rightrack

Issue 26 **Winter 2019**

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SPADtalk:
Getting the info

Newswire

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In the bleak mid-winter

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RSSB
A Better, Safer Railway

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Hello, and welcome to issue 26 of Right Track!

In this issue, we're looking at how changes to standards affect the way we work, including Emergency Special Working, and how the updated Rail Industry Standard on investigating accidents and incidents will help us learn lessons and keep improving the safety of our rail network.

We also hear about some of the ongoing work we do to keep ourselves and our passengers safe, including the suicide prevention programme and how we prepare for winter.

In our regular features, we meet an Electrical Control Operator in the Lowdown; continue our series on the human factors aspects of SPADs in SPADtalk; and look at RAIB's investigation into a near miss at Dundee.

As ever, we would love to have your feedback on any of the articles in this issue. If you have any comments, please email us at **righttrack@rssb.co.uk**.

RSSB A Better, Safer Railway

Right Track can be downloaded from Opsweb: www.rssb.co.uk/opsweb

Right Track is produced by RSSB through cross-industry co-operation. 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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Printed by Willsons Group Services / Pyramid Press.

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Investigating Accidents and Incidents

Ladbroke Grove, 1999

No-one starts the day intending to have an accident. However, things do not always go as planned, and sometimes an accident - or an incident – can happen. The investigation of accidents and incidents (there are specific definitions which differentiate between the two) is a significant part of improving safety, as we might be able to learn lessons and make changes to prevent a recurrence.

It is important that any investigation reaches the correct conclusions about the causes of the accident or incident, and then makes the appropriate recommendations. This is key to the continuous drive to improve safety throughout the rail industry.

RSSB has recently updated the Rail Industry Standard regarding Accident and Incident Investigation (RIS-3119-TOM), which now includes a lot of useful guidance on how to carry out investigations, and the lessons we can learn from them; including how to identify human factors, techniques for conducting interviews, and the importance of collecting evidence. This is to help investigators come to accurate conclusions about what actually happened, and to make recommendations about what might be necessary to prevent repetition.

The safety record enjoyed by today's railway owes a lot to lessons learnt from the past. The continuous brake, interlocking, the automatic warning system (AWS), the buck-eye coupling and, more recently, the Train Protection and Warning System (TPWS) all have their roots in past accidents. That said, much useful learning can come from events which are far less dramatic than these, as well as those from other countries' railways, and other industries, like oil and gas, aviation and aerospace.

An investigation into an accident or incident should be in proportion to the seriousness - or potential seriousness - of the event. No one would demand a public enquiry following a low speed derailment in a siding; but neither would we deem a one-page report into a major accident appropriate. Investigators need to apply the principles of proportionality when deciding how to investigate. Guidance on how to do this is in the RIS.

For more information on accident and incident investigating, please see RIS-3119-TOM, which can be downloaded from www.rssb.co.uk.

Clapham Junction, 1988

Harrow & Wealdstone, 1952

'Those who cannot remember the past are condemned to repeat it'

George Santayana (1863 –1952).

Learning from Accidents and Incidents

Investigation reports can spawn recommendations: recommendations which are designed to lead to actions, which in turn – all being well – will prevent accidents and lead to a safer railway. This is one way that lessons are learnt from operational experience. Yet no industry is static. Staff move on, employees retire, and human beings forget, so we all need to work hard to remember the lessons of the past, the present and even the future.

Think back to the multi-train collision at Clapham in 1988 (see table opposite), which was caused in part by fatigue, poor training and poor supervision. Only two years ago, over the Christmas and New Year period 2016-17, extensive resignalling and track remodelling work was carried out at Cardiff. When some of the new layout was brought into use on 29 December 2016, a driver noticed that the points his train was about to take were not in the correct position. He stopped the train just before reaching them.

The Rail Accident Investigation Branch (RAIB) investigated that incident, and concluded that the points had been left in this 'unsafe condition' because they hadn't been identified as needing to be secured. Furthermore, no one had checked that all the points that needed to be secured during the works had actually been secured. Route proving trains had been cancelled, and a culture had developed that led to 'insular thinking about methods of work and operational risk'. RAIB also felt ineffective fatigue management to be a possible underlying factor.

Simon French, RAIB's Chief Inspector, pointed out 'how easily things can go wrong when railway infrastructure is being upgraded and renewed'. He drew parallels between what happened in Cardiff in 2016 to what had happened in Clapham almost three decades earlier. 'Back in 1988, the disastrous collision at Clapham Junction happened in part because working for weeks on end without any days off was part of the culture in some areas of the railway.' The events at Cardiff showed 'how easy it is to forget the lessons of Clapham and slip back into those habits under the time pressures of a big commissioning'. The events at Cardiff could have been worse than they were. We were lucky – but the importance of remembering lessons learnt in the past is clear, so we should all make an effort to revisit old reports, talk to colleagues with long memories and (basically) read up on our own subject.

More information on accidents and incidents of the past, and the lessons that we drew from them, can be found in RED 49, Past at Danger. Go to www.rssb.co.uk/opsweb to access the full video.

You can also find the investigation reports into the accidents and incidents in the table opposite at www.railwaysarchive.co.uk, and from various books, including Red for Danger.

Nuneaton, 1975

Newswire

15 September, Canada: Derailment on washed out bridge in Manitoba kills one crew member, injures another

At around 18:30 (local time), a freight derailed on a washed-out trestle bridge south of Thompson, Manitoba. One crew member was killed, the other suffered life-threatening injuries. The train had been carrying liquefied petroleum, but none of the wagons was compromised.

18 September, Czech Republic: Level crossing collision at Kralupy nad Vltavou předměstí

During the morning rush hour, a passenger train struck a lorry at a level crossing in Kralupy nad Vltavou předměstí. Three passengers on board the train sustained minor injuries.

20 September, Netherlands: 4 children killed in level crossing collision in Oss

Four children were killed and two adults were seriously injured when a train struck an electric cart at a level crossing in Oss, Pays-Bas. The children were being taken to school in the cart at the time of the incident. One report suggests the brakes on the vehicle to have failed.

Accidents and incidents	Examples of resulting changes
Armagh (1889): An excursion train stalled on a steep gradient. The traincrew decided to split the train and take the front portion forward first. However, the rear portion ran away and collided with a following train.	Implementation of 'Lock, Block & Brake': interlocking of points and signals, absolute block working and continuous automatic train brakes.
Quintinshill (1915): Collision with stationary trains.	▪ Use of reminder appliances on signals ▪ Crashworthiness of rolling stock and use of gas lighting.
Welwyn (1935): Rear-end collision, second train accepted before first had cleared block section.	▪ Interlocking between block release and home signal berth track circuit and 'Line clear' release available for one pull only of section signal, also known as 'Welwyn control'. ▪ Ergonomics and safety critical communications.
Harrow & Wealdstone (1952): SPAD and rear-end collision in fog.	Accelerated the AWS programme (Lewisham 1957 also impacted this).
Morpeth (1969, '84 & '94) and Nuneaton (1975): Derailments due to overspeed on curves	Improved signage and use of AWS magnets when approaching reductions in permissible speed and speed restrictions.
Polmont (1984): Collision with cows leading to derailment.	▪ Cab-to-shore radio ▪ Rules regarding reporting of animals within railway boundary ▪ Crashworthiness of rolling stock.
Clapham Junction (1988): Irregular signal aspect displayed leading to rear-end collision and multiple fatalities.	▪ Changes to wiring practices ▪ Fatigue management.
Ladbroke Grove (1999): SPAD and head-on collision	▪ Increased focus on SPADs and their causes ▪ Accelerated installation of TPWS.

Ladbroke Grove, 1999

21 September, Australia: Two injured when driverless freight derails in Devonport

At 09:00 (local time), a freight carrying cement ran away as it neared Devonport at around 50 km/h. As it was routed into a siding fitted with a derailer by the signaller, the consist struck nearby fencing, sending debris flying, which struck and injured two passers-by.

24 September, Czech Republic: Locomotive strikes stock at České Budějovice station

At 21:35 (local time), a light locomotive struck empty coaching stock at České Budějovice station. Two members of staff suffered major injuries.

4 October, South Africa: Collision in Kempton Park injures more than 300

A passenger train struck the rear of another, which had come to a stand due to a fault at Van Reibeeck Park station near Kempton Park. There were no fatalities, but more than 300 people were injured, 32 of them seriously. An investigation has been launched.

RAIB report brief – Dundee near miss

A bridge just far enough

Around half-past midnight on Tuesday 10 July 2018, four track workers were involved in a near miss with a passenger train two miles west of Dundee. The team were working on a rail bridge over a footpath. Two were dealing with a fence just off the line, two were on the bridge itself. As the train approached, one of the latter scrabbled through the handrail to get clear, as the other pulled himself towards it.

The driver had seen the men, sounded the horn and made a full brake application. He'd cut his speed from 72 mph to about 30. The train had struck a portable generator, but none of the track workers. It was a close one...

East is east?

RAIB determined that the incident occurred because the team hadn't realised that the work location wasn't the location for which protection had been planned. Lines had been blocked as usual, but the blockage was some two miles east of Dundee. It should have been two miles west.

Railway mileages increase from 'zero' both to the east and west either side of Dundee. This meant the mileage at the site of work appeared to be consistent with that for the blockage. But it wasn't – and the same confusion came up several times during the planning process.

Planning involved several people, beginning with a track access request. Along with details of the work, the request form included reference to the structure number and its location (2 miles 1232 yards from Dundee), the route it was on, and the limits of the protection that would be needed (2 miles 1100 yards to 2 miles 1350 yards). This form was then given to a planner to arrange the blockage and prepare a safe work pack (SWP).

The planner was very familiar with the railway east of Dundee, having worked there many times. On seeing that the track access request referred to that city, he assumed he was planning for a blockage to the east. Although the request form referred to the line west of Dundee, a fact the planner transferred to the SWP, he didn't notice the discrepancy because the mileages matched his expectations. The planner later said his workload had been high at the time. RAIB felt this may have influenced his decision making.

The SWP the planner produced was standard, including information about the blockage. Four pages showed maps and diagrams of the area east of Dundee, followed by a form for setting up the blockage with the signaller. The form referenced signals and locations east of Dundee, but also gave brief details of the work, including the bridge structure number, which implicitly referred to the route west.

The person in charge of work on site (PiC) should play an active part in the planning process, checking and accepting or rejecting the SWP. Witness evidence suggests this wasn't routinely happening for the people involved in this incident.

The PiC's main concern in checking the pack was to confirm that the protecting signals covered the appropriate mileage. He also checked the nature and location of the work, finding out the (correct) location of the bridge from the person who raised the original track access request. Because the bridge mileage appeared to match the mileages of the protection, he didn't notice the additional detail in the pack that showed the protection was the other side of Dundee.

The process then requires a responsible manager to check and authorise the SWP. The manager involved had just resumed his post after being engaged on another project for several weeks; so he didn't have much prior knowledge

Newswire

5 October, Hungary: Passenger trapped in train doors and dragged at Ózd

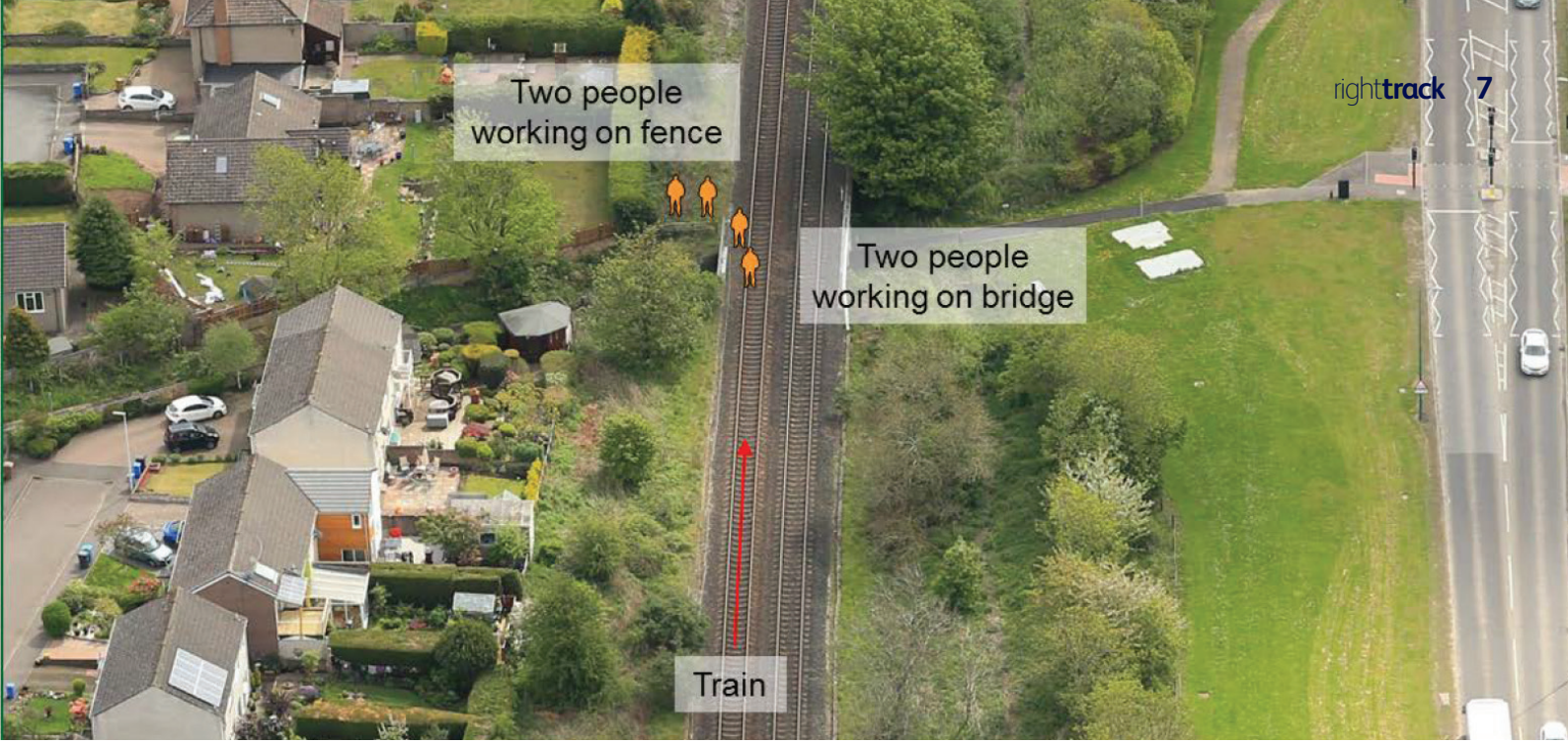
In the evening, a passenger was killed after being trapped in train doors and dragged along the platform at Ózd. An investigation has been launched.

9 October, Romania: Four killed in crossing collision in Lugoj

A freight train struck a car at a level crossing in Lugoj. The car's four occupants were killed instantaneously. It was also reported that the car's driver had failed to stop.

12 October, Germany: ICE catches fire near Dierdorf, over 500 evacuated, no reported injuries

In the morning, a high-speed ICE service caught fire near Dierdorf. The train was stopped and all 510 people on board were evacuated. There were no reported injuries.



of the work. He also had a significant backlog to deal with. He saw the work on the bridge as a routine job, and had confidence in the planner and PiC, who had already prepared and checked the pack. Given these constraints and influences, the responsible manager conducted a cursory check of the pack before authorising it.

On the job

On the night of the incident, the PiC arrived at the bridge with the other track workers. He had the SWP with him, as well as a 50-page work package plan, which contained more detail about the work to be carried out. This contained photographs and a map, which the PiC used (along with the structure number) to confirm he was in the right place.

At 00:19, the PiC contacted the signaller at Dundee to set up the blockage. During the conversation, the PiC cited the bridge structure number, while the signaller referred to the locations and signals east of Dundee, as per the form. They also agreed that the use of additional protection, like dets or track circuit clips, was not required because the work, as planned, did not affect the safety of the line. The PiC was sure he was in the right place and believed the line blockage protected him.

After the near miss, the PiC reported it to the signaller. When asked for a landmark to confirm his location, the PiC said he was near the airport – information that wasn't requested or given in the earlier conversation, as such landmarks are not part of the line blockage form. It was then that the signaller realised the PiC was in the wrong place.

In summary, RAIB note that the incident demonstrates:

- That the processes and documentation surrounding safe system of work planning can be vulnerable to misunderstanding, particularly where duplicate mileages on adjacent or nearby routes can cause confusion.
- The need for the PiC to be actively involved in the planning process to minimise the chance of such misunderstandings happening.
- The need for everyone involved in the process to check the information they receive.

16 October, Morocco: Seven killed in passenger train derailment near Bouknadel

At around 10:00 (local time), an express derailed and struck a bridge near the coastal city of Bouknadel. Seven people were killed; 86 more were injured. The train was later reported to have reached 158 km/h on a section where linespeed is only 60.

21 October, Taiwan: At least 18 killed in derailment on curve near Xinma

Eight people were killed and 187 were injured when The Puyuma Express derailed on a 300-metre curve near Xinma station. A government report later said that the driver had disengaged his train's speed governor just before entering the curve at almost twice the recommended speed. The report did not say explicitly why the driver took this action, but did note that the train's air compressor had been acting abnormally. The driver is currently under investigation.

Emergency special working (ESW)

Signal failures are a fact of life: even the most modern and well-maintained system will fail occasionally. Some failures only affect one or two signals, and these can often be managed by the signaller authorising trains to pass the affected signals at danger one by one. However other failures may be much more serious, and require trains to be authorised past several consecutive signals at danger to keep them moving, particularly in an area of dense rail traffic. It's this kind of failure that ESW was designed for.

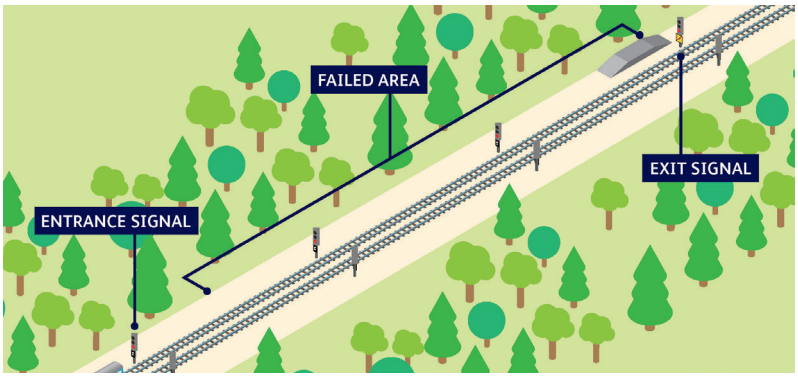
Until December 2018, the industry's main process for moving trains during a major signalling failure has been temporary block working (TBW), originally introduced into the Rule Book in the early 1990s. A TBW section is set up on each affected line between an entrance signal and an exit signal, with hand signallers provided at both. All points within the TBW section must be secured on the ground, usually with clips, scotches and padlocks, regardless of whether they are still correctly detected by the signalling system.

Finding hand signallers, getting them to site and arranging for all points to be secured means TBW can be slow to introduce: it can take a few hours to put in TBW after the signals have failed. In the meantime, trains are at a stand, and risks to passengers, staff and the whole rail system increase:

- More trains stopped means more red signals and a greater risk of SPAD incidents.
- Stranded trains can quickly become uncomfortable and unpleasant for passengers - especially in hot or cold weather or where trains are crowded- which has led to passengers self-evacuating from trains onto the track and putting themselves in danger.
- Stations may become overcrowded as well, increasing the possibility of injuries to passengers and staff from incidents such as slips, trips and falls.
- Both stranded trains and crowded stations can also result in an increased risk of assaults on staff as passenger frustration mounts.
- Needing to have hand signallers trackside, increasing their risk exposure

It's important to keep the length of time trains are at a stand following a signal failure as short as possible, and avoid these possible outcomes.

ESW, which came into force in December 2018, is a set of rules that forms a new way of dealing with the same kind of signalling failures while maintaining the necessary level of safety, as with TBW. The ESW rules have been developed



over more than ten years based on detailed research and risk assessment, with input from Network Rail, train operating companies, ASLEF and RMT. Operational trials of ESW have been in progress since 2013, first on the Wessex route of Network Rail, and more recently on the Western and Anglia routes as well. During these trials, hundreds of trains have operated successfully through ESW sections: in 2016 alone, ESW was successfully used twelve times on Wessex.

How ESW compares to TBW

1. In ESW the signaller passes instructions directly to the driver, who writes them down on an ESW ticket (form NR3190).
2. Signallers and drivers communicate directly, so there is no need for hand signallers in ESW.
3. Where points are locked and correctly detected by the signalling system, ESW does not require them to be secured on the ground.
4. The exit signal from ESW must be at a location that is easy for drivers to recognise.

ESW uses the same operational principles as TBW: both methods of working can only be used on lines that have two or more tracks and are signalled under track circuit block regulations.

However, there are some key differences (see box). These mean that ESW can be implemented more quickly than TBW, and therefore improving the safety of the network: during the operational trials, staff were able to introduce ESW in less than 20 minutes in some circumstances. This reduces the risks to passengers and staff that arise when trains are trapped for a long period of time.

Introducing ESW to the Rule Book is a major change, so RSSB has produced a range of materials to help staff understand the new rules so that they know how to implement ESW safely. This includes:

- Briefing leaflets for drivers, signallers and competent persons
- A general "question and answer" leaflet
- A briefing presentation
- A training video, which includes the background to the introduction of the ESW rules, an animation to explain the principles, and demonstrations showing you exactly what to expect from both a driver's and a signaller's perspective.

Find out more

- The new ESW rules are included in issue 8 of Rule Book Module S5, Passing a signal at danger or an end of authority (EoA) without a movement authority (MA)
- More information is available at www.rssb.co.uk/pages/esw.
- If you have further questions, speak to your line manager or submit a query through the RSSB help desk: https://customer-portal.rssb.co.uk.

SPADTalk: getting the info

This is the ninth instalment in our series on the human factors issues which can lead to SPADs (see issues 18-25 of Right Track for some of the other human factors issues that can lead to SPADs). The point of this SPADtalk series is to try and look past the immediate causes of SPADs (driver distraction, sun shining on signals, low adhesion) and think about the underlying causes: what causes these things to happen in the first place? The thinking behind this is that, if we identify and fix these underlying causes, then that makes lots of SPADs less likely, rather than just identifying a competence management plan to help a single driver.

A recent review of 250 SPADs identified that the written information people receive on the day can contribute to incidents. It's a theme that shows exactly why underlying causes need to be assessed: paperwork on its own doesn't cause SPADs; but it can cause confusion among drivers or signallers, which can lead to SPADs. This includes information on topics such as speed restrictions, unusual railhead conditions, possession arrangements, driver diagrams and freight consist patterns. These types of information can come as written information, from the train companies or Network Rail, and can change on a daily basis.

Some of these data are critical to SPAD management; for example, possession limits for drivers, PICOPs, ESs and signallers. Misunderstandings around this information can lead to SPADs and a range of other operating irregularities. Similarly, lack of awareness around information on unusual railhead conditions could lead directly to a SPAD.

In other cases, the information may be a contributor rather than a direct cause; for example, if a driver is distracted by reading a diagram when approaching a signal. If the driver doesn't identify a speed restriction or diagram change when they read through the written information before starting their shift, they can be distracted or confused by the unanticipated speed restriction or change to a route at the critical time, when they need to be observing and responding to signals.

Now that this theme has been noticed from the SPAD review, there is a responsibility on companies to try and provide any data that drivers need in a format that is accurate and easy to use, so that critical information is not lost in a large amount of irrelevant information. Drivers, possession staff and signallers also need to find the time to review and understand the information which is provided.

One challenge is that we become used to how we receive and need to process data. If the possession pack or diagram is a little tricky to interpret, over time we learn how to use it and find the data we really need. If we want to make this information as easy to use as possible, then drivers and managers may need to get together to review

Newswire

5 November, Australia: Runaway iron ore train derailed at Turner's Siding

A 268-wagon freight carrying iron ore ran away near Hester after the driver had left the cab to inspect one of the vehicles. The train travelled for 92 kilometres in 50 minutes before being deliberately derailed at Turner's Siding, in the Pilbra region of Western Australia. There were no reported injuries.

12 November, US: Freight carrying hazardous materials derails in Ripon

A freight train carrying fertilizer derailed in Ripon, Wisconsin. Five vehicles were involved in the incident. There were no reported injuries. Crews worked to remove the fertilizer, which can catch fire or irritate the skin or respiratory system. Initial reports say the train came off on a buckled rail.

16 November, Romania: Rail crane derailment between Mureni and Beia

At 11:55 (local time), the first two axles of a rail-mounted crane – running as part of a breakdown train – derailed on open line between Mureni and Beia. There were no reported injuries.

and redesign it. This will require change, which can be difficult to negotiate; but we need to bear in mind that such a change, if done well, will ultimately make us all safer.

This is also an area where non-technical skills can help. Good preparation for duty is a key element of non-technical skills, making the time at the start of a shift to check all relevant information, and checking this in a systematic and thorough way, not just scanning through. It's important to pay attention to the critical details and to ask another operator or your manager if something seems incorrect or confusing.

Non-technical skills can also help drivers by helping them to be prepared, and to manage the distractions that can be caused by information. Passenger drivers, for example, can use strategies such as reviewing diagrams to identify potential error traps from unusual or inconsistent stopping patterns. Highlights or reminders in the cab can then be used during a shift, to help retain information about unusual patterns, and to reduce the likelihood of errors caused by forgetting.

Information people receive each day is not the most direct or obvious cause of SPADs; but it can be a contributor. Working to make this information as usable and accurate as possible, and finding the time to read and process the information, are key parts of the SPAD management jigsaw puzzle, improving people's performance at work and ultimately improving operational safety.

17 November, US: Freight derailment sees Georgia town evacuated

At around 07:00 (local time), a freight train derailed in Byromville, Georgia. Some of the wagons fell from a bridge to the main road below. There were no reported injuries, but as some of the vehicles were carrying pressurised propane, the town was evacuated as a precaution.

20 November, Spain: Passenger train collision with landslide kills 1, injures 44

A commuter train struck a landslide between Terrassa and Manresa, and derailed. One person was killed and 44 were injured. Heavy rain over the previous few days in the north of Spain had caused flooding and a number of landslides.

20 November, Czech Republic: Freight train collision between Chotěbuz and Český Těšín

At 04:45 (local time), two freight trains collided between Chotěbuz and Český Těšín. There were no reported injuries. An investigation has been launched.

The Mysterious World of Electrical Control....

One area of the railway that remains mysterious to many of us has to be the enigmatic world of the electrical control room. ***Network Rail****'s* ***Claire Volding*** *went to meet* ***Electrical Control Operator (ECO) George Currell*** *to find out more.*

With more and more of our network being electrified, I am intrigued as to why so little is known about this part of the industry, by virtually everyone else. In fact, it's often joked about with reference to the "dark arts of the electrical control room". I decided to do some investigation into what goes on in Romford ECR.

I caught up with George Currell, who has spent 13 years as an ECO. He guided me through a spellbinding journey to unveil some of the mystery behind the curtain.

Romford ECR controls the entire 25kV Overhead Line Equipment (OLE) electrical network for the Anglia Route. It is a vast area of geography that is monitored 24 hours a day, every day of the year.

It takes a long time to gain the knowledge to be an ECO; many of those who work in Romford ECR have years of knowledge and invaluable experience working elsewhere in the industry. Some have worked on High-Voltage Distribution teams, whilst others have been part of Infrastructure Maintenance teams responsible for the OLE. So even before they come into the ECR, they have a pretty good understanding of the electrical needs of our rail network, and the safety risks that need to be considered.

The ECOs are responsible for providing maintainers and others with authority to test and to earth the OLE once all high-voltage (HV) switching operations are safely and correctly completed. This allows the external parties such

as maintenance, Network Rail's Infrastructure Projects and contractors to undertake installation, maintenance and repair activities, whilst the safety critical processes when dealing with electrification ensure that safety of staff is paramount.

I asked George what he enjoyed about the role. "I love that no two days are ever the same," he replied. "The role requires a high level of ability in terms of making decisions, based on Dynamic Risk Assessment principles, making it one of the most interesting roles I have ever had."

That's not to say there isn't room for improvement in the ECO world. George highlighted that Network Rail could do more to understand their role and involving them better in change programmes. This is especially true at the moment with the transition into the new world of Supervisory Control and Data Acquisition (SCADA), which is a different system to manage the electrical network. He says that it's the single biggest change that he has seen in his time here in Romford.

There are some big changes up ahead for this community, as there's also the planned migration to Romford Rail Operating Centre. George thinks there may be further developments to the ECO role once they've moved over to SCADA and the Romford ROC. "Technical advancements will lead to a change in the way isolations are processed and delivered, so there may also be evolution in the relationship between the Route Isolation Planners and the ECOs," he says.

I'm starting to understand a little better what goes on in the electrical control room, but I had to ask George one final question: what would an ECO be able to tell me, that nobody else could? Apparently, there's a lot; from the minute-by-minute status of a huge area of HV equipment, authority to test and apply once all switching has been completed and most importantly how many tea bags are left in the caddy.

Looks like the mysterious world of the ECR, just like the rest of the railway, runs on tea.

Preventing suicide on our Railway

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Unless you know what you're looking for, you probably won't notice the background work that goes on to prevent suicide on the GB rail network. It's rarely publicised, and a substantial amount of it takes place beyond the railway's boundary. ***Ian Stevens, Suicide Prevention Programme Manager*** *at* ***Network Rail****, tells Right Track how this work is making a difference.*

In 2010, on behalf of the rail industry and with its support, Network Rail put in place a suicide prevention programme, which I've led since September 2012. The work we've done as an industry is highly regarded, both at home and abroad, and has won many plaudits from around the world.

I've been a railway man for 34 years; and when I came into this role I brought with me the notion that if someone was going to take their life on the railway there was no stopping them. I now know differently. Suicide isn't inevitable. It's preventable if we all play our part.

When I first took this job, there was a belief that if we put enough fences up in all the right places, suicides would become a thing of the past. And yes, it's important to restrict the access to the means of suicide, but we've learnt that the issue is far more complex than that.

Despite being fenced, the rail network is still vulnerable to people gaining access to it. With that being the case, we know we must support those in crisis within their own communities, and we do a lot in this area. People who take their lives on the railway don't usually travel more than five miles from their home address to do so. Knowing this allows the industry to prompt local authorities to take specific actions in those areas.

You just have to look at the number of life-saving interventions that take place each year to know that's true. In 2018/19, 1,711 interventions were made, up 196% from 2013/14 when records first began. Interventions in suicide attempts form the cornerstone of the industry's suicide prevention programme. Without them, the number of suicides on the railway would be much higher than the average of 250 a year.

Anyone can intervene in a suicide; and whatever you say or do can't make the situation worse. Many staff are specially trained to make interventions though – over 18,000 of us (one in six). We're so convinced that interventions are fundamental to our suicide prevention programme that a year ago, industry launched a campaign to get passengers to intervene in suicide attempts too. Known as "Small Talk Saves Lives", this campaign has seen a 20% increase in interventions made by the public between January and September 2018 (see Right Track 23).

That isn't where it stops though. The industry has a widely recognised relationship with Samaritans, one of the biggest crisis-support charities in the country. We use the railway and our influence with local authorities to publicise the services of Samaritans, in the hope that individuals in crisis will call them before they become suicidal. You may well have seen Samaritans posters at stations, displayed to urge those in crisis to call their free confidential help line - available 24 hours a day, 365 days of the year.

Newswire

8 December, South Korea: Derailment in Gangneung injures 14

At around 07:35 (local time), a passenger train derailed in Gangneung as it slowed to 64mph on the approach to a station. Fifteen passengers were injured.

13 December, Turkey: Nine killed in high-speed passenger derailment

Shortly after 06:30 (local time), a passenger train struck a locomotive at Marsandiz station at between 50 and 56 mph. Three carriages derailed and a footbridge collapsed onto two more. Three members of staff and six passengers were killed; 84 more were injured. There is a suggestion that the passenger train had been wrongly routed prior to the collision.

That's not the only support Samaritans give the industry. They also run a comprehensive training programme to equip staff to intervene, and do a huge amount to raise the public's awareness that suicides are preventable. Their 'Brew Monday' campaign – on the third Monday in January, to coincide with 'Blue Monday' – is probably the most recognisable of these activities.

The railway's programme is supported by many others, too. The British Transport Police, for example, have a specialist unit dedicated to preventing suicides on the railway; and the National Union of Rail, Maritime and Transport Workers Union are looking to hand over their 'Bob Crow' training facility for two weeks every year to ensure their members receive training, so that they can play their part in preventing suicides.

My view, having led this programme for seven years, is that preventing the senseless loss of life through suicide on the railway is the responsibility of all those who work on it. Every suicide is a tragedy not only for those loved ones left behind, but also for those caught up in the event. The train driver, whose life and career may be changed forever; or the Mobile Operations Manager or police officer who goes to site in the immediate aftermath of the event and are expected to professionally cope with the often gruesome scenes they are presented with.

No one should have to come to work and expect to be involved in such events. It's this, more than anything else, that keeps me and my colleagues focused on our roles.

If you have been affected by the issues in this article, please seek support.

- Call Samaritans free on 116 123
- Speak to your line manager
- Contact your Employee Assistance Programme
- See your GP

For more information on mental health, how it impacts our workforce, and where to get help, see RED 52 available on rssb.co.uk/opsweb.

14 December, US: Freight derailment spills hydrogen peroxide in northern Wisconsin

At around 14:00 (local time), a freight train derailed while being shunted in a yard in Parkland Township, Wisconsin. One tanker wagon overturned, spilling some of its 18,000-gallon cargo of hydrogen peroxide. There were no reported injuries and no evacuation was deemed necessary. The cause of the incident has yet to be determined.

21 December, Serbia: Five killed when train strikes school bus at southern Serbian level crossing

A passenger train struck a school bus at a level crossing near the city of Nis. The bus was severed in two in the incident which killed five people and injured over 20 more, all of whom were on the bus. Early indications suggest the accident to have been caused by an error on the part of the bus driver.

2 January, Denmark: Collision on Great Belt Bridge kills 8

At around 07:35 (local time), an empty lorry trailer that fell from a freight train was struck during a storm by an express travelling in the opposite direction on the Great Belt Bridge that links the Danish islands of Zealand and Funen. Eight people were killed and 16 have been reported injured.

In the bleak mid-winter

Legends of "the wrong kind of snow", and some recent incidents, remind us that our network faces certain struggles in winter. ***Barry Tan, Vehicle Dynamics Engineer*** *at* ***RSSB****, reminds us of some of the risks we face this season – and how we can make sure we keep ourselves and our passengers safe.*

Winter presents all sorts of challenges to rail. Snow and ice can affect the infrastructure, particularly the electrified third rail, but also points and signalling. High winds can jeopardise overhead electrification and bring trees down onto the track. Platforms and concourses are more likely to be wet or icy, and so more slippery. And yes, "the wrong kind of snow" – the dry, powdery stuff - can find its way into electrical systems, causing short circuits and traction motor damage in trains if they're not adequately protected.

The good news is that our track and trains are designed to be resilient in all weathers, and most of the time they succeed. Even when the roads fail and planes are grounded, the railways will often still be running (although perhaps with some delay). So overall, our railway is actually quite resilient in winter, defying incredibly adverse conditions. This is partly thanks to the preparation we put into getting ready for winter. We start in the spring, when the previous winter's performance is reviewed. From there, we plan for next winter, even though it's still months away.

But these conditions put an extra burden on rail staff who have to literally weather the storm and keep the trains moving. In heavy snow fall, special trains fitted with snow ploughs will be deployed to clear thick drifts from the running line. In rare situations – and thankfully they are rare – conditions can mean train services are so disrupted that the service has to be reduced or stopped altogether. When that happens, we might face the risks that come from overcrowding and upset passengers.

Although climate change will mean more extreme weather, the actual nature of winter hasn't changed dramatically over the last 30 years. But there are anomalies: 2009/10 was a game changer; it was particularly harsh, revealing weaknesses in the way we prepare for winter, particularly in not reading the railway as a whole system.

The experience led to Guidance Note, GEGN8628 - Guidance on Preparation for and Operation during Winter - in June 2013. Now, rail companies have a consistent reference point to make adequate preparations for winter; and overall, the railway has been better prepared.

However, there are always new lessons to learn. Winter 2017/18 provided a reminder of how badly things can go wrong. Incidents in the New Forest and at Lewisham in March 2018 showed how trains can become stranded without power for hours, and point to collective industry management failings.

These more serious events were reviewed along with day-to-day issues, and again revealed a lack of systems thinking. Cooperation between Network Rail, RDG and RSSB has led to a Combined Winterisation Checklist, to make it easier to keep track of responsibilities and key tasks, which is being trialled this winter. It prompts decision makers to work collaboratively with other organisations on issues of common concern and interfaces, where there is a risk that respective parties assume the other is on the case.

With better preparation, the risk of winter causing upset to the rail system and its customers will be reduced and better managed together.

To find out more about this, go to the RSSB website and search "Winter is coming".