rightTrack

Issue 14 **Winter 2015/16**

Our regular features:

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ironmen run through Raven

The Lowdown
Scott Tarr, Electrical Control Room Operator

SPADtalk
Looking for the signals

Newswire

Coping with the Scrum

How do we prepare for major sporting events?

Swipe in and swipe out:
Changes to Sentinel

Dont make a hash of it

how passenger operators use social media to talk to our customers

175 years of the ORR

RSSB

Headlamp

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Welcome to the winter 2015/16 issue of Right Track.

To sand or not to sand? That is the question we look at in our piece about contaminated railheads. We also preview new guidance designed to help companies brief drivers when there are a lot of planned route changes. There's a piece about changes to the Sentinel scheme, and we find out about the work that goes into major sporting events.

We also have our regular features, including Newswire, SPADtalk, the Lowdown with Scott Tarr, Electrical Control Room Operators, and the RAIB report into ironmen running through a level crossing in West Wales.

As ever, we would love to hear what you think about Right Track. If you have any comments on this issue's articles, or suggestions for future stories, please get in touch!

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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Sand By Me

Fitting additional sanders to rail vehicles could cut delays in half and lead to savings of over £1million a year, according to new research published by the RSSB's Adhesion Research Group (ARG).

Trains have been fitted with 'sanders' for many years. They drop sand on the rails ahead of the wheels to help prevent the train's wheels from slipping, which can be a particular problem during autumn. However, sanding can also cause problems with the systems which detect and locate trains on the track, because too much sand insulates the rail from the wheelset, which prevents the track circuit from effectively detecting a train. These are known as Wrong-Side Track Circuit Failures (WSTCF)

The cross-industry ARG has been looking into ways to improve the management of adhesion in the autumn. Its project compared the possible risks from Signals Passed at Danger (SPADs) and platform overshoot when not sanding, against the WSTCF risk when there is sanding. The group found that the risk of from an adhesion-related SPAD or station overrun is 250 times more likely to result in an incident than a WSTCF due to sand contamination. Fitting additional sanders could reduce the already low safety risk due to SPADs and station overruns by a further 89%, improving the safety of the rail network for staff and passengers; and reduce autumn delay minutes by 58%, saving the industry over £1 million per year.

Neil Ovenden, chairman of the ARG, commented "This work shows the significant advantages train operators and their customers can gain by adopting these findings on multiple unit fleets. It has confirmed that worries associated with train detection were largely unfounded."

The research also found that low voltage DC track circuits are most susceptible to railhead contamination-generated WSTCF; replacing them with modern equivalents would reduce the risk of railhead contamination-related WSTCFs by 90%.

As a result of this work, RSSB will be changing the standard for sanding equipment fitted to multiple units (GM/RT2461). Trains are now allowed to use more than one sander per formation, which should improve braking performance in low adhesion conditions and improve the safety and punctuality of trains.

Driver Survey

We all know that autumn is a challenging time for the railway, with rain, leaves and the first frosts making the railhead particularly treacherous. The Adhesion Working Group (AWG) spends a lot of time and effort to combat these unfortunate side-effects of autumn, but we've still got a long way to go. The AWG wants to understand autumn better from a driver's perspective, to develop effective tactical and strategic recommendations for Network Rail, TOCs and FOCs.

Last year, the AWG ran a survey which asked train drivers about their experiences of autumn 2014 (see Right Track 11). That survey gave you the opportunity to feed into the discussion, and many of you did. We published some of the findings in Right Track 13.

The AWG want to explore in more detail the issues you raised in your excellent feedback. So this year, some of the questions are the same as last year, but many have changed, based on your answers.

The AWG wants to continue to improve the industry's response to the challenges autumn throws at us. This year's short survey aims to develop our understanding of the effectiveness of some of the measures that are deployed throughout the season. We want to know what you think based on your experiences of autumn 2015. 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.

Completing the survey should take no longer than 10 minutes, and you can find it here:
https://www.surveymonkey.co.uk/r/autumn2015driversurvey

The survey closes on 15 April 2016, so please get your responses in before then to make your views count. We will of course keep you posted on the results of the 2015 survey via Right Track. Thank you for taking time to take part.

Potters Bar 2002

175 Years of the Railway Inspectorate

Ian Prosser, the ORR's Chief Inspector of Railways, tells Right Track about the safety work of the Railway Inspectorate.

George Stephenson's Rocket is rightly remembered for being one of the key advances in railway technology, helping to usher in an age of steam that lasted from its introduction in 1829 through to the 1960s. However, It is less well remembered for being involved in the world's first recorded railway fatality, when it struck and killed William Huskisson MP at the opening of the Liverpool and Manchester Railway on 15 September 1830.

Back then, Britain's railways were unregulated, poorly coordinated and often downright dangerous. Ten years after that first fatality, the Railway Regulation Act set up a body whose initial role was to inspect the construction and equipment of new railways, but which would later have the legal right to investigate train accidents and make recommendations to help stop them happening again. Now – 175 years later – the Railway Inspectorate is part of the Office of Rail and Road (ORR), and is still working hard to improve the safety of workers, passengers and the public.

That passengers in this country now use a railway which ranks among the safest in Europe is in no small part due to the way the industry has learnt lessons from tragedies. Britain's fledgling railways were blighted by hazards ranging from exploding engine boilers and a lack of signals to the use of gas lighting and inadequate brakes.

Tackling these issues drove the innovations that we now take for granted. In those early days, railway inspectors investigated the causes of accidents and suggested improvements such as continuous brakes on passenger trains, the interlocking of points and signals, guidance on cabs designed for driver protection in collisions, and the rules for emergency evacuation. Where needed, these were imposed by law.

Great improvements were made, but other issues arose. Well into the mid-twentieth century, inspectors were reporting on fires in diesel engines, accidents due to staff error, and 'malicious' actions by members of the public. As an example, the Railway Inspectorate report into the terrible derailments at Harrow and Wealdstone in 1952, and Lewisham in 1957, helped to accelerate the introduction of the Advanced Warning System (AWS), which gave the driver an in-cab indication of signal aspect, and applied the brakes automatically if

Harrow & Wealdstone 1952

OFFICE OF **RAIL AND ROAD**

the driver did not respond to a warning of red or yellow signals.

These days, the inspectorate tries to anticipate dangers, and puts risk-based measures into place to prevent deaths occurring, rather than reacting to incidents. The large number of people being injured by either falling out of trains or from sticking their heads out of train windows eventually led to automatic locking doors and sealed windows on new trains. After initial problems with short-wheelbase wagons, welded rails have helped cut the number of derailments caused by track problems. Level crossing-related improvements have reduced risks to crossing users.

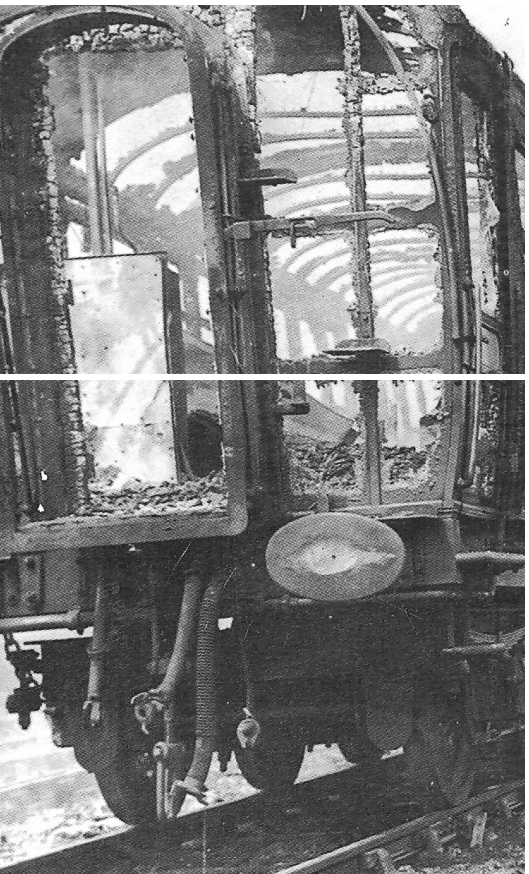
The organisation has also built acceptance across the industry that CCTV should be used to reduce risks at the platform edge. Monitoring the behaviour of staff, passengers and the public helps ensure that control arrangements at stations are appropriate at all times. Staff can then be adequately trained, supported and resourced to dispatch trains safely.

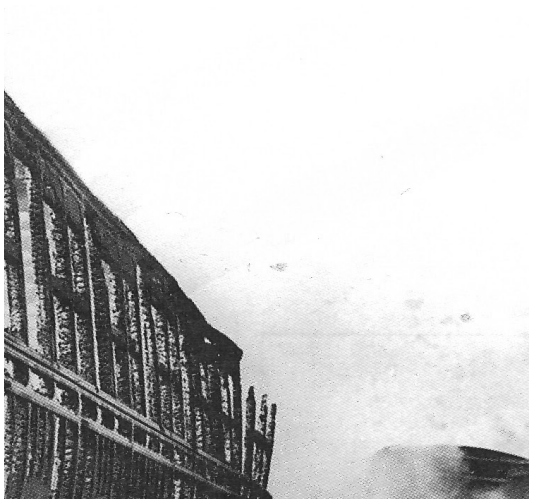
Last year, the ORR brought together parties from across the industry to discuss container train derailments. This followed a number of incidents in recent years which all had similar causes. Bringing the infrastructure manager and the freight industry together, along with the ORR, RSSB and other relevant bodies, allowed the industry to achieve a common understanding of the issues, and provided clarity on the legal framework for risk reduction and co-operation on reaching a system-level solution. A working group including people from across the industry will now take forward a series of work-streams to reduce these risk. This group produced its initial progress report at the end of October 2015.

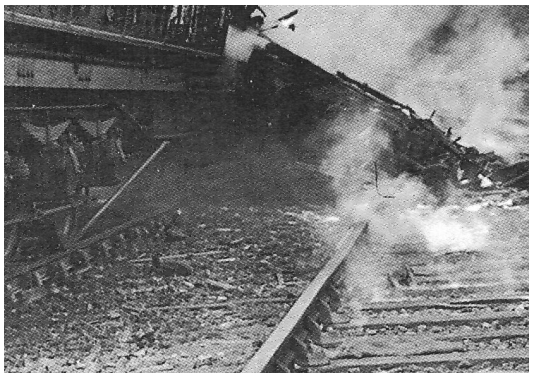
Whether by good design, training people to be aware of health issues before they develop, or through instilling a strong safety culture based on risk management across all tiers of an organisation, the Railway Inspectorate remains focused on looking ahead so it can nip health and safety risks in the bud.

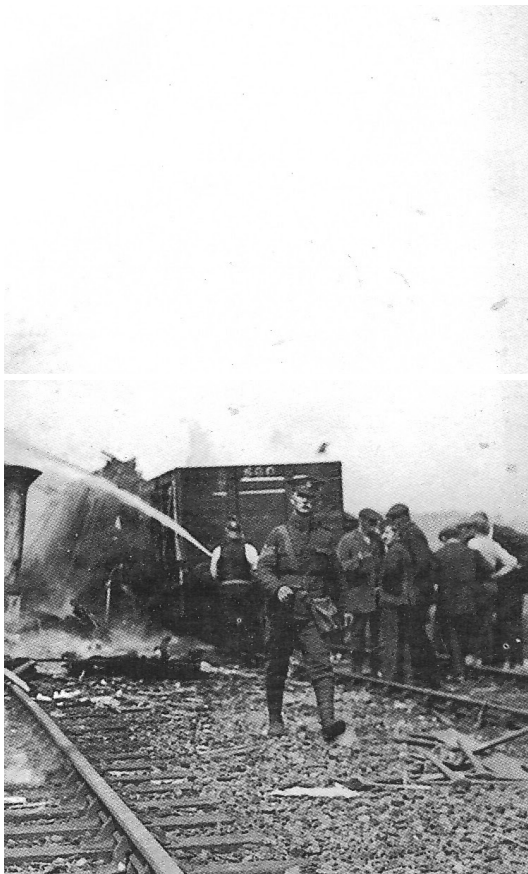
In 1887, 734 workers were killed on the railways; there was an acceptance that this was an inevitable consequence of operating and maintaining a railway. Today, we no longer accept any worker fatality or health and safety issue as inevitable. We are proud of the role the Railway Inspectorate has played thus far, but we know the job isn't over, so we'll go on being vigilant, go on fighting complacency and go on striving to drive down risk for staff, for passengers and the public at large.

Quintinshill 1915









RAIB report brief

ironmen run through Raven

At about quarter to ten on the evening of 1 November 2014, a pair of ironmen – carrying a 16-metre length of rail – ran away for around 5.4 miles on a falling gradient along the Garnant branch in Carmarthenshire. Two track workers rode as far as Raven crossing (a distance of about one mile) so they could shout a warning to colleagues working there. They were successful in this, but received minor injuries when they jumped from the ironmen just ahead of the crossing.

It must have been terrifying – and it could so easily have been another Tebay (see Fact Box, page 7). Why did it happen?

RAIB determined that the runaway began shortly after the 'rig' had been taken over Gwaun-Cae-Gurwen level crossing. Part of the problem was planning: the task planning for the work had not adequately mitigated the risk from using ironmen on the gradient. And part of the problem was the brakes – something that was also a feature of Tebay.

In this case, the brake springs fitted to the leading ironman were incapable of delivering the specified torque. There also wasn't enough slack in the brake cables, while poor maintenance, coupled with overuse and possible water and leaf contamination, all made the incident almost inevitable.

But of course, had the role of 'person in charge of the trolley' been carried out properly, then – arguably – the brakes would have been tested and the ironman would not have been put into service when they failed.

What was done?

Network Rail issued a safety bulletin reminding staff that information on the planning and use of ironmen, including the minimum numbers of people required, is included in specified modules of its Plant Manual.

The maintainer, Torrent Trackside, put arrangements in place to check the validity of the brake test results submitted by its mobile fitters. These are intended to confirm that the results are complete and that the values recorded are credible.

Network Rail also prohibited the use of ironmen on gradients steeper than 1 in 150 until further notice.

What will be done?

In addition, RAIB recommended:

- Reviewing Network Rail's arrangements for planning work using manually propelled plant, including the risks associated with the use of such plant on gradients;
- Reviewing Network Rail's arrangements for compliance with the requirements of Rule Book Handbook 10, specifically the responsibilities assigned to the person in charge of the trolley;
- Risk assessing the braking system on ironmen, starting with a definition of the function of the brake, and taking account of operational experience from end users, the suitability of the brake for use in controlling the speed of loaded ironmen on gradients and possible degradation of the braking performance through the life of the equipment;
- Defining the required functionality of the braking systems fitted to manually propelled plant, in order for Network Rail to revise the requirements and guidance for design, testing and use of the braking systems, and determine what retrospective action is required with respect to existing equipment;
- Creating a time-bound plan to implement any mitigation measures necessary to reduce the risk from runaway of existing manually propelled plant to be as low as reasonably practicable; and
- Reviewing the arrangements for ensuring that the braking systems of all types of manually propelled plant are correctly maintained.

Details of the other actions undertaken by Network Rail and Torrent Trackside may be found in RAIB's full report – go to www.gov.uk and search for 'Raven'.

Newswire

3 September 2015 US: Freight trains collide in Tacoma

Just before 07:00 (local time), a freight train struck the rear of another in Tacoma, Washington state. The impact occurred at low speed; the driver of the incoming train suffered minor injuries. An investigation has been launched.

6 September 2015 Canada: Freight trains collide at Golden, British Columbia

At around 03:30 (local time), two freight trains collided and derailed near Golden, British Columbia. There were no reported injuries.

10 September 2015 US: Concrete ledge crumbles, derails subway train, injuring 2

At 22:35 (local time), a commuter service derailed in a tunnel some 700 feet north of Hoyt-Schermerhorn Street station. Around 80 passengers were evacuated. One reported feeling dizzy; two others sustained minor injuries. Initial investigations showed that the derailment was caused by debris from a concrete access ledge, which had fallen to the track.

FACT BOX: TEBAY

In the early hours of 15 February 2004, a trolley loaded with rail ran away from a maintenance area at Scout Green.

Wooden chocks had been placed in front of the trolley, as its hydraulic brakes had been disconnected, thanks to a fault that had not been repaired.

As a track worker began using an excavator to remove sections of scrap rail from the trolley, the chocks became dislodged. Slowly, it began to roll downhill, gathering momentum on the 1 in 75 gradient from Shap summit.

In darkness, it reached speeds of up to 40 mph, before striking and killing four members of staff who were working further down the line. Five men were also injured.

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GTR's Twitter team: Joseph, Tina, Huw, Bradley and Isana

Don't make a hash of it:

how we're using social media to talk to our customers

Passengers want information, and with the increasing use of smartphones and tablets they can demand that information in real time. The advent of social media has provided new ways for the thousands of people who ride the rails to contact their train operator directly.

So what can be done to respond to passengers' questions, comments and complaints, in the time frame they want and the format they find accessible? One passenger train operator has agreed to tell us how they are using social media in their operations.

Govia Thameslink Railway

GTR is a relatively new franchise, set up in September 2014. The company now runs Southern, Gatwick Express, Thameslink and Great Northern, and it takes communications with customers seriously. For example, the Southern and Gatwick lines only became part of GTR in July 2015; but their twitter functions integrated into the wider GTR six months before that, in February.

Our main goal over social media is to provide our customers with information about train services. Through the Gatwick Express, Great Northern, Southern and Thameslink Twitter accounts, we interact with customers in a less formal way, looking to answer their questions and resolve any issues they may have.

At times, it can be difficult to answer every query. We have 172,400 Twitter followers, all looking to us for information. The biggest hurdle is getting to know our customers and understanding the way they want information presented.

We are now capable of being a source for real-time information, as we are in the middle of control and get information as soon as they get it. With the support of the control team, we can now update customers faster than ever.

Newswire

12 September 2015 India: Shimla charter train derails, killing 2

At 13:20 (local time), a charter train derailed on a curve shortly after leaving Kalka station. Of the 37 passengers on board, two – both British tourists – were killed; nine others were injured. India's Commissioner of Railway Safety later announced that 'provisional findings' suggest 'the accident took place due to "Failure of Railway Staff". The investigation continues.

16 September 2015 Germany: Level crossing collision at Hedendorf, 1 rail passenger injured

A passenger train struck a bus that stalled on an automatic level crossing at Hedendorf. The bus driver managed to move the vehicle to a less dangerous position and evacuated his 30 passengers (all children) before the impact. One rail passenger was injured.

As well as giving better information to our customers, social media sites allow us to provide our control team with customer feedback at a more in-depth level. Our customers are our eyes and ears on the railway, and if something goes wrong they can provide us with information that we can pass on straight away.

We are looking at how we can use social media to engage with our customers, and how we can make 140 characters have a positive impact on their day. We aim to present ourselves as proactive rather than reactive, generating a positive image for Govia Thameslink Railway.

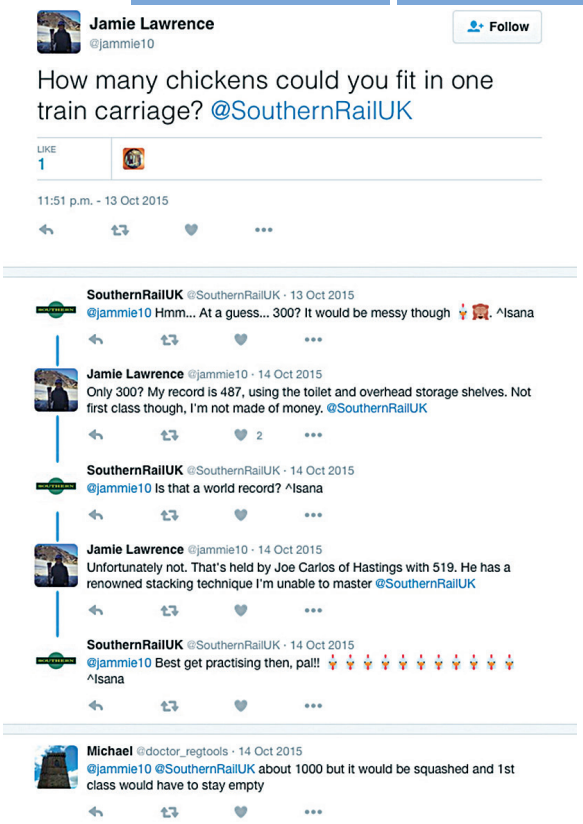
The great thing with social media is that we can be warmer and more informal than other channels.

We do get a lot of trolls, especially on Southern, we don't let them overpower us though if they want to send 200 tweets a day, let them - but we'll answer questions where needed.

We used to dismiss all abusive tweets, but now we take a different approach and try and turn things around for the customer. We sometimes have to tell people to be careful and back down though.

We don't say sorry needlessly. We explain issues clearly using plain, jargon-free English.

We're serious when we need to be, but we like to smile too and use humour to engage with our customers.



Have you updated your Rule Book?

In December 2015, updates were made to the Rule Book and related publications. This saw the reissue of 19 Handbooks, 27 Modules, and requirements for movement of freight and dangerous goods (so called white and pink pages), to name but a few. The Rule Book is a vital safety document. Regardless of the route you work on, you should take the time to familiarise yourself with the Rule Book changes.

One of the bigger changes is to the locations of the rules relating to the European Rail Traffic Management System (ERTMS). Thameslink, Great Western and the East Coast Main Line are set to follow in the Cambrian's footsteps and roll out ERTMS. Previously, these rules were documented in separate Modules and Handbooks, but now the majority of these have been merged into the national Modules and Handbooks, so you need fewer documents.

If you've previously downloaded Rule Book Modules/Handbooks/ Manuals from RSSB.co.uk, make sure you've downloaded the latest updated version and replace any existing copies you may have on your PCs or mobile devices.

You can find more information, including the December briefing note and the updated documents, on the RSSB website: www.rssb.co.uk/railway-group-standards.
You can also contact RSSB: enquirydesk@rssb.co.uk

5 October 2015 US: Passenger train derails after striking rocks on line in Vermont

The Vermonter – a passenger train that runs between Vermont and Washington – derailed in Northfield after striking rocks that had fallen to the track. There were seven minor, but no reported major, injuries.

15 October 2015 UK: Five staff hurt in RTC near Hampden Park

At 17:06, it was reported that five members of contract staff had been involved in a road traffic collision in the Hampden Park area, after completing a turn of duty with the Brighton Delivery Unit. All were taken to the Royal Sussex County Hospital, where one staff member was reported to have suffered life-threatening injuries.

24 October 2015 US: Hurricane washes track away in Texas, freight overturns

At 03:30 (local time), a 64-wagon freight overturned just north of Cosicana in Texas, floodwater having destroyed the trackbed. Both crew members swam to high ground and were later rescued uninjured. The excessive water levels were caused by Hurricane Patricia, which saw 18 inches of rain fall on the area in two days.

Swipe in and swipe out: welcome to Sentinel Site Access

Site Access, the upgrade to Sentinel, was deployed in January 2016. The whole industry (including Transport for London, Sentinel's newest partner) is changing the way that it uses Sentinel on a daily basis. One of the main reasons for this change is the need, recognised across industry, to prevent double shifting on rail infrastructure and in other areas, such as construction sites. By using the improved Sentinel scheme on a daily basis, the industry will be in a better position to tackle practices that compromise safety and manage fatigue.

Angi Bell, Site Access Project Manager, takes us through the work which has been taking place over the past 18 months.

"The biggest challenge here", says Angi, "is to do it in a way which makes it easy and logical to use, whilst remaining fully focussed on the need to stop double shifting. Sentinel Site Access has the safety benefits we need, but we've also used the opportunity to give card holders something back! The redesign of the Sentinel mobile application makes this easy to achieve."

Sentinel is the national programme, aimed at improving workforce safety. For example, it provides a means of authentication for staff on the rail infrastructure, bringing together all infrastructure access arrangements across the whole industry under one roof. Although Network Rail has led on the programme, suppliers, sponsors and Trade Unions have all been heavily involved in the work.

So how is Sentinel changing with the introduction of Site Access in January?

As a user, when you swipe in through the Sentinel mobile app, you will be asked a series of questions:

- where you are swiping in to (location of work and not GPS)
- the role you will be undertaking on that shift
- the time of day you left your place of rest
- how long you are planned to work
- how long it's likely to take to return to your place of rest at the end of the day.

There is now also a new 'swipe out' function. This will let the system know if you have had less than 12 hours' rest, and will ask for a risk assessment to be completed before allowing you access to the site.

Site Access will also record if you've had a site induction for each specific work site, so you'll no longer need to have the same briefing twice; and as everything will be sorted out electronically, you won't need to sign as much paperwork. It's all designed to be more efficient.

The upgraded Sentinel app will have greater capability, even when there's no internet connection. It only needs signal for swiping in, as the system will still need to confirm authority from the database that you have the authority to work on the live infrastructure, including a valid medical record, a valid drugs and alcohol record and the right competence to perform the job. That's it. Everything else can be done offline, so you can continue at your own pace.

Newswire

5 November 2015 Germany: Passenger train strikes lorry at level crossing, killing two

At around 20:00 (local time), a passenger service running at around 100 km/h struck a US army lorry at a level crossing in Freighung, Northern Bavaria. The force of the collision caused the lorry's trailer to separate from its tractor unit. It was dragged several hundred metres by the train, after which both vehicles caught fire. The lorry driver and a member of staff in the cab of the train were killed. Of the train's 40 passengers, 16 were injured; four were taken to hospital in a non-critical condition.

14 November 2015 France: TGV on test derails on curve near Strasbourg, killing ten

At 15:10 (local time), a TGV unit derailed on a 1000-metre radius curve while on test near Eckwersheim, before colliding with the parapet of a bridge over the Marne-Rhine canal. Some of the vehicles were thrown into adjacent farmland; the rear power car fell into the water. A fire also ensued. Of the 49 people on board, 11 were

The Sentinel programme team recently held a Summit at Westwood to introduce the changes. They listened to examples of real instances when double shifting has sadly contributed to the fatalities of some of our workers, hitting home the importance of Site Access in Sentinel. The new Sentinel functionality received positive feedback during the Summit. "It was my first real confirmation that we have succeeded in our goals to make the new apps logical, intuitive, user-friendly and easy to fit to our everyday routine," said a beaming Angi.

For more information, email sentinel@networkrail.co.uk and write 'Site Access' in the subject of your email or contact the Sentinel hotline number on 0330 726 2222.

Change support

Some driving routes across the UK are currently going through significant change. For example, the Great Western Main Line is currently undergoing refurbishment, change in signalling and electrification, all at once.

These changes are vital to the industry, as they improve safety or increase capacity. But they do have consequences for the drivers who use the route regularly. And the route knowledge that these drivers have spent months or even years building up stops being quite so relevant. Drivers may find, for example, that knowing the signalling layout for Reading is simply no longer relevant, as that system has gone. However, they now need to be aware that a new diagram is in place, and know how to deal with that.

So, what is the industry doing to support drivers on routes undergoing significant change?

The industry has looked at how we could improve the briefing process for drivers in this situation. The ultimate aim is to not bombard drivers with too much information, but make sure as far as possible that they understand and remember the safety aspects of the changes.

The researchers focused on these questions:

- We all have a point at which our brains can't take in any new information in a single go. At what point does the new information given to these drivers reach a 'tipping point', when they can't take any more in?
- How do route changes affect the risks to drivers?
- What advice can be given to driver managers to make the briefs as useful as possible for drivers?
- How can we improve the briefing process for drivers on routes undergoing significant change?
- How can we avoid giving drivers too much information, and making sure they understand and remember the safety critical parts of that information?

The answer to these questions is a newly developed good practice guide, which gives advice on how to help drivers cope with the constant changes in infrastructure and technology being undertaken or planned on the GB Railway. This guide helps managers to improve the briefing process for drivers, as well as improve ways to reduce the risk of information overload, and increase understanding and memory of safety critical information.

This good practice guide is available on the RSSB website.

It was first published in January 2016, and will be reviewed and updated by industry to reflect new research and resources relating to driver management, training and briefing.

You can also find out more about the research on the RSSB website. Search reference 'T1045'

Between 2011 and 2014, Reading station was completely rebuilt, impacting drivers both during the works and after completion.

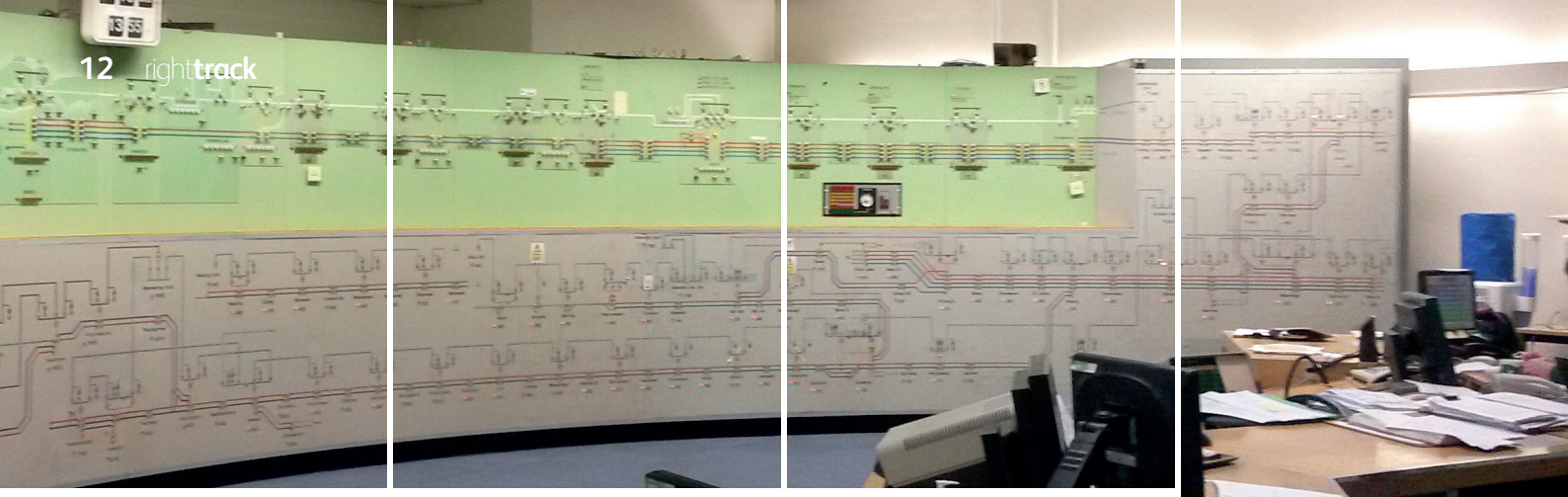
killed and 37 were injured (12 seriously). Initial investigations suggest that the driver braked too late for the curve.

US: 18,000 gallons of ethanol spilled in Wisconsin derailment

A Burlington Northern - Santa Fe (BNSF) freight train carrying ethanol derailed near Alma, Wisconsin. Some 18,000 gallons of the fluid were spilled into the Mississippi River. Staff stopped the leaks in all five wagons involved, placing a containment boom along the shoreline before pumping the remaining ethanol away.

Pakistan: 'Jaffar Express' derails, killing 20

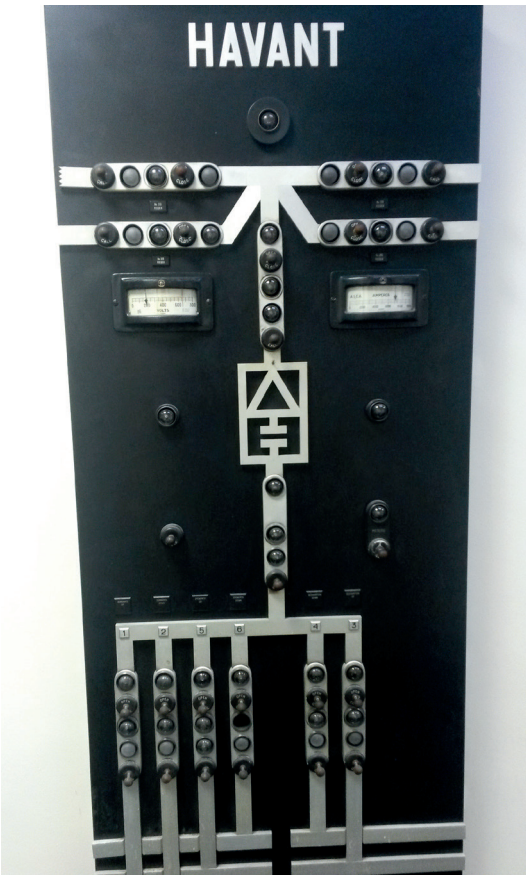
The 'Jaffar Express' derailed at Aab-e-Gum, Balochistan, killing 20 people and injuring 96 more. The victims were taken to a local hospital and an investigation was launched. Initial reports suggest that the incident occurred after the train's brakes failed.



The control panel in the Eastleigh ECR

The Lowdown

Scott Tarr tells RSSB's **Martha Parkhurst** about the hidden world of the Electrical Control Room Operators.



An Electrical Control Room switchboard from days gone by

It's the morning rush hour. People are going to work, and there are dozens of packed trains on one of the major commuting routes. There's a circuit failure on the line, and the trains come to a grinding halt. The signals no longer work, so it's impossible to know whether or not it's safe to proceed. But even if you could tell, you wouldn't be able to move your train anyway. The third rail or overhead line, on which your train depends for energy to move, isn't giving you any more juice. Your passengers aren't going to be rescued any time soon either, since the recovery train service won't be able to access the electricity they need either.

On another part of the network, a passenger has leaned out a bit too far from the platform, and fallen on the track. The signaller has been contacted, and all trains have stopped; but the passenger is dangerously close to the third rail, which has a voltage of up to 750V DC. Should she touch it, there is a high chance it will kill her; if it doesn't, she will probably suffer life-altering injuries.

The responsibility for trying to resolve both types of issues falls to Electrical Control Room Operators (ECROs). They hold the key to working out how to switch the current back on when there has been a fault, making sure that the operational railway can continue working; or switching it off and making the area safe in the case of an emergency, saving the lives of anyone who might be coming too close to power supplies. But what exactly is it that ECROs do? On a cloudy December day, I went to Eastleigh ECR to meet Scott Tarr and find out more…

Eastleigh ECR is the largest DC ECR in the country. The track it looks after uses the third rail to power its trains (AC ECRs are responsible for track that use overhead power lines). The ECROs at Eastleigh are responsible for a total of 467km of track, including 16 signal boxes and hundreds of signals. The 12 ECROs based at Eastleigh cover Walton on Thames Weymouth via Southampton, Egham to Reading, as well as lines to Portsmouth and Walton, and the Isle of Wight. The

Newswire

Canada: The accused in the Lac-Mégantic derailment plead 'not guilty'

Six people on federal charges in connection with the Lac-Mégantic accident of July 2013 have pleaded not guilty. Each is a former employee of the now-defunct Montreal, Maine and Atlantic Railway (MMA), who were charged under the Railway Safety Act for failing to ensure the incident train's brakes were properly set before it was left unmanned. They also face Fisheries Act violation charges following an Environment Canada investigation regarding the crude oil that flowed into Lac-Mégantic and the Chaudiere River.

Operators (they don't like being called Electrical Controllers) work in pairs on a six week roster: five earlies, five lates, 7 nights (including 2 longs), and 2 long days of 12 hours. There's also a week of spares for training, briefing and checking shifts. ECRs are one of the few locations on the network that are staffed 24 hours a day, 365 days a year. "The hours are the worst thing about the job," says Scott, "especially missing Christmas and not seeing the kids open their presents."

Scott qualified as an electrician, and joined the railway in 1992. He started off on the permanent way, as an Engineering Supervisor and PICOP, enjoying the physical and outdoorsy nature of the job, before moving on to substation maintenance, first as a technician then as a manager. He has been working at Eastleigh since 2008, and says it is the most professional department he has worked in on the railway. "There's a very positive feel at Eastleigh, though it all stops when the phone rings." And what a ring it is! Dave Miles and Derek Bursey, who were on shift when I met Scott, answered the phone very quickly, then informed me that this was their "normal" ring, for non-emergency situations. There are different rings for different levels of purposes. They then played me the emergency ring, which sounded to me more like a fire alarm.

Along the length of the ECR office is a large board showing all of the track and electrical substations the ECROs are responsible for. Owing to changes in technology, some are controlled by computers (in grey), whilst the oldest parts (in green) actually require physically switching the current on an off. The board has lights which are on, off or flashing, and notes are attached to show where track staff have asked for a switch-off. Some substations have yellow warning triangles placed by them. "Those are the compromised warning sites," explains Scott. "The structures there are not insulated safely, usually because of our local thieves."

Being aware of issues that make the electrical structures of the railway less safe is part of the responsibility of the job. ECROs need to respond to these challenges to ensure the train can run on the network, and staff, passengers and the public are kept safe.

ECR Operators are responsible for:

- Ensuring a constant supply of electricity to trains and signals
- Monitoring the supply
- Maintenance and renewal of electrical assets
- Checking and issuing isolation documents, which then go into SSOW packs.
- Reacting to emergency situations, such as members of the public on the tracks

Electric shock accounts for 7 % of fatality risk to the workforce (RSSB ASPR 2013/14 p4)

Coping with the scrum

Railways are increasingly busy with passenger journeys and station footfall breaking record numbers every year. So how can we cope when major sporting events mean even more people want to travel on our network?
The 2015 Rugby World Cup, held in September and October, demonstrated how our industry worked together to deal with the scrum of passengers at stations near Twickenham, Wembley, Cardiff and Queen Elizabeth Olympic Park. We have caught up with some of the staff involved to hear about their experiences.

Name: Paul McMahon

Company: Network Rail

Job: Route Managing Director Wales (Interim)

Network Rail spent two years preparing for the Rugby World Cup. I was involved for the final three months to lead the finalisation of the plans and oversee delivery. The aim was, as always, to allow spectators, in addition to the regular travelling public, to move safely and effectively. We wanted the stories to be about the sport and not about transport issues.

Seven of Network Rail's eight routes hosted a total of 48 games in 11 cities. There were 1.6 million train journeys to and from the games, with hundreds of additional trains laid on for passengers to and from the matches. All this was possible because of the effort put in by people across the rail industry. We had 350 station volunteers and extra mobile operation managers. Our normal operations worked well in both national and route controls; and we arranged for additional maintenance to take place before the tournament. Network Rail's contribution has been recognised by England 2015, the tournament organisers; and for that we have our people to thank.

And it all paid off! During the cup there were no significant infrastructure issues, and we can be proud of that. Of the 48 matches, we only had real challenges with the first three games in Cardiff, as we were attempting to manage up to 40,000 people in a station built in the 1920s with a track layout that restricts many additional train movements. Yet there are some lessons we can learn. Plan early, but keep it under review. Develop strong and honest relationships with stakeholders, using good communications.

The UK has good reputation for managing major sporting events, as we have proved with the Olympics and now the Rugby World Cup. We are proud at Network Rail with what we have done to support. Every week, there are big events across the network - whether sport, music, cultural, or whatever. The vast majority of these go well, which reflects the organisation and effort of all our staff.

Name: Patrick Allinson

Company: Great Western Railway

Job: Duty Control Manager, Swindon

I have been a controller for GWR for three and a half years; prior to that I worked for Northern Rail at Manchester Piccadilly.

GWR had a project team dedicated to the world cup, as well as new train plan written for extra trains and crew movements needed. All frontline and control staff were issued with a booklet giving details of where and when the matches were taking place, and any changes that happened as a result.

During the world cup, we saw a great increase in traffic, both during the day before a match and in the evening as fans left. On top of ticket-holders, a lot of people travelled to the fans' areas outside the stadiums, so we had to take them into consideration when we did our planning. Our job at control was to monitor the trains during the busy events; and remain aware that if an intervention was needed, it would be time critical as the numbers of people could build up quickly.

The best part of working for the world cup was that, as with the Olympics in 2012, we had the chance to create good experiences for the people travelling to and from events. This could sometimes be difficult though, when we needed to make a decision with two events happening in different places. It was hard to satisfy everyone in this instance. Providing crew to work trains with very late finishes at Paddington could also be a challenge, especially on weekends.

Managing events at Cardiff is notoriously difficult, as it is a through-station with very limited terminating facilities. As such, it is hard to manage large groups of people heading back East as trains stack behind if there is any delay loading passengers onto the train. Next time, we'll need to have better communication with the people on the ground to avoid misbalances between trains and confusion for customers.

Name: Wyatt Gates

Company: South West Trains

Job: Events Strategy Manager, Twickenham

I've worked for South West Trains for 12 years. I started as a station manager, working in Bracknell, Wokingham and Twickenham. I have been Events Strategy Manager for two years.

We knew the world cup would be demanding, so we started a steering group two years ago, to make sure we were as well prepared as we possibly could be. We had learned some valuable lessons from the London Olympics; and as a TOC in this part of the country we have regularly helped with major events for 20 years. The key issue for preparation was engaging with our partners, including Network Rail, local councils, event organisers, Transport for London, and the emergency services.

There was a huge increase in foot traffic. Twickenham Stadium holds 82,000; and in addition we had the fan zone at Richmond which could hold 10,000 at a time plus those who travelled to the area to watch in pubs and with friends. On match days, we had extra staff and volunteers at all the stations affected. We also arranged for staff who could speak additional languages to be on hand to help visiting supporters. The most challenging day was certainly the opening ceremony and first match on Friday 18 September. Supporters travelled to the stadium during the evening peak – this has never happened before on this scale. It was a massive challenge, but one we really enjoyed.

It was great to see how everyone pulled together and worked closely to help customers have a great experience. It didn't really matter whether you were South West Trains, Network Rail or the local council – everyone got stuck in and supported each other really well. The South West Trains / Network Rail Alliance was also a massive help, as we already had an integrated control centre and station management team at London Waterloo. The plans we put in place worked really well, and we've had excellent feedback from supporters and our local stakeholders.

Name: Alix Doran

Company: Network Rail

Job: RWC Volunteer

Normally, I work as the Personal Assistant in Network Rail to Phil Hufton, the Managing Director of Network Operations. However, during the Rugby World Cup season, I volunteered at stations to assist people getting to and from the games, giving customer service and helping customer flow in the stations which were busier due to the world cup.

Working for big sports events is interesting and stressful at times. I had a lot of people asking me different questions at the same time, and sometimes had to deal with crowds; but it was also hilarious as our group of volunteers got to work closely with the station staff and we all got along really well. I learned that even if the customer is staring straight at the information screens, they will still ask which trains to catch.

I had previously volunteered for the Olympics and really enjoyed it; it is a great opportunity to get out there and actually meet our customers as sometimes at a desk you can feel a bit removed from the operational railway. I would definitely do it again, as it really makes you value how hard but rewarding front line roles can be.

SPADtalk

Looking for the signals

25 years ago, a train driver was wrongly blamed and imprisoned for causing an accident following a SPAD. Times have changed; but could our investigations be smarter?

Purley Train Crash. Image: Rex

On 4 March 1989, Robert Morgan was driving the 12:17 Littlehampton to London Victoria, and passed T168 signal at danger. He struck the back of the 12:50 Horsham to London Victoria, at 60mph, just after Purley station. The first six coaches of the Littlehampton train left the track and came off the embankment, killing 5 passengers and injuring 88 on board.

Morgan had been a driver for 22 years with no serious incidents nor, up to then, any SPADs. He was in good health, had not been taking medication or consuming alcohol, and had no issues at home. But without any other legal alternative, Morgan admitted two counts of manslaughter and was jailed for 18 months.

A red signal had been passed, leading to a collision. Lives were lost, and so the driver was to blame. Was it really that simple?

The answer is no. In fact, there had been four previous SPADs involving T168 in the five years prior to the fatal crash. In 2007 Lord Justice Latham overturned Morgan's conviction, feeling there was something about the infrastructure of this particular junction that was causing mistakes to be made.

Since Ladbroke Grove (1999), no one has died as a result of a SPAD. However, there are still about 300 SPADs a year, and each represents a situation where something, somewhere, didn't go to plan.

Everyone works incredibly hard to tackle SPADs. TPWS provides extra security, and staff are increasingly encouraged to speak out and share their own experiences to help others learn, whether that's through conversations with colleagues, managers, a RED video, Right Track or CIRAS.

Despite this, many feel that the focus is still on the train driver in SPAD investigations. Are rail companies doing enough to ensure they can manage risk better by investigating underlying causes of SPADs?

RSSB held a series of workshops involving drivers, signallers and managers. We asked them how they felt about SPADs, and the types of things that made them more likely to happen. Everyone involved recognised the importance of looking past the individual driver to the underlying causes.

The study identified 10 key factors which make SPADs more likely, including signal design and layouts, driver competence management, fatigue, driver workload, non-technical skills, safety critical communications, and the things that cause trains to approach red aspects in the first place. These factors were also identified as key underlying causes in incident investigations..

Of course the driver still has a duty of care: they need to keep up their competencies, follow the rules, use TPWS correctly, and look after themselves and their passengers. This means the role of the driver in how a SPAD occurs still needs examining; but it's in the context of establishing why things happened the way they did, and not assuming any kind of blame.

The results of the study have been made available in a handy booklet summarising what came out of the workshops, as well as guidance aimed at company directors – to find out more, go to Opsweb (www.opsweb.co.uk) or contact RSSB at enquirydesk@rssb.co.uk

FACT BOX

This project, "Industry human factors SPAD review" is now available on SPARK. Go to www.sparkrail.org.