rightrack

Issue 23 **Spring 2018**

RAIB Report: Sandilands

Our regular features

RAIB Report: Sandilands

SPADtalk: Environment

Newswire

Also in this edition...

Buffer stop collisions

iSafe

Safety in Aviation

Take 5 for Safety

Small Talk Saves Lives

Safety in Aviation

Buffer stop collisions

RSSB

Headlamp

Contents

3 Buffer stop collisions

4/5 iSafe

6/9 **RAIB Report:** Sandilands

10/11 Safety in Aviation

12/13 Take 5 for Safety

14/15 SPADtalk

16 SmallTalk Saves Lives

Hello, and welcome to issue 23 of Right Track!

In this issue, we're looking at how the aviation world deals with risk, and how they're changing their culture to make sure everyone reports hazards.

We also hear from Network Rail and East Midlands Trains about the things they're doing to keep our colleagues and customers safe – whether that's making it clear when we can use our phones and tablets, or what the warning signs for mental health issues are.

In our regular features, we look at how the working environment can affect the likelihood of having a SPAD; and we find out what RAIB recommended after the Sandilands tram crash – and what heavy rail can learn from it.

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**.

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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Buffer stop collisions

At 08:44 on 8 January 1991, a heavily loaded passenger train struck the stops at London's Cannon Street station, causing the fifth carriage to partially override the sixth. Two people were killed and 542 were injured. The high number of injuries that resulted was compounded by an overcrowded train and the relative lack of crashworthiness of the ageing rolling stock.

Put simply, the driver had failed to operate the brake successfully. His cannabis use was left to speculation. All the same, legislation was soon brought in to support the Rule Book by making it an offence for rail staff with safety responsibilities to be intoxicated while on duty. And that created a much-needed cultural change that's with us today.

The resulting investigation also recommended BR include terminal platforms in its 'Automatic Train Protection systems evaluation'. ATP was implemented on the Great Western and Chiltern routes, although an alternative solution (Train Protection Warning System, or TPWS) became the industry standard.

Once it had been installed, it cut the number of buffer stop collisions significantly, such that RSSB notes the current risk to be just 0.1 FWI (that's fatality or weighted injury) a year – a very low value.

BUT…

…the incident at King's Cross (17/09/15), and the more recent ones at Brighton (28/03/17) and Preston (01/04/17), show that the problem hasn't gone away, although the causal chain has changed…

At Brighton, the driver had stopped short in the platform and took too much power in trying to correct the position. At King's Cross and Preston, the drivers took power instead of applying the brake. The Preston incident saw a number of passengers injured, recalling Cannon Street just a bit too well.

All three incidents occurred at low speed, and all involved trainees. RAIB's reports on King's Cross and Preston highlighted issues with the quality of the training itself. Training is a specific skill – so the best driver might not make the best driver trainer.

To find out more about buffer stop collisions, look out for RED 51, available on Opsweb from autumn 2018.

- Have you considered buffer stop collision risk?
- Are you satisfied your trainee drivers are ready for the road?
- Have you seen RSSB's 'train the trainer' course on non-technical skills (NTS)?
- Have you seen RSSB's other training packages?

Newswire

9 January, South Africa: More than 200 injured in rear-end collision at Geldenhuis

A passenger train struck the rear of a stationary service at Geldenhuis, on the outskirts of Johannesburg. There were no fatalities, but 226 people were taken to hospital. Signaller error is currently thought to have been the cause.

15 January, US: Commuter train derails in Downtown DC

At 06:40 (local time), a Metro commuter train derailed shortly after leaving Farragut North station, Washington DC. The train was carrying 63 passengers, all of whom were evacuated, and none of whom were injured. In a statement, Metro said the base of an eight-foot section of rail appeared to be rusting, even though previous automated and manual inspections had not identified any problems that would lead to it being taken out of service.

18 January, Mexico: Freight derails in Mexico City, striking house and killing five

Just before 06:00 (local time), a freight train carrying grain derailed on the outskirts of Mexico City before colliding with a lineside house and killing at least five of its occupants.

EAST MIDLANDS TRAINS

iSafe

Using mobile phones and other personal electronic devices (PEDs) can pose a risk to the safe operation of trains. Misusing PEDs can lead to catastrophic consequences, as the incident in Bad Aibling in February 2016 showed (see box). We need to keep on top of how PEDs are used across the network, so that we can identify issues before an incident occurs. Trevor Parkin, Operations Specialist at East Midlands Trains, tells us how they keep their staff and passengers safe.

Train operators and infrastructure managers will routinely have policies in place to control the risks of staff being distracted when using a mobile device; some companies even issue phones to their staff and allow limited use of them in controlled circumstances during train operations. One of the main concerns, however, is ensuring that we use these devices as prescribed, and not when driving a train or carrying out other safety critical activities.

The UK Government recently increased the penalties for using a mobile phone whilst driving a car. The RAC has carried out research, with some shocking results: four out of ten car drivers admit using their phone whilst driving, and an estimated 9.2 million drivers break the law on a regular basis. Other research by the Royal Society for the Prevention of Accidents (RoSPA) has identified that car drivers using a phone when driving are four times more likely to have an accident causing death or injury to themselves or others.

These risks are now being made more difficult to manage by the rise of smart and wearable technology. iPods and Walkmans are being replaced by tablets, smartwatches and fitness trackers that can play music, receive and send texts and emails, access the internet and monitor our lifestyle. We're faced with constant temptation to check our emails, watch the news, or see how many steps we've done. So PEDs also increase the risk from distraction, with wearable tech being particularly diverting: after all, who wants to switch their watch off?

So what can the rail industry do to tackle this growing problem? Here at East Midlands Trains, we have introduced a new PED policy covering all types of interactive devices including phones and tablets, smartwatches, fitness trackers and media players. We know that our staff may want to check their PEDs at some point in their shift, to check the news or message friends. We want our staff to know when the use of PEDs is prohibited, when they may be used for operational reasons, and when they can be used for personal reasons.

Bad Aibling crash

On 9 February 2016, two trains collided head-on in Bad Aibling, Germany. Nine people were killed and 50 suffered serious injuries. An investigation found that the immediate cause of the crash was the distraction of the signaller, who had been playing a game on a mobile device.

Newswire

22 January, Australia: 16 injured in Sydney buffer stop collision

A train struck the buffer stops at Richmond, on the outskirts of Sydney. One passenger suffered a broken leg; 15 more were taken to hospital with minor injuries. One witness report claims the impact speed to have been between 30 and 45 mph.

25 January, Italy: At least three killed in derailment near Milan

At least three people were killed and 10 seriously injured when a commuter train derailed near Milan. CCTV footage shows the sides of the carriages scraping along the platform edge as it passed through Pioltello-Limito. Infrastructure manager RFI said there was 'a rupture in the track', but that it was unclear whether this was a cause or consequence of the accident.

28 January, US: Level crossing collision in Harrodsburg leads to fuel spill

At around 19:30 (local time), a freight train struck a lorry on a level crossing in Harrodsburg, Kentucky. The lorry reportedly spilled 40 gallons of fuel. There were no reported injuries.

The policy covers a working day, from booking on for duty, waiting for orders in a mess room, preparing to work a train or undertake safety critical duties, but also down time during the shift. We don't want to ban the use of PEDs completely whilst at work, but the policy offers guidance on when it is safe to use them. Using PEDs can be a significant distraction, and therefore a safety risk, and it's important for us to appreciate that and limit when we use them accordingly. But we still want our staff to be able to access their PEDs when it is safe for them to do so. To make sure everyone's on the same page, we've undertaken messroom sessions and safety briefs to explain the policy; and we've produced a policy booklet that clearly explains the do's and don'ts around the use of PEDs that staff can carry with them.

Controlling the risks posed by PEDs is an essential part of managing safety on the railway. However, we have to accept that they are part of 21st century life; and if used the right way can make tasks simpler and improve morale.

So what can you do? Start by thinking about how and when you use PEDs at work. If you do, ask yourself: could this be a risk to safety? Using PEDs in a controlled and safe manner may just prevent you from being involved in an incident.

The number of rail incidents caused by distraction is growing. High profile incidents such as Category A SPADs have a 60% causal factor of distraction and loss of focus. Not all these instances will be down to PEDs. But with the rate of use growing, as it is on the road network, we cannot ignore this known risk.

31 January, US: One killed and six injured in level crossing collision near Crozet, Virginia

At 11:20 (local time), a chartered Amtrak train carrying Republican Party lawmakers from Washington to a retreat in White Sulphur Springs, West Virginia, struck a refuse lorry at Lanetown Road level crossing near Crozet, Virginia. The lorry driver was killed; six more (on lorry and train) were injured. CCTV footage later showed the road vehicle being driven onto the interface after the gates had lowered.

1 February, US: Shunter injured during Alabama yard derailment

On 1 February 2018, a wagon derailed while being propelled towards another for coupling at a yard in Akron, Alabama. A shunter riding on the wagon jumped when it came off the rails, sustaining minor injuries in the process.

4 February, US: Two killed in passenger-freight collision in South Carolina during degraded mode working

An Amtrak 'Silver Star' service carrying 147 passengers and eight crew struck an empty CSX freight train in Cayce, South Carolina, killing two people and injuring 116 more. The incident occurred during degraded mode operation. The passenger train had been permitted to work through the area on the main line, but was diverted via handpoints into the loop on which the freight was standing. The lineside signals had been suspended on 3 February in order to install positive train control (PTC).

RAIB report brief – Sandilands

Just after 06:00 on 9 November 2016, a tram derailed and overturned at Sandilands Junction, on the Croydon Tramlink, killing seven people and injuring 52 more

As the tram began to tilt, passengers were thrown across and around the vehicle. The right-hand windows were smashed, by passengers thrown against them and the force as the tram hit the ground. Some fell through the openings where doors and windows had been and were crushed under the vehicle as it slid to a stop.

RAIB determined the immediate cause of the accident to be that the tram had been travelling too fast to negotiate the curve, as the driver hadn't applied enough braking.

Although it can never be completely ruled out, there was no evidence that the driver's health or medical fitness contributed to what happened. He'd been driving trams in Croydon since 2008, had a good safety record and had driven round the Sandilands curve many times. There was also no evidence of distraction of any kind.

After the tram rounded the previous curve, the driver applied power and let it reach its maximum speed. He then needed to do very little as the tram ran through the tunnel. Compared with other sections of the tramway, this presented a relatively low level of workload to the driver.

Although some doubt remains, RAIB concluded that the most likely cause was a temporary loss of awareness during this period of low workload, which possibly led to a microsleep. It's also possible that, when regaining awareness, he became confused about his location and direction of travel.

Sleep debt

It's important to give our body the sleep it needs to work well and stay healthy. Like financial debt, sleep debt can accumulate over time, with consequences if we don't pay it off. If you lose an hour's sleep on Thursday night, you can have a lie-in on Saturday to pay back your sleep-debt. But if you lose an hour's sleep every night from Monday to Friday, the sleep debt accumulates, and you may not be able to pay it back over the weekend. As our sleep debt increases, so do the consequences: fatigue, irritability, poor performance and ill health.

RAIB noted that the shift pattern followed by the driver should not have caused an increased risk from fatigue on the morning of the accident, but that it was possible his sleep pattern could have led to a sleep debt (see box) – a situation which can result in microsleeps.

Some tram drivers on the Croydon system reported that there had been occasions when they had used heavy braking or the emergency brake to control their speed at Sandilands. None of them reported these events to the managers at Tram Operations Ltd (TOL), mainly because of the perceived attitude of some managers and because the drivers feared the consequences for themselves if they did so. This meant that TOL management did not understand the extent of late braking, and thus took no action to mitigate the risk.

Furthermore, while senior managers recognised the importance of learning from experience, there were a number of factors which prevented TOL gaining a full understanding of the extent of late braking on the approach to Sandilands. Partly, this was down to a reluctance of some drivers to report their own mistakes, partly it was down to a failure to learn from customer complaints about harsh braking and overspeeding.

There was also a failure on the part of the UK tramway designers, owners and operators, as well as the safety regulator, to understand fully the risk associated with excessive speed around curves.

Detailed analysis showed that the principal cause of death and serious injury was the ejection of passengers through the windows and doors on the right-hand side of the tram. Tests showed that the windows could have been shattered by passengers being thrown against them, and would in any case have shattered on impact with the ground. Although they met regulatory requirements, the windows were made of toughened glass, which provides little resistance to the ejection of passengers. Similarly, although complying with relevant design standards, RAIB said it was also likely that the way the doors were attached meant that some of them were not able to contain passengers when they fell against them during the accident.

It was also revealed that UK tramways does not have a mechanism to promote the effective sharing of safety information or the development of common approaches to the management of risk. This meant that data on safety performance is not routinely shared between operators, and there is little evidence of the use of common risk assessment techniques.

Furthermore, the ORR's regulatory strategy provided a lower level of intervention for tramways than for other sectors, consistent with its evaluation of the risk and the regulatory framework in place for tramways. RAIB's analysis of the evidence suggests that the overall level of risk on tramways, and the potential for multiple fatality accidents, is higher than previously assumed.

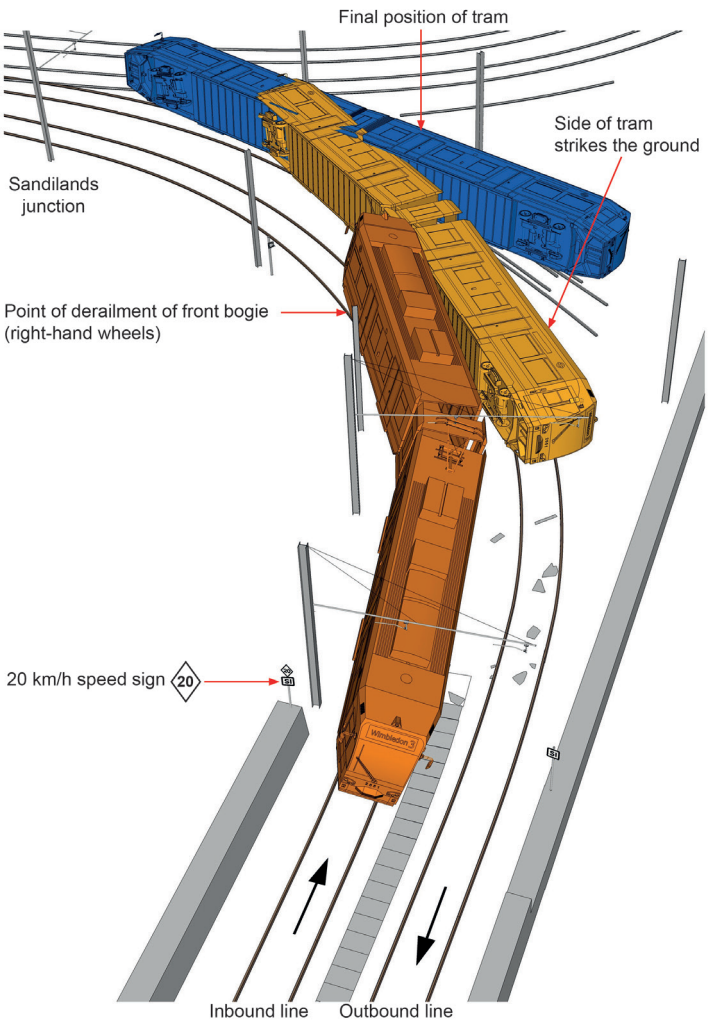
'If there is one overriding lesson to learn from this tragic accident,' says RAIB, 'it is that safe operation of a tram network depends on thinking about possible accident scenarios outside the immediate experience of the managers and their teams. The UK tramway community did not appreciate that such a catastrophic accident could occur.'

RSSB research project T1068 (Supporting a fair culture – creating appropriate plans after incidents) looks at how to make driver competence development plans (CDP) more effective. This includes:

- providing support and direction to drivers
- fostering confidence in a just culture within the organisation
- minimising the impact on driver availability, and
- ensuring that the organisation, and wider industry, learn lessons from operating incidents.

RED 48 also covered this issue. For more information, go to www.rssb.co.uk/opsweb and click on 'RED programmes'.

All RSSB research projects with a 'T' number, such as those mentioned opposite, can be found on www.sparkrail.org. Enter the 'T' number in the search bar to find out more.



Recommendations

RAIB made 15 recommendations, several of which are addressed to all the operators in the UK tram industry. Some need to be implemented by co-operation between individual operators, and for this reason the Branch recommends the establishment of a permanent body to facilitate a long-term cooperative approach to UK tramway safety.

To prevent an accident like this happening again, RAIB believes it important that an automatic system be developed and installed that will slow a tram if it approaches a higher risk location, such as a sharp curve, at a speed which could lead to it derailing or overturning. RAIB also recommends consideration and, if appropriate, installation of systems which automatically intervene if a driver displays a low level of alertness.

Other recommendations focus on the need for better understanding of the risk associated with tramways, updated guidance on how tramways should be designed, operated and maintained, and the need to provide better lineside signs to warn tram drivers of speed restrictions.

Recommendations relating to vehicle design are intended to reduce the likelihood of passengers being ejected during a collision or derailment, and to provide adequate lighting and exit routes in an emergency. There are also specific recommendations about the regulatory activities of the Office of Rail and Road (ORR), TOL's processes for the management of operational risk, tram driver fatigue, and some aspects of safety culture.

The GB heavy rail situation

Signalling

Croydon Tramlink is not completely unsignalled: tram signals are provided at some locations, such as junctions, road crossings and the entrances to single line sections. However, the principle of driving on line of sight does apply.

In terms of GB heavy rail, driving at caution is often required in possessions and work sites. RSSB has produced guidance on driving at caution: search "proceeding at caution" on the RSSB website.

Fatigue

Fatigue and low workload issues are often highlighted in RAIB reports on heavy rail incidents. RSSB has produced guidance on managing fatigue (search RS504 in the Standards Catalogue), which gives companies information on taking a risk management approach to the subject. It also addresses some of the key issues raised in this report, such as the need to think about training and guidance for staff, monitoring (for example, rest day working), compliance with fatigue-related policies and fostering a fair culture to encourage fatigue reporting.

RSSB is continuing to add to the industry's knowledge of underload and fatigue, with two upcoming projects 'looking at fitness for duty decisions in relation to fatigue' (T1130) and 'cognitive underload in the train driving task' (T1133).

Containment

The last heavy rail train accident in this country was the derailment at Grayrigg 2007. It demonstrated the benefits of operating crashworthy vehicles. One person was killed, but the train (a Class 390) retained its structural integrity, which helped to prevent further loss of life. The fatality rate would arguably have been much higher had it been formed of older stock, such as Mark I or II carriages.

RSSB analysis supported the idea that passengers should be contained in a rail vehicle in the event of an accident, particularly when they overturn.

With this in mind, all passenger trains built since 1993 have mostly laminated windows, but research confirmed that the best approach was to dispense with all designated escape windows. RSSB did some research into containment, 'requirements for train windows on passenger rail vehicles' (T424), which was developed into a series of measures for vehicle bodyside windows, including a comprehensive suite of test requirements. These are incorporated in Railway Group Standard GMRT2100 (Requirements for rail vehicle structures).

Speeding on curves

The curve at Sandilands Junction is tighter than is permitted on the main line. However, incidents on heavy rail curves can and do occur. The most recent such fatal derailments occurred at Santiago de Compostela (Spain, 2013) and Philadelphia (US, 2015). Both highlighted issues around a lack of train protection.

In Britain, the 1969 derailment at Morpeth led the Railway Inspectorate (later part of ORR) to recommend that AWS be fitted to warn drivers of severe speed restrictions on high-speed lines (where the speed is 60 mph or greater and the speed reduced by a third or more). British Rail adopted the proposal in the wider sense, but did not provide the equipment on the Up line at the curve as it failed to meet the fitment criteria. Instead, it featured a 'cascade' of descending speed restrictions (none of which individually met the criteria), rather than a single one, as on the Down line. A second – non-fatal – derailment on the Up line in June 1984 caused this to be changed.

Following the introduction of the Railway Safety Regulations 1999, TPWS was fitted at certain Permissible Speed Reductions (PSRs) on the GB infrastructure. The Regulations require that the over-speed elements of TPWS are fitted and in service where the permitted speed on an approach to a PSR is 60mph or more. In order to comply with the reduction, a train travelling at the permissible speed on that approach would need to have its speed reduced by a third or more. The effect is to reduce the risk from derailments caused by trains going too fast around curves. In 2007, there were around 1,150 speed reductions fitted with TPWS over-speed sensor loops. Of these, 1,100 are fitted at PSRs primarily intended to mitigate over-speed derailment risk.

Newswire

5 February, US: Freight derails in Lee County, Iowa

Five wagons of a BNSF freight derailed in Lee County, Iowa. There were no reported injuries, and no dangerous goods involved.

6 February, US: Amtrak service separates at 125mph, no reported injuries

Two carriages in Amtrak's Acela Express separated as the service was heading from Washington DC to Boston. The incident reportedly occurred at 125mph and reportedly resulted from a 'mechanical issue'. There were no reported injuries.

11 February, US: Freight train derails in Hughson

A 30-wagon freight derailed in Hughson, California. There were no reported injuries, and no dangerous goods involved.

Safety in Aviation

RED 49: Past at Danger

What have we learnt from the past? Take a journey through past railway incidents, and how the industry changed to prevent them happening again.

The track is a safety-critical environment, with significant risks – passing trains and high voltage equipment for example – that we need to manage. We learn from our past mistakes (see box). But can we also learn from other safety-critical environments? Sean Parker of the Civil Aviation Authority tells us how aviation does culture and safety management.

Aviation organisations are expected to have effective Safety Management Systems (SMS), whether they run an airport, operate aircraft or are responsible for air traffic control. But how does a SMS actually work?

If I want my organisation to have an effective SMS, I need to do a few things regularly. It's not a 'fit and forget' type of process; rather, it needs constant attention.

1. First, we need to identify the 'risks' in our environment. What could go wrong that would hurt colleagues or customers, or maybe reduce our profits?
2. Now we've got a list of 'risks', we need to prioritize them. Every organisation has limited resources, so they need to be used effectively. What risks are the most significant? Where can we make the most difference with the money and staff we have?
3. Now we can work to mitigate the more significant risks. That means reducing the likelihood of risks turning into actual events; and/or reducing the severity of the potential event if we can't remove the risk completely.
4. Have our actions reduced the risk? Have we created new risks while mitigating others? Risks can change, as the operational environment, systems and organisation are constantly changing; so we need to adapt to those changes.

That's it… that's what an SMS needs to achieve. But how does an organisation get started, how do we identify our 'risks' in the first place?

There are various ways to identify the risks to an organisation, but the most effective one involves getting your staff and colleagues to tell you what's wrong. The people who are working with the systems, in the locations, know better than anyone what equipment doesn't work properly, or which procedures are out of date and unworkable. If staff feel comfortable making a report when things go wrong, even if they are the ones who made the mistake, the organisation as a whole quickly get quite a list of 'risks'.

Just Culture

Just Culture is really important for organisations to learn and improve their safety risks.

But having a 'Just' culture where the fear of punishment is reduced is only one element of an effective safety culture (see diagram). If our issues aren't acted on, or we don't get any feedback, we might stop reporting because we come to the conclusion that it's a waste of time, and "nothing ever gets done about it". We need to believe reporting issues is worthwhile and makes a difference, so frequent communication between those who report and those who investigate and fix is vital.

European aviation legislation defines just culture as:

A culture in which front-line operators or other persons are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but in which gross negligence, wilful violations and destructive acts are not tolerated.

Cultivating an atmosphere where people have confidence to report safety concerns without fear of blame. Employees must know that confidentiality will be maintained and that the information they submit will be acted upon, otherwise they will decide that there is no benefit in their reporting.

Organisation collects and analyses relevant data, and actively disseminates safety information.

Organisation is able to learn from its mistakes and make changes. It will also ensure that people understand the SMS processes at a personal level.

Organisation and the people in it are capable of adapting effectively to changing demands.

Errors and unsafe acts will not be punished if the error was unintentional. However, those who act recklessly or take deliberate and unjustifiable risks will still be subject to disciplinary action.

Staff behaviour

As human beings, we can be reluctant to 'own-up' when they have made a mistake if they perceive they may be punished in some way for the error, or even sacked!

Introducing a 'no-blame' process, stating clearly that if a mistake is appropriately reported then no punishment will be imposed, goes some way to alleviating this; but it doesn't fix all the problems. And there needs to be a clear line between not blaming individuals for mistakes, and not seeking corrective action when someone is deliberately flouting the rules. For example, if I accidentally break a window, I need to report it so it gets fixed; and I'm more likely to do that if I'm not scared I'll be punished. However, if I deliberately throw a stone through the window, well that's different and it's right that I should face the consequences.

So we should acknowledge that we are all human, and humans make mistakes - so mistakes are inevitable. However, deliberate misconduct and negligence are not acceptable.

Management Behaviour

You'd think that, once management knows there's something wrong, they'd be glad. Better to know about the problem than not; you wouldn't want it hidden. So why do managers sometimes behave negatively, with "not again!" rather than, "thanks for letting me know"?

As a rule, people don't like hearing bad news. And we generally don't like getting extra work. So when a manager hears that they've got to deal with a problem, it's understandable that they're not going to be particularly happy.

So if managers want their staff to report problems, they need to let them know they're pleased when they do so, even if it's hard. One way of dealing with it is to treat every report as a gift. The problem exists regardless of whether it's reported, and nobody is happy about that; but once it's been reported, you're aware of it and you can act it - and that's got to be good!

Summary

Effective safety management begins with an organisation ensuring that it is aware of the threats to its safe operation to enable mitigation as appropriate. The communication of the risks perceived by staff to the organisation requires a positive Safety Culture to encourage and facilitate this open reporting. Safety Culture is vulnerable if staff do not understand their safety responsibilities, perceive there is any detriment associated with reporting or that no action will be taken. But if all of us play our parts, we can make sure that our colleagues and our passengers can get home safely.

See overleaf for the rail perspective

The rail perspective

Like aviation, the railways are a safety-critical environment. And, like aviation, we're also looking at reducing blame in order to improve safety.

RSSB has developed a good practice guide for developing support plans after incidents. This helps organisations that work on the railway to manage operational incidents in a way that is fair and finds the root cause, rather than blaming the individual for a mistake.

South West Trains, working with the trade union ASLEF, used the guide as a catalyst to review its competence development plan process. Driver managers and local union representatives worked together using real-life operational incident scenarios and agreed proactive measures that would support incident prevention.

South West Trains incorporated the guide as part of a wider safety management system, and supported with a programme of cultural change. In the first 12 months, operational incidents where driver error was identified as one of the causes were reduced by over 21%. Using a risk-based and more targeted and proportional approach to driver monitoring, South West Trains were able to remove 79 drivers from their driver support programme. They were also able to reduce additional monitoring for drivers (over the minimum monitoring requirement for driver competency management) by over 11,844 days.

You can find out more on the RSSB website: got to www.rssb.co.uk and search "Safety Culture Toolkit" or "fair culture".

Take 5 for Safety

Network Rail's aim is to get "everyone home safe every day". With so many staff, contractors, and suppliers on the network, they're encouraging all of us to consider our own safety at every stage of a task. Take 5 for Safety is a safety campaign, launched to encourage us to "take 5" to consider the safety impact of what we're doing – before, during and after the task.

Industry figures show that the railway is becoming a safer place to work: the number of workforce fatalities, major injuries and minor injuries continues to go down year on year. Yet any harm to any of our colleagues is something to avoid. Take 5 for Safety is the industry's response to these accidents. In several engineering and asset management companies, it has been shown that building "Take 5" safety checks into our daily routine can contribute significantly to a reduction in workforce injuries.

For more information, watch the Take 5 for Safety video. It can be found on Connect (for Network Rail staff), or Safety Central.

Take 5 for Safety is a prompt for all people in Network Rail – and across the industry – to do an extra simple safety check, to spot risks that might otherwise be overlooked. It can be done at any stage during a work activity, and could make it part of our daily routine.

We all have very busy jobs, and sometimes we get so focused on what we're doing that we find ourselves compromising on the most important thing: our safety. We can get complacent, working in the same environment every day. But just because we're used to the risks doesn't mean they're not there any more.

Take 5 is as simple as it sounds: it is literally about stopping for a few moments to check for any health, safety or environmental hazards that may not have already been spotted. We can Take 5 at any stage during a task: before we start, to check the equipment is working; halfway through to check our colleagues are ok; and at the end, to see what can be learnt. You can do it in your head for yourself, or in a group for the whole team – or both!

It's not about blame, it's not about grassing your mates up. It's about looking after your colleagues, and making sure we all get home safer every day. Let's stop these accidents from happening. Five minutes now could save you more than five minutes later on – it could save your life.

Putting Take 5 for Safety into practice

Do you use Take 5 for Safety? How do you use it? Is this new for you? Here's some questions to get you started.

Before	During	After
What will I be doing? What are the risks? How are they being controlled? Is the task safe? What do I do if it isn't?	Do I feel safe? Are those around me working safely?	Did anything happen during the job? Can we make any safety improvements for the next time?

SPADTalk: The environment we work in

This is the seventh instalment in our series on the human factors issues which can lead to SPADs (see SPADtalk, issue 16). This time, we're shining the spotlight on our working environment.

Environment factors.

Sometimes, the environment we work in can be a distraction, both in the cab and on the track. Some are annoying niggles, others pose a significant risk to safe working.

- Windscreen wipers
- Faulty heating system
- Broken sun shades
- Strong sunlight washing out signals
- Foliage obscuring signals
- Foggy conditions
- Poor railhead adhesion

If you think about the home environment - when we're sitting at home watching the television maybe - we flick a light switch when it gets dark, turn the heating up if we're cold, draw the curtains if the sun's shining on the TV screen.

When you are working, doing a job like driving a train, you can do the same things. There are heating controls, sun shades, old fashioned windows in some cases, which help to control the environment. And being comfortable, not being distracted by the environment, is something we need to actively manage to make sure we can focus on the job in hand. But we also need to be able work and react to work situations when, sometimes, the environment is not optimal. Such issues could be a distraction from our work, or require particular concentration.

Strategies to deal with these issues are all part of the skill set we need in the working environment. The most important thing is to make sure, when the

Newswire

12 February, Austria: One killed and 22 injured in side-on collision at Niklasdorf

Two passenger trains were involved in a side-long collision at Niklasdorf, Austria, on 12 February. One person was killed and 22 were injured (including both train drivers).

12 March, US: Ballast regulator operator killed in Tennessee

At around 14:15 (local time), a CSX Transportation (CSX) equipment operator was fatally injured while working with a ballast regulator near Wartrace, Tennessee.

19 March, US: Collision injures four in Kentucky

Two freight trains collided in Georgetown, Kentucky, injuring four crew members and starting a fire that led to the evacuation of many local residents.

environment you work in is not as good as it should be, that these things get fixed whenever possible (though we can't change the weather!) - both for you and for others who might use that cab or drive that route after you. Train companies and Network Rail have important safety responsibilities to fix these issues, but to help them do that, we have important responsibilities to report these issues.

The issue of distractions leading to SPADs is well known, it's a key factor. That's why we need to try and make sure that we report issues like cab niggles, faults and signals which can be difficult to read in strong sunlight. You might have the skills to deal with the issues, but the next driver to use the cab or drive the route might not, especially if they're a trainee. Also, when you leave the cab, think about the next driver. Leaving rubbish or a dirty cup behind might not seem like much, but it could be the distraction which niggles the next driver in that cab at just the wrong moment. After all, if you were sitting at home and somebody left muddy boot prints and a half-drunk cup of coffee on the floor, you'd likely be annoyed. Even if it wouldn't even bother you too much, you'd probably be happier if you couldn't see those things out of the corner of your eye.

The environment you work in is an important part of the job you do. Being able to adapt to it when required, making it as comfortable and safe for you and others as you can, is another part of the jigsaw puzzle for making SPADs less likely to happen.

26 March, US: Freight train derails in Sioux Falls

Shortly before noon, six wagons from a freight train carrying grain derailed in Sioux Falls, South Dakota. There were no reported injuries.

28 March, US: 'Motorail' service derails in North Carolina

An Amtrak 'car-carrying' service derailed in Halifax County, North Carolina. There were no reported injuries. Amtrak officials said the derailment was under investigation. Its car-carrying trains were also cancelled.

1 April, US: Freight derails in Mountain Iron, Minnesota – no reported injuries

At around 08:20 (local time), three wagons within a Canadian National iron ore train derailed in Mountain Iron, Minnesota. The wagons remained upright, there were no spillages and no reported injuries.

Small Talk Saves Lives

Suicide on the railway is not a new phenomenon. The number varies year on year, reaching a peak of 286 in 2014/15. But whether it goes up or down everyone in the industry agrees that even one suicide is one too many. And sadly, of those who do seek to take their lives on the network one in five fail and suffer severe life-changing injuries.

Over the last three years, railway employees, police officers and members of the public have intervened in over 2,500 suicide attempts on Britain's railway. There are 16,000 railway employees and stakeholders who are now trained in suicide prevention techniques, meaning that one in six of our staff are now able to support those who come to the railway in emotional crisis.

For every life lost on the railway, six are saved. Central to our programme is the belief that suicide is not inevitable, and we can work collectively to reduce the traumatic loss of life and devastation that suicide causes. It means those individuals have gone on to live their lives, and that our staff and customers have been spared the trauma of being involved in potentially tragic events.

To further reduce the number of lives lost this way, the rail industry, along with Samaritans and the British Transport Police, launched the "Small Talk Saves Lives" bystander campaign in November 2017 (see box). We worked with people who have been affected by suicide to develop a campaign that encourages the public to support those who may be in emotional crisis on the rail network.

The campaign aims to give commuters the confidence to trust their instincts and intervene if they see someone who may be at risk of suicide by encouraging them to go up to them, and have a conversation. The objective is to increase the number of successful interventions in suicides on the rail network by targeting potential bystanders amongst the general public and encouraging them to take action.

We've already launched Phase I of the campaign, which looked at risk across the whole network; and Phase II, which targets 15 specific locations where the risks of suicide is particularly high including Milton Keynes, Bletchley and Ealing Broadway.

Early indications suggest that "Small Talk Saves Lives" has resonated with its target audience, with 90% of those who have seen it supporting the message. Better still, almost 50% say they feel more confident to recognise the signs of someone in crisis and empowered to do something about it. Ultimately, we're all hoping that this leads to fewer deaths on the railway, fewer grieving families, and fewer traumatised staff.

Making passengers more aware was one of the recommendations from a study for Samaritans and the rail industry by the Universities of Middlesex and Westminster. The campaign has the backing of leading suicide prevention expert, Professor Rory O'Connor of from the University of Glasgow, who said: "Small Talk Saves Lives aims to tackle one of the myths around suicide and its prevention: that there is nothing we can do to prevent suicide. There is, and we all have a role to play. It is great to see this campaign encouraging people to reach out if they think someone may be suicidal. It could save lives."

For more information, go to Samaritans.org/smalltalksaveslives

KEY CAMPAIGN MESSAGING

- Suicide on the railway can be prevented - lives are being saved every day
- People who are suicidal often feel like there is no way out, their frame of mind means they can't appreciate the impact their death will have on others
- If you think somebody is in need of help, trust your instinct
- If you feel comfortable and safe to approach them, a simple question or a bit of small talk could be all it takes to interrupt their thinking, and start them on the journey to recovery
- You can also report it to railway staff, many of whom are trained by the Samaritans