks there were many less exciting things to look forward to as well.

Unfortunately, with the falling leaves and poor weather, the possibility of contaminated rail head and the wet-rail phenomenon comes every year without fail.

So what's being done? A number of national initiatives are currently under way to tackle the problems that can be associated with autumn. So that any reports can be followed up and recorded properly, it was agreed that a standard form for reports of low adhesion would be sorted out.

There are a number of circumstances when drivers are required to communicate with signallers to report low adhesion or exceptional railhead conditions or to feed information back after being asked to make a controlled stop or otherwise report on prevailing conditions.

In autumn 2013, the reporting form was varied across the Routes, which meant that – in some cases – the way the information was recorded was unhelpful when it came to comparing and contrasting incidents that occurred across the board. Collating the information was time-consuming, which often compounded delay. Last year, though, a national form was created to aid clearer, relevant and swifter communication to help us achieve a clearer understanding of prevailing conditions.

The redesign of the form will also minimise the exposure of unaffected trains to signals at danger and also reduce delays.

Signallers only need to collect perishable information. Non-perishable information can be collected once the initial driver's report has been completed. It will also mean a consistent procedure for those drivers crossing over the various Routes.

There are other benefits to the form downstream too: for example, Seasons Delivery Specialists will be able to review the reports and look at the mitigations in place in that area. They may look at Traction Gel Applicators, railhead treatment circuits, manual interventions and then decide whether what was deployed was suitable, or if things need to be done differently.

With the same form available across the nation, it will be easier to build business cases for national changes and initiatives to help combat the adhesion issues that we face each and every autumn.

If you've any questions on the new form, please don't hesitate to have a word with your line manager.

Signaller Report Form:
For Poor / Exceptional Rail Head Conditions

Section 1: To be completed with the driver on the phone

What is the line and location of the reported Low Rail Adhesion [miles / chains]? If you do not know miles / chains then quote landmarks etc.	Line:				**Is the location on the approach to* / beyond* a** *[*Delete as appropriate] [Please circle below]*			
	Location:				Station	Signal	Landmark	
Weather conditions at time of low adhesion? *[Please circle]*	Dry	Damp	Drizzle	Rain	Frost	Sleet	Snow	Ice
Was the train?	Accelerating			Braking		In Normal Running		
Over what distance approximately did the low adhesion continue for?								
Are sanders fitted on the train?	YES		NO		DON'T KNOW			
Are you aware of anything affecting the braking capability of the train?	YES		NO					
If 'Yes' then what?								

Section 1B – only valid on lines at xxx

Is the location listed in the Sectional Appendix as a site of Exceptionally Poor Rail Adhesion?	YES	NO
If yes, are the conditions at the site worse than expected for the time of year?	YES	NO

Section 2: To be completed after the telephone call with the reporting driver has been terminated

Signal Box / Signalling Centre?				
Date and time of reported low adhesion?	**Date:**		**Time:**	
Headcode and traction ID? *[If known]*	**Headcode:**		**ID:**	
Was this the first train after passage of the RHTT?	YES		NO	
Has this train passed the RHTT / MPV?	YES		NO	
Type of Report? *[Please select only one]*	Poor Adhesion		Station Overrun	

Section 3: Follow up Actions [to be completed by Route Control]

1st train advised at *[Time]*		**Was the 30 minute rule applied?**	YES	NO
Normal working resumed at *[Time]*		**Wheelset checked for contamination?**	YES	NO

Findings of site inspection? *[Please circle]*	Visible Leaf	No Visible Contamination	Snow / Ice	Other Contamination Detected
Rail moisture at time of inspection? *[Please circle]*	Dry Rail	Damp	Wet Rail	Icy

Was there a controlled test stop?	YES	NO	
Successful controlled test stop by *[Headcode]*		**At Date / Time:**	
Is there a working TGA at this location?	YES	NO	N/A
Please give details of further controlled test stops *[If applicable]*			

Onsite treatment / actions *[Circle all that apply]*	No Action Required	Hand Sanding	Traction Gel Application	Rail Scrubbing
	Photos Taken	RHTT	ECD Readings Taken	OTDR Download Supplied

Form valid as of 01/10/14 until further notice

Fax completed form to Autumn Control *[number]*

speed restrictions survey results

As evidence suggested some trains were exceeding permanent, temporary and emergency speed restrictions, RSSB launched a project to find out why.

The scale of the problem was not known, but checks in association with Adjacent Line Open working (ALO) revealed that the number of incidents might be higher than we all thought. While efforts were made to reinforce the need for compliance with speed limits at driver briefings, some companies felt that there could be other causes, like the incorrect or late placement of speed limit boards.

The reasons drivers may be exceeding speed limits were unclear, so RSSB set four main objectives for its research:

1. Identify (as far as possible) the scale of the problem of drivers exceeding the speed limit in PSRs, TSRs and ESRs using the data available.
2. Consider the whole process to try to understand how all roles and activities can influence drivers when responding to speed restrictions.
3. Get an understanding of why drivers exceed the speed limits in PSRs, TSRs and ESRs.
4. Identify potential controls to prevent or recover from the underlying causes of over speeding and evaluate these methods.

A train driver survey was created and then promoted by ASLEF in the Locomotive Journal, and via Right Track magazine and Opsweb. There were 566 respondents, 493 (89.2%) from train operating companies and 60 from freight operating companies/ on track machine operators.

The survey showed that most respondents thought PSRs, TSRs and ESRs were exceeded 'rarely' or 'sometimes', with slightly more selecting 'sometimes' for TSRs and ESRs. The main reasons given for a driver exceeding the designated speed were: a lack of knowledge about where the speed restriction was, issues with memory and attention, fatigue, signage missing or incorrectly placed, inconsistency in braking distances between the warning and commencement boards and confusion (because of the number of signs in complex areas or the number of in-cab warnings, for example).

Just over three-quarters of respondents said they read Section A of the Weekly Operating Notice (WON) frequently. However, there were issues cited with the WON, such as drivers not having enough time to read it, and the document containing too much and irrelevant information. About 35% said they looked for the signs on the ground rather than read the WON. There were also comments about the 'dry tabular format' and size of the text used in the document.

Respondents that received ESR information in the form of late notices tended to try to remember this information rather than highlight their documents or write it down. Some drivers did not receive any ESR information because they did not have a late notice case. These drivers were therefore completely reliant on signage being correct and laid out properly.

In terms of the signage on the track, there were generally positive comments about their design. However, some respondents suggested that the design could be improved by changing the background colour of the sign, so they do not merge in to the wider environment and to consider alternative means of illumination. Over 80% said that there is too great a braking distance between the warning and commencement boards for TSRs and ESRs, however almost half said that there is not always enough braking distance. If there were issues with speed restriction signs, 65% of respondents would report this to a signaller, but only a third thought that if an issue was reported it would be rectified quickly.

Perceptions about the use of AWS for speed restrictions is that it catches the attention and acts as a useful visual and audible warning to drivers, while having the added safeguard of applying the brakes if not acknowledged. However, there are weaknesses with AWS related to habituation (drivers cancelling the warning without fully taking in its meaning and acting upon it), confusion between alarms that are for signals and alarms that are for speed restrictions. There can also be too many warnings in short periods.

The final stage of the project was to consider the proposed mitigations with front-line staff and senior managers in a series of workshops. The final report incorporating the results of all of the work on the project was published in January 2015 and is now available to RSSB members on the SPARK website (search for 'T1044').

excuse me, are you alright?

How the training course to help manage suicidal contact is working out.

A NATIONAL STORY

Every suicide is a tragedy. With far-reaching implications every time someone takes their own life, it's an issue that touches families, friends, communities, governments and many more people besides.

Photo: Network Rail

And we are not immune, on average, one person a day tries to take their own life on the railway, with serious consequences for drivers, station staff, MOMs, passengers, police officers and all those that rely on us to get from where they were to where they need to be.

Take out the human implications, and it also costs our industry many hundreds of hours' delay, while the financial expense runs into tens of millions of pounds.

TAKING OWNERSHIP

In January 2010, Samaritans and Network Rail formed a partnership to reduce the number of railway suicides and to improve support available to those affected by them. The suicide prevention and support programme, born out of this partnership, covers England, Scotland and Wales and includes representatives from across the rail industry.

BUILDING CONFIDENCE

A rail industry staff training course, Managing Suicidal Contact, has been developed to equip staff with "emotional first aid" skills. The course is not about turning people into counsellors; instead, it's about developing skills and confidence to respond to a distressed person at the initial point of contact and then getting them to a place of safety before making a sensitive referral to Samaritans, British Transport Police or other appropriate support services.

Steve Tollerton, training officer for Samaritans, runs the courses. "The communications techniques we encourage aren't rocket science," he explains. "They're things people may naturally use everyday. But what the course does is get you to think about how you communicate with someone that may be feeling suicidal and how you can provide what I call 'emotional first aid'."

"The primary purpose of that is to get someone back to safety and to make an effective referral to minimise the risk of the person returning at a later date with suicidal intent. Those are the main aims, and since we've been running the course, more than 240 railway people have used what they learnt on the course to do just that."

UNDERSTANDING TRAUMA

The second course has very different goals. Designed to teach people how they can help colleagues that have been directly traumatised by a suicide on the railway,

Photo: Network Rail

it's aimed at train drivers, managers and frontline operational staff and is called "trauma support training".

"Many railway people can feel traumatised by suicide on the tracks," Steve explains. "Train drivers are the obvious example, and it's really important managers and colleagues are equipped and able to help those people. Misplaced guilt, or flashbacks, or feelings of self doubt and anxiety are common, but there is a lot that can be done to help people suffering these emotions and, again, it's not hugely complicated stuff. Just understanding trauma, having the right communications techniques and being confident will help. And it's those skills the course offers."

More than 650 courses delivered to over 7,000 railway industry staff in the first 5 years

To book a place on a course or to learn more, email:
railcompanies@samaritans.org

Samaritans are available 24 hours a day, 7 days a week. Talk to us if things are getting to you.

Call: 08457 90 90 90 (charges may apply – see www.samaritans.org)

Email: jo@samaritans.org

SAMARITANS

is your mind on the job?

New research looks into the whole issue of mobile devices and the problems they can cause on the front line...and in the office.

Mobile phones are so vital to how we live that hardly any of us would leave home without one. The trouble is, within a safety critical environment, it's not always safe to yield to the natural urge to answer a ringing phone or reply to a text. In fact, it can be fatal.

This was illustrated in the worst possible way on 12 September 2008, when a Metrolink service passed a signal at danger and struck a freight in Chatsworth, California. Twenty-five people were killed, including the driver. On the day of the accident, he'd sent and received several texts on duty; the last occurred just 22 seconds before the collision.

After Chatsworth, industry looked into the whole issue of mobile phone use. RSSB helped develop an education programme for train drivers, but it's now looked more deeply into the subject, because it isn't all about drivers, it's about all of us; and it isn't all about mobile phones, it's about all the devices that we carry about with us that can provide distrcations. And that was a big part of the problem with the original research – nowadays people can do so much more than text and make calls while on the move: there's emails, Skype, Facebook, Twitter – all providing the opportunity to take attention away from work.

> "The RMT represents over 60,000 workers in grades that could be affected so it was appropriate for us to be involved in this project."
>
> Paul Clyndes,
> Health and Safety Officer, RMT

As a result, RSSB (with support from the RMT, Network Rail, train operators and contractors) has released a new safety education programme which asks: Is Your Mind On The Job?

IT'S FOR YOU

The idea is to educate safety critical front line staff (other than drivers who have already had this training??) on the effects of mobile device distraction. Research found two main issues with this: basically, it can divert attention from the task being carried out, and reducing reaction times. So, obviously, a track worker could be struck by a train while talking on the phone, but a dispatcher may be prevented from alerting the driver to someone getting stuck in train doors, say, with enough speed to prevent an incident from becoming an accident.

There are two versions of the education programme: a classroom-based one, featuring PowerPoint slides, supported by trainer notes, adding up to three hours of content; and a self-managed one, for use by individuals on a personal computer, which has about an hour and a half of content. The courses also available on a memory stick too.

The RMT was closely involved in project throughout and provided tutors and facilities for testing the training materials. The course is interactive and flexible, so it can be worked through in groups or by individuals at their own pace. The interactive elements test the implications and understanding of how distraction works by demonstrating what it's actually like to experience distraction and how hard it can be to have to concentrate on more than one thing at a time.

> The course also reminds managers not to email, text or call staff with unnecessary information unless they know them to be in a place of safety.

The course also shows how making or receiving a call can be affected by a person's age, experience, mental state and practice, and how the distraction can last beyond the actual length of the call or message, especially if the content is bad news – or even very good news.

If you'd like to read the research for yourself, go to the RSSB website or SPARK and search on 'T989'.

KEY REMINDERS

- Everyone's responsible for their own – and their team's – safety
- Don't use a mobile device if it's unsafe, even if you're told to do so
- Following the rules doesn't necessarily eradicate risk – it only reduces it
- If the risk from using a mobile device outweighs the benefits, don't do it!

To access the education programmes, go to Opsweb or SPARK. If you'd like the programme sent to you on a memory stick, contact enquirydesk@rssb.co.uk