# rightTrack

Issue 15 **Spring 2016**

## On track machine risk

Time to think again?

Our regular features:

**RAIB REPORT BRIEF**
Near miss Hest Bank

**The Lowdown**
Rachel Poynter, station manager

**SPADtalk**
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RSSB

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# Welcome to the Spring 2016 issue of Right Track.

It's easy to assume that safety at the platform edge is pretty much down to how the passenger behaves. And while this is a big factor, is there anything that staff can do to reduce the risks there? We find out about a new initiative designed to answer that question.

Trackside, one company tells us how they reconsidered the safety around on track machines. We also look at a new guidance note on proceeding at caution, and the possible impact of changes in standards on yellow front ends.

As always, we have our regular features, including Newswire, SPADtalk, and our RAIB report, which looks into the close call at Hest Bank. And in the Lowdown we look at what a major station's renovation offers by way of smarter safety.

As ever, we would love to hear your views about Right Track. If you have any comments on this issue's articles, or suggestions for future stories, please get in touch via **righttrack@rssb.co.uk.**

**Right Track can be downloaded from Opsweb -www.opsweb.co.uk.**
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# The Lowdown

Manchester Victoria, named after the Queen at the time, opened in 1844. Today is one of the largest stations in the north of England, welcoming 10 million passengers a year and up to 300 trains each day. The listed building has recently undergone a refurbishment programme. So, what does it take to run a station that big? Station Manager Rachel Poynter of Northern talks to RSSB's Martha Parkhurst.

Rachel joined the rail industry ten years ago, working in customer services for Trans Pennine Express. She moved on to become duty station manager until October 2014 when, looking for a new challenge, she joined Northern to take Manchester Victoria through its redevelopment.

"When I started two years ago, Man Vic was drab and dark; it didn't feel safe or welcoming and the roof was always leaking" Rachel tells me (an IRA bomb in 1996 caused extensive damage to the station and city's infrastructure and injured 212 people). Since then, the station has seen a £45million refurbishment programme.

It now has a new curved roof, made of ETFE (ethylene tetrafluoroethylene – the same stuff as used in the Eden project in Cornwall), a bright concourse, and a fully accessible walkway leading directly to Manchester Arena. Many of the heritage features of the old station were given some much needed TLC to bring back their former glory: the mosaics have been redone, as has the glass dome over what is now a beer and burger joint. The result is a bright concourse behind a heritage building, bringing together the history and future of rail.

The station runs 24/7, with a total of 47 station employees and more than 400 drivers and conductors. "Our focus has always been on making the station safe and welcoming," says Rachel.

This includes everything from extra crowd management when a charter train makes a stop, to building relationships with the local community. Rachel confides that sometimes pleasing everyone is not easy. Yet the team at Victoria seem to be doing a good job. When I visited, there were stars stuck to the floor of the concourse, celebrating Northern's North of England award for customer service.

So what next for the station? Well, the new Northern franchise started on 1 April 2016. Rachel hopes that this will lead to extra funding, to make the station even better for its employees and customers.

# On Track Machine Risk
## Time to Think Again?

One of the most important aspects of health and safety management is the effective identification and reduction of risk. Balfour Beatty Rail Plant's Health and Safety Business Partner, Darren Kitchener, explains how it has been re-thinking risk evaluation across its fleet of on track machines.

Managing risk is a legal requirement: the law requires all companies to examine all the tasks they do, and to think carefully about the risks. But it is as much about ensuring employees are safe at work, and fundamental to any strategy which aims to reduce staff injuries in a quest to achieve Zero Harm.

The rail industry provides many hazards to staff, so it is essential we do not overlook the basics. Across Balfour Beatty Rail, we have taken a fresh approach to ensuring the safety of our workforce, which brings management and front line employees together as one to consider and take action on risk.

### Changing Expectations

Many on-track machines (OTMs) in use were manufactured long before some of today's stringent regulations came into force (and at a time when standards in general were less onerous). But like many other industries, our tolerance of risk has changed, and our expectations have vastly increased when it comes to acceptable controls in new tools, equipment and rail vehicles. So what can we do about the older ones?

## The Problem

With heavy machinery comes significant risk and if these risks are not adequately controlled, they can lead to serious injuries. Tamping machines, for example, have bulky, fast moving and powerful components designed to lift and pack track. These components pose an obvious risk to those people working close to an operating machine but also to the staff servicing and repairing this equipment. So risk assessments must be carried out for the operators, track workers and fitters.

The trouble is risk assessments can often be 'generic', with poorly defined control measures. This means the level of control isn't always proportionate to the risk present. Often, we go through the motions of producing an assessment because it has to be done, but don't always use the outputs to change what we do. There are many examples where these types of risks are present, but all too often, not enough is done to prevent exposure.

Risk assessments often fail to use the hierarchy of controls. Relying on warning signs or introducing a procedure to prevent access to moving parts for example, relies entirely on people to do the right thing, whereas fitting a guard around a moving part removes the risk altogether. The Provision and Use of Work Equipment Regulations place a duty on employers to 'think about how a machine can be made safe' and the measures used to prevent access must be considered in a specific order (this is the hierarchy of control):

- Use fixed guards to enclose the dangerous parts, whenever practicable.
- If fixed guards are not practicable, use other methods (eg interlocking so the machine cannot start if the guard isn't in place).
- Where guards cannot give full protection, use jigs, holders etc if it is practicable.
- Control any remaining risk by providing the operator with the necessary information, instruction, training, supervision and appropriate safety equipment.

## Avoiding Complacency

We often accept our workplace for what it is, and don't always see the everyday risk or we put up with things that are not right and develop a 'work around'. Sometimes you should step back to see the risks that were previously been accepted. I spent time with some of the crews and fitters, and by taking them away from the normality and routine, we started to see everyday hazards. During one assessment of a tamper, the operator was able to highlight a number of potential issues that existing assessments had simply not picked up on, but had long been accepted practice, and we were quickly able to identify improvements.

## The Golden Questions

Our new approach has been established to focus the mind by asking specific questions designed to tease out potential hazards and problem areas. Gone are the A4 style assessments with the 5 x 5 risk ratings, and the many pages of text with generic statements.

> *"As an operator, getting involved with the risk assessment process to this level of detail has really made me think differently about things"*

Instead, our approach requires the operators who actually use the equipment to walk around the machine, answering 18 risk questions, pointing out the specific hazard, before we pop the vital question 'Can the current controls be improved?'

We found that the exercise was highlighting common themes across all the machines reviewed, so we published the 'top risks' to share them across the business.

**Fall from height -** Are there un-guarded areas where there is a risk from falling?

**Entanglement -** Are there any rotating drive shafts present?

**Draw-in entrapment -** Are there any exposed belt and pulley/chain or sprocket drives?

**Impact -** Are there any machine accessories or parts that could strike against people or vehicle?

**Ejection, stab or puncture -** Are there any parts where debris could be ejected?

**Unexpected start up -** Are there any systems that could unexpectedly be started by others?

**Loss of stability -** Are there any parts that could fall through loss of stability or detachment?

**Crushing -** Are there risks from falling or moving parts that could result in a crushing injury?

**Sheering -** Are there any moving parts close to other parts that could cause cutting or severing?

**Break–up during operation -** Are there any parts that could fail due to wear, tear and strain?

**Unexpected overrun -** Could any parts continue to move – even when powered down?

**Stored energy -** Is there any part where stored pressure is present (for example electrical or kinetic)?

**Cutting or severing -** Are there significant sharp or jagged components present?

**Injection -** Is there risk of hydraulic fluid being injected as a result of a failed component?

**Errors of fitting -** Are there any risks from wrongly fitted attachments or components?

**Electric shock -** Are there any high voltages present that could result in an electric shock?

**Fire -** Are there any sources of fuel, ignition or heat that could cause a fire?

**Slips, trips -** Are there any significant risks present that could result in a slip or trip injury?

# Newswire

### 10 December 2015, US: Boston runaway driver put on 'admin leave'

Just after 06:00 (local time), a commuter train left Braintree without a driver. It passed four stations before officials cut the power to the third rail. There were no reported injuries. Reports reveal that the driver had tied a cord round the train's power handle and had not secured the brakes when leaving the cab for a 'signal issue'. He has been put on 'administrative leave'.

### 22 December 2015, Mexico: Level crossing collision kills 4 near Mazatlán

A bus was struck by a train on an open level crossing in Mazatlán, Mexico, killing four people (including the driver) and injuring 22 more. The bus crossed the line moments after a car had successfully done so. Police believe this lulled the bus driver into thinking it was safe to follow.

### 27 December 2015, Australia: Freight carrying sulphuric acid derails in Queensland

At 10:20 (local time), a freight carrying around 800,000 litres of sulphuric acid derailed near Julia Creek, Queensland. The locomotive and all 26 wagons left the rails; the three crew members sustained minor injuries.

## Good Safety is Good Business

Making the improvements to reduce risks in older plant can be difficult and expensive, particularly where retrofit components have to be designed and added to earlier equipment. However, it's widely accepted that good safety is good business; so when updating some of the components (like fitting replacement engines, or repainting the external livery), why not invest in installing additional guarding and improved access lighting, or apply non-slip paint to the external surfaces?

## What's in it for the Industry?

The industry is striving for ever-improving safety performance and Zero Harm. So what does this mean for you? Eliminating risk will obviously reduce the number of injuries; but these material safety measures are not the only way we'll reach our goal of 'everyone home safe, every day'. We need help from our people too.
Since we started re-examining risk, we have already seen evidence of a changing culture. A greater awareness of risk has led to an increased appetite for the reporting of close calls. And as the number of close calls increases, so the number of injuries decreases, and the safety of all our staff improves.

## The Top Six Risks in Plant

1. Moving Parts – Risk of entrapment, crushing or entanglement from unguarded rotating or moving parts.
2. Falling whilst accessing cabs – Risk of falling from the machine whilst gaining access. Some cabs have limited guarding, non-aligned steps or poorly located handrails.
3. Unexpected start-up – Risk of any part of the machine being started by others without warning when working on components such as motorised or electrical parts.
4. Access to high level components – Risk when required to access some areas of the machine where access platforms may not be available.
5. Pressurised hydraulics – Risk of hose failure and contact with pressurised hydraulic oil when working near, or leaning against, pressurised hoses.
6. Contaminated checker plate – Risk of slipping where checker plate is wet, icy or contaminated with oil.

**4 January 2016, US: Level crossing collision injures 22 at Lake Worth**

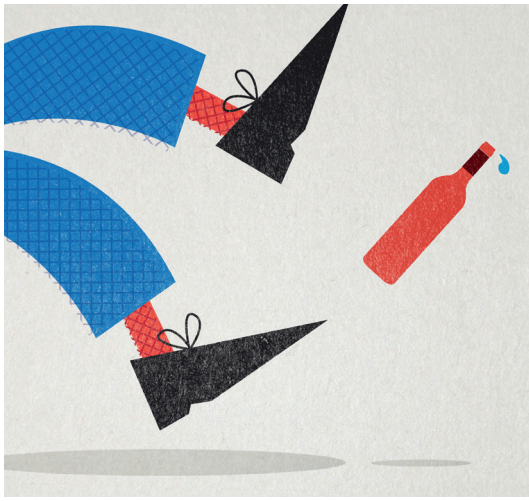
Just before 07:00 (local time), a passenger train struck a dustbin lorry which had broken down on a level crossing at Lake Worth station, Florida. 22 passengers were injured; all were taken to hospital for treatment.

**8 January 2016, Thailand: Crossing collision at Phetchaburi kills 3; injures 34**

At 10:35 (local time), a passenger train struck a cattle lorry on a level crossing at Phetchaburi station. The lorry driver, his passenger and one rail passenger were killed; 34 people were injured. The heavily laden lorry was reported to have been speeding as it approached the interface. It then crashed through the lowered barriers and into the side of the train.

**12 January 2016, Philippines: 'Jeepney' driver charged after 1 killed in crossing collision**

At around 19:00 (local time), a passenger train struck a 'jeepney' on a level crossing in Paco, Manila. One road vehicle passenger was killed and six more were injured. The 'jeepney' driver was later charged with dangerous driving.



# Reducing risk at the PTI

Accidents on the platform are the biggest fatality risk for passengers on the railway: in the last five years, 19 people have been killed and over 7,000 injured around the edge of station platforms. These accidents can happen when getting on or off a train, or even when there is no train stopped at the platform.

There have been high profile incidents at the platform train interface (PTI), such as the trap and drags at West Wickham, and Hayes and Harlington; a person who fell off the platform at Sittingbourne and came into contact with the third rail and a fall between the train and the platform at Hamilton Square.

These incidents, added to the increasing pressures on the network to increase capacity, performance and accessibility, has led to a cross-industry response to the problem. We need to improve co-ordination across the industry, making sure that any new methods to control the risk at the PTI are effective.

A cross-industry strategy to reduce injuries at the PTI was published in early 2015. (It can be found on **http://www.rssb.co.uk/improving-industry-performance/platform-train-interface**).

Of course, passengers need to take some responsibility for their safety; and in order to remind them of this, stations across the network put up "lend a helping hand" posters at Christmas last year. This reminded passengers to take extra care in stations, and encouraged people to reach out and help if they saw someone at risk. There is also a booklet for staff working in trains and on stations (see box on next page).

Stations come with different track layouts, platform arrangements and service frequency. Some are on on straight, others on curved track. Ideally, calculating the risk at the platform edge needs to be done on a case by case basis.

## Newswire

**14 January 2016, France: Level crossing collision near Beuville; loco driver injured**

At 04:05 (local time), a lorry was struck by an empty freight at a level crossing between Beuveille and Arrancy-sur-Crusne. The locomotive and 21 wagons derailed. The track was damaged, the lorry was dragged some 100 metres and the train driver suffered minor injuries. The lorry driver – who just managed to jump clear – suffered shock/trauma.

**20 January 2016, US: Freight carrying sulphuric acid derails in California**

At around 08:00 (local time), three wagons carrying sulphuric acid derailed In Martinez, California. There were no reported leaks or injuries. The cause of the incident has yet to be determined.

**28 January 2016, US: Passenger train derails at Pompano Beach, Florida; 1 passenger injured**

A Tri-Rail passenger service derailed in Pompano Beach, Florida. Of the 40 passengers on board, one was injured. Some diesel fuel was also spilled, though this was later contained. Reports suggest that the locomotive struck debris before leaving the track.

A tool, which provides a common method to complete PTI risk assessments at stations, will help to ensure station managers and safety managers follow best practice. The risk assessment tool provides a review of the safety arrangements in place for managing PTI risk at a station, and considers how effective these arrangements are. It helps prioritise which areas need improvement.

To ensure we continue to reduce risk at the PTI in an ever-expanding and evolving railway, the industry will continue with research, analysis, engagement and sharing good practice. The outcomes will focus on improving PTI data; influencing passenger movement at the PTI; optimising methods of stopping and dispatching trains; optimising the step and gap between the platform and trains; and improving accessibility, performance and capacity.

For 2016, the focus will be on reducing incidents around trap and drag, alcohol consumption, and improving competence management. The industry will continue to work together to reduce the risk and improve operational performance, capacity and availability of access. This will benefit the mainline railway, including all who use and work on it.

PTI guidance can be found in the "Lend a helping hand" staff booklet. This tells you in more detail who is most at risk, and what you can do to help prevent an accident at the PTI, whatever your role is on the railway. This can be found on

**http://www.opsweb.co.uk/platform-train-interface-pti/materials**

"People in a safety critical role have an obvious part to play, but accidents at the platform edge can be the result of actions, behaviours and decisions taken by passengers long before reaching the platform edge. Staff at the ticket office, within the station or at the gate line can really help to influence passenger behaviour and potentially reduce the occurrence of these incidents."

**Mark Philips, Director of Research and Standards at RSSB**

**31 January 2016, Egypt: Level crossing collision near Cairo kills 7; keeper blamed**

At 07:30 (local time), seven people were killed and three injured when a passenger service struck a lorry at a level crossing in Giza, near Cairo. Initial investigations imply that the crossing keeper 'forgot' about the train.

**4 February 2016, Northern Ireland: Passenger train strikes equipment on line near Lisburn**

At around 06:45, a passenger train struck 'construction excavation equipment' on the line near Lisburn. There were no reported injuries, but the incident did cause widespread disruption to traffic.

**5 February 2016, India: Passenger train derails near Pachur; 'broken rail' cited as cause**

At 04:10 (local time), a passenger train derailed on Vetapattu Bridge, between Somanaickanpatti and Pachur. 14 passengers were injured. A broken rail has been cited as the cause.

# Proceeding at caution

## How should you communicate the instruction to proceed at caution; and how, as a driver, should you drive once the instruction has been given?

Every year trains still strike objects on the line such as trees, animals, vehicles and equipment, despite having been instructed to proceed at caution.

Sometimes, part of the problem is that the people involved in safety critical communication fail to come to a clear understanding because of the way they communicate.

### So what does the Rule Book say?

**Rule Book reminder**

*'If instructed to proceed at caution, you must, as well as not exceeding any specified speed, proceed at a speed which takes account of conditions (such as the distance you can see to be clear), that will allow you to stop the train short of any train, vehicle or other obstruction, or the end of your movement authority.'*

You can find this in Rule Book Module TW1 Preparation and movement of trains, Section 25.

To drive in the way described in the Rule Book means you must take account of factors that could impact your ability to see the hazard and stop the train. This could be things like the weather: fog and mist will affect visibility. If you're driving on a curve, there may be something just around the corner. How long and heavy is your train? Are you on a downward gradient? How would these factors affect your ability to stop the train?

You also need to stay on top of all driving tasks. What about vegetation and line contamination?

And if you're dealing with a moving hazard like an animal or a trespasser, they may have moved since they were last spotted. If that's the case, you shouldn't make assumptions about where the hazard is. Anticipate it to be just around every bend. And remember, you still need to look out for and obey signals while proceeding at caution.

## Newswire

**6 February 2016, Australia: Commuter train derails at Rushall, possible wheel issue**

At around 16:50 (local time), a commuter service derailed at Rushall station, on Melbourne's South Morang line. One passenger sustained a minor injury. The cause has yet to be determined, though initial reports suggest a wheel-related issue.

**9 February 2016, Germany: Collision at Bad Aibling kills 11,**

At 06:48 (local time), two passenger services collided on the single line between Bad Aibling and Kolbermoor. 11 people were killed (including both drivers). The signaller allowed both trains on to the single line in error. For more information, see RSSB's summary on Opsweb.

**11 February 2016, Egypt: Over 70 injured in Beni Suef derailment**

At least 73 people were injured when a passenger train derailed and two of its carriages overturned in Beni Suef. The incident occurred when the locomotive struck a block of cement on the line. The driver has been held responsible for the accident since he did not follow the signaller's instructions, according to a spokesman for the operator.

This may all sound very…well…cautious. But this of course is the point. The situations where drivers strike objects will often be because they've opted to drive too fast.

So how can you make sure the instruction to proceed is clearly communicated and understood?

The people responsible for communicating this message can be drivers, signallers, PICOPs, engineering supervisors and safe work leaders.

Before authorising a driver to proceed at caution, the driver must be given the information about the potential hazard ahead (see box). You can give this information via the GSM-R system, using a berth-triggered broadcast where the driver gives a 'non-verbal' acknowledgement. You can also have a two-way conversation over the handset.

When giving the instruction to proceed at caution, keep the conversation accurate, brief and clear. Both parties should be identified straightaway. The information should be repeated back at each key instruction to confirm understanding. If anything is unclear, seek clarification.

For more detail, see Rule Book Module G1 General safety responsibilities and personal track safety for non-track workers. Section 5 and Handbook 1 General duties and track safety for track workers Section 9.

Proceeding at caution has been covered in two recent editions of RED: **RED 40 'Driving at caution'** – raises the question of what proceeding at caution really means, and advises on the correct way to contact a driver on the move. **RED 44 'Assuming safety'** - highlights the need for clear communications and when there is a hazard on the line.

Information to share with the driver before giving the authorisation to proceed at caution:

- What the hazard is
- Where the hazard is – you must use major, recognisable features of the line such as tunnels, bridges, stations, signals and level crossings
- Whether the hazard is moving and when the hazard was last seen
- The section of line over which the driver is to drive at caution
- Whether the driver is required to report back with an update on the hazard

A new short guidance note on Proceeding at Caution has been put together by operations experts from across the industry (working through the Train Operations Risk Group).
You will find this guidance useful if you are a driver, signaller, engineering supervisor, or safe work leader; or are involved in, or affected by, train movements.
The new note is available on Opsweb – **www.opsweb.co.uk**

| Accurate<br>Brief<br>Clear | Identify | Repeat<br>Repeat<br>Repeat | Seek clarification |
|---|---|---|---|

**15 February 2016, US: Passenger killed in 'trap and drag' on New York subway**

At around 06:45 (local time), a commuter was trapped in the doors of a subway train and dragged to his death at Union Turnpike-Kew Gardens station. A spokesman for operator MTA said that the passenger had tried to board while the doors were closing.

**18 February 2016, Belgium: ECS runs away; stopped by driver jumping on board**

At around 21:00 (local time), an ECS formation ran away from Landen station after its driver left the cab to investigate an engine fault. It travelled for 7½ miles before another driver jumped aboard and brought it to a stand. SNCB is investigating.

**19 February 2016, France: Eurostar hits concrete blocks near Beloeil**

On 19 February 2016, a Eurostar service heading from St Pancras to Brussels hit a concrete block on the line near Beloeil. The train was running at its top speed, but did not derail. There were no reported injuries. Initial investigations suggest the block to have been placed deliberately, nearby fences having been cut open to allow access to the track. Four people are being questioned by police.

# And it was all yellow

Companies are now able to make their own informed choice about their trains' front end colour, as long as the right risk assessment is done and all affected parties are involved.

People out on the track or using level crossings need to be able to see and hear trains so they're able to stay safe. Traditionally, train fronts have carried a yellow panel in order to make them more visible.

It all started in the 1950s, when diesel and electric-powered trains were gradually introduced on Britain's railways to replace steam locomotives. Being far quieter, people working on or near the line found it more difficult to anticipate when a new train was approaching, and so the eye-catching yellow front began to appear on a number of locos from 1962. Later builds wore the panels from new, while up until privatisation, the BR Corporate Identity Plan of 1965 made the canary-like hue mandatory over a wider area.

However since that time, headlamp technology has improved, and that meant that the standards about train visibility needed to be updated. These updates came into effect in March; and it's now up to the companies owning and operating trains to make sure they are sufficiently visible. For new and modified trains, this includes having the right arrangement of head lamps in line with legal requirements; but the operator has more flexibility about the colour at the front. Yellow is still an option, it's just the operator's choice rather than a one-size-fits-all tick box in a standard.

## So what about safety out on the track?

As before, it is still your employer's responsibility to ensure compliance with health and safety at work legislation, including managing risks and setting up safe systems of work that adequately protect people who need to go out on the track. And in the short term, it's unlikely you'll notice any change to train fronts, not least because existing trains may not have the right arrangement of head lamps, and there's a lot to consider if a change is being thought about.

If an operator wants to introduce a train without a yellow front end, they will need to consult all affected parties –

## Newswire

### 23 February 2016, Netherlands: Train collides with crane; driver killed

At 08:50 (local time), a passenger train derailed after striking a mobile elevated work platform (MEWP) on Lage Veld level crossing near Dalfsen. The train driver was killed; seven people were injured. Eyewitnesses told the Dutch media that the MEWP had waited for one train to pass, but was struck by a second while attempting to cross the line.

### 7 March 2016, US: 'Altamont Express' derails after striking tree near Sunol

At around 07:45 (local time), a passenger train – the 'Altamont Corridor Express' – was derailed when it struck a fallen tree in Niles Canyon, near Sunol, California. The leading carriage plunged into the nearby Alameda Creek. The second vehicle derailed, but remained upright. Fourteen people were injured, four of them seriously.

### 3 April 2016, US: Passenger train collision with digger kills two near Chester

At around 07:50 (local time), am Amtrak passenger train derailed after striking a mechanical digger in Chester, Pennsylvania, at between 50 and 60 mph. Two maintenance workers were killed. The local senator told the press that it was unclear whether the digger was performing regular maintenance or whether it was clearing debris from high overnight winds.

including your employer and trade unions. They need to carry out appropriate risk assessments, including possibly applying other EU requirements to manage the change effectively, some of which is required in law if the change is considered significant.

A range of factors needs to be considered, including all operating conditions likely to be experienced by the train, and the impact on the safety of railway workers, passengers, members of the public and level crossing users. Operators need to think about situations like permissive moves into platforms where there is a train already there – would the front end colour make a difference on the perceived position? They also need to avoid colours associated with signal aspects or with high visibility clothing to avoid confusion. Reliability and maintenance of the head lamps will also be critical.

## In summary:

New or upgraded trains introduced to the network must comply with legal requirements to have the correct arrangement and illumination of head lamps. They can also display a yellow front-end.

Indeed, the yellow front end is still a must for trains without the new arrangement of headlamps, and the spec for the yellow panel is still provided in the new standard where companies find this to be good practice.

Yellow plant still has to be yellow all over, and shunting locomotives and snowploughs still require forward-facing surfaces to be painted yellow with black diagonal stripes where it's reasonable to do so.

## Further information

To find out more, talk to your line manager or appropriate safety contact in your organisation. Or contact us by email enquirydesk@rssb.co.uk or telephone 020 3142 5400 if you have any questions.


Cows have broken through a fence and found their way onto the line.

How should you respond?

What happens when the rules aren't followed?

We see how poor communications between driver and signaller, and a failure to follow correct emergency procedures, allow the situation to escalate into a serious incident.

Also in **RED 44**:

- 175 years of the railway inspectorate
- How human factors affect SPADs
- Briefing drivers on routes undergoing significant change

RED 44

# RAIB report brief: Near miss near Hest Bank

It was the afternoon of Monday 22 September 2014, and a group of nine track workers were repairing a section of the West Coast Main Line south of Hest Bank crossing, near Lancaster. The gang were on an underbridge located on a curve, which made it hard to see approaching trains. To reduce the risk, their safe system of work involved a lookout operated warning system (LOWS), supervised by LOWS controllers, and designed to give a visual and audible warning at least 25 seconds before a train came near. This would give the gang enough time to clear the track and move to a designated position of safety, which was just off the bridge and next to the Up line.

Warnings were being triggered by lookouts positioned north and south of the site using transmitters. The equipment had been working normally since the start of the shift, but just before half-two a passenger train came seemingly out of nowhere and powered past the gang at close to 100 mph. Luckily, they saw it just in time to get clear. They were understandably shaken, but no physical injuries were reported.

Why hadn't they had a warning? RAIB concluded that there were two possibilities: either the lookout operated the wrong switch on his radio transmitter by mistake, or he forgot about the need to send a warning during an intended delay period between seeing the train and operating the warning switches.

The delay was down to the fact that he was positioned on a long section of straight track and could see approaching trains for significantly longer than the time needed for the gang to get out of the way.

RAIB also noted that the lookout's vigilance had probably dropped as he'd been working continuously for almost two hours.

Since the incident, Network Rail has tested LOWS equipment that gives better user feedback, and features a (more reliable) movement sensor instead of a 'vigilance switch'. The company also introduced 'non-technical skills' training for lookouts. The programme includes modules on attention management, which cover the ability to remain alert and focussed, the ability to manage distractions, and the ability to keep an awareness of the overall situation.

The train operator – First Trans-Pennine Express – re-briefed staff on its policy for capturing OTDR data following reported incidents, as the relevant download had not been made within 8 hours. This made the investigator's job harder than it needed to be, forcing him to wade through several days' footage before the relevant section was found.

RAIB also recommended that Network Rail reassess the working time limits and duration of breaks applicable to lookouts, updating its guidance and instructions accordingly. Network Rail will also re-consider the circumstances in which LOWS should be used, in order to try to reduce the chance of a single point of failure due to the complete reliance on the action of one lookout.

Download of FFCCTV, courtesy of First TransPennine

# SPADtalk

## Right Track re-visits last year's steam-hauled SPAD in Wiltshire

The Railway Magazine's Nick Piggott likened it to Quintinshill, Britain's worst railway accident. It sounds melodramatic, but of course he was right: had the timings been slightly different, a collision could have occurred that would almost certainly have resulted in death at levels not seen in this country for decades.

As it was, on the afternoon of 7 March 2015, there was a SPAD, with no. 34067 Tangmere passing the signal protecting Wootton Bassett Junction, before blocking it soon after an HST had passed on clear signals. RAIB is investigating this incident, and its findings are eagerly awaited by all who operate steam, love steam, work with steam – and run trains alongside it on the network.

So far, we know that the driver didn't cancel the warnings from the AWS, so the brakes came on. The trouble was, he chose not to contact the signaller and report what had happened, but cancelled the AWS using an isolation cock on the locomotive. He also deactivated the TPWS. He then opened the regulator and had built up such speed that, when the locomotive activated the AWS for SN43 signal – which was at caution – he couldn't bring the train to a stand at SN45, which was at danger.

The casual observer might look at this situation and put the blame on the crew: something was done in the cab that shouldn't have been. The casual observer would be right – but only up to a point. Errors seldom occur in a vacuum, and this case has highlighted many management failings beneath the seemingly obvious surface. Indeed, RAIB has noted that the Wootton Bassett SPAD wasn't the only occasion on which Tangmere's isolation cock was used by crew in order to by-pass an AWS brake demand. 'The extent of this practice,' says RAIB, 'continues to be the subject of further investigation.'

In some respects, the investigator's march was stolen when the regulator, the ORR, issued a Prohibition Notice (PN) in February to the operator, West Coast Railway Company Ltd (WCRC), banning it from running heritage services on the main line. The ORR lifted the PN on 23 March 2016, having received evidence that clearer governance structures – with proper accountability for safety – had been introduced, along with more robust risk assessments and enhanced staff management processes.

The ORR Director of Railway Safety and HM Chief Inspector of Railways, Ian Prosser, said he was 'satisfied that WCRC has...taken all the necessary steps to address the issues of concern on safety', adding that the regulator will continue 'to closely monitor WCRC over the coming period to ensure that their approach is embedded into the culture of the company and that they fully comply with all the commitments they have made.'

RAIB's report on the incident is now available on its website. We'll take a closer look in the next Right Track.

CCL Hec Tate

CCL James F Clay