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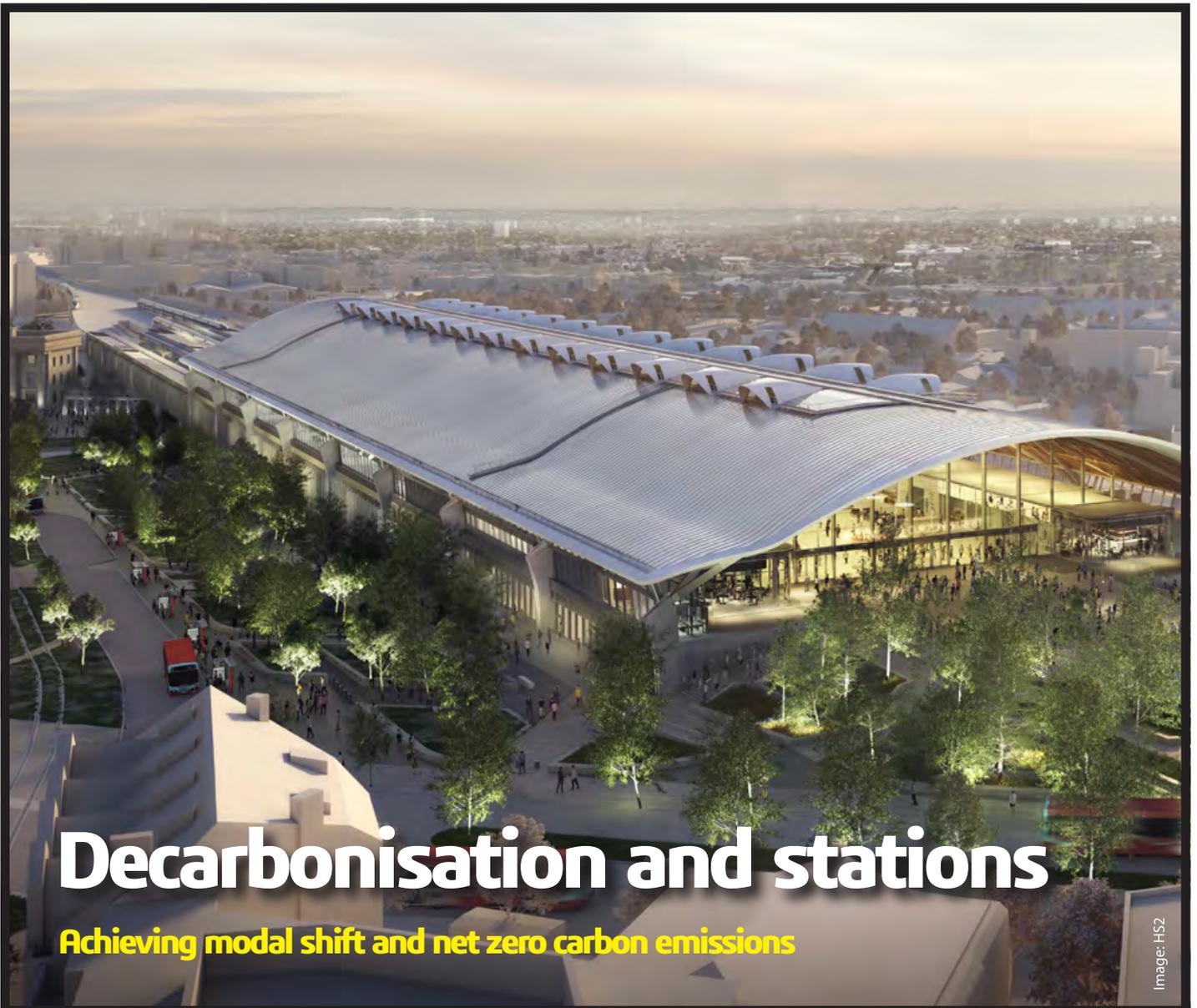


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editor's note

“Welcome back everyone, I hope you were all able to get something out of the Summer break. I tried to maintain the enthusiasm for ‘home workouts’ from early on in the lockdown but I have since been trumped by two cousins who have successfully raised thousands of pounds, one by running one hundred kilometres in a month and another by cycling one hundred kilometres in a day – both for charities that are helping people who have suffered the most during the pandemic.

A lot of people have been hurting in a variety of ways of late, so it is always good to see people sparing their time and energy to help out. I also note that our own industry is quick to step in, Chime Whistle Publishing is putting out a special fundraising book to support the families of the staff affected by the Stonehaven derailment. I’m also glad to see that Railway Children has received a £19,000 grant from The National Lottery, the charity that helps vulnerable children has had to postpone fundraising events so that cash injection must come at a crucial time. Let’s hope that spirit of togetherness continues as we all try to push for a return to normalcy in the coming months.

On to this issue and we are focussing on stations with pieces looking at The Coventry Station Masterplan and the role devolved authorities can play in station transformation. We also have an article from Sustrans that asks how to get more and different people travelling by foot, bicycle and public transport. All three are linked as we should see travelling by rail as part of an active lifestyle, which needs to be encouraged. The article mentions that Active Travel England has been tasked with administering the new cycling and walking budget to ensure funding is spent on good infrastructure.

Some of you may have seen on social media the pedestrianisation of streets across London as a way to help restaurants reopen, to buttress that I read a recent report conducted by University College London on behalf of Transport for London which found that people walking or cycling through a neighbourhood spend 40 per cent more than motorists. All those videos I have seen of people enjoying the space afforded by empty roads have made these places seem far more attractive, as though cars were obscuring their true beauty. It reminds me of Japan, where on-street parking is banned across all major cities, as such walking through urban areas is a far more pleasant proposal. Perhaps banning on-street parking across our major cities could be the solution to all the problems faced by the high street and the restaurant industry.

Sam Sherwood-Hale Editor

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Transport Secretary launches new Acceleration Unit to speed up transport infrastructure projects and build back better from COVID-19

Vital rail and road upgrades that will create jobs, increase connectivity, and boost the economy will be delivered more quickly, thanks to the launch of a new Acceleration Unit announced by the Transport Secretary Grant Shapps. The new team of specialists will join the Department for Transport (DfT) in order to tackle delays to infrastructure projects and drive forward progress for passengers.

The unit is set to be in place this month and will be directly accountable to the Transport Secretary. It will be led by Darren Shirley, currently Chief Executive of the Campaign for Better Transport and formerly of Which? Magazine.

Alongside the Acceleration Unit, the Transport Secretary today announced a raft of ambitious upgrades to Wales' railways, with £343 million of investment to deliver better, faster, more reliable journeys for passengers.

This includes kickstarting design work on plans to upgrade Cardiff Central station and funding to develop plans for upgraded cutting-edge digital signalling on the 241-kilometre Cambrian line from Shrewsbury Sutton Bridge Junction to Aberystwyth and Pwllheli, and proposals to speed up journeys between Cardiff and Swansea, Chester and Llandudno Junction, and the Severn Tunnel and Cardiff.

Transport Secretary Grant Shapps said: 'As Britain begins to get moving once again

after four months of lockdown, no-one should underestimate the scale of the challenge ahead.'

Chancellor of the Exchequer, Rishi Sunak, said: 'This £360 million investment in our roads and railways will help drive our economic recovery from coronavirus – creating jobs and levelling-up by ensuring businesses across all corners of the UK have the opportunities they need to grow.'

Darren Caplan, Chief Executive of the Railway Industry Association (RIA), responded: 'It is positive news that the Government has set up a new unit to accelerate transport projects, as well as providing £340 million for rail schemes in Wales. Speeding up rail projects is a clear way in which the Government can spur green economic growth, jobs and investment around the UK following the economic slowdown caused by the Coronavirus outbreak.'

'The Railway Industry Association and our members look forward to working with this new Unit, particularly to speed up the 58 rail enhancement projects the Government has direct control of, as our 'Speed Up Rail Enhancements' campaign has been calling for. Through Government and industry working together, we can support the UK's economic recovery, whilst delivering a decarbonised, more efficient transport network for the whole of the UK.'

Work starts on second phase of Motherwell station redevelopment

Over the next six months, the redevelopment work will focus on the main station building which will see changes to how customers access platform 2 and 3.

The main stairwell to platform 2 and 3 will close to make way for a larger concourse area, and the mezzanine level of the station will be refurbished with new lighting, flooring, ceilings, and a glazed roof.

Customers will access platform 2 and 3 via a ramp to the side of the station building, which will add some additional time to their journey – particularly customers travelling to and from platform 2. All lifts to station platforms will remain in operation throughout the works.

A new, larger, ScotRail lounge will also be created between platform two and three. So far, the project has seen the demolition of an old building at the bottom of platform one, which has made way for a new staff car park.

The taxi rank at the front of Motherwell station has closed to make way for staff portacabins, however taxi pick up and drop off remains available on Muir Street. Changes have also been made to the provision of blue badge parking, reducing from three bays to two.

An overhaul of the public realm outside the station building will take place in 2021, improving links between bus and train services as well as reducing congestion.

Once complete, the £14.5 million project will deliver:

- An enhanced station forecourt and building with glazed roof and brighter, larger concourse
- Improved ticket retailing facilities
- Enhanced retail environment with food and drink offering
- Refurbished customer toilets and waiting facilities
- Improvements to pedestrian and cycling access
- Expansion of bus facility on Muir Street
- New facilities for taxis, car drop-offs and disabled parking
- Expansion of nearby park and ride facilities at Farm Street

News in brief

Rail still safer than road during Covid-19

Rail safety experts worry that people may be assuming the roads offer a less risky alternative during the pandemic, when in fact trains are safer and greener. Analysis by the rail safety body has shown the risk of contracting Covid-19 while travelling by train is about one in 11,000 journeys. This is equivalent to a chance of less than 0.01 per cent, based on an hour-long train journey in a carriage with no social distancing or face coverings.

Vital rail link a step closer to being better protected as sea wall plans approved

Teignbridge District Council approved Network Rail's plans for the remaining section of the new sea wall at Dawlish, which will provide increased protection for the railway from extreme weather and rising sea levels for generations to come. Network Rail hopes to begin construction work on the second section of wall, which runs for 415 metres between the Coastguards and Colonnade breakwaters, later this year. It follows the opening of the first section at Marine Parade in July and will complete the £80 million Government-funded project.

Soham station contract awarded

Network Rail has awarded the contract to build Soham's new railway station to J Murphy and Sons Ltd. Having been without a rail connection for almost 55 years, the contract will deliver a new station for Soham, providing the community with more transport choices to local destinations and support more investment as part of the Council's vision for the wider area.

The £18.6 million funding package for reconnecting Soham to the rail network →

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NORTHERN POWERHOUSE

UK's most operationally challenging railway junction to be unblocked as part of Brighton Main Line proposals

Network Rail is asking passengers and the community to help shape its proposals to remove the UK's most operationally challenging railway junction as a public consultation on the scheme enters its final month.

The flat railway junctions, located to the north of East Croydon station, regularly cause delays to the 1,700 trains that pass through the area each weekday as trains often need to stop to allow others to pass in front of them. This creates a bottleneck that amplifies delays on the Brighton Main Line, its branches and the wider network.

Network Rail is proposing to replace the flat junctions with new viaducts, bridges and

dive-unders to separate the tracks, creating clear routes for trains and removing the current need for trains to wait at red signals for others to pass in front, which would result in a significant boost in service reliability.

The proposals to transform services on the Brighton Main Line also include plans for an expanded and enhanced East Croydon station including two new platforms to ensure incoming trains no longer have to queue outside the station for a platform to become available. The upgraded station would also include new escalators and lifts to improve accessibility.

Access to the reconstructed station would be available from the tram and bus stations, from Caithness Walk and from Cherry Orchard Road. A new northern concourse with an improved entrance will be created, accessible from Lansdowne Road.

The expansion of the railway to allow the new platforms at East Croydon station also means that Windmill Bridge (north of the station) would need to be rebuilt to increase its span to provide space for three additional tracks underneath.

Major railway works could begin as early as 2023/2024, with plans for the scheme to be constructed in stages to avoid major disruptions for passengers and allow benefits to be realised earlier.



World leading imagery survey set to improve passenger journeys

A new innovative way of inspecting the railway using high-quality imagery has begun across west London, the Thames Valley, the west and south west as part of plans to reduce delays for passengers and improve safety for staff

Network Rail has teamed up with Fugro, a leading

Geo-data specialist, following their success on the Wales route in 2019, who will capture high quality images of thousands of track miles to millimetre accuracy for analysis.

The trial is being funded with a £394,000 grant from the Department for Transport through the First

of a Kind 2020 (FOAK2020) rail industry innovation programme, which is managed by Innovate UK.

The advanced imagery measures absolute track position, track geometry and the wider rail corridor and will enable any faults on the railway to be detected sooner and before they potentially lead to delays for passengers.

It will also improve safety as it will reduce the amount of time railway engineers need to spend on the track.

The imagery survey, known as a Rail Infrastructure Alignment (RILA), will capture 97 per cent of Network Rail's Western route, which runs from Paddington to Penzance and to the Welsh border, providing an almost complete view of the network to levels of accuracy that have never been seen before.



News in brief

has been provided by the Cambridgeshire and Peterborough Combined Authority, led by Mayor James Palmer. With consent secured from East Cambridgeshire District Council in June, early enabling works are expected to begin this autumn to prepare the site for main construction works in 2021.

Statement on Stonehaven incident

Following the tragic Stonehaven incident, Network Rail has announced it is to inspect high-risk trackside slopes across Britain and the government has also asked Network Rail to review its resilience to, and management of, extreme weather. The Office of Rail and Road has issued this statement:

'Our thoughts remain with the families and friends of those who lost their lives and those impacted by yesterday's tragic incident. Britain's railways have an excellent safety record and incidents like yesterday are thankfully rare. There are increasing risks from extreme weather which are well known in the industry and our recent annual health and safety report showed that there have been six times more flooding events and a trebling of earthworks failures on Britain's railways in the last year.

'We look forward to receiving the outcome of the review, in addition to plans from Network Rail responding to the requirement we set out last month for improvements to the monitoring of assets and more sophisticated responses to forecast adverse weather.'

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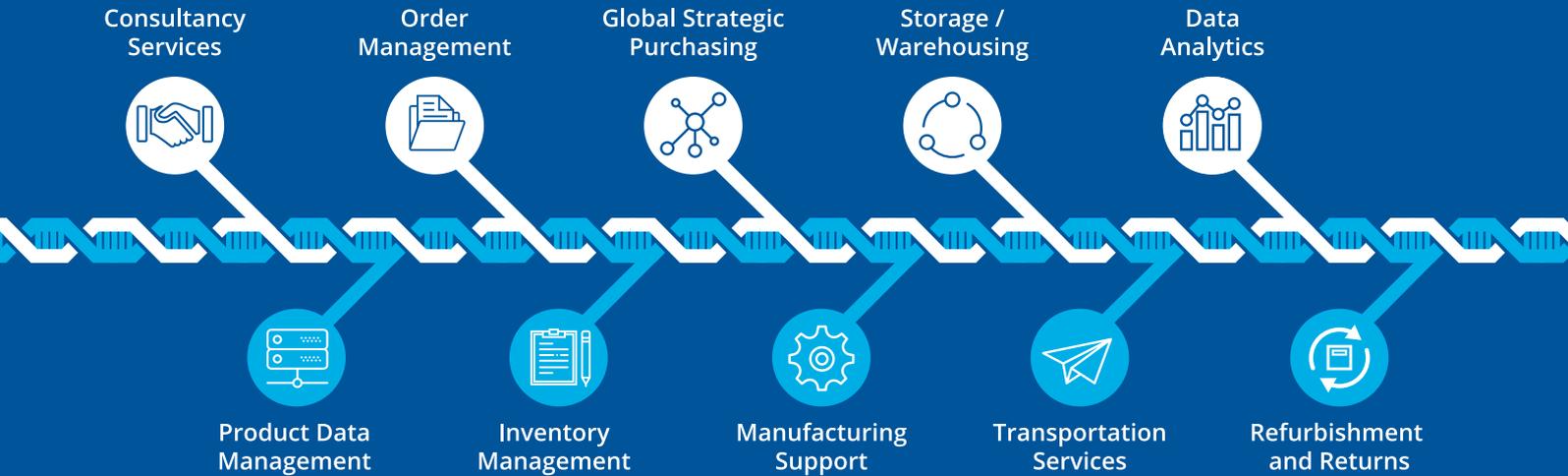


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New bridge and new rails on track as Network Rail invests £9.1 million to improve railway in Kent and South East London

A 130-year-old bridge has been replaced by Network Rail as part of a programme of engineering works. Along with the work to replace the bridge at Catford, South East London, engineers will also be replacing points, the moveable rails which allow trains to change tracks, at a very busy junction near Crayford.

The junction at Crayford was originally installed as part of wartime resilience for the railway, and it is now one of the busiest on Southeastern's Metro network, linking Sidcup with Dartford. Replacing the points there will help improve reliability for passengers across the area.

The bridge at Catford was constructed circa 1890 and strengthened in 1916. Freight

trains are currently subject to a 15mph speed restriction over the bridge due to its condition, so it is essential it is replaced, to avoid further speed restrictions and disruption to services in the future.

Over the next few years Network Rail is investing a record £1.25 billion to upgrade track, signalling, embankments, structures, stations and depots to give passengers in Kent and South East London better journeys, with fewer delays. The funding will tackle decades of under investment in the Kent network, replacing ageing equipment with new and more reliable technology to support improving train performance and keep people moving for decades to come.



GWR to honour Gurkha VC hero to mark 75 years since the end of World War II

Great Western Railway (GWR) is to honour Gurkha VC hero Tul Bahadur Pun by naming one of their Intercity Express Trains after him.

Marking 75 years since the end of World War II when hostilities in the Far East ceased, the naming ceremony will take place in the run up to Remembrance Sunday towards the end of the year.

Tul Bahadur Pun was just 21 years old and serving as a rifleman in the Third Battalion, the Sixth Queen Elizabeth's Own Gurkha Rifles in the Indian Army when his bravery and courage earned him the Victoria Cross. In 1944 on 23 June while serving in Burma, most of his platoon were wiped out while

attacking a railway bridge.

Tul Bahadur Pun charged the enemy position armed with a Bren Gun and single handed sent the enemy fleeing and held the position while the attack continued.

His citation read: 'His outstanding courage and superb gallantry in the face of odds which meant almost certain death were most inspiring to all ranks and beyond praise.'

He is one of just 13 Gurkhas to receive the Victoria Cross, the highest award for valour. In later life he became a figurehead in the campaign, led by Joanna Lumley, for the right of ex-Gurkha soldiers to be able to settle in the UK.

News in brief

Multi-million boost from UK Government for Welsh railways to level up infrastructure and improve journeys for passengers

Major progress has been made on ambitious upgrades to Wales' railways following £343 million of investment to help deliver better journeys for passengers. The raft of schemes to be funded include kickstarting the design of the Cardiff Central station upgrade, advancing plans for cutting-edge digital signalling on the Cambrian line and speeding up journeys between Cardiff and Swansea.

Work on a new, modern design for Cardiff Central station will be funded through the release of £5.8 million. It will focus on improving access and ensuring platforms are suited for longer trains, boosting space and capacity for passengers.

The Transport Secretary has also announced £3 million to advance plans for upgraded signalling on the 241-kilometre Cambrian line from Shrewsbury Sutton Bridge Junction to Aberystwyth and Pwllheli. The planned state-of-the-art digital signalling system will modernise the network, improving the reliability of services, and support the introduction of a new fleet being rolled out across the network in December 2022.

In addition, almost £2 million has been made available for the next phase of development work on proposals to speed up journeys between Cardiff and Swansea, Chester and Llandudno Junction, and the Severn Tunnel and Cardiff, through better-aligned tracks and exploring putting additional services on the lines.

The announcement of these new projects follows major reforms to the network over the past months such as completion of a fully electric route between Cardiff and London and the devolution of powers over the Core Valley line to the Welsh government.



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Television presenter, adventurer, and possibly Britain's most enthusiastic engineer. Profile **Rob Bell**, and you'll find an informed, inquisitive individual, with a thirst for knowledge. No surprise then, that when taking a perspective on the British railway scene, his view is equivocal, insightful and appreciative. Professional life has afforded Rob opportunities he considers privileged, as told in conversation with **Simon Walton**

Taking a less equivocal view was another individual with an engineering background. Not quite as keen to pull on his running shoes, Dr Beeching was nevertheless quick off the mark to fulfil his remit to make the railways pay their way. His radical downsizing left a legacy of crudely dismantled railways, that have since been built over, overgrown, overlooked, or simply lost. In search of that engineering legacy brought Rob to the Borders of Scotland, filming for his television series, *Walking Britain's Lost Railways*.

Encountering aspects of that legacy appeal to the adventurous engineer. Appreciating Shankend Viaduct, is just thankfully part of Beeching's legacy that has survived any crude dismantling. Illuminated in the evening sun, from the old reivers road that bridges the gap between Southern Scotland and Northern England, its determined march across Langside Valley echoes every determined step of the navigators who built it. What little success those cattle thieves would have enjoyed, had the lookouts commanded a view as panoramic as the vista from atop its sixteen arches. 'There are higher and there are longer structures on the British railway system' says Rob Bell. 'There are greater examples of engineering all around the world, but as a testament to the men who built this bridge, and opened this railway in the 1860s, there is no greater monument.'

The magic of television compressed the 66-mile walk from Tweedbank – terminus of the reborn Borders Railway from Edinburgh – to one hour. Not even the ever-enthusiastic Rob Bell would do that, but don't for a moment harbour the thought that he would hesitate to accomplish it in a more realistic timescale. Endurance sports are less a hobby, more a passion.

That enthusiasm extends beyond a thirst for all things engineering, and readily comes across in his TV work. Too modest to admit it, his easy-going presentation style makes him among the most popular communicators in the country. 'My work really is the vehicle that lets me put across what I believe in. I really have a need to put across the importance of science, engineering, technology and maths. It's especially important to actively engage kids. These subjects are important. The young generations will be the innovators who change our country in the future, every bit as radically as the railways changed it in the past. Show them the value of work like this, through TV or in person, that's how we'll engage them.'

Perhaps the railways changed life nowhere more so than in the Borders, where the landscape, every bit as rugged as the Highlands

or the Welsh mountains, was unified by a line of communications one hundred miles long, from Edinburgh to Carlisle. 'With the Borders there is a great story to tell' says Rob. 'For the two series I've presented of *Walking Britain's Lost Railways* there was so much to explore. There is probably nowhere else in the British Isles, where the Beeching axe fell with such profound finality. The closing of the main line through the Borders, the Waverley Route as it was known, was not just another cut. It was a blow to the base of a tree that brought down along with it, a whole canopy of branch lines, that covered a whole region. Yes, there were many other areas of the country where lines were pruned back, but no single area was as denuded of an entire network upon which a diverse community depended. School children would board at a set of steps by the lineside, and even the local doctor would be dispatched on a light engine to answer house calls. It was that much a part of the way of life.'

Yet Rob's appetite for exploring the achievement of building the line is also taken with the rebuilt section. The Borders Railway stepped outside the remit of the *Lost Railways* programme. The thirty-odd miles between Edinburgh and Tweedbank is very much found again. 'I'm told it's the longest restoration in Britain' he says.

'I think that's a double achievement in its own right, both in building the line and in restoring it.'

'There's a parallel with the Great Central Railway in England, which largely closed at the same time as the Waverley Route. Both lines were engineered over challenging terrain, and both lines had high hopes for commercial success. The Waverley Route served an affluent agricultural and textiles area, but had competition for long-distance cross-border traffic. The Great Central was in a similar situation, and what sealed its fate in the sixties was competitors also serving the same places – London, Nottingham, Derbyshire, South Yorkshire and East Lancashire.'

'The population is obviously greater than in the Borders, but let's not forget, and I was often told this, the Waverley Route had trains that ran through to all points north and south. There were day and night trains to London, and military trains were running through here, from the times of the Great War, all the way to Scapa Flow. The Borders was an economic heartland and the line was its artery, in peace and war.'

'The Waverley Route didn't see the sort of innovations that the Great Central did. Those forerunners of the high-speed trains – the Blue Pullmans as they were known – plied the Great Central. The innovations on the Waverley Route would likely be the early British Railways diesels. Hardly as glamorous. I think the innovation there

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Image: Steven Somerville

was in the actual building of the line. When I spoke to the engineers who worked on the Borders Railway reinstatement, I expected them to tell me about the challenges they faced, but the talk was all of the robust Victorian infrastructure, which needed little more than renovation and new track laying. It's that sort of built-in resilience that I think gives campaigners for the resurrection of the entire line a genuinely achievable ambition. Rebuilding that line would be rebuilding on the shoulders of the giants who engineered it in the first place. So much of the groundwork is already there.'

Grappling with the contrasts of modern engineering marvels, and marvel of building in the nineteenth century is something that Rob frequently returns to professionally. On the one hand he may be within the rapier-slender deck of the Millau Viaduct, on the other, climbing the giant tubular thighs of the Forth Bridge. 'My work gives me privileged access to many of the sort of places that engineers would be excited to see. The Millau Viaduct has become an icon of France, and I'm sure it will in time be every bit as famous as the Forth Bridge. The functional nature of the Millau Viaduct would probably make it more difficult, but the plan to build in public access to the Forth Bridge has got to be good. It's not only iconic, it's an engineering marvel. Making it accessible is a feat of science communicating that I'm sure will pay a dividend of engagement many times over.'

The grand railway projects around the world capture the imagination like no other. They cross the line between engineering and art, opening new opportunities to communicate, experience, and understand. Rob is as impressed as the rest of us in the grand achievements, and the artistry, of projects around the world. Examples like the TGV network in France, the Japanese Shinkansen, and the single-mindedly rapid deployment of China's high-speed rail network all rate highly. Rob is impressed by the idiosyncratic design and development approaches in different nations, and that's something apparent closer to home too. 'With the Lost Railways

programmes there was a real intention to get a good geographical spread. What really intrigued me was the opportunity to go into some detail about the way that different engineers approached their challenges, and how that's varied over time.'

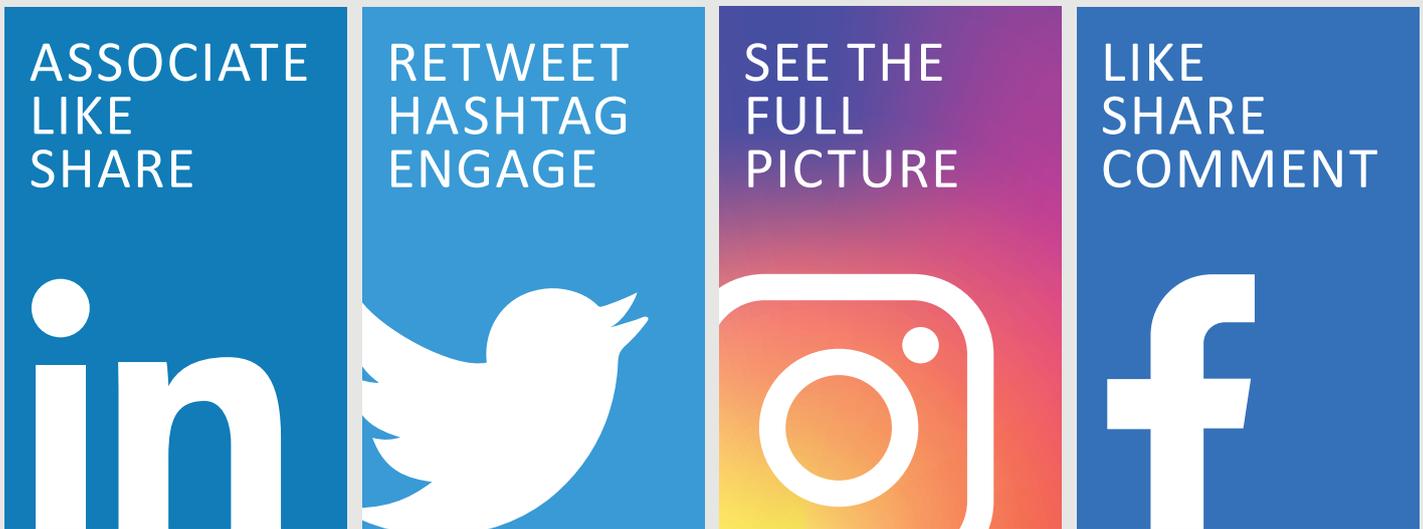
The most modern of challenges, must of course be the very British engineering ambition of HS2. In that aspect, Rob finds a project on a scale even those Victorian engineers he so admires would appreciate. 'The nearest part of the project to me is, I suppose, the station at Old Oak Common. I'm really impressed by what's planned there. Old Oak Common is an opportunity for something new, something on the scale of Lille Europe or Xi'an North. Statements for the engineering ability of our time, that's right up there with the TGV and CHR scale. The biggest challenge of HS2 that concerns me is how successfully it is managed at a macro level and how to avoid it becoming overly politicised.'

'I think back to the Borders Railway and extending it, and look at the engineering statements made there. The new bridges built

The biggest challenge of HS2 that concerns me is how successfully it is managed at a macro level and how to avoid it becoming overly politicised

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Places like Tweedbank didn't exist when the railway was built, and indeed when it closed. The heavy industries, designed around the railways, have largely gone too. Yet, still the railway thrives. The nuts and bolts of the railway still work today as well as they ever did

to replace demolished ones, or where realignment called for new works. The reuse of sturdy Victorian viaducts over the Tweed and the valleys, like that striking crossing at Shankend. Then let's not forget the where the line rejoins the network, at Carlisle. There is a station, a citadel by name and nature, that shows the ambition of joint venture in the Victorian era. It's right that the station will be the heart of the regeneration project in the city, and its railway heritage will play a bigger part in its future.'

There remains remarkable diversity within these small islands, and how much the unifying communications tool of the railway adapted to answer those very different needs. Rob Bell, who after his visit accepted an invitation to become Patron of the Campaign for Borders Rail, says the unique culture of the area exemplifies that diversity.

'I had not really understood how this part of the British Isles could have such a unique and diverse culture. We visited Edinburgh of course, which was radically changed by the coming of the railways. Where Waverley Station is now, was once, basically a swamp. Now, for the past century and a half, there has been this vast field of glass, eight and a half acres, probably the biggest roof in the world when it was constructed, and it must have totally changed the character of the city. It's actually one of those engineering achievements that you can appreciate both from afar, and from close up. We were standing on The Mound – an engineering achievement in itself – a Georgian landfill that's a famous city centre thoroughfare – and looking down on this three and a half hectares that's as intrinsically Edinburgh as the Scott Monument or the Castle. Inside, where the walkways take you up into that roof, you get a real impression for the Victorian heritage, and the grand scale of ambition.

'Everywhere you go you meet people who have a story to tell. Every line I've been to, people are very passionate. Not just about their lost railway line, and there's often a deep sense of nostalgia about that, but also there's always so much pride about the community, the distinctive way of life - and their achievements. Very often, and because they were built to last, that pride in achievement is reflected in the railways. Let's not forget, that after High Street, Station Road is the most popular street name in Britain. That speaks volumes about what the railways mean to our national culture.

'What campaigners have managed to achieve here, bringing the line out to Tweedbank, there will be many people who did not even know that this line used to come out to here, and that will have affected their lives in many positive ways. Now I bet if you took that away from them, they'd really struggle and they'd really miss it.

'The railway serves new purposes and what we build now is to accommodate those needs, not the needs of the past. Engines will not be dispatched to convey doctors on call. I have though great respect for the foresight and vision of the Victorian engineers, who invented, designed and built the railways. Despite almost everything around us having changed radically since then, their invention still serves a valid purpose, and still serves it well. We might be contemplating reopening lines for different reasons now, but the benefits can still be as absolutely huge.

'Places like Tweedbank didn't exist when the railway was built, and indeed when it closed. The heavy industries, designed around the railways, have largely gone too. Yet, still the railway thrives. The nuts and bolts of the railway still work today as well as they ever did.'

Despite the title, the Flying Scotsman programme Rob presented for the UK's Channel 5 was more than just a retrospective on that most famous steam locomotive. It was an insight into the innovation and expertise of the great steam railway engineers, from Nigel Gresley and William Stanier through to Freddie Harrison and Roland Bond. 'In a way it's impressive that British engineers were still developing and refining that locomotion technology, right up to the nineteen-sixties' he says.

Rob is not alone in expressing a thrill that was more than engineering excitement when the programme afforded him the opportunity to take the throttle of Tornado, the replica of Gresley's A1 Pacific design. The nostalgic attachment to the steam legacy of Britain's railways lives on as a part of the national heritage.

'The perseverance with steam technology is a debate that has been had many times. It may ultimately have cost the country, by making it a more expensive and a more protracted process to modernise the network, but there are positives. That nostalgia has given birth to an entirely new form of tourism – the heritage railway. The railway continuing to bring business to communities, doing the job they were designed for, back in the nineteenth century. If a living part of our engineering heritage can be showcased in such an engaging way, then we have a platform to introduce modern engineering to a new generation. If the longevity and the relevance of the railways can show school children that there's a career path in something that will be around for a hundred years or more, the railways may just be performing another role that they were not originally designed to do – inspiring the next generation.'

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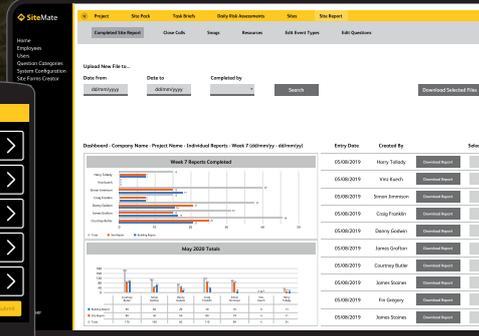
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The Cheek of it Chris Cheek



Quantifying the post-Covid world

Chris has been looking at the results of the latest National Travel Survey and wonders whether it can give us any clue as to what might happen to the rail travel market after Covid-19

The Department for Transport recently published the results of its latest annual National Travel Survey (NTS), for which the fieldwork was carried out during 2019. As such, it will be the last snapshot we will have of our travel habits before the onset of the pandemic at the beginning of this year.

Always interesting in itself, the survey can also give us the basis for looking at the possible consequences of the changes in our travel habits that may become permanent if and when we manage to conquer the Covid-19 virus.

Across all modes, the survey recorded a fall in the number of trips per person per year (the 'trip rate'), thus eradicating the growth seen in the previous two years. The 2018 survey had recorded the highest trip rate for a decade at 986, but last year it fell back again to 953, in line with the 2016

figure. Overall, the trip rate is 11.3 per cent lower than it was in 2002, the first year for which we have truly comparative data.

On the national rail network, the trip rate also fell slightly in 2019 after almost two decades of continuous small increases. Trip rates peaked at 22.1 per person per year in 2018 but fell back to 21.2 in 2019. Even so, the 2019 figure is still almost 58 per cent higher than the 13.5 recorded in 2002. In terms of trips, as opposed to the government's preferred measure of passenger kilometres, rail's market share held steady at 2.2 per cent in 2019, having been as low as 1.3 per cent in 2002.

As I have mentioned before in these articles, one of the most useful tables in the NTS looks at journey purpose. Commuting retained its crucial importance to the market for rail travel in 2019, accounting for 47 per cent of trips. There was a small fall in the commuting trip rate in 2019, from 10.4 trips

per person per year down to ten. However, this remained the second highest figure recorded since 2002.

Overall, the trip rate for commuting by rail has grown by over 55 per cent since 2002, and by almost twelve per cent in the last decade. That would take estimated passenger volumes from 458 million a year in 2002 to 820 million in 2019.

Business travel accounted for a further 9.8 per cent of journeys in 2019, up by 11.7 per cent on the year before. The volume of trip making for this purpose has grown by a whopping 87 per cent since 2002, and has grown by over 56 per cent in the last ten years. The increase in patronage is estimated at 115 per cent, accounting for 171 million passenger journeys in 2019.

Travel for educational purposes has increased too over the period, with the trip rate going from around 1.0 in 2002 up to 1.5 (though it has been as high as 1.7). In

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terms of its importance to the overall rail travel market, this has remained broadly unchanged at between 6.5 and 6.8 per cent of overall demand. This market would seem to have been worth around 120 million passenger journeys in 2019.

Historically, shopping has been of less importance to rail than to other forms of public transport, especially bus. In the pre-recession period, trip rates for shopping did grow, from around one in 2002 and 2003 up to 1.6 in 2006 and again in 2013. By the time of the 2019 survey, the rate had fallen back to 1.1.

This means that shopping, which once accounted for as much as seven per cent of the total rail market, has now fallen back to no more than five per cent. In terms of passenger volumes, this would be consistent with a fall of around 20 million trips (around 18 per cent) since 2015.

The leisure market, encompassing visits friends and relatives (VFR) at home and elsewhere, entertainment, sport, holiday and day trips, has seen some of the strongest growth over the years. Trip rates grew steadily from 3.1 journeys per person per year in 2002 to a peak of 5.7 in 2018, before falling back slightly to 5.6 in 2019. That's an increase of 78 per cent and is estimated to have doubled passenger volumes for this purpose to a total of 457 million in 2019.

These figures mean that we can have a rough idea as to what might happen to passenger volumes post-Covid given the immense social changes that are now expected.

The biggest of these would be a change in working patterns – more home working will inevitably mean fewer rail trips, and it is possible those that remain will be more evenly spread across the day. Thus, for example, if we assume a ten per cent reduction in the total workforce because of the economic downturn, and then that the proportion of those working from home doubles, then it is possible to imagine that this would reduce the volume of work trips by around a quarter. This would take the volume down by around 200 million trips.

Applying assumptions to other journey purposes based on outside views as to what is likely to happen to both the economy and our travelling habits can quickly build up a possible picture of future rail demand. Thus, it might be reasonable to assume a fall in business travel equivalent to commuting, i.e. around 25 per cent. The continuation of online learning at universities could very well depress travel for educational purposes by up to a half.

The move online might lop another 20 per cent off the number of trips for shopping and for personal business by rail. The big unknown is leisure travel – which could return to normal more quickly

than anything else, or continue to be badly affected by nervousness and lack of spending power: let's assume a ten per cent fall for the moment.

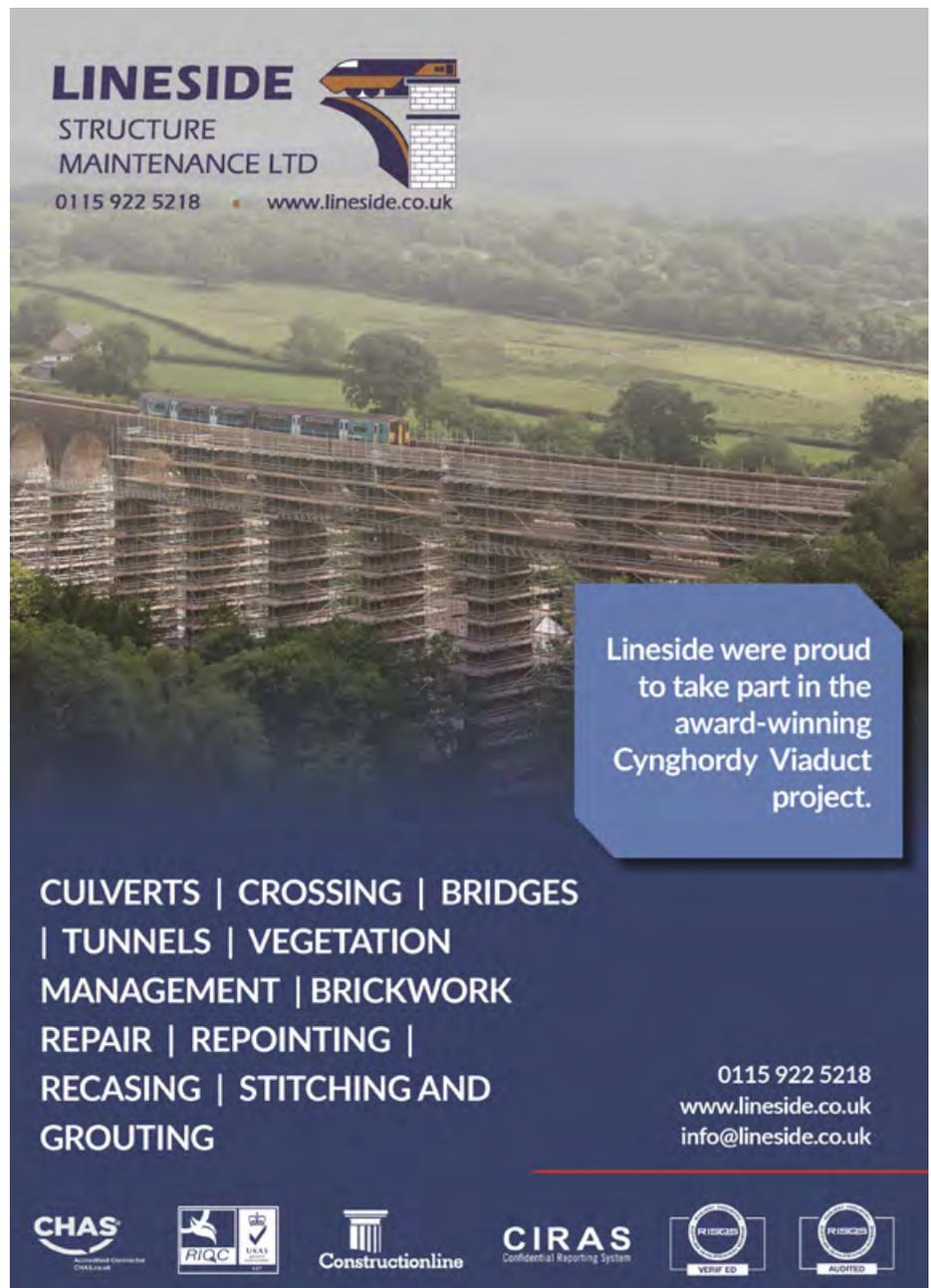
Taking all these together, we'd see a reduction in patronage from over 1.7 billion to around 1.4 billion a year – a fall of 22 per cent down from 2019 levels. On the surface, that sounds fairly disastrous, but on the other hand hardly takes us back into Beeching closure territory – it is actually around the level the network was carrying in 2010, before the post-recession growth spurt. If that was the case, overcrowding

would be eased considerably, and we could expect that performance could improve as pressure on the infrastructure would be eased, especially given the capacity increases put in place over the last decade.

The main casualty from such a reduction would of course be the Treasury – saddled with revenue risk that nobody else was prepared to take, and having to bear the cost of a network that nobody would dare cut because of the political backlash that would inevitably follow.

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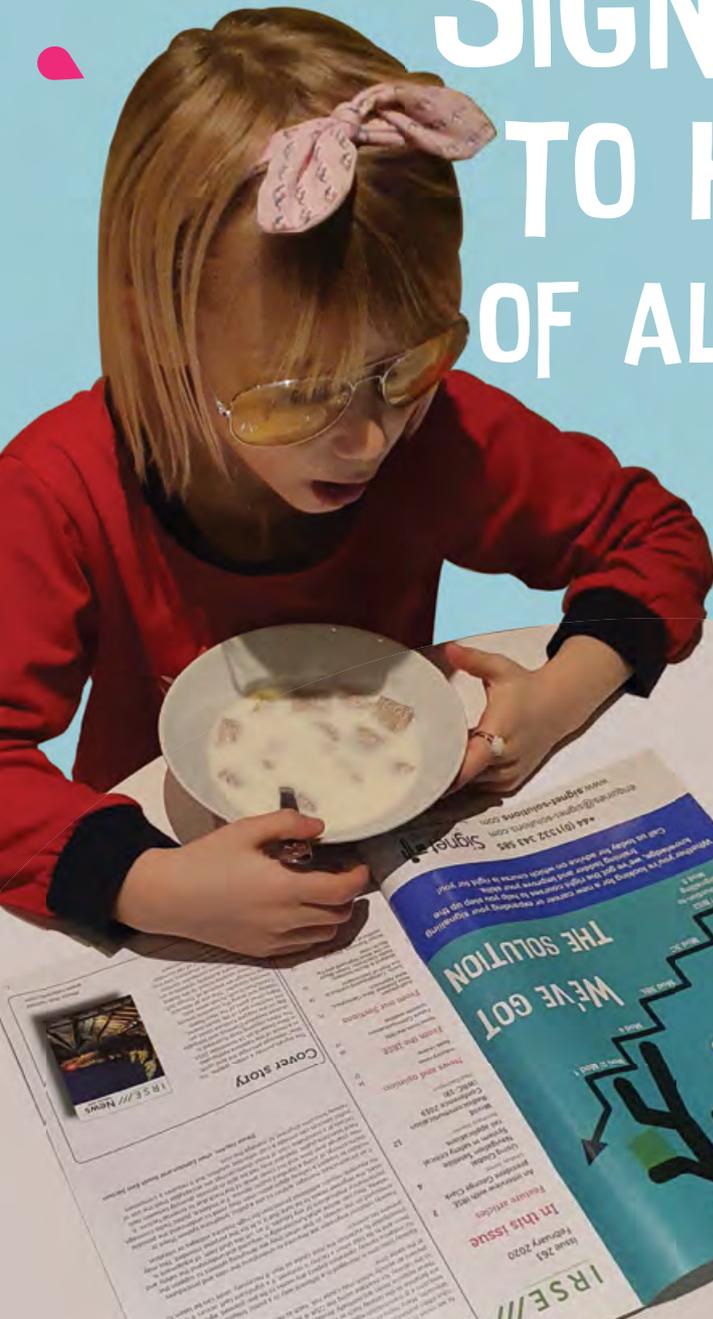


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LOGISTICS UK

Hydrogen trains and decarbonisation

Zoe McLernon, Policy Manager of Multimodal at Logistics UK, asks what place hydrogen trains will have in the decarbonisation of the rail network

This Summer, the Department for Transport (DfT) awarded HydroFLEX – a project to develop the UK's first hydrogen powered train – with £400,000 to fund the final production design and testing of the ground-breaking vehicle. Globally, there are only two 'hydro' trains in active service; if successful, the project would place the UK at the forefront of rail innovation. But unlike electric trains, hydrogen powered trains are in their infancy, and the threat of climate change is driving immediate action across the transport sector. In this month's column, I will explore the role these trains could play in the decarbonisation of the rail network.

HydroFLEX

In 2019, the Birmingham Centre for Railway Research and Education (BCRRE) and railway rolling stock company Porterbrook teamed up to demonstrate how hydrogen could be deployed across the rail network to offer a cleaner alternative to diesel trains. Titled 'HydroFLEX', the project involves fitting a hydrogen powerpack to an existing Class 319 train, which would allow it to run on conventional electrified routes as well as independently.

The HydroFLEX team believes hydrogen powered trains could help decarbonise the UK's rail system without incurring the high cost of electrifying its track. After all, electrifying a single kilometre of track can cost £750,000 to £1 million, according to a 2019 report by the Railway Industry Association (RIA). With 58 per cent of UK's



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the trains are in their early stages of development and the HydroFLEX team is looking into options to extend the ability to travel long distances. And with the buzz around this technology growing across the globe – America plans to install its first hydrogen train by 2024 – we expect the technology will continue evolving, and improving, quickly

from renewable sources – such as wind or solar – rail cannot claim to be zero-carbon. However, I am confident that national power generation will become decarbonised in the coming years.

Production of hydrogen also has its challenges; while its only direct waste product is water, the hydrogen used for HydroFLEX's units is derived from byproducts of chemical processes. However, the project's supplier is looking into switching to renewable sources; the option for clean hydrogen is there, but it requires further investment and development for it to become a popular, affordable, mainstream choice.

With the world's first hydrogen train only making its debut in 2016 – Germany's Coradia iLint – the technology is very new, exciting and set to make a significant contribution to the decarbonisation of freight transport. While hydrogen will have a positive impact on rail in the future, we must remain mindful of the requirements of freight and seek to adopt a coordinated approach with electrification to decarbonise the UK's rail network quickly, safely, and cost-effectively to the benefit of all users.

Logistics UK is one of the UK's leading business groups, representing logistics businesses which are vital to keeping the UK trading, and more than seven million people directly employed in the making, selling and moving of goods. With Covid-19, Brexit, new technology and other disruptive forces driving change in the way goods move across borders and through the supply chain, logistics has never been more important to UK plc. Logistics UK supports, shapes and stands up for safe and efficient logistics, and is the only business group which represents the whole industry, with members from the road, rail, sea and air industries, as well as the buyers of freight services such as retailers and manufacturers whose businesses depend on the efficient movement of goods. For more information about the organisation and its work, including its ground-breaking research into the impacts of Covid-19 on the whole supply chain, please visit logistics.org.uk

rail track still not electrified, hydrogen powered trains could offer a more affordable way to decarbonise certain sections of the network, for example, on rural, little-used stretches of track. With this in mind, hydrogen powered trains would be best employed as a complementary means to electrification. And as the HydroFLEX concept involves converting existing diesel units into hydrogen units – creating a zero emission self-powered unit – it is a cost-effective solution; brand-new trains would not need to be commissioned and built.

With the government wanting all diesel trains eradicated from the network by 2040 – and with so much left of the network to electrify – hydrogen powered trains could be the missing piece of the puzzle to enable rail to reach its decarbonisation target on time.

Freight applications

While the benefits of hydrogen for passenger travel are very clear – the trains are quiet, quick, reliable and environmentally friendly – its applications for rail freight

are less apparent. There is a concern that heavy freight trains, moving across vast stretches of the country, may not be suited to hydrogen in the long term. After all, these trains, weighed down by cargo, will require more power than passenger services, and hydrogen takes up much more volume than diesel.

However, the trains are in their early stages of development and the HydroFLEX team is looking into options to extend the ability to travel long distances. And with the buzz around this technology growing across the globe – America plans to install its first hydrogen train by 2024 – we expect the technology will continue evolving, and improving, quickly.

Clean energy

For the rail network to achieve full decarbonisation, its chosen energy source – either hydrogen or electricity – must be produced cleanly. While more than 40 per cent of the UK's rail network electrified, until the electricity is derived





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Extra concerns during the holiday period

The arrival of the Summer holiday period has seen many employees looking to take part of their annual leave at the same time as they had in previous years

Rules issued on 8 June under the Public Health (Control of Diseases) Act 1984 for each of the four countries making up the United Kingdom required people arriving into the UK from abroad to undergo a 14-day quarantine period before going into work. These rules were changed on 10 July for England, Wales and Northern Ireland, establishing a number of 'travel corridor countries' which did not require a quarantine period for people returning from those locations. These included a significant number of places which were considered major UK holiday destinations and many people started planning their holidays to those countries.

The situation changed somewhat on 25 July when the UK Government announced that UK travelers returning from Spain, the Balearic Islands or the Canary Islands on or after 26 July would be required to self-isolate for 14 days on their return. Since then other European countries have been added to the list requiring self-isolation. The speed at which the UK Government brought countries back within the quarantine regime surprised a number of employees and employers. This was so, even though the rules were relatively clear that the travel corridor countries could change at short notice in order to protect the UK.

Within the transport industry, many employees are required to be 'out in the field' rather than 'working from home', whether that is maintaining track or rolling stock or staffing stations. This raises two important

questions: 'Are staff who are subject to such a quarantine regime entitled to be paid during the 14-day quarantine period?' and 'How can an employer manage the impact of staff having to self-quarantine and minimise the potential disruption of having fewer staff?'

Options for paying employees during quarantine

Where employees are required to quarantine following international travel from a country which is not exempt from the travel restrictions, there are four main options available to the employer:

1. Where employees *can* work from home during a period of mandatory travel quarantine, they should do so and receive full pay during the quarantine period.
2. Where employees *cannot* work from home, due to the type of job that they do, there is no automatic entitlement to Statutory Sick Pay (SSP) during the quarantine period. Currently, entitlement to SSP will *only* be triggered where an employee:
 - Tests positive for COVID-19 or has been in contact with someone with COVID-19
 - Has COVID-19 symptoms or lives with someone with COVID-19 symptoms;
 - Is shielding due to an underlying medical condition, or
 - Has been told to self-isolate via a notification from the NHS Test and Trace system
3. However, although employees and workers are not entitled to SSP,

employers can choose to pay employees SSP, or their standard rate of sick pay if higher, in these circumstances if they choose to.

4. If the employee has enough annual leave left, they may choose to take a longer period of annual leave to cover their quarantine.
5. The employer can require the employee to take annual leave, but would have to give double the amount of time as notice in a redundancy situation (i.e. one month for 2 week's leave) to comply with the requirements in the Working Time Regulations 1998.
6. The employee and employer agree that the time spent in quarantine should be treated as unpaid leave.

If the employee has already been furloughed for a minimum of three consecutive weeks before 30 June, it may be possible to furlough the employee under the Coronavirus Job Retention Scheme (CJRS) to cover the quarantine period. However, this requires the employee to have already signed an agreement dated prior to the furlough period (which cannot be backdated) where the employee consents to being put on furlough. In using the furlough scheme, the employer must act fairly and take account of clause 2.5 of the Further Treasury Guidance on the CJRS (15 June 2020) which provides that 'no claim may be made in respect of an employee if it is abusive or is otherwise contrary to the exceptional purpose of the CJRS'.

The employer would therefore need to be satisfied that claims in these circumstances fall within the exceptional purpose of the CJRS, which is to help employers who cannot maintain their workforce because their operations have been affected by coronavirus. In addition, from 1 August 2020, employers have needed to contribute towards the cost of furlough leave.

Actions for employers to minimise business disruption caused by travel quarantine

To help set expectations across the business and manage the potential disruption of the travel quarantine rules, it is recommended that companies establish a foreign travel policy (or supplement an existing policy) to address issues such as:

- **Notification obligations:** Whether employees will be required to tell their employer when booking time off if they intend to travel abroad (and whether or not that country is currently on the exempted list) and/or to notify their employer as soon as they become aware that their destination is not on the exempted list
- **Expectations for work and pay during any quarantine period:** What will happen if a period of travel

quarantine is imposed, how that time will be accounted for (e.g. work from home, holiday, unpaid leave) and what pay, if any, will be due

- **Any differences in approach:** Whether there will be any differentiation between holidays booked before or after the pandemic and/or holidays booked before or after travel quarantine has been imposed for a particular country
- **Disciplinary action:** Whether failure to comply with any aspects of the policy may result in disciplinary action

It will be sensible to publicise the new rules and policy and communicate with staff about them, to help set expectations around pay, discuss individual travel plans and flush out any other related issues. Consultation with Unions may also be necessary in order to smooth the passage of such changes.

Clear obligations and expectations

It is worth remembering that under general employment law employers have the right to cancel any pre-authorised leave provided that the notice of cancellation is as long as the duration of the leave itself (subject to any specific provisions in the employment contract, staff handbook or holiday policy). However, this is likely to be

unpopular and employees may argue that this is unreasonable behaviour in breach of the term of mutual trust and confidence. Instead, establishing a clear and thorough policy and then following it will help both employees and managers to have clear expectations of what is required of them and help to provide some certainty during a changeable time. It should also help the business to make a plan to mitigate the effect of any absences within the business.

Martin Fleetwood is a Consultant at Addleshaw Goddard's Transport practice. The Rail Team has over 30 lawyers who advise clients in both the private and public sectors across a wide range of legal areas. As well as contractual issues, the team advises on operational matters, franchises, concessions, finance, regulatory, property, employment, environmental and procurement issues.

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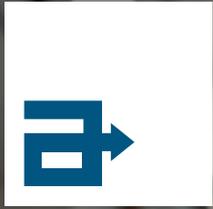
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Garden Villages and Garden Towns: Visions and Reality

England is missing out on a generation of new rail-oriented housing development, says planning and transport consultant **Steve Chambers**

Working for Transport for New Homes, I co-authored the Garden Villages and Garden Towns: Visions and Reality report with Jenny Raggett. Transport for New Homes is a project of the Foundation for Integrated Transport that seeks to understand why new homes are being built around car dependence and not walking, cycling and public transport.

The report looks at the transport provision for new housing developments in England promoted as garden towns and garden villages. This distinction is an important one, as 'garden community' status is only given if a proposal meets government criteria set out in the Garden Community Prospectus. It also means that government funding can be unlocked to provide vital infrastructure, including rail transport.

Overwhelmingly we found the transport infrastructure unlocked by this status was major roads. We found very little on walking, cycling or public transport. Aspirations for mass rapid transit and other sustainable transport infrastructure was present in the visions and proposals, but the funding to make it happen just wasn't there.

We believe the 20 garden towns and villages we looked at could create up to 200,000 car dependent households. In total more than fifty developments have

now secured garden town or garden village status.

A number of visions for garden villages and garden towns touted better rail or mentioned that there was a small station nearby that could be made into a transport hub. Others wanted a station opened. A new light rail link was even suggested to provide for mass transit for a large garden development some miles from Reading.

Developers know that rail is very popular with potential residents of new homes. However, planning applications showed that developers and local authorities found the procedure for getting a new station or existing one approved that they kicked the plans into the long grass.

Another problem we found was that land offered up for development by landowners was too far from a station nearby. We found some were near or adjacent to operational railway lines, but are proposed too far from existing stations to make them useful for new residents.

Even those we found with a station were typically on the outskirts so the development could not be planned around a central railway hub. This meant that many homes were too far from the station to make walking to it a viable option. With the absence of safe cycle routes and a street layout that hindered direct utility walking we came to the conclusion the opportunity has been missed to design out

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car dependence in these new communities.

The situation was also disappointing for developments proposed near freight lines or former railway corridors that could be reopened. Despite all the talk of Reverse Beeching, we found that little progress had been made in providing new rail services to the new housing that was proposed.

Our research into the funding reinforced this. The Housing Infrastructure Fund (HIF) is meant to unlock new housing by providing missing infrastructure. We discovered the transport portion of approximately £1bn is being spent almost exclusively on new road buildings in the form of motorway junctions, bypasses and ring roads. Outside London, we found the entire rail spend from the HIF was used on a single station in Chelmsford.

The focus for our research was outside London, but we observed that in the capital something was happening to make rail and housing connect together. Examples of rail-led development are the perhaps well-known Barking Riverside on the new London Overground extension and the newer development at Beam Park being built around a new station on the Fenchurch Street line. In both cases the central location of the station is being exploited to create a vibrant centre with a square and mix of amenities, well integrated into the

development.

The density of London means that rail spend will always come out better in a cost benefit analysis than elsewhere in England, but something more than that was happening here. The presence of Transport for London (TfL), an all-purpose transport authority with rail operation experience is missing elsewhere in the country and this clearly helped these rail developments along.

The governance of TfL is the Mayor of London, who is also land owner of these sites and the strategic planning authority of Greater London. This meant that these sites benefited from the secret sauce of the same entity being multiple actors in the development process. Quite simply there was the practical ability as well as the will to ensure housing was planned around and with railway infrastructure and services.

Back to outside London, we think the tentative attempts to get railway stations built has meant the new developments are completely out of sync with the timescales of railway planning. This has a cost because the new residents will become car dependent from day one of occupation of their new homes. It is difficult to attract rail commuters if the railway station is merely a speculative dot on a promotional map.

We also found an apparent lack of understanding of railway operation on

the part of development promoters. The aspirations for new stations on lines that are already at capacity is unrealistic, especially for a new station serving a settlement of just a few thousand homes. Elsewhere the homes are being built on or near rural lines with very low frequencies or not on the route to the nearest major employment centre and will therefore have limited appeal for commuters.

The Government prospectus for garden towns and garden villages talks about new developments being transformative for communities. The only way this is going to happen for rail is if new or reopened lines, stations and services are planned very early in the development process and are in sync with railway infrastructure planning. Crucially, the money for these projects must be available from the outset. If the government was really committed to decarbonising transport we'd see every new housing development built around rail.

Garden Villages and Garden Towns: Visions and Reality is available to download from www.transportfornewhomes.org.uk

Steve Chambers is a planning and transport consultant. He is the Sustainable Transport Campaigner for Transport for New Homes

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We need more diversity in rail to get the industry back on track

Dyan Crowther, Trustee, Women in Rail, looks at the data behind the green case for a diverse workforce

Covid-19 has created very real challenges for all of us in the rail industry. But as we look to reboot the rail sector, we must ensure we don't miss the opportunities along the way too. I believe we have the chance to turbo charge a push towards a more diverse rail industry, and in doing so, help drive the sector towards a green recovery.

There are roughly around 85,000 people working in the rail industry, but only 14,000 of these are female. This ratio of around 1 in 6 decreases further when it comes to certain jobs such as train drivers or engineers. Despite individual measures already being taken by rail companies to foster a more inclusive culture, the industry must, now more than ever, work together to foster the talent we need.

I believe that workforce diversity and key current issues, such as sustainability, are firmly linked. Too often in recent years, the railway industry has rested on its laurels as a naturally green alternative to car or plane. But so much more can be done and encouraging a more diverse and inclusive workforce can really help to challenge perceived wisdom and force new and creative thinking.

There is a significant body of research underlining the positive impact that an increased female workforce can have on

sustainability in a sector. As one recent study from Colorado University put it: 'When more women make decisions, the environment wins.'

So, how can we ensure we find, support and develop the careers of more women to drive creative thinking in the industry?

There are already a range of support networks like Women in Rail and The National Skills Academy for Rail (NSAR). But we need to do more to leverage the 'kerb appeal' for a wide range of apprenticeships through which we can attract the quality and numbers of future employees the industry needs. And as a sector that is increasingly innovating, appealing to younger generations is becoming a lot easier – but we must not rest there. How we communicate is crucial.

However, getting people interested and getting them in is only a small part of the process; retention and training is crucial for developing a skilled workforce. We must give new entrants a clear steer on their career options and development opportunities, as well as transparency of the support network available to them, including showcasing role models in the sector.

I am a real advocate of mentoring and coaching. Over the past 30 years in the rail sector, I have mentored tens of women and men in the industry. Learning from others' personal experiences is just as important as



harnessing new ideas, and hand in hand can be very powerful for achieving innovation and change across the industry.

As a sector we have come a long way in terms of diversity, but Covid-19 reminds us that now more than ever we need the greatest creative thinking to drive change, and that can only be done by attracting the best talent out there.

Dyan Crowther is a Trustee at Women in Rail



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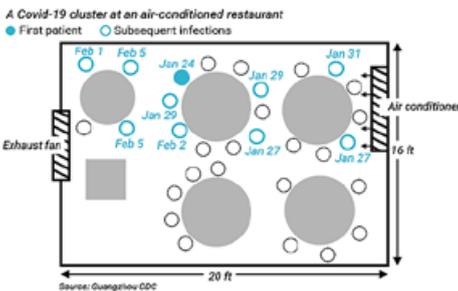
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UV-C technology that kills Covid-19 is being ignored

Rail passengers and staff are facing an increased risk of catching Covid-19, **Paul Tweedale**, Managing Director at Tenbroeke Co Ltd, explains how UV-C light is a proven solution

SARS, MERS and now Covid-19. The first two caused what seemed like huge disruption and many deaths, but in comparison to Covid-19, seem quite tame. Despite having a lower fatality rate, COVID-19 has resulted in more deaths than SARS and MERS combined.



The World Health Organisation (WHO) has acknowledged ‘evidence emerging’ of the airborne spread of Covid-19. This is proven by a study in China in a paper published July 2020 by Dr. Li, a clinical doctor at the Dept. of Infectious Disease, Affiliated Hospital of Xuzhou Medical University, China. The paper identified how ten people from three families who had all eaten at the same air-conditioned restaurant in Guangzhou, China on 23 January, 2020 were infected by Covid-19 – due to the virus being spread by unsterilized air through the restaurants’ Heating, Ventilation & Air Conditioning (HVAC) system.

This happened in a restaurant, hence it can and is happening in any enclosed space – train carriages, station waiting rooms, offices, ticket buying areas, schools and places of worship.

Recent studies – China, Germany

UV-C light kills Covid-19

The germicidal properties of sunlight – ‘nature’s disinfectant’ – were established in 1877 during proven research by British researchers who found that bathing bacteria-filled test tubes in sunlight killed microbes. In the 1930s, a Harvard sanitary engineer

Study	Result
The risk of Covid-19 transmission in train passengers: an epidemiological and modelling study: Published by Oxford University Press for the Infectious Diseases Society of America.	Covid-19 has a high transmission risk among train passengers... (and)... is heterogeneous by travel time and seat location, with the highest risk seen among passengers adjacent to an...infected...patient
Investigation of a superspreading event in the largest meat processing plant-related SARS-Coronavirus 2 outbreak in Germany.	‘Our results indicate climate conditions and airflow as factors that can promote efficient spread of SARSCoV-2 via distances of more than eight metres.’

demonstrated that UV lamps installed near the ceilings of schoolrooms dramatically cut measles infection rates among pupils.

Recently, a study published in Nature identified that a particular spectrum of ultraviolet light, ‘far UV-C’, ‘efficiently inactivates bacteria without harm to exposed mammalian skin’... ‘this is because, due to its strong absorbance in biological materials, ‘far-UV-C’ light cannot penetrate even the outer (non-living) layers of human skin or eye; however, because bacteria and viruses are of micrometre or smaller dimensions, ‘far-UV-C’ can penetrate and inactivate them.’ Covid-19 is new, but we can look to previous coronaviruses for insight - studies on SARS and MERS over the last few years show that ‘far UV-C’ light is safe for humans and kills viruses.

UV-C technology from PP-L is proven to kill Covid-19

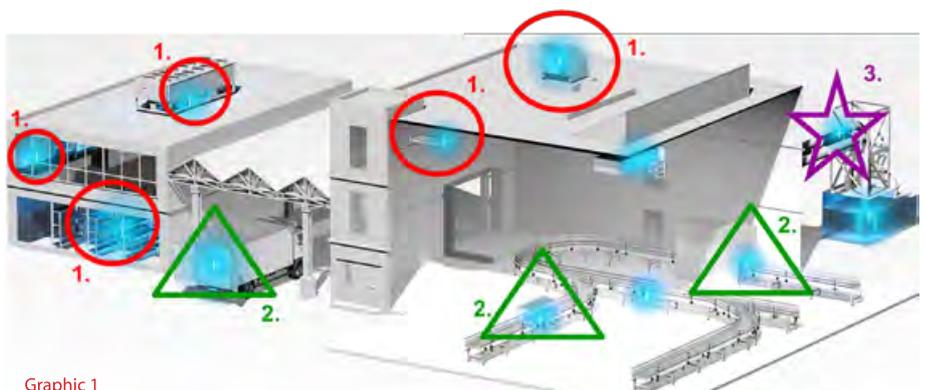
Whatever the reason, pride, naivety or the desperate hope that a vaccine will be

produced – which may take years – the result is that an effective, low cost solution is available today and is being ignored.

The TenBroeke/PP-L partnership is delivering UV-C solutions that kill bacteria, micro-organisms, coronaviruses and deadly pathogens in the air, on surfaces and in liquid.

The PP-L technology and systems, proven over 80 years, continually sterilises the air in closed spaces by either being fitted in enclosed areas or installed within the heating and ventilation system. In an HVAC system, it sterilises the air before it is circulated or recirculated whilst also keeping components within the system free from microbes.

The solutions cover stations, carriages, control rooms, offices, staff welfare facilities, retail outlets, escalator handrails, ticket office areas – essentially, the air and surfaces in any enclosed space. Critically, the PP-L system can undertake deep cleaning and air filtration without impacting revenue earning



Graphic 1



infectious diseases, viruses and bacteria. The robots are safe, reliable, user friendly and designed to be operated by every-day cleaning staff. The picture shows the Aitheon robot in a hospital room and an airport.

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Graphic 1 identifies the places where viruses breed and how the PP-L solutions stop the spread of Covid-19 and over 35,000 viruses and bacterial infections.

Ventilation and air conditioning

The PP-L UV-C disinfection systems for air and surfaces destroy germs 24/7 and ensure Covid-secure space that can be used with greater confidence by passengers and staff. The system disinfects the air and ensures the supply and re-circulation of clean air through installation modules in air ducts and air-conditioning centres. The products can be retrofitted within existing systems or integrated into new build.

Wall and ceiling units

PP-L wall and ceiling units protect products stored in cold rooms, and people working in Control Rooms, server rooms and

warehouses. The system is made entirely of corrosion-resistant materials. The air sterilisation product is designed to be operational when people are present, however the surface sterilisation products can only be used when the enclosed space is empty of people.

UV-D Robots

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Working on the London Overground

Pod-Trak offers bespoke engineering solutions to clients who seek an innovative approach to the construction and maintenance of transport infrastructure

Pod-Trak's highly skilled teams have the knowledge to support the broad spectrum of transport networks keeping the country moving. This includes various specialist disciplines across the railway, airport, and civil engineering sectors.

The Pod-Trak story began in 2007 from humble beginnings. Fast-forward 13 years and the company now employs 300 people, has offices in London, Manchester, Bristol, and Doncaster and works throughout the UK and Ireland focusing on infrastructure projects – well established within the railway, airports and power sectors with over a decade of experience in delivering complex and specialist technical projects successfully.

Pod-Trak also has an extensive plant fleet with a full unrestricted Network Rail POS, meaning it can operate its plant on Network Rail infrastructure. Its plant fleet means that it can be more versatile, more efficient, and more cost-effective.

A key to the success is the company's ability to build strong, long-lasting partnerships with its clients, producing an efficient, safe, and quality product throughout the project cycle. It prides itself on being different, challenging to get better solutions, and delivering right first time.

Building better railways

The Pod-Trak team are engineering specialists within the rail environment. With a strong core of multi-discipline services delivered with in-house capabilities, Pod-Trak can deliver both standalone discipline-specific and turnkey package solutions. Experienced in working on a vast range of rail infrastructure throughout the UK and Ireland including, main line, tram line and underground, Pod-Trak can assist with planning through to delivery of all projects.

When it comes to many companies reviewing performance in rail work, it can be deemed that issues can stem from where contractors are not involved at all stages of the project. The fact that it is a multi-disciplined business means that the project can be worked on by the same team – reducing the potential for inefficiencies and essentially providing a cost saving to the job.



The team has completed hundreds of projects since the formation of the company, with significant experience in civil engineering, communications, railway electrification and permanent way works.

Latest project – Barking Riverside Extension (March 2019 – May 2021)

Considered to be a very significant project in London, Pod-Trak was contracted by the Morgan Sindall VolkerFitzpatrick (MSVF) JV to complete works which would extend the London Overground to make the city more accessible for 10,800 new homes.

The Barking Riverside project is essentially building a new community near to the Thames in East London. In order for these new homes, school and healthcare facilities to function effectively, an effective transport infrastructure system is essential. Pod-Trak is delivering a multi-discipline rail systems and civil engineering scope on the project which is an extension to the London Overground and commissioned by TfL.

As part of this project, Pod-Trak are contracted to deliver:

- A 4.5-kilometre extension to Barking Riverside, from the Tilbury Loop Line between Barking and Dagenham Dock stations to Barking Riverside
- Reconfiguration of Network Rail's Ripple Lane goods yard to allow the extension to connect to the Tilbury Loop
- Continuation of the rail system over a new 1.5-kilometre viaduct into the heart of Barking Riverside

Laying the foundations for a new future

This project involves an extensive Permanent Way scope, including:

- Creating a new up a Tilbury Loop and up & down Barking Riverside lines
- Installation of new double track spur line on the viaduct
- Installation of new ballasted track
- Transition section between ballast and slab track
- Installation of new crossovers
- Track lubrication and buffer stops
- Stressing
- Installation of chainage plates, gradient signs and datum plates

Electrifying the route

London Overground trains are Electric Multiple Units (EMUs), so the team is well prepared to manage the electrification project as well. The scope of the Traction /



Overhead Line Equipment (OLE) works includes:

- Electrification of the Up & Down Barking Riverside Extension
- Installation of new series 2 OLE structures and catenary along with RC & EW the route
- Modifications / replacement to the existing infrastructure
- Upgrade to West Ham & Barking Feeder Stations
- New Neutral sections
- Testing and Commissioning of new Overhead Line Equipment

Civils – General/Ancillary

The benefit of working with Pod-Trak is its adaptability and versatility. The nature of the business is multi-disciplinary, so it has the ability to complete civils works as well and ensure a consistent approach to the project. The scope of the civils general/ ancillary works includes:

- Piling/foundations
- Breakout and excavation work
- Track formation

Recently completed project – Codsall Drainage

A section of track northwest of Codsall Station in South Staffordshire had poor drainage and unable to cope with heavy

persistent rain. As a result, the commuter services to and from Wolverhampton and Birmingham were becoming unreliable.

Pod-Trak was contracted by J Murphy & Sons to construct an access road, set up the compound and complete all drainage works. Once land access was agreed with the landowner, Pod-Trak made an opening in the hedge, installed a stock fence and a temporary access road and compound using the dura-base system from Terraforma Roadways to minimise impact and damage to the land. Site setup included all welfare and offices.

The on-track drainage consisted of 700 metres of 300mm diameter HDPE drainage pipe with 14 chambers. To support the existing flow from adjacent land two cascades were installed using the smart ditch channel lining system. A 650mm diameter drainage UTX was also installed to move from one cess to another. As a result of the drainage works 150 metres of concrete troughing had to be removed and reinstalled to protect existing cables.

The off-track drainage which was carried out during normal working hours consisted of 50 metres of 600mm diameter pipe and four precast header walls. All plant and material had to be delivered to the land locked area using rail trailers during a possession. All existing local ditches were

cleared out to allow for stone pitching.

The Project required careful planning due to short midweek possessions. Difficulties encountered on site included mud, stone and clinker through the dig along with excess water which needed to be over pumped. During the UTX installation old buried rail was discovered which had to be burned out. Works were successfully delivered, and the field was handed back to the landowner in excellent condition.

The future of Pod-Trak

The pandemic has brought challenges, but Pod-Trak is thinking innovatively and adapting how it does things differently to add value. The business aims to build on the long-standing relationships it has developed over the years and work on significantly projects which make a difference to its clients and the community.

Currently, it is focusing on works for CP6 – despite any delays to work caused by lockdown. While that work comes through, it is adapting and building other work streams to maintain its market share. Opportunities are now coming through thick and fast.

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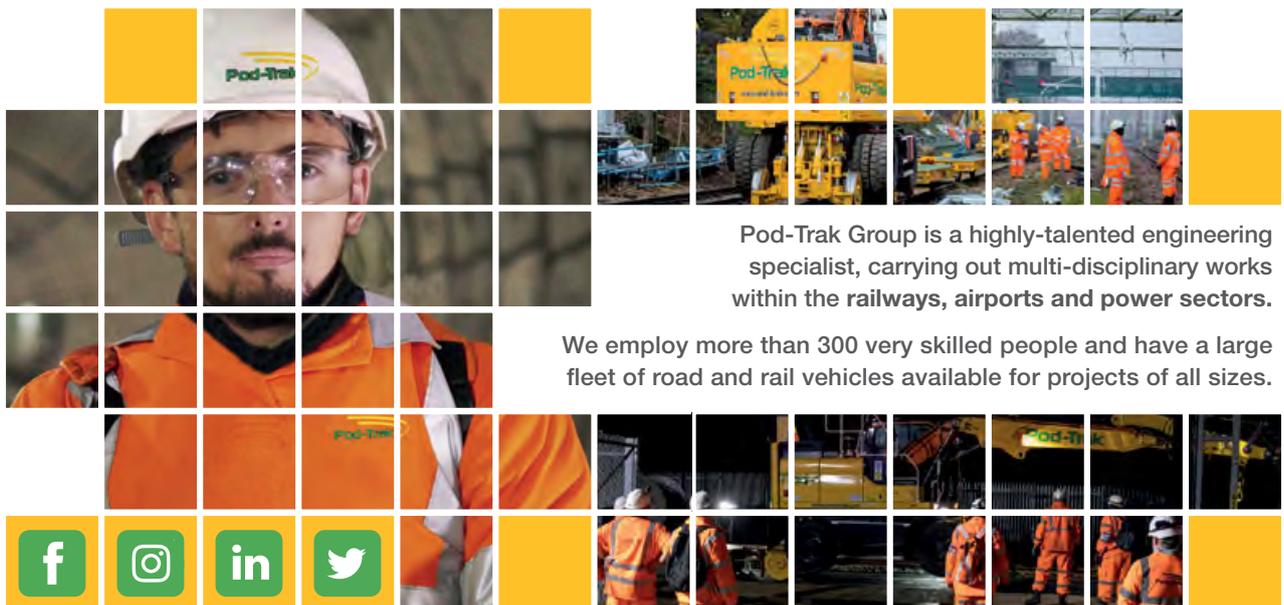
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The new normal of a post-lockdown environment

Caroline Hooton and **Tammy Samuel** explore force majeure, relevant events and compensation events in a post-lockdown environment

A number of articles in the legal and professional press greeted the introduction of lockdown and social distancing restrictions in March, examining their impact on contract management by focusing on force majeure, relevant event and compensation event clauses. With the position evolving, their application should be re-examined to assess whether they continue to be available should the restrictions be reapplied, new restrictions introduced or, in a worst-case scenario, a completely new virus unrelated to Covid-19 arrives in the UK that requires different measures altogether.

On 23 June 2020, the UK Government announced that from 4 July 2020 the social distancing rule in England would be relaxed from two metres to one metre plus where mitigating factors are in place, such as installing screens, and handwashing facilities in enclosed spaces. In the case of public transport, it remains mandatory for passengers to wear face coverings.

With Northern Ireland, Wales and Scotland also announcing plans and pathways to ease lockdown and restrictions, many businesses within the rail sector will be planning for life post-Covid-19 and a return to more 'normal' operations. However until a vaccine is developed for general distribution, the government has warned that caution and vigilance must remain watchwords and that the restrictions, including regional lockdowns such as that announced in Leicester on 29 June 2020, will return if the spread of Covid-19 increases again. What does this mean for rail contractors, in particular in relation to construction or facilities management contracts, which are commonly governed by JCT or NEC terms?

What are force majeure clauses?

By way of reminder, force majeure clauses detail what happens if there is an extraordinary event that adversely affects the performance of the parties' respective



Caroline Hooton

obligations. The drafting varies depending on how detailed the parties have chosen to be but they generally address the following:

- An event has occurred after contract signature. This can be either a specific event identified within contract as constituting a force majeure (e.g. war, act of God, pestilence or disease) or a more general requirement that it be an event that was unforeseeable and beyond the reasonable control of the parties
- The event has prevented, hindered or delayed the affected party (usually, but not always, the contractor) from performing its obligations under the contract
- The impact of that event was outside the control of the affected party
- There was nothing that the affected party could have reasonably done to avoid or mitigate the event or the impact on its performance

The occurrence of the force majeure event excuses the affected party from performance of the relevant obligations for the duration of the event. In many contracts (including relating to construction and manufacturing), this typically means granting extra time to a contractor to complete the relevant works or explicitly suspending their obligation to



Tammy Samuel

do so, thereby excusing them from paying liquidated damages. In service contracts, it usually means excusing the contractor from performing the services and thus paying service credits that would otherwise accrue due to such non-performance. The clause will usually go on to provide for termination of the contract if the force majeure event continues for a prescribed period of time and what, if any, payments are due and owing at that point.

The JCT suite of contracts treats force majeure as a relevant event, entitling the contractor to additional time and money. Although the NEC3/NEC4 forms of contract do not specifically use the term 'force majeure', they do include analogous wording within their compensation event drafting.

What are relevant event clauses in JCT contracts and compensation event clauses in NEC3/NEC4 contracts?

Relevant events and compensation events perform the same function. They are events that are not the fault of the contractor and keeps the contractor whole to the extent that the event affects prices or completion of the works/services. In other words, should a relevant event or compensation event occur then the contractor will be entitled to both extra time and money.



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Although force majeure is specifically included as a relevant event in JCT contracts, unhelpfully, there is no definition and so it is open to interpretation as to whether a pandemic such as Covid-19 would fall within it. The NEC3/NEC4 suite of contracts does not specifically include force majeure by name within its compensation event wording. However, there is equivalent drafting that captures events: (i) that prevent the contractor from completing the works/services by the planned date; (ii) could not be prevented by either party; and (iii) an experienced contractor would have judged to have such a small chance of occurring that it would have been unreasonable to allow for it.

Note that notwithstanding the relevant events and compensation events set out in the JCT and NEC3/NEC4 forms, the drafting can be dis-applied, amended or extended by the parties and so the final signed contract should always be checked.

Whether the re-imposition of lockdown or reintroduction of stringent social distancing restrictions on a national or regional basis would allow relief (for force majeure or otherwise) under the relevant contracts depends on:

- if there is first a complete lifting of restrictions by the UK government for England (and, in turn, by the Welsh, Scottish and Northern Irish assemblies for those respective regions)
- the drafting of the clause in question.

What if restrictions and lockdown are completely lifted before being reintroduced?

Bespoke force majeure or other relief provisions often require the affected party to serve notice when the force majeure event is over and it is able to resume performance of its obligations. If the affected party has served such a notice, then any reintroduction of restrictions or lockdown would leave it free to initiate a new force majeure event. This is because in the absence of drafting to the contrary, there is nothing to prevent an affected party from claiming for recurring force majeure events during the term of a contract.

The lack of such notice provisions does not prevent the affected party from arguing that a new force majeure event has occurred or indeed that a force majeure or relief event is ongoing. In the case of JCT and NEC3/NEC4 contracts, the contractor will need to start the process of claiming for a relevant event/compensation event again. This is important because both sets of contracts have onerous notice requirements. For example, the NEC3/NEC4 standard form wording gives the contractor eight weeks to make a claim for a Compensation Event, failing which they lose the ability to claim additional time or for any losses, and it is common for this time period to be reduced. Similarly, JCT contracts require notice of a relevant event to be given by the contractor when it becomes 'reasonably apparent',

which is generally taken to mean within a working week. Failure to do so can reduce any extension of time that the contractor may otherwise be entitled.

However, it would be wrong to regard any new force majeure or relief claim as a 'replay' of the March 2020 situation. The affected party's mitigation obligations may well now be more stringent given that lockdown and social distancing are a known quantity. The affected party should therefore have revised its business continuity and mitigation plans to specifically deal with the same, including having made such adjustments to its staffing and supply arrangements as may be necessary and making contingency for regional restrictions if applicable to the works/services to be performed. Force majeure clauses do not absolve the affected party from performance just because it is more difficult or expensive to perform the contract. The affected party is still obliged to find a way to perform and if stop-start restrictions and lockdowns become a feature of every-day life, then it needs to accommodate the same in its operations. Indeed, under the JCT suite of contracts, the contractor must use best endeavours to do so, which is a high legal standard requiring adherence even when it is against the contractor's economic interests to do so.

This position holds true if new restrictions or lockdown are introduced because Covid-19 mutates into a completely new strain or because a disease or virus that is unrelated to the coronavirus strain causes a public health emergency. Essentially, unless the restrictions and lockdown measures are unprecedented and render performance completely impossible, the affected party must try to adapt to ensure it can meet its obligations.

What if there is no initial lifting of restrictions/lockdown?

If there is no lifting of restrictions/lockdown and the country instead moves to rolling restrictions of greater or lesser severity on a national or regional basis, then this will likely be a deemed continuation of the initial force majeure event. The main issue for the employer/purchaser here is that the longer any national restrictions remain in place the more likely it is that the parties will reach the termination threshold. In this case, the employer/purchaser will need to examine the termination drafting to see if the right of termination is open to either party or restricted to the non-affected party.

Where regional lockdown/restrictions apply, the position depends on both the drafting of the clause and the extent to which the contractor's obligations are affected. Looking at the Leicester lockdown, for example, a cleaning contract for train stations in Leicester and Nottingham would only be incapable of full performance in Leicester so if the contract allows for partial termination due to force majeure, then this could occur for the Leicester obligations only.

Bespoke force majeure or other relief provisions often require the affected party to serve notice when the force majeure event is over and it is able to resume performance of its obligations. If the affected party has served such a notice, then any reintroduction of restrictions or lockdown would leave it free to initiate a new force majeure event

Termination whether in whole or in part is important for train operators because the costs and difficulties in procuring a replacement contractor (especially for a partial set of obligations) may make it preferable to try to keep the existing contract in place for as long as possible even if it the contractor cannot fully perform it. Equally, a contractor may take the view that it is better to remain in a contract that it cannot currently perform (even if it is not receiving payment). This is because once the crisis does end, then it will find itself having to bid for new work, resulting in a 'lag' that could exacerbate existing cash flow issues.

Additionally, to the extent that a contractor is currently dependent on emergency loan support from banks, then the fact that it has kept contracts in place can provide support for the longer-term viability of the business. Equally, contractors are generally wary of partial termination, because it could make the remaining contract much less profitable, e.g. if mobile crews were used to cover both Leicester and Nottingham stations and the Leicester element is removed, then the contractor could be left with too many employees for service provision to be profitable.

Note that until termination, the affected party remains subject to the mitigation requirements described above. It must therefore constantly reassess which of its obligations it can perform as restrictions and lockdown by turns tighten and loosen, and which obligations are affected by any

regional lockdowns and restrictions. The NEC3/NEC4 suite of contracts assists here through risk reduction meetings that are callable by either the contractor or the project manager to manage the compensation event.

Flexibility and communication for the 'new normal'

It is clear that rolling lockdowns and social distancing restrictions will be a feature of the coming months, whether on a national or regional basis. Therefore, both rail industry bodies and their contractors need to adopt a flexible approach to contract management in order to manage the challenges ahead and preferably one that involves communication and candour from both parties.

Rail industry parties may find it useful to diarise regular phone calls or virtual meetings with their contractors to discuss the current state of performance and what the contractor believes will be achievable in the foreseeable future. Establishing forums or liaison committees to which all contractors are invited would also assist in brainstorming management and performance strategies to identify best practice and share knowledge on flexible working arrangements and the

implementation of social distancing restrictions. There may be sensitivities here in terms of sharing specific information on commercial arrangements, e.g. lead in times for goods or equipment, but this should not discourage high-level discussion of general principles where common ground could be found. Such forums may be particularly beneficial if scheduled after government/devolved government announcements on the progress of restrictions as against their respective Covid-19 roadmaps. This is because they would enable speedier coordination of contractual responses and ensure assist contractors in joining up when needed, e.g. if multiple works contractors are working in the same depot.

Such a collaborative approach would demonstrate regard for the UK government's 'Guidance on Responsible Contractual Behaviour in the Performance and Enforcement of Contracts Impacted by the Covid-19 Emergency' (issued on 7 May 2020). This 'strongly encourages' responsible and fair behaviour in contract management, including in: requesting and giving relief for impaired performance; requesting and allowing extensions of time, substitute or alternative performance and compensation; and making and responding to force majeure, relief event, delay event,

compensation event and excusing cause claims. Establishing such forums would demonstrate that the rail industry is attempting to act in the requested spirit of cooperation to achieve practical, just and equitable contractual outcomes. In England at least, it may also draw goodwill from the Department of Transport at a time when government scrutiny of the industry has been increased due to the emergency measures agreements currently in place and the UK government in particular is keen to minimise the number of corporate insolvencies resulting from the Covid-19 crisis.

With the way ahead remaining uncertain for the coming months, rail industry parties and their contractors alike may find that terminating a contract for force majeure and/or not providing for sensible relief creates more headaches in the long-run than solutions. Adopting a pragmatic approach to contract management and contract performance could be to the advantage of both sides in ensuring continuity of works and services once the pandemic is finally over and life is able to return to normal.

Tammy Samuel is Head of Rail, and Caroline Hooton is a senior associate, at international law firm Stephenson Harwood LLP

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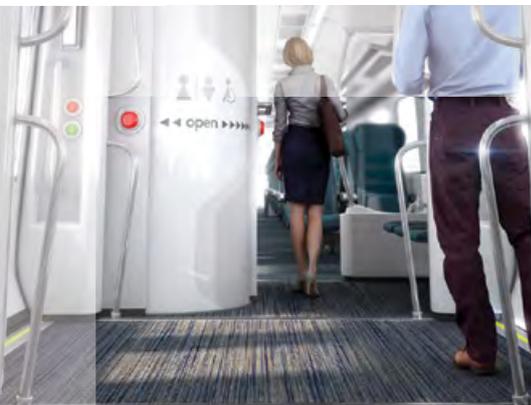
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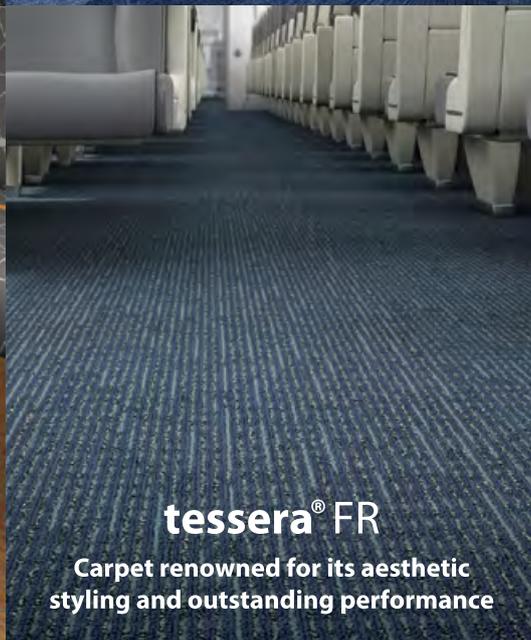
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The importance of records and making a claim

The word 'claim' is despised by many when working on a live project as it is synonymous with blame these days, especially with the increasing prevalence of litigation

Unfortunately claims in the context of manufacturing and supply contracts have suffered a proportionate level of disdain, despite the claimant merely insisting on exercising their contractual rights. If claims were so bad, why do so many contracts make provisions for them? On a project, the word claim can send team members cowering under their desk in fear that the dreaded finger of blame will be pointed in their direction for a decision made eons ago. In its simplest form the word 'claim' means (amongst other things) to formally request something that is considered due. In light of that, we are going to examine the practical steps you can take to present a clear, concise, compelling, and cogent claim, which will increase the chances of success and often result in a better settlement.

It is implied that one party will not hinder the other in carrying out its contractual obligations. However, when one party does restrict the other, the affected party should be entitled to relief by way of cost, time, or both to complete the contract. Rather than rely solely on common law for such relief, many contracts contain provisions to govern the claims process.

What comes first?

Most standard forms of contract contain detailed provisions under which a manufacture or supplier can claim against the customer for any losses suffered if the work is disrupted due to certain specified clauses. The first point is: review the contract and identify the clause on which you will rely to claim an extension of time or additional costs.

Claim provisions mean that, in many



Chris Jackson



Carl Simms

cases, an event that enables a claim to be made will also entitle the manufacture or supplier to recover damages for breach of contract. It may amount to a breach of the customer's implied obligations of cooperation. If this is so, it is for the manufacturer or supplier to decide whether to sue for breach of contract or to claim under the appropriate clause in the contract. Once you are clear on this, be sure to submit an appropriate notice.

What's next?

Once a notice is issued to the other party, the next thing to consider is good record keeping. This ensures that any impact that your project suffers is properly recorded. These records will serve as evidence, so that your counterparty can assess the delay period to which you may refer when seeking a claim for an extension of time and costs in the future.

The most common reason

why a manufacturer or supplier is unable to obtain an extension of time or recover additional costs is that it has insufficient evidence, in the form of records, to support its claim. The manufacture or supplier may often argue that as part of the project it is constantly dealing with challenges that arise from budget, schedule, and resourcing limitations; records are its last priority in delivering the project. But alas, without records, there may be little means of proving your position. Thus, even the best managed and planned project can encounter disputes, without a proper record of activities and events. It is important, therefore, that once you become aware of an issue that you begin to record any impacts that this event is having on your planned work activities. Record the decisions that are made or

proposed by both parties and ensure that these are formally communicated.

A record of the decisions taken from both parties will act like a retrospective road map; it is these decisions, or lack thereof, which may have impacted the project and changed its direction. As well as being used to make a claim, records of decisions taken can act as a defence of your conduct should the other party believe you are at fault.

A simple but effective way to manage your cost records for a delay event is to set up new billing codes in your financial systems against which your teams, sub-contractors and suppliers can record their time relating to the issue. This allows you to easily identify the period from which the issue first impacted the project to the end date at which the delay ceased.

When claiming money, it is a process of accounting which needs to be adopted rather than estimation or valuation; parties do not make money from claims, but merely recover losses (cost)

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The burden of proof is on the claimant, who must prove that, on the balance of probabilities, the event is true, and that it has adversely impacted the project in some way

Early management and collation of records will save a huge amount of time and this will support any adjustment required to the project programme in the form of an extension of time. It is also likely that there will be a provision(s) within the contract that requires for regular updates to be submitted and for continual assessments to be made and submitted throughout the duration of the delay event. The above actions will help manage those requirements and ensure that measures can be put in place to mitigate the overall impact of the issue.

When claiming money, it is a process of accounting which needs to be adopted rather than estimation or valuation; parties do not make money from claims, but merely recover losses (cost).

What records should I keep?

The records that should be kept for any project will vary according to the type, complexity, and size of the project. Generally you should record: (1) resource name, job roles, work progress and interruptions; (2) the identification of specific work activities being undertaken; (3) productivity and output, recorded against working area; (4) the use of any operating plant and equipment: the number of hours worked, idle or down time for repair; hire charges, setting up costs and running costs; (5) information and approvals required and received; (6) instructions and orders given (written and oral); (7) test and inspections: when they took place and the results; (8) the identification of any other delays encountered; and (9) if working outside, the weather conditions.

What do I do once the event is over, and I have all this information?

The next step is to produce the claim. This could be for additional time, money, or both, dependant on the clause(s) in the contract on which you are relying.

The burden of proof is on the claimant,

who must prove that, on the balance of probabilities, the event is true, and that it has adversely impacted the project in some way. This means that the opposing party must be satisfied, based on the evidence presented, that the occurrence of an event was more likely than not.

There are four elements to be considered as part of a good claim: (1) cause (explain what happened); (2) effect (explain what effect the cause had on the project in terms of time, money or both); (3) entitlement (demonstrate entitlement under the contract or at law); and (4) substantiation (provide claim narrative, delay analysis and additional costs all need to be substantiated with evidence).

There are also four points to remember when compiling a claim: (1) ensure that the reader's/decision maker's job is made as easy as possible when assessing the claim; (2) the claim submission should be a stand-alone document; (3) assume that the person who will assess the claim has no prior knowledge of the project or circumstances; and (4) remove any irrelevant information from the document.

What should I do once I have completed my claim submission?

Once the claim has been prepared, this can now be submitted to the other party for review.

It is important that any submission complies with the specific provisions of the contract. Failure to do so may limit entitlement.

What happens next?

Typically, a responding party will take anywhere between two to four weeks to respond to an initial claim submission (some contracts specify a period of reply). It is good commercial practice to request a meeting with the other party, as soon as practicably possible, after the submission of a claim.

Regardless of how difficult it may be to discuss the issue it is good to maintain a continuous dialogue between both sides. This allows each party to better understand the issue at hand and how best navigate any areas which could potentially prevent an amicable settlement from being reached.

The checklist

- Identify the clause(s) which enable you to claim an extension of time and/or costs
- Comply with any notice provisions in the contract, taking special care to comply with any timescales and include the relevant detail that you wish to rely on later when submitting a full claim document
- Keep and maintain contemporaneous records ensuring they have the necessary details to support the effects of any delay and additional costs
- When drafting the claim remember the four element and four points – this could be the difference between submitting a successful claim, or not

Typically, a responding party will take anywhere between two to four weeks to respond to an initial claim submission... It is good commercial practice to request a meeting with the other party, as soon as practicably possible, after the submission of a claim

- During the whole process maintain a positive dialogue with other party and be proactive when arranging meetings and reaching amicable settlement

Carl Simms is a Director and claims management specialist at HKA with over 18 years' experience in the rail, construction and engineering industries. He has worked on a range of projects in the rail, rolling stock and signalling sector for a variety of clients providing support with contentious issues (dispute resolution and avoidance), drawing on skills in adjudication, arbitration and litigation, as well as, preparing and defending claims.

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Chris Jackson is a Consultant at HKA, who, having trained as a Quantity Surveyor, has built significant experience by working across a broad range of industries and sectors including Rolling Stock manufacture, infrastructure such as rail and road building. His experience also extends to oil and gas facilities, pipelines, specialist critical infrastructure, data centres and commercial and residential building. He has worked at various levels of the supply chain from specialist subcontractor to global EPCM corporation in the UK and internationally. Chris can be reached via chrisjackson@hka.com



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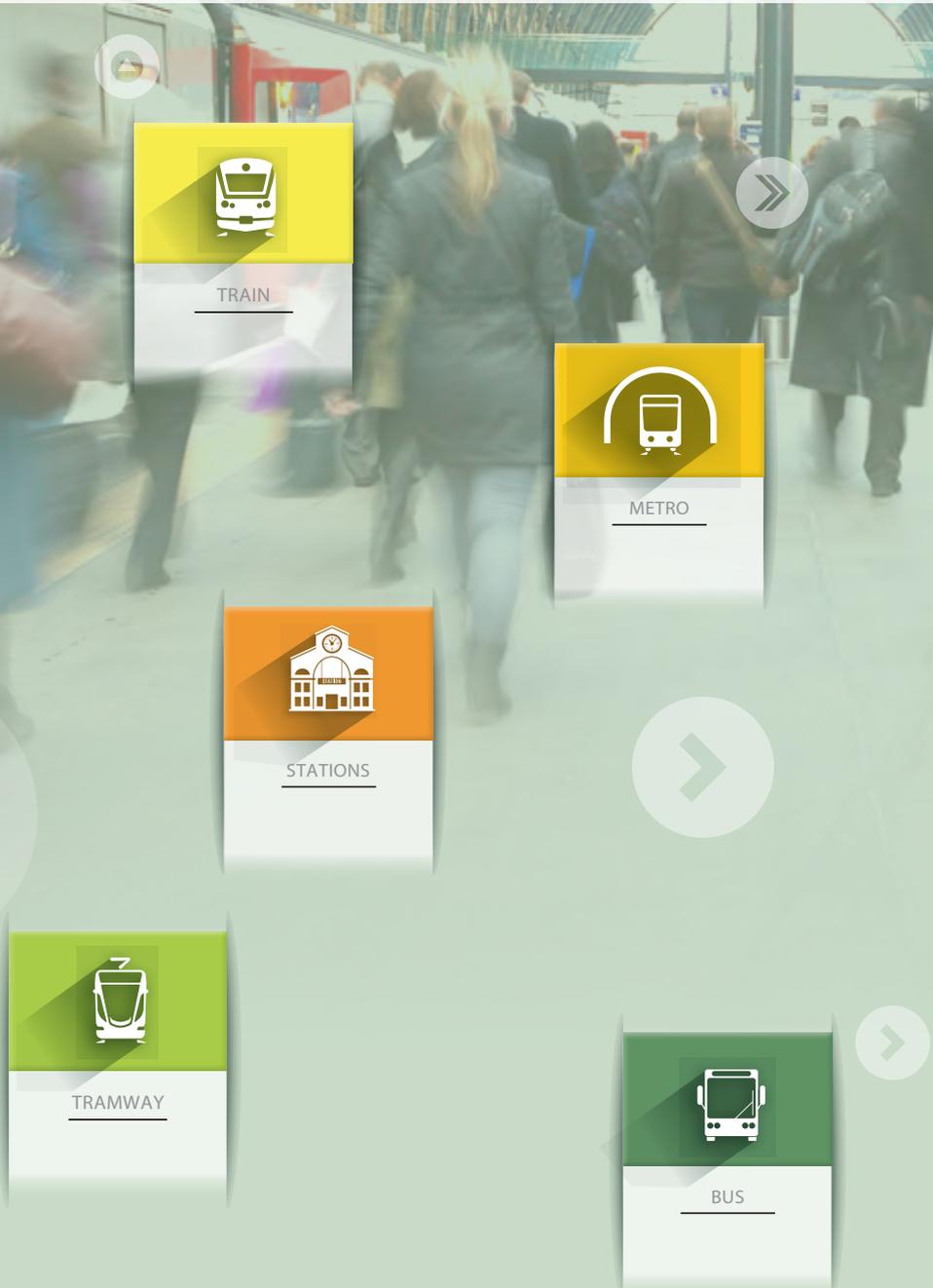
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On track to keep you safe



Liam Johnston, Executive Director of the Railway Mission, describes the work being done to keep trains clean and keep passengers and staff safe

Many years ago, as I cleaned the toilets which were located by the entrance to the bakery factory unit where I worked, a sales representative walked in to the reception and asked to see the manager. 'What can I do for you?' I politely replied. 'Get the manager' he snorted. I was the manager, and explained, 'How can I ask my staff to clean the toilets, if I am not willing to do it myself?' In a company that makes food, hygiene is safety.

In a safety critical industry such as the railway, the safety focus is often and rightly placed on the engineering or signalling aspects in relation to protecting the lives of staff and passengers. However, the present Covid-19 epidemic has brought into sharp focus that the first line of defence in the battle to stop the virus, are those who are most often overlooked, the cleaners. Often unnoticed as they pass through a train carriage clearing the discarded remnants of an 'effluent society', the cleaners are our first and best line of defence against Covid-19.

Recently I spent some time with some of the onboard cleaners for a Train Operating Company, I was impressed by both their dedication and the pride they had for their work. Some of these people were considered to be at a higher risk of dying from Covid-19 than others in the population due to ethnicity or underlying health issues, yet each one believed that their work was helping to both prevent the spread of the virus and to save lives.

I recalled a meeting I once had with Chris Gibb when he was the Managing Director of Virgin CrossCountry when he said: 'The most important people working for the company are our cleaners. Without them, passengers would not travel on our trains.' At the time this struck me as an insightful remark, today it carries even more poignancy. Perhaps now more than ever, we

understand the importance of the cleaning teams and the work they do behind the scenes or even as a public facing service.

Mike Roberts, Railway Mission chaplain for the North West has been volunteering some of his spare time to assist with the cleaning of trains for Northern Trains Ltd, after the company asked for suitable volunteers during the Covid-19 lockdown to assist with train presentation. Giving up his personal time and assisting with

the cleaning shows that not only is the job of cleaning important, but each and every person is valued and respected for the part they play in keeping us safe.

There are of course other areas that need cleaning, such as offices and stations. Network Rail has been proactive in ensuring the railway environment is safe for passengers and colleagues. As the lockdown is steadily eased over the coming weeks and months, the cleaning regime at Network Rail





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Major Stations, engineering and engineering facilities will be of increasing importance.

Andrew Haines, Network Rail Chief Executive, said: 'A clean station shows passengers how much we care, and all year round, our cleaning teams provide invaluable services. Clearly their work has been particularly important during these difficult times. Their effort and diligence provide safe working environments for our employees so they can help to keep rail services running for the critical workers who need to travel by train, and ensure freight services can continue to transport key goods such as medicine, food and fuel.'

'Thank you to all those cleaning and maintenance staff for keeping our stations and workplaces in the best possible condition and minimising the risk of the virus spreading to employees and passengers. We simply wouldn't have been able to operate the railway over recent weeks without you.'

The railway has invested in new cleaning materials and disinfectants for sterilising all types of surfaces, from seats to handrails. Trains and stations are deep cleaned to eradicate any trace of the virus that has taken the lives of almost 45,000 people. Some of whom have been transport industry colleagues, family members or friends. For

Thank you to all those cleaning and maintenance staff for keeping our stations and workplaces in the best possible condition

all of us touched by this virus, we know the risk that the cleaning teams put themselves in each day.

We have clapped for carers, placed rainbows on our windows for the NHS, queued at shops and said thank you to the staff as they have let us in one by one. But on the rail network we should remember that protecting passengers and rail staff from Covid-19 is not a menial task; but one of the highest importance. I ask, that as Covid-19 becomes less of a threat and the lockdown is eased further, we remember the importance of the cleaners and continue to honour and value the work they do.

Liam Johnston is Executive Director of the Railway Mission

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Competition launched to shape Britain's future railway stations

Network Rail and RIBA Competitions have launched an international competition to shape the future of Britain's railway stations

The competition will provide architects, engineers and designers with the chance to improve the travel experience for the millions of passengers who use Britain's railway, and leave a lasting legacy on station design.

It asks designers to reimagine small to medium-sized stations – which make up 80% of all those on Britain's railway – so they can better serve the needs of both passengers and their local communities.

The competition encourages entries which stimulate creativity and address the changing character of our society.

In developing proposals, entrants are encouraged to consider how future stations can be sustainable and deliver outstanding value, whilst considering the impact on the environment to achieve net zero emissions to leave a positive legacy for future generations.

Anthony Dewar, Head of Buildings and Architecture at Network Rail, said: 'Fostering creativity and developing an outward-looking, collaborative culture is a key priority for Network Rail, so I'm delighted we are hosting this competition, which gives designers a unique opportunity to leave a lasting legacy on our railway and improve the journeys of millions of passengers through quality design.'

'Our ambition is to raise the quality of design across the whole rail network as well as responding to the evolving role of infrastructure within communities.'

We're looking forward to welcoming creative and forward-thinking designs which will help us better serve the communities and passengers who rely on our railway.'

Rail Minister Chris Heaton-Harris said: 'For two centuries the UK has been at the cutting edge of rail innovation, and our forefathers enticed our towns and cities with some of the most iconic and beautiful stations in the world.'



'Harnessing creativity and ambition through competitions like this will help us carry on that great spirit of design that delivers better journeys for passengers.'

'This competition will help build the railway of tomorrow, ensuring we continue to modernise and improve our railway, making it welcoming and accessible for all passengers.'

Across Britain, there are more than 2,000 small-to-medium stations which vary greatly in terms of design quality and amenities. By improving the overall quality of stations, they can better serve their communities, whilst accommodating potential enhancements to the existing and future passenger experience through good design. Designs should be considered for the adaptation of existing stations to better meet passenger requirements, or new-build stations to accommodate the projected increase in demand for rail travel.

The competition is open internationally to individuals and teams from both small and large organisations from the design, built environment and manufacturing

industries.

On the judging panel will be:

Lucy Musgrave OBE
(Founding Director of Publica)

Jonathan McDowell
(Director, Matter Architecture)

Chris Wise
(Senior Director, Expedition Engineering)

Dinah Casson CBE (RDI Designer)

Victoria Lee
(Lead Programme Manager, Design Council)

Paul Beaty-Pownall
(Managing Director, BPR Architects Ltd)

Sahar Fikouhi (Founder, ARki)

Anthony Dewar (Professional Head Of Buildings And Architecture, Network Rail)

Frank Anatole
(Principal Architect, Network Rail)

Ian Grimes
(Principal Engineer, Network Rail)

For further details visit www.ribacompetitions.com/reimaginingrailwaystations/
The closing date for submission of design proposals is 14.00hrs (BST) on Tuesday 15 September 2020.



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The Coventry Station Masterplan

The landscape around Coventry Station is currently changing at a fast pace as a £82 million showcase scheme gathers momentum

With the city hosting the UK City of Culture from May 2021 for twelve months, the fruition of the five-year project could not be more timely. The Coventry Station Masterplan has been developed following a piece of work commissioned in 2014 called 'The Coventry Rail Story' which identified the city as having one of the fastest growing stations outside London, with annual passenger numbers more than trebling in the last 15 years from 2.5 million to eight million.

Coventry Railway Station was extensively re-built in the 1960s as part of the electrification of the West Coast Main Line and its innovative light, open and airy design was recognised with a Grade II listing, and it has accommodated significant growth in passenger footfall over the decades.

However, the station is now at capacity, with limited passenger facilities, poor integration with other forms of transport and has little room for growth as well as not generating the commercial benefit it should for Coventry considering the huge rise in passengers.

Due to the listed status of the building, there are limitations on expanding the physical infrastructure which is why the Coventry Station Masterplan was developed.



An overview of the work currently taking place at Coventry Station

A second station building is currently being built adjacent to the existing structure to avoid causing any detriment to the listed building and will remain in operational use by housing the main ticket office.

The new station entrance will include up

to five new retail units, new waiting rooms and passenger facilities and will directly connect to a new footbridge which provides access to all four platforms. Canopies on the platforms will be extended to mirror the original listed design to provide more protection from the elements for passengers.

Foundations for a new footbridge have been completed and it will be lifted into place this Autumn.

The framework for the station building is due to be completed by Christmas before the fit-out starts in the New Year.

The station entrance will be accessed from Station Square as well as at first floor level on Warwick Road, alongside direct access from the new transport interchange which is being constructed in the existing car park on the opposite side of Warwick Road via a new pedestrian access tunnel which will form part of the new station building.

The transport interchange will facilitate

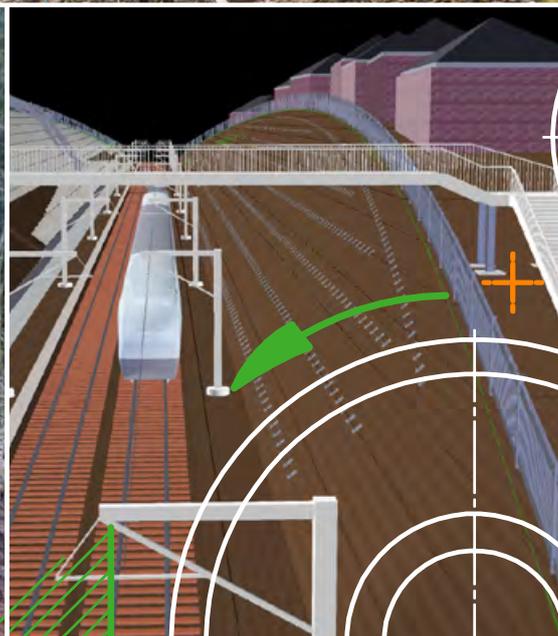


CGI of the new station building at Coventry Station

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service buses and rail replacement buses, and passengers will benefit from a weatherproof and traffic-free route to the new facility.

The project will also provide 300 more parking spaces following the creation of a multi-storey car park with 633 spaces that will sit directly on top of the new station building.

To complement the new station infrastructure, a high-quality public realm boulevard will be extended from Station Square north to the front of the railway station for pedestrians and cyclists which will become a traffic-free route between the station towards the city centre when it's completed.

A new drop off and pick up loop will be created between the two station buildings and a new taxi loop will be created.

Work has recently started on upgrading the sub-station to increase the power to the station for the new infrastructure since it is presently at full capacity.

Highway improvements are also being undertaken on the adjacent Warwick Road and a new western link road is being created between Westminster Road and J6 of the ring road which will help to unlock the western part of the Friargate development.

The Friargate office-led development, which is immediately adjacent to the station and the future City Centre South development along with the new leisure destination The Wave are also nearby which will create further demand.

The Masterplan project is being funded by the Government's Local Growth Fund through the Coventry and Warwickshire Local Enterprise Partnership (CWLEP) and the West Midlands Combined Authority Devolution Deal alongside Coventry City Council.

Currently, work is on track to be completed in Spring 2021 which is timely as the city will be welcoming thousands of visitors from across the UK and the world during its time as UK City of Culture.

This will be swiftly followed by the Birmingham 2022 Commonwealth Games when Coventry and Warwickshire will be hosting Lawn Bowls, Para Bowls, Judo, Wrestling and Rugby Sevens.

The main works are being delivered by Buckingham Group Contracting Limited and the project management is being undertaken by Network Rail on behalf of Coventry City Council.

The project team has monthly operational group meetings with key stakeholders, including Avanti and other rail operators, Transport for West Midlands and bus operators to ensure everyone is fully engaged with the much-anticipated scheme.

Cllr Jim O'Boyle, Cabinet Member for Jobs and Regeneration at Coventry City Council and CWLEP board director, said: 'This work will support our plans for growth and job creation. Coventry station is one of the fastest growing stations outside London and this work will transform it to create a



CGI of the new footbridge at Coventry Station

transport hub, connecting rail, bus, cycling and walking and in due course our plans for Very Light Rail.

'I believe the connection between the station and our city centre is one of the most impressive in the country and soon we will have a station to match it, giving an impressive welcome to visitors and living up to the high standards local people deserve.

'The steelwork is rising out of the ground now and I'm pleased that we have been able to employ local people, including apprentices who will gain valuable new skills.

Route Director, said: 'The redevelopment of Coventry station will transform it into a modern facility which will meet passenger demands for decades to come. We are working closely with our partners to deliver these improvements to provide passengers with an ever-improving railway and gateway to the city.'

In addition to the Masterplan project, Coventry Station will be undergoing expansion to include a new bay platform to enable an enhanced train service to Nuneaton (NUCKLE Phase 1.2).



CGI of the front of the new-look Coventry Station

'There is a lot going on in Coventry at the moment and the station area is an important part of our transformation.'

Nick Abell, Interim Chair of the CWLEP, said: 'The Coventry Station Masterplan is a £82 million programme of improvements that will increase capacity and improve accessibility at Coventry Railway Station.

'Coventry needs an improved station to promote and enable development as well as seize upon the opportunities provided by the UK City of Culture, Birmingham 2022 Commonwealth Games and HS2.

'When it opens, the new-look Coventry Station will have extra capacity for further growth and will lead to more sustainable transport options for passengers in the Midlands since there will also be improved pedestrian and cycle routes in the area.'

Dave Penney, Network Rail's Central

The new platform will be located in a disused siding on the other side of Warwick Road from the existing station building and will enable rail services to increase from one to two an hour between Coventry and Nuneaton as well as support wider aspirations to connect Coventry Station directly to the East Midlands. This scheme is at the design stage and is being led by Network Rail.

Station usage is expected to continue to rise as demand for rail travel increases, with particular growth expected as a result of the additional service between Coventry and Nuneaton which is expected to generate an additional 195,000 journeys at the station every year.

For further information on the project and latest updates see: www.coventry.gov.uk/stationmasterplan

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Scotland's Railway: Decarbonisation and Enhancement



Paul Tetlaw, Policy Forum Convenor, Transform Scotland looks at the plans for decarbonising Scotland's railway

Plans for decarbonising Scotland's railway network are to be warmly welcomed. However, many challenges lie ahead for the railway to play its part in a truly sustainable transport network.

The action plan

Transport Scotland's 'Rail Services Decarbonisation Action Plan', published on 28 July, is indeed to be welcomed. It builds on the successful electrification programme in Central Scotland in recent years and is in marked contrast to the 'dither and delay' approach so evident south of the border.

It is well worth noting that Scotland's two main cities are now connected by five electrified routes and the Hitachi 385 electric trains are proving to be the most reliable on the UK networks.

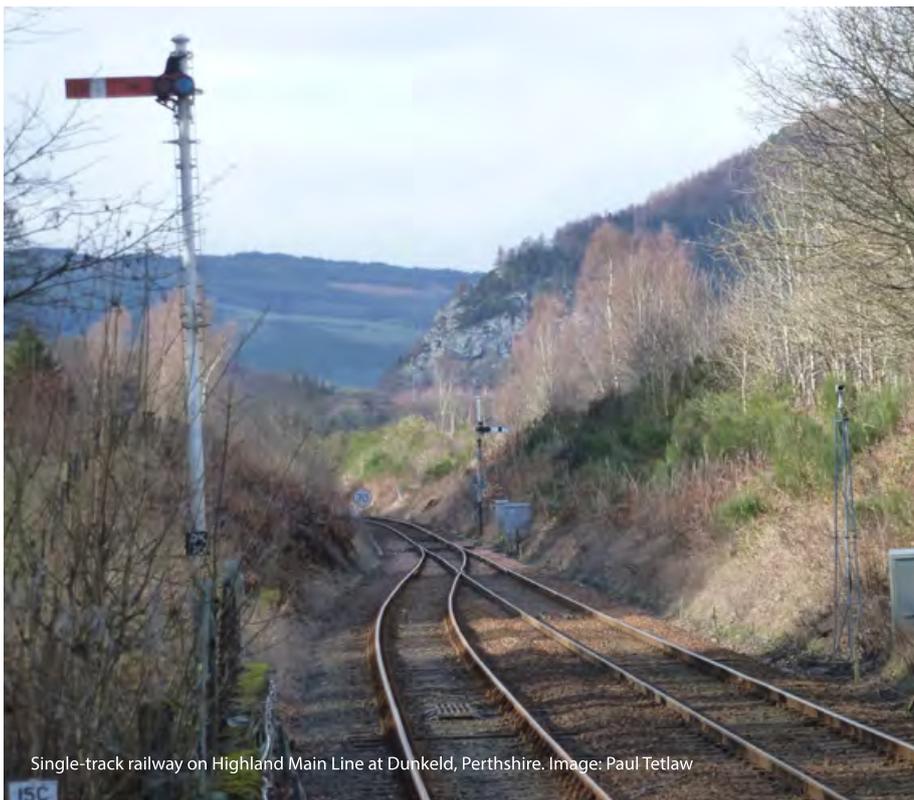
A feature of the most recent route electrifications has been the gradually reducing cost per mile of each scheme as more experience has been gained. A continuous programme of electrification is essential to build confidence and trust in the supply chain and that in turn will help to deliver innovation and further cost reductions. By committing to such a programme of decarbonisation and rolling

stock replacement, Transport Scotland will create many new career opportunities and high quality jobs in Scotland.

Capacity enhancements

To gain full value from the decarbonisation programme and achieve real modal shift, the Action Plan needs to be accompanied

To gain full value from the decarbonisation programme and achieve real modal shift, the Action Plan needs to be accompanied by a series of capacity enhancements that will allow faster, more frequent and longer passenger and freight trains to run on the network. The Highland Main Line from Perth to Inverness provides a perfect example of what is required



Single-track railway on Highland Main Line at Dunkeld, Perthshire. Image: Paul Tetlaw

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Walkers and cyclists on The Meadows in Edinburgh. Image: Transform Scotland

by a series of capacity enhancements that will allow faster, more frequent and longer passenger and freight trains to run on the network. The Highland Main Line from Perth to Inverness provides a perfect example of what is required.

Here we have had political promises of significantly faster journey times to ensure that 'railways should be able to compete with roads' and yet a huge investment programme of £3 billion is instead focussed on the parallel A9 road making journey times there by car and lorry even quicker and encouraging modal shift away from the railway to the road. This is hardly consistent with the declared intentions of the Scottish Government.

The railway itself is largely single track. Passing places have been removed over the years, and those that remain are too short for an efficient freight service. Extra passenger services have been added but the line is being worked to capacity. Any delays have serious knock-on consequences. While the Victorian-era semaphore signals may be of interest to the railway historian, they certainly do not speak of a 21st Century inter-city route.

This example serves to illustrate the urgent need for the Scottish Government's policy objectives to be matched by appropriate funding priorities.

Future structure of the railway

The Corona Crisis has resulted in emergency measures being implemented

by Governments at both Westminster and Holyrood to support the rail franchises, but these measures are clearly not a long-term option for the railway.

Prior to this a number of franchises were in financial difficulties and it is clear that a new structure is now required for the railway. This is not the place for a detailed discussion on that matter. There is however a widespread belief that closer integration between train and track is required and that any future structure allows for long-term planning and investment in the network and rolling stock free from the short-term whims that may arise from changes of government or even of individual ministers.

Beyond that it will be important to consider the railway in Scotland as an integral part of the whole public transport sector so that closer integration and consequent ease of use creates a network equipped for the challenges ahead.

A sustainable transport system fit for the 21st Century

The Action Plan rightly highlights the challenges posed by climate change, the need for improvements to local air quality, and the associated need for modal shift away from the plane, the car and the lorry to more sustainable modes. Equally valid is the need to tackle the ever greater incidence of obesity in the population and the associated diseases – and costs – resulting from obesity. Whilst poor diet may not be something that the transport sector might be expected to

tackle, inactive lifestyles and poor local air quality are most certainly a consequence of our present transport system. Investment in safe active travel routes should go hand in hand with investment in public transport networks so that the shift to more sustainable modes is approached from all angles. Active travel and public transport are natural partners and should be combined as key elements of a sustainable transport system that delivers lifestyles and a quality of life fit for the 21st Century.

The Scottish Government possesses all the powers and levers to make this happen. It must exercise them to ensure that demand management measures are applied to unsustainable modes, and to prioritise investment on sustainable modes. Failing to do so will result in a failure to achieve the intended modal shifts.

The Action Plan is a credit to Transport Scotland and highlights the more progressive approach being adopted in Scotland than south of the border. However it must be accompanied by a strategy for capacity increases in the rail network and the creation of enhanced and integrated public transport and active travel systems as key building blocks of a sustainable transport system.

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Building back better through devolved rail stations

Stephen Joseph, advisor to the Rail Devolution Network and former CEO of Campaign for Better Transport, explains the key role devolved authorities can play in station transformation with a new report from the Urban Transport Group

Just a few months ago, the UK's rail sector was preparing itself for the outcome of the Williams Review – the Government's 'root and branch' examination of the railway, promising recommendations on how to restructure a system that clearly has not been working well enough for passengers, taxpayers or the places the railway serves. But how things change.

Coronavirus has created a new (but hopefully temporary) transport reality in which capacity across all modes, including rail services, is severely constrained by the need for social distancing and the rail network is now even more heavily reliant on public support. Our immediate priorities have changed too. Reform of the railway may no longer be a primary concern for a Government grappling with the virus and its impact across all aspects of society, not just transport.

But as we start to pick up the pieces and turn our attention to how we recover from this crisis, the railway, and in particular, stations, have a key role to play. Why? Because investing in rail stations can give a much-needed boost to local economies

and communities, a goal which is even more pronounced in the aftermath of this pandemic.

'Action stations', a new report from the Urban Transport Group which I co-authored, specifically highlights the benefits of devolved authorities' involvement in station transformation. It finds that, by and large, the greater the role of sub-national authorities, the better the local station.

The report looks at over 35 UK case studies – from Barnsley to Bolton and from Liverpool to Laurencekirk – and shows how and why devolved authorities and administrations have improved stations in recent years, and the wide-ranging benefits that this has brought for passengers and the places the railway serves.

Meeting housing need without creating more car-dependent sprawl is one such benefit. Devolved authorities and administrations have been making this happen by building new stations which are specifically linked to new housing developments, such as the West Yorkshire Combined Authority's role in Kirkstall Forge. This new station opened in 2016 and serves over 1,000 new homes, as well as office,

retail, leisure and community space, and has exceeded projected demand of passengers.

Devolution is helping to plug more places into the rail network. Local authorities and the Scottish and Welsh Governments have been instrumental in opening, reopening or upgrading stations, sometimes reopening whole lines – offering access to jobs, training, education and healthcare for more people in more places, and reversing the damage of the Beeching era cuts.

Local authorities have been instrumental in rescuing and revitalising run-down stations. In recent years we have seen stations transformed from run-down Victorian hulks, or spartan bus-sheltered platforms, into places that people can take pride in, feel comfortable in using and which are fulfilling more of their wider potential. The regeneration of Irlam Station in Greater Manchester is a fine example, becoming a community hub that has seen a 30 per cent increase in usage. This has been done because devolved authorities understand the value stations can bring to communities.

Devolved authorities also have the benefit of seeing railways as part of a coherent public transport network for

This report is just the latest addition to their evidence base, strengthening the case that any meaningful rail reform should have devolution as a cornerstone. Put simply, rail devolution works!

the places they serve, where interchange between rail services and the rest of the public transport network is not only possible, but easy, safe and convenient. And that's why they have a long track record of investing in better rail interchanges, often using their own resources to do so. A good example is Wolverhampton's new multi-modal station connecting rail, metro and bus services, which has been part funded by Transport for West Midlands.

And the list of benefits goes on, from creating stations which are accessible to all and which involve communities in decision making and day-to-day running, to stations which lesson their environmental impact

and celebrate heritage, arts and culture.

But the report is not just about what's been achieved in the past. It also points to the future, and the potential that exists to do more. Greater devolution of responsibilities for rail stations can help to achieve consistent branding with the rest of the local public transport network, set demanding minimum standards for accessibility, security, and – particularly important in these times – cleanliness, and ensure stations are integrated with plans for housing, economic growth and decarbonisation.

And to realise this potential, devolved authorities and administrations need to

have significant influence over the future of stations. The way this happens in practice should be in line with local circumstances and aspirations and thus could range from taking on full or partial ownership of stations through to having a strong and binding relationship with the owners and operators of stations.

Greater devolution of responsibilities for rail is something which the Urban Transport Group has consistently called for over the past few years. This report is just the latest addition to their evidence base, strengthening the case that any meaningful rail reform should have devolution as a cornerstone. Put simply, rail devolution works!

We must remember that stations are more than simply the places where trains stop, they also help to define those places and deliver the types of benefits that have become ever more urgent in the wake of the coronavirus crisis. If we are to truly build back better, then investing in rail stations is a sure-fire way to help do so.

Stephen Joseph is a transport policy consultant, advisor to the Rail Devolution Network and former CEO of Campaign for Better Transport. He co-authored the report 'Action stations: How devolution is transforming rail stations for the better'.



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Gear change – we are on the right track

Rachel White Head of Public Affairs at Sustrans looks into why an integrated transport system between walking, cycling and public transport is key to tackling many of the current crises whilst helping improve wellbeing

The UK Government recently published 'Gear Change: A bold vision for cycling and walking'. It is a vision Sustrans welcome in which walking and cycling make up half of all journeys in towns and cities by 2030.

This is desperately needed. Covid-19 continues to have a huge impact on all of our lives, with obesity and diabetes key factors in mortality rates. If we want to be more resilient against Covid-19, and all diseases, then we need to be healthier as a population and currently we are far too inactive, with inactivity itself directly costing the NHS £1 billion a year.

The threat of the Climate Crisis also looms. Road transport alone makes up around a fifth of the UK's greenhouse gas emissions. In the end this will have a far greater effect on people and the planet than Covid-19 and is something that we should be taking seriously.

Changing behaviours

So how do we begin to get more and different people travelling by foot, bicycle and public transport to tackle physical inactivity and fight the climate crisis? The ambition of 'Gear Change' is a great start. It proposes the set-up of Active Travel England which will be led by a walking and cycling commissioner and will be a 'statutory consultee within the planning system to press for adequate cycling and walking provision in all developments of over a certain threshold, and provide expert advice on ways in which such provision can be improved.'

Active Travel England will also administer the new cycling and walking budget and ensure funding is spent on good infrastructure. We all know that poor, unprotected cycling infrastructure which stops short of where we need to go will not encourage new people to start cycling.





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This is important because we need more women, ethnic minorities, disabled and older people cycling to meet the ambition and to ensure equity in transport provision. Our recently published *Cycling for Everyone* report highlights that these groups are disproportionately left out of transport planning.

There will also be a number of cycling and walking social prescribing pilots set up. This is a process in which a GP prescribes cycling or walking to a patient to improve their health. The pilots will loan a cycle to the patient, provide them with training and will be run in towns and cities in which low traffic neighbourhoods and protected cycling infrastructure are being installed. This is again needed as you will not get new people cycling if they do not feel there are safe streets on which they can do so.

These are all good steps for local journeys, but if we want to tackle climate change we will need to think about converting medium and long journeys from the car to public transport and this is where the synergy between walking, cycling and rail is so important. We need to get this right. We often hold the Netherlands up as the panacea for cycling – and they are excellent at it, with 25 per cent of all trips

made by cycle. However, they also have greater carbon emissions per capita than the UK, because whilst their trips by cycle are 23 per cent higher than the UK, they travel by car so much for longer journeys.

'Gear change' highlights how cycling and rail make ideal partners and allow journeys door to door in the same way a car can. The Government intend to invest in safe cycle routes to and from stations, improve storage at stations; and increase space for cycles on trains, with all future rolling stock required to include more cycle spaces equivalent to the markets they serve. The plan also states that: 'Major new rail corridors will be designed to support local and National Cycle Network plans for improved traffic free links between communities within the corridor.' Sustrans is custodian of the National Cycle Network and we welcome initiatives that strengthen the quality of the network and link it up further with local communities.

These are all fantastic measures and a step up from simply thinking about cycle parking at stations (an important factor but fairly redundant if there are not safe cycling routes to the station in the first place). We also need transport hubs where walking, cycling, buses, trains and trams can be brought together to form seamless transport

links that are a favoured option over the car.

There are some good schemes happening already. Sustrans manages the Cycle Rail Grant programme. Despite disruption caused by Covid-19, train companies and their partners have been delivering new schemes at many stations around the country. These range from small rural schemes at stations like Three Oaks in East Sussex to larger cycle parking schemes linked to cycle access improvements at Legrave in Luton. More expansive, long-term funding from Government will help more of these types of schemes be embedded and these should be comprehensively linked to bus routes, especially in more rural areas.

Gear change is just that, a step up in gear in ambition and vision for our transport networks, particularly in relation to cycling and walking. For it to become a reality it will need to be implemented quickly; be backed up with long-term funding that increases over time as capacity increases; be recognised and fully aligned with cross-government initiatives, such as planning, health, tourism and the environment; and be fully integrated with public transport.

Rachel White is Head of Public Affairs at Sustrans



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The fog phenomenon explained

The formation of fog is not just a weather condition. The same humidity and temperature differences that create clouds of fog also fog-up surfaces such as prescription safety glasses and goggles

When glasses fog-up it can reduce the visibility of the wearer, essentially blinding them until the condensation can be removed. In many situations, this fogging-up can occur at crucial moments and result in disaster for the wearer or those around them.

Many industrial settings incur severe financial losses due to fog. In the rail industry, operational shortfall due to downtime alone can reach thousands of pounds per day. Railway lines, construction sites and even factories or warehouses become extremely dangerous workplaces when foggy too. The reduced visibility in some cases can prevent work all together, such delays lead to severe losses for the business and for contract workers that are common in these settings.

In the workplace

Just like clouds of fog that form in humid conditions because of the temperature difference between the air and a surface; safety glasses fog-up due to temperature differences between the lens and surrounding air. This can happen when you move from a cold environment to a warmer one or the other way around. This is particularly common in rail industry where workers regularly move from indoor to



outdoor environments or vice versa.

A number of factors can increase the chances of this fogging effect. Dirty and damaged lenses, for example, create more surface area upon which condensation can form. This dirt increases the fogging effect and is particularly pronounced in older prescription safety glasses and goggles. In order to reduce accidents at work, businesses must ensure that their employees are equipped with new and undamaged eyewear but also that lenses are cleaned frequently.

High humidity environments, both indoor and outdoor, are likely to result in foggy lenses regardless of temperature differences. However, longer exposure to cold temperatures can cause lenses to chill completely. Meaning any warmth will result in prolonged fogging despite wiping and other efforts. Warm factories and plants in cold environments are the perfect examples, as workers move from outdoors into the warmth they are at high risk of fogging-up.

Wearing foggy eyewear reduces their visibility preventing them from working productively and increasing the risk of accidents. Many of those workers chose to remove their protective eyewear in order to see better, which in turn puts their eyes at risk from other dangers such as light, heat and airborne particles. Ninety per cent of all workplace eye injuries can be avoided

by using proper safety eyewear, according to the Prevent Blindness Organization, but foggy eyewear creates another set of safety risks.

Preventing lens fogging

Where fogging up can cause serious hazards, such as workplaces that operate heavy machinery, it is essential to not only have anti-fog but also anti-scratch protection on lenses. Anti-fog coating incorporates hydrophilic materials that absorb moisture and hydrophobic techniques that divert excess moisture to the sides of the lens. Most protective eyewear on the market only protects the inside of the lens against fogging and the outside against scratching but this does not account for all the types of fogging up that can occur. Other technology like the PLATINUM® Coating by Bollé Safety offer more comprehensive protection from fogging up by applying a scratch-and-fog-resistant coating on both the inside and outside of the lens. Bollé Safety are also the first company in the world to supply all their prescription lenses with PLATINUM® anti-scratch and anti-fog coating as standard and at no extra charge. Contact Bollé Safety today and discover the Platinum technology for yourself.

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TBF – moving forward for a brighter future



COVID-19 has had a devastating impact on the public transport industry and workers across many sectors have been on the front line throughout the pandemic

They have helped to transport vitally important NHS staff, carers and other key workers to ensure that they reach their destinations. By doing so they have exposed themselves to the risk of the virus, and many of them have suffered as a result, with some paying the ultimate price. Even before we were all dealing with the terrible effect of COVID-19 it is a sad fact that in modern Britain there are cases of need, hardship, and distress amongst those working within the

public transport industry.

Physical and emotional illness can lead to many weeks off work with consequent loss of earnings, and whilst nothing can compensate a bereaved family for the loss of a loved one, the Transport Benevolent Fund CIO – TBF – is always ready to help in times of need and uncertainty.

From simple beginnings

The fund's roots go back to the First World War when the Train, Omnibus, and Tramway Group of London passenger transport companies set up the TOT Mutual Aid Fund to support the dependants of employees serving with the armed forces.

Subscriptions were paid voluntarily, and matched penny-for-penny by the participating firms. It meant that the service pay of workers could be supplemented so that their families would not suffer undue hardship whilst they were away fighting. The charity evolved over succeeding years, becoming the Train, Omnibus, and Tramway Benevolent Fund in 1923; the London Transport Benevolent Fund in 1933; the TBF in 1996 and TBF CIO in 2015 (2016 in Scotland). By that time it had spread its activities far beyond the capital.

What does TBF offer?

TBF offers people working in the public transport sector in Great Britain, who find themselves in need, hardship, and distress, a wide range of health, welfare, and financial benefits.

John Sheehy, TBF Chief Executive Officer, explains: 'TBF is different and makes a difference. Membership is far reaching and helps a great many people on a day-to-day basis. Each family member is considered separately and benefits paid are not cumulative for the whole family. Monies granted are for the beneficiary to keep, it is not a loan. There are no different levels of membership; the flat-rate weekly fee gives the member and their family access to the extensive range of benefits.'

A small weekly fee covers membership for the prime member, their partner and dependent children. It is usually paid by payroll deduction but can be paid directly from the member's bank account by standing

order if a payroll deduction is not an option.

The only criterion for membership is that the member is working within the industry on the day they join. There is no bar for those suffering from pre-existing conditions, no requirement for a medical, and no age limit for joining. When members retire from work they may be able to obtain free membership if they have contributed long enough. Individuals can even continue with their membership if they leave the industry.

Benefits

Medical benefits

- Medical consultations, scans and tests where the NHS is unable to deliver within an acceptable time frame
- Medical equipment not available from the State
- Convalescence and recuperation

Complementary and alternative therapies

- Chiropractic and osteopathy treatments, physiotherapy, acupuncture, homeopathy, reflexology, chiropody and podiatry, and many more

Financial help

- Cash grants to help cover short-term hardship when a member is off sick, usually for two weeks or more
- Prescription prepayment certificates (PPCs)

Advice and bereavement

- Debt advice
- Legal assistance (although employment-related matters and costs related to property conveyancing are not included)
- Bereavement grants if the member or their partner unexpectedly passes away (before State pension age) or on the death of a dependent child



A not-for-profit membership charity, TBF embraces everybody engaged in the industry and related services, including bus and coach operators, every major rail operator and their infrastructure and maintenance companies, ferry operators, the airline industry, and licenced taxis.

In recent years a significant number of employers, having recognised the benefit of TBF membership for their employees, have entered into a partnership with TBF and are now meeting the cost of membership as part of their employment package. Employers recognise the importance of work-life balance and offering support to staff if the need should arise. The health and wellbeing of their workforce is an extremely important factor in keeping staff-turnover to a minimum.

How does TBF work?

TBF is a registered charity in England and Wales, 1160901, and in Scotland, SC047016. The fund is governed by a board of trustees, most of who work in the transport industry, and they decide on all benefits awarded. Patrons include leading figures in the major transport groups and the trades unions. The weekly subscription is not the fund's only source of revenue. Individuals and companies make donations from time to time, and money is raised through charitable events. Gift Aid donations represent another income stream – the weekly subscription qualifies for Gift Aid if paid through the payroll system or by standing order – as do bequests.

Monies donated or bequeathed in a person's Will in favour of TBF for a specific cause can be 'ring-fenced' in a memorial fund to help members, and sometimes non-members, if they are affected by a specific condition or incident. The Arthur and Rose Hollingsworth Memorial is used in helping public transport employees (or their dependants) who have been closely associated with a fatal incident at work. Help in such a situation is not restricted to TBF members. The trustees are currently considering two new memorials to help workers in both the bus and rail sectors who have been affected by the coronavirus. Monies will be raised from the Run for a Bus campaign and the proceeds from the charity raffle, which TBF has been the main beneficiary in recent years, at the annual Rail Staff Awards.

With its head office in London, TBF has expanded steadily in recent years thanks in part to the activities of nine local organisers who visit key sites across England, Scotland, and Wales, recruiting new members. The fund does not pay commission, which means more of its money goes to assist those members in need.

Membership fee

TBF has over 68,000 members and during the past 12 months has paid £2.9m in benefits to its members.

'The current weekly membership fee is just £1 and this has not gone up since 1994, when it was increased from 80p,' Sheehy comments. 'Keeping the fee so low for so long

is, in part, thanks to the help of well-managed investments, the growth in the number of members year-on-year, and generous donations.

'We've continued to operate and support our members through recent economically-difficult times without an increase,' he continues. "We kept it at £1 throughout the 2008 financial crisis and its aftermath, and we've been assisting members during the current pandemic crisis.'

Maintaining the weekly fee at £1 is, alas, no longer sustainable, and a rise will be implemented in the spring of next year, but it is a remarkably modest one given the benefits provided. All members will be contacted personally, nearer the time.

'It was not an easy decision to make, but after lengthy discussions with TBF's board of trustees it has been agreed that the membership fee will be raised by 25p a week to £1.25 from 1 April 2021' Sheehy explains. TBF patron, Sir Peter Hendy CBE, Chairman of Network Rail and long-standing supporter of the fund, says: "The transport industry is a family. At the heart of this family is the Transport Benevolent Fund CIO providing care and support when our members and their dependants need it most. For the first time in nearly 30 years, we're asking you to contribute a little more, at a time when we're awarding more in benefits and demand for our services is higher than ever. I'm immensely proud to be a patron of TBF, and it's vital we're able to continue supporting members in times of hardship and distress.' It still represents remarkable value-for-money.

TBF Trustee and Managing Director, Stagecoach Cumbria and North Lancashire, Rob Jones, says: 'Everyone involved with TBF is enormously proud of the fact that we have been able to continue to offer such an extensive range of benefits while keeping the fee at just £1 a week for so many years. So, the trustees have agonised over this major decision.

'Unfortunately, it has been clear for some time that further monies would be required due to the inevitable rise in costs year-on-year. Our postal budget alone is around £44,000 annually.

'Modern living arrangements have brought about a change in family dynamics which have also put the fund under pressure, with an increased need for benefits' Jones continues.

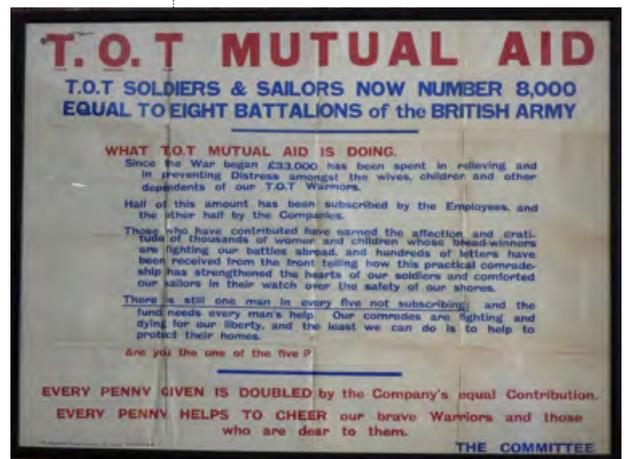
'We feel that an extra 25p a week is a not-unreasonable rise and that TBF members will understand why we have had to do this. 'On the positive side, the small rise will allow TBF to offer increased benefits as well as

cover the shortfall. £1.25 per week equates to less than 20p per day and that's great value-for-money when compared with the cost of your daily latte, cappuccino or flat white, for instance.

'In an attempt to reduce running costs and help to keep the membership fee rise to a minimum, the trustees have also approved the implementation of a fully-digital computer-system upgrade. This will be achieved by utilising the existing IT budget allocation' Jones explains.

This system will include the launch of an online portal giving members instant access to their record with the fund. It will include past claims, current employment details held and will give them the ability to update personal information. All data will be stored as per the provisions of the Data Protection Act 2018 and under the guidelines of current GDPR legislation, as it is now. Eventually, members will be able to submit online claims and requests and view statements of available funds.

Current office practices at TBF have evolved over the past 97 years and there



Archive TOT poster, circa 1915, hangs in today's modern office and is a reminder of TBF's early beginnings

is no debate that modernisation of the system is overdue. At the moment, all fund payments are still being made via cheque, which is, of course, expensive and administratively burdensome. What is more, paper consumption in the form of stationery is huge and does the environment no favours.

So, a planned introduction of a state-of-the-art, electronic payment system will reduce expenditure, improve efficiency, and boost the fund's green credentials. The moderate rise in the weekly fee looks set to result in even more valuable benefits that can be shared by all members as the economy emerges from lockdown. 'TBF is all about helping people, people in the public transport industry, and the future for the fund and its members is extremely exciting' says Jones.

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Carrying the load

Michael Grace, Strategic Growth Director at SNC-Lavalin, explains how rail freight can expedite UK's net zero future

Too often, a vital aspect of our railways is ignored. Rail conjures images of passengers and platforms, conductors and concourses. But rail freight operates under the radar. And consequently, few are aware of how instrumental it could be in reducing the UK's carbon footprint.

Currently, rail only accounts for five percent of the UK's hauled freight. The most popular haulage choice by far? Road, with 89 per cent of all freight carried by lorries. Yet if the UK is to meet its legally-binding 'Net Zero' aspirations, more of this cargo must be moved by train. Rail freight has a fraction of the road's carbon footprint, with scope to bring this number even lower.

Importantly, there's also plenty more capacity available in rail freight. In 2018-19, the total volume of rail freight moved rose to 17.4 billion net tonne kilometres. It sounds vast, but just a few years ago it was well over 20 billion. Most of this decline is linked to the collapse in demand for coal, which was mostly hauled by train. But it also signals that there is a large amount of unused capacity and untapped potential out there.

Rail vs road – a choice for people and the environment

Carrying more freight by train unlocks a huge opportunity to decongest our roads

and reduce the carbon footprint of our haulage.

Levelling up our rail freight can help improve our roads. Thanks to freight trains, 7.2 million lorry journeys were avoided in 2017-18. And with HGVs responsible for 17 per cent of the UK's total transport emissions, this reduction can have a significant effect on carbon reduction. Around a fifth (21 per cent) of UK greenhouse gas emissions came from road transport in 2017. Our railways still represent the cleanest choice for freight transportation, and by transferring more of our road freight to rail, we can reap the benefits.

Transporting more goods via rail isn't just a boon for the nation's sustainability, it's also good for road users' sanity. Congestion continues to grow. On the Strategic Road Network, the average delay per vehicle grew by 0.4 seconds year on year in 2018, according to the government's own figures. The government forecasts that traffic on the UK's already-busy SRN could increase by as much as 59 per cent by 2050. Freight can help ease this load. According to the Rail Freight Group, each freight train removes around 60 lorries from our roads. And that means more than just reduced emissions or less congestion. Fewer HGVs would also reduce the amount of wear and tear on the



roads, lowering maintenance costs (whose processes are also carbon-intensive).

So, to help our roads, we must power up our rail. A holistic approach considering the relationship between rail and road benefits both.

Go electric

Clearly, rail freight has many advantages over roads. But to maintain this superiority in the face of improvements such as electric vehicles, rail freight must show it is capable of going green. Rail produces just 25 per cent of the carbon footprint of road freight, but this number is still too high. Less





can we make wise, long-term choices. For example, careful planning policy can help to protect freight terminals from housing developments. Decisions like these can help ensure rail freight's viability.

Anticipating changing demand can also help ensure that freight remains relevant to tomorrow's challenges. Online shopping has led to a huge growth in delivery trucks, hauling our parcels up and down the country. Converting inter-city trains to share the load could help to remove many of these vans, reducing congestion while ensuring we all receive our deliveries. It could even expedite the process.

None of this will happen overnight. The first step is to begin looking at the UK's transport network holistically. Understanding rail freight's potential to decongest our roads, clean up our haulage, and boost our chances of hitting those Net Zero goals all begins by looking at the relationships between transport modes. In turn, this holistic understanding generates support for joined-up policies that empower our freight to become greater in capacity, cleaner in emissions, and play a vital part in the transport network of the future.

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 Visit: <https://www.snclavalin.com/en/markets-and-services/markets/transportation#rail-and-transit>

than half of the UK's tracks are currently electrified, with the majority of our railway running diesel trains. A rolling programme of electrification would allow gradual, sustainable transformation of the tracks, reducing our carbon footprint without suffering from the stop-start 'boom and bust' problems of the past.

Some parts of the track are more urgent than others, so it's important to start where we can reap the most gains. Felixstowe, the UK's busiest container port, still lacks electrification. Electrifying the route to

Ipswich, for example, would help to create a clean corridor for freight to be hauled up and down the east coast.

Getting society on track

Getting our transport strategy right will determine whether or not the UK can hit its Net Zero goals. To achieve this, we need to understand the relationships between people, government, and business that shape our transport behaviours. Only by understanding the interconnections between these three aspects of society

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Prior Knowledge

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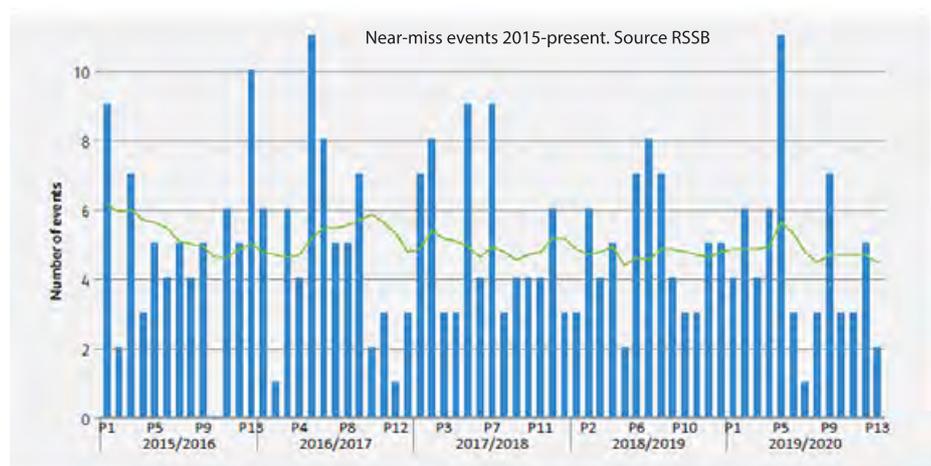
Why we need to innovate to improve psychological safety in the workplace

How grateful are we to our frontline colleagues, to those who have kept trains, plant, freight and passengers moving?

How aware are we though, as a community, of the intricacies of their roles, their working conditions, and the less-obvious safety challenges they face? There are huge gaps in my understanding of their day-to-day, but this is arguably as it should be. Even without safe-distancing measures, I would not have the prerequisite competencies to even be allowed to stand alongside them in their workplace.

Our colleagues in safety-critical roles face inherent risks every day in the workplace. But as trained professionals, and with the rulings and guidelines from a myriad of official bodies, we know that all manner of risk assessments, mitigations and safe systems of work are being carefully designed, tested and implemented, to keep our colleagues as safe as possible at work. However unfortunately as an industry we still encounter injury, or worse, amongst our front-line colleagues, and we must address this.

The number of near-miss events over the last five years has not seen any significant reduction, as illustrated in the graph shown



above.

Of these incidents, over half occur either lineside or in yards, depots and sidings. It is our infrastructure workers who are in the riskiest roles, representing a specific and substantial proportion of the railway workforce.

These are potentially the most physically distanced roles and personally, I find it very

difficult to accept that we cannot do more to support them. I am not suggesting for a moment that any one of us is complacent on the matter, and therefore the question I want to pose is, how can we each create incremental change to deliver exponential improvements in safety across the board, but especially where improvements are most clearly needed?

Figure 1 All workforce risk in context (SHM)

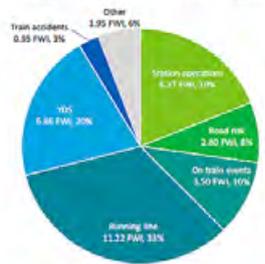
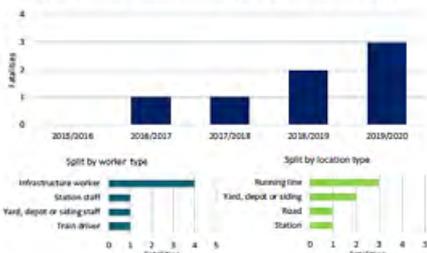


Figure 2 All workforce fatalities split by location and worker type



All workforce harm 2015 – present, source RSSB

Technology as a safety tool

Last year Network Rail launched its Workforce Safety Taskforce to target track worker safety, and RSSB has subsequently reported a number of key insights within the AHSR on the same topic. The taskforce has as a focus, the introduction of new technology ‘to keep people safe and ensure that everyone has the right knowledge and skills’.

As Network Rail’s taskforce recognises a need to innovate and adopt new technologies to keep our colleagues safe, informed and within competency, so too can technology play a part in addressing the challenges that CIRAS has uncovered

Working in a tech company in rail, I am naturally delighted to see that technology is recognised as being an essential part of improving safety, both as a means of ensuring the right people are in the right place through competency management systems for example, and as a means of delivering the right information to these people in a timely manner.

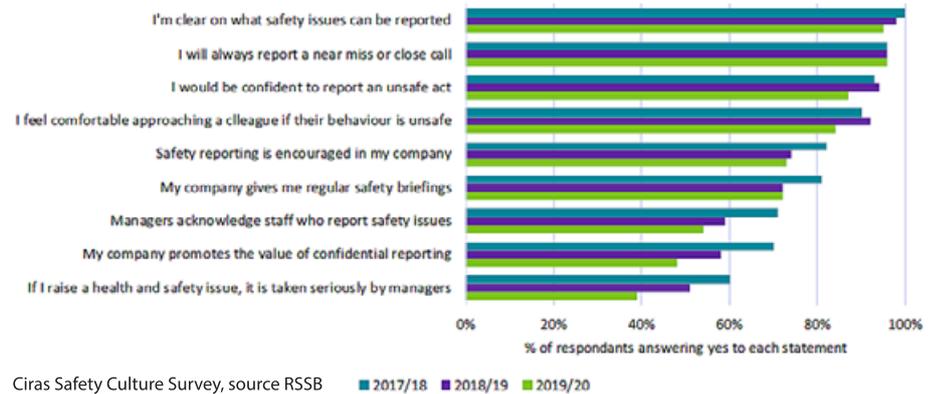
As well as reading the AHSR, I have been revisiting the textbooks because for me the taskforce’s aims resonate almost entirely with Peter Senge’s ‘fifth discipline’. This describes the concept of harnessing and using systems thinking to enhance, develop and constantly improve organisational knowledge, and to use that knowledge to become a ‘learning organisation’. When I studied the concept however, it was much more about using this fifth discipline to hone a company’s ability to develop and

our railway safer. Overtly we can and do use smart technology to provide greater clarity, ensuring that safety briefings, standards update, and reporting processes and protocols can be simultaneously available in a control room and lineside via smart devices.

As Network Rail’s taskforce recognises a need to innovate and adopt new technologies to keep our colleagues safe, informed and within competency, so too can technology play a part in addressing the challenges that CIRAS has uncovered.

Perhaps the real role of technology is to support innovative learning organisations that simultaneously nurture psychological safety. This would surely encourage and enable the reporting of safety issues which in turn, will allow for better systems thinking and organisational learning?

If more than half of our reported



Ciras Safety Culture Survey, source RSSB

maintain a competitive edge.

Consider the concept of the learning organisation however through the safety lens, and how this constant learning, re-evaluating and challenging of practices could help drive incremental and exponential change through innovative technology; in turn keeping more of our colleagues safer.

According to academics (Sharma et al): ‘Innovation and continuous improvement are based on a company’s ability to be creative and to learn.’ He suggests that organisations should create the ability to use, ‘The knowledge already inherent within them as well as the new intellectual capital created daily and should use technology to ensure efficient knowledge transfer.’

CIRAS, the confidential reporting subsidiary of RSSB, conducts an annual safety culture survey. Cited within the AHSR, it suggests that culturally the railway has several barriers to psychological safety that need addressing. By addressing these challenges, we can surely improve the safety risks that are referred to above.

Ensuring passenger safety still remains top of the agenda, as it should. This provides the industry with the opportunity to truly embrace technology to innovate and make

incidents happen trackside or in yards, depots and sidings but if less than 40 per cent of people feel health and safety issues are taken seriously by managers, we must find a way to address this.

Yes, we do still have the safest railway in Europe. However, would we have such good results were our key worker colleagues as safe psychologically, as we believe they are physically?

Lucy would like to thank Andy Stringer of Siemens for his support in developing this article and RSSB’s Matt Clements

Lucy Prior MBE is Business Engagement Director at 3Squared in Sheffield. 3Squared’s RailSmart suite delivers technology solutions to known and emerging rail industry challenges to help customers to increase productivity and reduce risk and cost.

Outside of her day job, Lucy also holds roles on the RSG Export Workstream, the NRIL executive and is vice-chair on the RIA SME group. Most importantly she is a full-time working parent to two young children who hear an awful lot about just how cool the rail sector is.

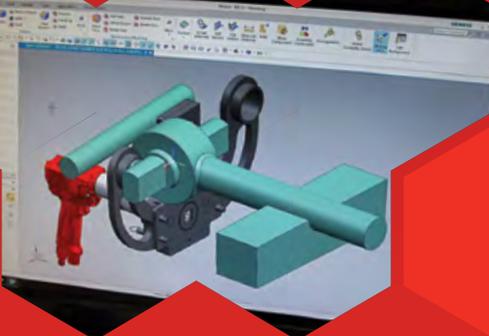


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Norbar's EvoTorque® Battery Tools (EBT) granted Network Rail approval

Following a rigorous testing process, Network Rail has granted full approval to **Norbar's EvoTorque®** tools range for use across the UK's rail network infrastructure

Specifically, approval has been granted to Norbar's EvoTorque® Battery Tool, a range of battery torque tools designed for applying torque to threaded fasteners.

The models covered by the approval have torque capacities of 200 N·m to 4000 N·m. This follows the prior approval in 2017 of Norbar's EvoTorque® 2 – a range of corded electric torque tools with a torque capacity of 200 N·m to 7000 N·m.

Network Rail approval ensures that the Norbar EBT meets the exacting standards required for use on rail applications; that these products are safe, reliable and will enhance maintenance tasks on the UK's rail infrastructure.

Graham Hudson, Technical Support Engineer at Norbar Torque Tools Ltd, says: 'Network Rail Approval is the culmination of a long and rigorous acceptance process by Norbar Torque Tools and Network

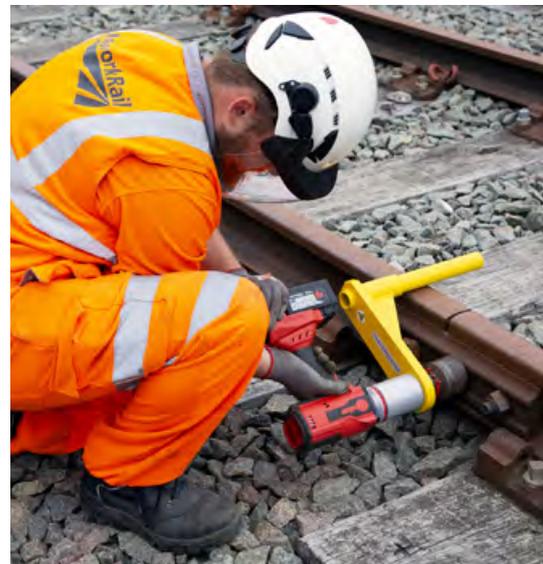
Rail. We are delighted that the EvoTorque Battery Tool range has been deemed to be compatible with all of the criteria necessary to work on the UK's rail infrastructure and can now play its full part in improving safety and traceability across the network.'

Like EvoTorque® 2, the EBT range is equipped with unique 'Intelligent Joint Sensing' technology that will accurately tighten to the correct torque without the risk of excess overshoot or undershoot that is common in other electric tools. Positive confirmation of correct joint tightening is displayed on the tool.

In addition, the range has a built-in data logging capability to help contractors and engineers keep track of completed work. The newly certified tools can log up to 3,000 different time, date and task stamped torque readings, including identification of the tool-user, enabling the creation of a clear installation and maintenance audit

trail. Once work is completed, this data can be downloaded and stored in EvoLog, a dedicated software platform, via USB or Bluetooth 4.0 transfer.

The EBT range also has an audit mode that allows existing bolts to be checked to ensure that contractors can identify bolting 'hotspots' where persistent problems occur.



Armed with information, extra preventative measures or maintenance procedures to ensure the integrity of the track or other infrastructure in those weaker points can be implemented.

Graham concluded: 'EvoTorque®2 and EvoTorque® Battery Tool, were developed with rail applications in mind, both infrastructure and rolling stock, and this approval is vindication of Norbar's vision for bolting safety and traceability across the UK's rail network.'

For more information on the EvoTorque® products from Norbar, visit: www.norbar.com/products

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Transferable skills and technical expertise

Following a decade of unprecedented change in its traditional markets, a specialist engineering firm has landed its first rail contracts after a strategic move into the rail sector

Since 1954, the Greenbank Group has built a solid reputation for technical excellence across a wide range of industries, particularly power generation, where its bulk materials handling, fuel balancing and monitoring systems are in operation at coal and biomass-fired plants across the globe. The company's expertise has also been utilised by multi-national businesses operating in the aggregates, manufacturing and other heavy industries as well as firms looking for bespoke engineering and technical as well as general fabrication solutions.

While these markets have provided Greenbank's core business for several decades, the last few years have seen a move away from coal-fired power generation in many parts of the world, making diversification a priority for the company.

Charles Conroy, Greenbank Managing Director, explained: 'We've always enjoyed a diverse customer base, and we're fortunate that much of the practical expertise we've acquired, and the professional skills of our manufacturing team, are easily transferable between different industrial sectors.



'While we operate globally, the company made a strategic decision to look more locally for new opportunities, which is particularly important as many businesses look to develop shorter, more resilient

supply chains.'

With manufacturing facilities in Derbyshire and Nottinghamshire, Greenbank is based in the heart of a region long associated with railways, and it was perhaps unsurprising that early attempts at local business networking helped to forge close contacts with other suppliers to the rail industry.

'However, we recognised that contacts and an established reputation for engineering excellence wouldn't be enough to gain a foothold in an established, highly competitive market' Mr Conroy said. 'We needed to invest significantly to meet the requirements of the rail sector, and this later resulted in Greenbank achieving a globally recognised industry standard.'

Special Process

Following a thorough audit of its manufacturing facilities, Greenbank has become one of just a few UK firms to be awarded EN 15085 Manufacturers of Railway Vehicles and Components Certification Level 1.

The coveted standard recognises welding as a 'Special Process' in the manufacture of railway vehicles and their components,



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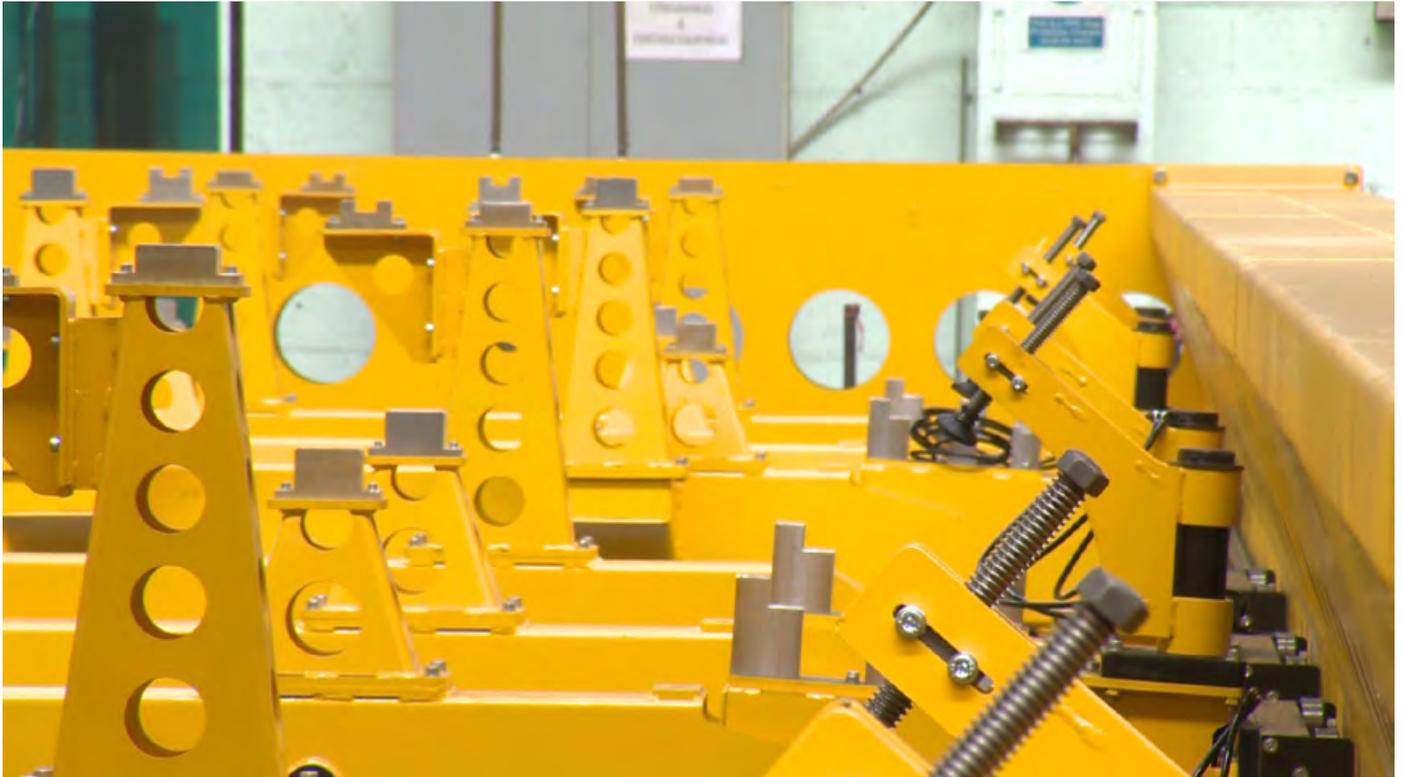
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setting down clear requirements on testing and documentation as well as processes and procedures to ensure the quality of welded components and competence of employees carrying out the work.

The certification was issued by TÜV SÜD, a Europe-wide standards body, and the audit was carried out by independent consultant Zoe Gallagher.

On presenting the certificate in 2018, she said: 'The Greenbank Group is a proactive SME, which I have been delighted to work with to progress its systems and ensure compliance to the certification requirements.'

'The company has always made sure, even as an external party, that I felt part of their team as we developed their systems to the standards required.'

'The operating systems they have subsequently produced, together with the competence of the company's personnel, leave no doubt in my mind that the full compliance requirements of the EN 15085 standard will be assured for any rail projects that Greenbank engages in.'

Since then Greenbank has seen its investment in the accreditation process pay off with several high-value contracts.

Cab assemblies

Earlier this year it secured a supplier partnership with another East Midlands company, Datum of Derby, that will see the firm build 170 cab assemblies for trains destined for a rail franchise in the south of England.

After landing the order, the company completed its first main cab structure assembly in record time – finishing the cab in under four weeks, and four weeks ahead

of schedule – and work on the contract has continued through the coronavirus pandemic.

Mr Conroy said: 'Our efforts to achieve the EN 15085 standard are clearly paying off and, as well as securing highly skilled jobs in our workshops, this contract has enabled us to take on additional skilled fabricators, welders, goods inward coordinators and Responsible Welding Coordinators.'

Although the exact value of the main contract remains confidential, it's providing a major boost for the firm's manufacturing facilities, with around eight cabs a month currently rolling off the Greenbank production line.

This is expected to rise to around eight cabs per week as production is ramped up, and, under a separate contract, the company is also manufacturing all the sub-assembly and final assembly jigs and fixtures involved in their assembly.

On Greenbank's involvement in the project, Datum Managing Director David Taylor commented: 'By working with a UK partner we've been able to build excellent lines of communication and a more robust supply chain.'

'The general engineering expertise offered by Greenbank, combined with the company's excellent manufacturing facilities and ability to adapt quickly to the requirements of the contract, has also helped us to deliver the quality standards our clients have come to expect in what is a very demanding sector.'

Acquisition

Recently Greenbank's diversification plans received a further boost with the acquisition of Burton-based Franklyn Yates

Engineering, a well-respected mechanical, electrical, instrumentation, control and automation (MEICA) company, which also provides specialist manufacturing services and fabricated pipework and structures.

Although the two companies will continue to operate independently, the move brings the total Greenbank Group workforce to around 130, and its manufacturing facilities in Connah's Quay in Flintshire will complement Greenbank's existing plants in Woodville in Derbyshire and Creswell in Nottinghamshire.

Looking to the future, Greenbank is now well placed to take advantage of fresh opportunities in a sector with huge potential for British manufacturers, thanks to ongoing investment in infrastructure and rolling stock.

Alongside investment in both skills, capacity and research and development, building up a network of contacts within the sector remains a key element of the firm's strategy.

'Now we're looking to consolidate our position as a key supplier to the rail sector by stepping up our engagement with other suppliers to look at ways we can work together to provide added value for operators and organisations responsible for rolling stock and infrastructure' Mr Conroy continued.

'To this end we've joined influential representative bodies, including the Rail Alliance and Rail Forum Midlands, enabling us to showcase the unique skills and capabilities we can bring to the sector' he added.

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Layher brings environmental focus to the fore

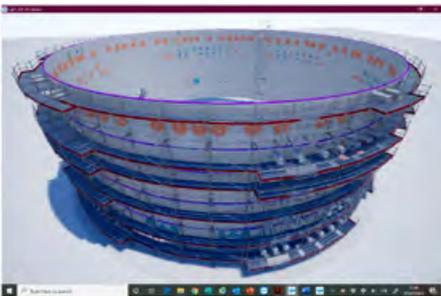
The importance of safety, versatility and cost effectiveness relating to the use of scaffolding is quite clearly not in dispute

Every installation – not least those relating to new building, refurbishment and maintenance operations in the rail sector – must meet the highest standards in these key areas.

‘There is, however, a further dimension which is invariably being highlighted by manufacturers, contractors and end users alike – including those in the rail industry’ says Sean Pike, UK Managing Director of system scaffolding, access and weather protection specialist, Layher Ltd. ‘Optimising environmental performance has now become a factor that is not only called for by our customers but one which, vitally, we demand of ourselves.’

Layher’s view reflects today’s greater emphasis on the achievement of greener performance. This, the company believes, impacts not only on the broad need to ensure that its methods always take account of environmental effect but also on the advantages that can then be realised from a competitive point of view.

‘Every aspect of our activity now accommodates this consideration – from manufacturing and production processes to optimising our broad association with local,



national and international communities’ adds Sean Pike.

This philosophy at Layher extends to both economic and ecological sustainability. The organisation ensures, for example, that it not only utilises resource-preserving production processes but also focuses its commitment on areas such as facility construction and transport.

‘For example, we have created a dedicated Energy Management Team at our manufacturing plant near Stuttgart’ continues Sean Pike, ‘which uses the international standard ISO 50001 as the basis for all activities and processes that call for the use and consumption of energy.’

Layher has identified several areas where the obligations associated with environmentally responsible activity should be applied. The sustainability of its production processes, the means of measuring performance and the design of the products themselves – all come under the green spotlight.

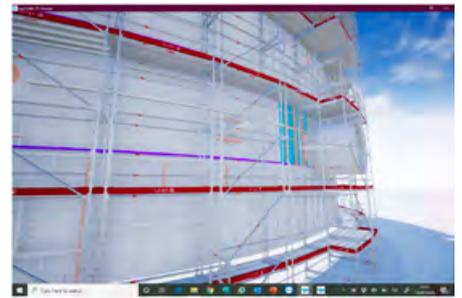
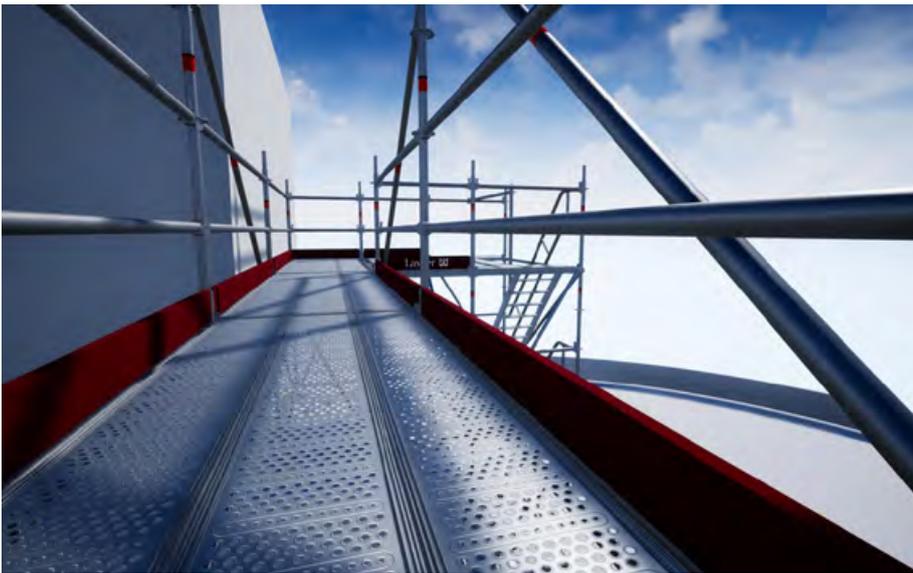
‘We have committed to a ten per cent reduction in energy consumption across our production processes over the next ten years’ explains Sean Pike by way of example. ‘This includes a move towards optimising movement between manufacturing locations to help reduce CO₂ emissions, the acquisition of raw materials that themselves are ecologically sustainable and the use

of machinery which operates within the highest energy efficiency class.’

The use of new production technologies and processes that look to ensure the preservation of resources can also be seen through the company’s focus on utilising innovative technology such as combined heat and power and heat recovery facilities.

‘It is vital that this approach is continually subjected to a reliable means of measurement’ continues Sean Pike, ‘not just





in order to demonstrate our performance, but also to identify areas where further improvements can be made.'

Targeting building refurbishment plans – ranging from regular roof repairs to the use of new innovations such as roll-up door products that provide faster, more energy efficient operations – are cited by the company as good examples in this context.

'Replacing diesel forklift trucks with electric alternatives, installing photovoltaic systems and incorporating green spaces in new building plans are all factors that we apply and adhere to wherever possible' adds Sean Pike. The reduction of waste materials, often to create an alternative energy source, is a further demonstration of this principle in practice.

Apart from steps taken to optimise environmental performance at its manufacturing plant – its new galvanising facility, for example, creates emissions that actually have a beneficial effect on its surrounding woodland location – Layher also believes that product design, much of which brings key gains to the rail industry, should itself reflect the green imperative. For example, being able to combine new equipment with existing materials and

stocks can help to optimise the long-term use and versatility of scaffolding, weather protection and access solutions. It is a view that is echoed by the organisation's commitment to ensuring equipment approvals remain applicable across successive design generations.

'The use of lightweight materials also plays an important role not only by helping with operations on site, such as station refurbishment or temporary footbridge installation, but also because they can contribute to minimising transportation needs. Again, this has a beneficial impact on emissions' continues Sean Pike.

Perhaps one of the most dramatic recent developments by Layher has been its Scaffold Information Modelling (SIM) software and, here too, environmental gains can be noted. 'The design tool, which interfaces directly with BIM, provides a highly versatile planning method which offers enhanced presentation opportunities, communication with mobile devices via cloud-based mixed reality and even VR-modelling' explains Sean Pike. 'In turn, this can reduce the need for multi-party meetings and operations which, once again, can help cut down on travel requirements

and consequent emissions.

'The focus on environmental performance – in all its aspects – is, today, high on the agenda of all responsible companies and, in our sector, we believe we take a committed and proactive approach to the issue' says Sean Pike. 'This year marks our 75th anniversary since we began the production of ladders in little more than a small hut and, throughout that time, our belief in quality, innovation and working closely 'in partnership' with customers has been well recognised and we can proudly point to a long list of rail sector installations where this is much in evidence. Importantly, this is now being enhanced by our belief in meeting our green obligations.

'In the UK, through our head office in Letchworth and satellite depots in Yorkshire, the West Midlands, Scotland and Ireland we demonstrate this approach on a clear basis and believe it goes hand-in-hand with, for example, maintaining stock levels and support during the current challenging times. The added emphasis we place today on optimising our, and our customers', environmental performance will be recognised and appreciated, I am sure, by everybody in the rail industry' concludes Sean Pike.

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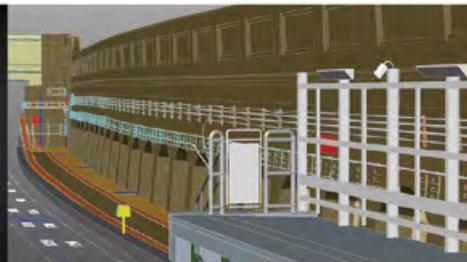
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Integrating efficient, reliable power supplies in a mission-critical environment requires specialist knowledge in power management and design

Robust power supplies are used for passenger comfort and safety as well as in network communications systems but the harsh conditions that are particular to the rail industry mean that specialist power knowledge is required.

Making sure passengers are comfortable is a priority for design engineers and various in-carriage devices rely on a power source for information screens, displays and services. If this power supply should cease, it is inconvenient but if there is an emergency and the main power source is lost, the results could be far more catastrophic.

Operators have to be able to rely on power conversion systems because failures cannot be tolerated. Yet the rail network is an environment that is subjected to extreme temperature ranges and harsh operating conditions.

Emergency systems

For example, in the event of the loss of the main power source, emergency HVAC systems ensure that fresh air is supplied to passengers.

These auxiliary emergency systems are equipped with DC-AC inverters which are supplied by batteries that can range from 24V, 36V, 72V or 110V. The input power is converted into three-phase AC power, to allow the inverter to feed a three-phase motor which switches on fans in the carriages to maintain the ventilation system.

Relec Electronics provides specialist power conversion and display products for many demanding industries. In addition to standard products, the company has over 40 years' of experience to understand applications and specifications as well as the ability to source the most appropriate products. Products can be customised to achieve optimum performance.

Among the DC-AC inverters available from the company are single and three-phase DC-AC inverters from Premium.

All Premium DC-AC inverters comply with the EN50155 standard, which covers input voltage range, electrical isolation, operating temperature, shock and vibration, humidity, EMC, reliability and expected useful lifetime.

The company's DC-AC inverters are robust to accommodate the extreme temperatures and humidity levels experienced, as well as the high levels of shock and vibration. They are also compact, to fit into designs where space is limited.

Premium has supplied DC-AC inverters (ODX-1300) for the emergency fans in CAF's Civity fleet of commuter and regional trains in the UK. It has also supplied the ODX-3000 and ODX-6000 DC-AC inverters for HVAC emergency systems in Bombardier's streetcars in Cologne, Germany.

Relec offers a wide selection of chassis mount single and three-phase Sine wave DC-AC inverters approved to EN50155. The conformally coated inverters withstand the harshest of environments, whether mobile or static, for example in 'at seat' power in carriages and network security systems.

In addition to the conventional 24V and 110V inputs, the company offers a variety of inverters operating from 12V, 36V, 48 or 72V battery systems and approved to EN50155 and EN50121-3-2, with options to meet RIA 12 surges and transients.

Power inverters for networking

The Cotek SR-1600 Plus series of modular, intelligent DC-AC inverters are available with Simple Network Management Protocol (SNMP) communication to manage services on IP networks, making them particularly suitable for trackside applications as well as data centres.

They offer true Sine wave output with minimal total harmonic distortion (THD) of less than two per cent to ensure power factor, low peak currents and efficient operation. The standard 19-inch, 2U rackmount inverters are scalable, providing up to 6.4kVA per rack, based on 1600VA modules. They have redundancy and hot swap features as standard and DC or AC mode can be selected with zero transfer



time for uninterrupted power supply. In DC mode, efficiency is 95 per cent.

The inverters are protected against reverse polarity connections and will also shut down if the input levels rise outside specified parameters, without damaging the systems. Both AC and DC outputs are protected against overload, short circuit and over-temperature conditions.

Technical and practical support in power design can help engineers meet the exacting conditions of rail networks and passenger comfort. Relec Electronics offers a wide selection of specialist power products and an experienced, technical team to help with the selection and sourcing of some of the most vital components in a rail network's power system.

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It is crucial that Wales has cutting-edge transport links to help people travel to work, encourage inward investment and better connect it to the rest of the UK in order to boost prosperity. As we seek to grow our economy once again, I look forward to continued collaboration with Network Rail to improve connections, cut journey times and create world-class transport infrastructure in Wales.

 **Simon Hart**, Secretary Of State For Wales

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Restoring confidence in post-pandemic service



Altro is a family-run flooring manufacturer based in Hertfordshire, UK, with manufacturing plants in the UK and Germany

A global company with offices across the world including Melbourne, Shanghai, Boston, Santa Fe, and Dessau, Altro is proud to have celebrated its centenary year in 2019. Across its one hundred years of operation, Altro has been an innovator and industry leader, credited with the inventions of safety flooring and adhesive-free flooring. Altro has always held the customer at the heart of everything it does and takes great pride in its Voice of the Customer programme, which allows it to listen and partner with customers to enable it to deliver the best service.

Altro has been engineering and manufacturing high quality transport flooring, applying its innovative streak and passion for safety for over 60 years and has supplied flooring to a range of rail applications across the world. Altro's current rail flooring portfolio is supported with a wide range of value-added services.

Make the right flooring choice

Now, more than ever, it is key for operators to show passengers the demonstrable efforts they're making to ensure that public transport is a safe way to travel. Regular and thorough cleaning is the best way to protect your passengers but, Altro cautions, can you be sure that your interior environment is doing all it can to help you?

Altro asserts that the best way to create an inviting rail interior while reassuring

passengers to the good hygiene of their surroundings is to choose a resilient acrylic or rubber floor. Some common floor coverings absorb dirt and contaminants and show obvious degradation over time. With a resilient floor dirt sits on the surface for quick and easy removal, while its impervious nature allows for more thorough wet cleaning. Altro Transflor Tungsten™ is equipped with Altro Easyclean™ technology, and both Altro Transflor Motus™ and Altro Transflor Tungsten™ are effective cleaning with both detergents and heat up to 60°C, so that you can be sure increasing expectations for hygiene are met with one easy clean. As, according to the US National Library of Medicine, viruses are only killed at temperatures above 56°C, it is imperative to choose materials that will withstand the type of cleaning needed to maintain a safe environment for passengers.

The other aspect to consider is downtime caused by product drying times. To ensure a safe and hygienic environment, vehicles must be cleaned at least once every 24 hours. As some carpet products on the market can take as long to dry, Altro asks: can you justify that amount of downtime?

For the future

Altro's overarching aim is to partner globally with leading rail operators and manufacturers to create environments for both passengers and staff which are inviting, safe, and compliant. It continues to develop



Altro floors are effective for cleaning with heat and detergents



Altro Transflor Tungsten™ is equipped with Altro Easyclean™ technology



Altro rail floors will play their part in restoring confidence in public transport

industry-leading rail flooring products with the user in mind, so that its products make a positive impact on both passenger and employee experience with ease of cleaning and reliable safety credentials. Throughout the rest of 2020 and into 2021 Altro will expand its EN45545-compliant portfolio, continuing to offer rail flooring products with easy maintenance and reliable slip resistance.

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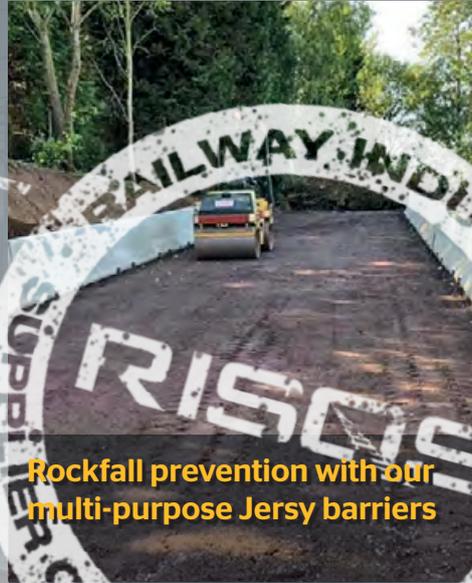
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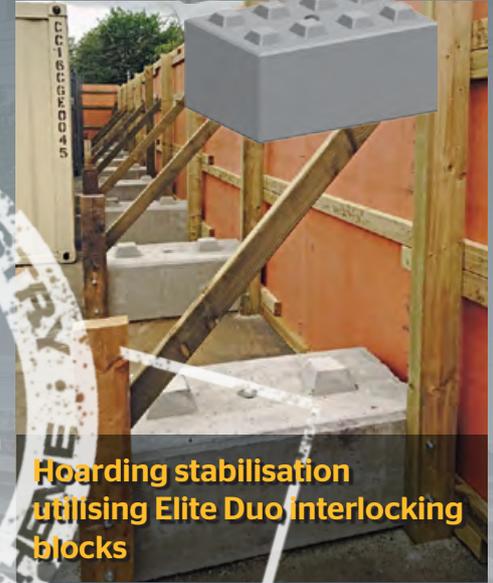
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Intelligent infrastructure

Westcotec thrives on innovation, relishing the challenge of bringing new approaches to old problems

Alongside traditional speed limit warning signs the company produces very specialist devices to fit within a variety of different sectors. It also supplies intelligent solar powered furniture/infrastructure and air quality monitoring equipment.

Westcotec manufactures from its own factory based in Norfolk, utilising high quality, rigorously tested components. The single site for manufacture, technical support, research, development, sales and marketing provides an ability to react swiftly to customer's requirements particularly in the more specialist areas, this flexibility has led to custom in not only in the UK but also across Northern Europe, Asia and the Middle East.

Westcotec is one of only a few to have obtained the required CE mark for its VAS products. Westcotec has pioneered alternative energy with wind and solar options, available throughout most of its product range. Westcotec is determined to reduce its carbon footprint so for every sign sold a tree is planted in the company owned woodland, to date this numbers in excess of 10,000 trees.

Intelligent signage

Through the use of innovative technology, Westcotec can increase the safety of areas such as crossing points. Thermal cameras can be used to detect vehicles, cyclists or



Air Quality Monitor and Display

pedestrians, and then trigger signage to alert individuals of a potential hazard. By introducing a system such as this, it can lead to much improved safety in high risk areas. Due to Westcotec designing and manufacturing within its own premises, if

there is a bespoke situation, it will strive to develop an innovative solution to deal with that.

Examples of existing Westcotec signage solutions:

- Crossing Warning Sign on a main road to alert road users prior to the crossing area
- Speed Signs for trains in low-speed areas or when work is taking place on the tracks
- Speed Signs installed in depots to ensure vehicles are compliant with speed restrictions
- Smart Solar Powered Infrastructure

Westcotec also offers a range of smart solar powered infrastructure, which would be brilliant additions to stations and public spaces. The range includes Smart Benches, Smart Rubbish Bins and Smart Hand Sanitisers. All of the above are powered by solar as standard, however mains power can be catered for also if the units would be required indoors.

The Smart Benches are designed with a modern feel, with three different models available in varying finishing styles. They have the ability to be a source of Wi-Fi, work within an existing Wi-Fi network, be a power source to charge mobile devices via the



Solar Powered Smart Bench - Future



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Addlestone Level Crossing

numerous USB ports or a Wireless Charging pad located on the top of the bench.

The Smart Rubbish Bins key feature is their alerting system, where the customer can be informed of the fill level of the bin. This allows for more efficient planning of site maintenance, and also ensures that locations never have a situation where bins are over-flowing. If rubbish is being balanced on bins, and falling onto the floor etc. this can be a bad impression on customers and visitors.

The final part of the Solar Powered infrastructure is the newest addition to the range, which is a Smart Hand Sanitiser. This is incredibly relevant in the current climate,

and critical in adapting to the new normal. With the potential for charging ports as well, there is more than just the hand sanitising element that is gained from this product. There is also a notification service to ensure that the unit is never without sanitiser.

All of the above products can be linked to a remote management software, giving voltages of the product and percentage of charge due to the solar power charging element. By having the remote management system, all products can be continually maintained and managed efficiently without having to send staff out to locations on a regular basis to assess.

Air quality monitoring equipment

Westcotec is now providing Air Quality Monitors that can be deployed in any location. The smart technology enables real-time monitoring of air quality via an online map.

Its mission is to build a dense network of sensors that will increase people's awareness of what we breathe in every day. It will also help identify sources of problems and their exact locations.

The sensor provides detailed, real-time and historical data about the air quality in that specific area. The use of an API gives all interested parties free access to air quality



data, allowing them to create applications and scientific papers based on the best data on air pollution. This also means that the data can be displayed in a variety of public facing locations, including display screens and advertising boards.

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EAO Passenger Interface – Charge, Connect, Communicate

Passenger Interface is an innovative new range of Qi certified inductive and USB phone chargers, featuring an electronic iBeacon passenger location system

EAO Ltd has released details of its extended Passenger Interface range which now includes the SliderFLEX seatback phone holder that can accommodate almost any size of mobile phone, with or without a phone case, for use in portrait or landscape mode. There is also a new adaptor for top mounting the Passenger Interface into train tables, and a range of rail approved power supplies and cable sets that facilitate easy system installation.

Passenger Interface is more than a phone charger, it has the potential to dramatically enhance the passengers' journey experience, providing opportunistic charging throughout their journey thus reducing 'low battery anxiety'. It allows train operators to connect via the iBeacon through their travel app to gain passenger insight, offer value added services and generate additional revenue.

EAO's new Passenger Interface is now available in four standard variants to meet the various needs of train operators, manufacturers and refurbishers:

- SliderFLEX seatback inductive charger with USB socket, featuring a sliding



Seatback SliderFlex multi-coil charger



Seatback holster multi-coil charger



Rectangular multi-coil charger



Table top single coil charger



Top loading table charger



Power supply unit



Train seat with phones

EAO does much more than just manufacture individual control elements. As a solution-focused partner, EAO provides the option of technically and mechanically customising its existing HMI components in line with individual application requirements

holder to allow phone viewing in either landscape or portrait mode.

- Seatback holster inductive charger with USB socket, featuring an innovative metal holster with a secure soft-touch phone holder.
- Rectangular multi-coil inductive charger with USB socket suitable for integration into seatbacks.
- Round single coil inductive charger with separate table edge USB socket with easy mount Top Loading Adaptor, or for mounting from under the table.

All variants consume between 5W and 10W of power from a 5V input voltage and deliver a maximum 1.0A output current (via USB A) and a maximum 1.0A Inductive charging current. The new power supply units run up to four Passenger Interfaces from a nominal 230VAC, 24VDC or 110VDC supply and offer IP40 or IP65 protection, they meet all relevant rail approvals and can be supplied with cables and connectors for easy installation.

iBeacon technology

When the Passenger Interface is used for charging, the iBeacon is activated and connects their phone to the Passenger Interface cloud using Bluetooth Low

Energy. The iBeacon's unique address will then identify the train operator API code, and also send back the train, carriage and position ID.* Once the train operator API code is received the phone will search for and open an app containing the train operator API code. Passenger Interface has now established communication between the passenger's phone and the operator's app.

This offers the potential for 'smart ticketing' – and opens opportunities to deliver value-added services such as tailored passenger information and in-seat trolley service ordering to help drive customer loyalty and increase revenues.

**iBeacon integration is subject to app development and cloud based service fees for the operator.*

Reliable charging

Mobile phones often need charging during journeys, but charger cables can be forgotten, lost or broken. Modern phones can be wirelessly charged through the Qi compliant inductive charging system. Passenger Interface products incorporate a unique multi-coil inductive system that makes it easy to locate the optimum charging position, and also include a standard USB-A charging socket to cater

for older phones, or for tablets. Passenger Interface has been specifically developed to meet rail industry standards and approvals and the long-term reliability needed by train operators and passengers alike.

Company profile

EAO Ltd is the UK sales company for EAO AG, a Swiss, family owned company that has developed into one of the world's leading manufacturers of high-quality switches, keyboards, sophisticated control elements, and complete HMI control units and HMI Systems. EAO products are supplied and supported by a network of distributors that covers the UK, Ireland, Denmark, Finland, Norway and Sweden.

EAO does much more than just manufacture individual control elements. As a solution-focused partner, EAO provides the option of technically and mechanically customising its existing HMI components in line with individual application requirements. From simple control elements through to sophisticated HMI Systems, from serial production through to installation – EAO offers a comprehensive HMI service and strives to inspire the confidence of its customers.

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A lighter, greener approach to rail transport

The use of lightweight advanced composites in the aerospace and defence industries has delivered major improvements in operating efficiency, performance and lifecycle costs

Now, the rail industry wants to reap these benefits too, and is incorporating these materials into its rolling stock. In the first of two articles, we take a look at the advantages of using composite materials in the construction of rail carriages.

Learning from the aircraft industry

Aircraft manufacturers have long recognised that composite materials offer major benefits. In fact, more than 50 per cent of the structural components of some of the latest commercial aircraft are made from advanced aerospace-strength composites. Typically, a honeycomb prepreg composite laminate is used, with substantial performance benefits. The rail industry followed the other mass transport industry sectors, taking advantage of new materials and manufacturing processes, and actively seeking out lighter, greener alternatives for fabricating rolling stock without compromising performance or passenger safety.

The overall weight of a set of railway carriages can be significantly reduced by

building the interiors and doors from lightweight composite materials, which offers many advantages. Train and track operators benefit from reduced wear and tear and lower annual maintenance costs, and lighter trains are also cheaper to run, as they use less energy. It's better for the environment too, as diesel engines pulling lighter carriages emit fewer particulates into the atmosphere. The net result is less drain on non-renewable energy resources and less pollution, which has huge positive implications.

Composite innovations

TRB Lightweight Structures Ltd. (TRB), based in Huntingdon, Cambridgeshire, works in partnership with rail customers to produce new low weight design concepts, to reduce maintenance, repair and overhaul costs and to improve safety.

Just last year, the company engaged in a successful collaboration to design and manufacture new gangway doors to increase passenger capacity for a series of four-car trains by allowing them to be coupled together while still being sectioned off from each other and from the driver's cab.

Constructing the carriage doors from an aluminium external skin with an aluminium honeycomb core ensured they were rigid, strong and lightweight, while meeting all the cost, weight and regulatory specifications, including GM/RT 2100 Rev 5. The doors were also impact tested to BS EN15152 standards to demonstrate compliance with the stringent safety requirements of the UK rail sector.

Looking to the future

The advantages of composite materials are clear to see, and the next step is to develop, source and use sustainable materials whenever possible, while continuing to reduce weight to lower emissions. As conversations turn to how much weight can be saved using more sustainable materials, the spotlight is on next generation materials, such as the revolutionary EvoPreg 'biocomposite' and a one hundred per cent recycled PET foam, both of which will be discussed in the next article in this series.

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Sustain, evolve or transform?

TVS Supply Chain Solutions' inhouse team of expert supply chain practitioners can provide you with a consultative service to lead your business through transformational change and make it leaner, more efficient and operate from a lower cost base

The company provides a suite of consultancy services in support of several industry sectors that experience complex supply chains or are asset-intensive and deliver value through the exploitation of network data and industry knowledge. The TVS approach is to consult in a way that offers a scalable solution to transform the supply chain and logistics through efficiency and visibility to deliver improved performance and a reduction to operating costs.

Supply chain design

Supply chain design describes the management of critical areas in the supply chain. The process includes the identification and best combination of systems and procedures used in each element comprising the end-to-end supply chain including:

- Product Data Management
- Order Management
- Inventory Management
- Global Strategic Purchasing
- Manufacturing Support
- Storage/Warehousing
- Transportation Services
- Data Analytics

Value-add is created through TVS' expertise and methods.

Supply chain optimisation

Aligning your operations and manufacturing to a lean model can be extremely beneficial to your business. The supply chain optimisation process is a tool used to create a more efficient and cost-effective supply chain.

Supply chain optimisation is TVS' 'core proposition', and the company has different ways in which it can analyse your current situation to provide cost improvement

options, including cost-benefit analysis, to inform decision making.

Strategic procurement

Improving your strategic procurement capability can significantly contribute to the overall profitability of an organisation. Global reach and extensive experience in strategic procurement mean TVS can give you the best possible direction to build a successful ethical and environmental compliant procurement strategy.

Systems integration

The importance of having a fully integrated system complements a lean business operating model and helps to achieve the business objectives. TVS has extensive experience in integrating systems into its customers' operations systems. TVS can advise you of the best way to achieve a fully integrated platform and achieve your goals.

Transformation – driving change

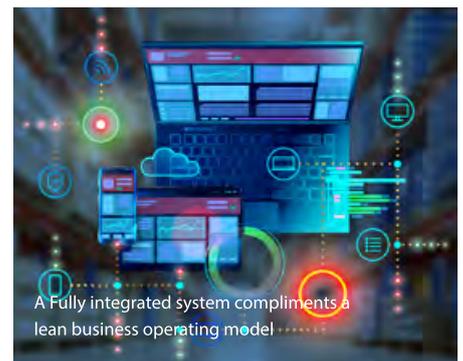
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Zonegreen writes new chapter in newton heath safety

It is almost 150 years since the Newton Heath depot in Manchester opened its doors. Whilst elements of its construction might still be recognisable, much has changed. Not least attitudes to safety

Five years ago, Sheffield-based Zonegreen installed its revered New Generation Depot Personnel Protection System (DPPS*) in the original ten-road shed and on two fuel roads to provide physical protection for depot staff. It has been in operation ever since, seamlessly safeguarding workers and infrastructure from the inherent dangers faced in busy maintenance facilities.

The rail safety specialists have now returned to Newton Heath for the latest stage of its evolution, replicating the DPPS system in a new-build, four road shed that will be used to house and maintain CAF's incoming Northern Class 195 diesel trains.

Automated safety

£20 million has been invested in to the expansion of Newton Heath and a new maintenance shed has been constructed, to increase capacity and house an additional 300 staff. It is now the largest depot managed by Northern Rail.

Working with main contractor, Stobart Rail, Zonegreen's DPPS is now protecting all four roads in the new facility. The system guarantees the safety of workers by automating operational procedures, thereby

removing the margin for human error.

Powered wheel stops have been installed on all four single-ended roads in the new shed, which are controlled by road end panels that staff must log onto before they can commence work. Each individual is issued with a personalised datakey, tailored to their level of authorisation, which records their whereabouts and prevents any dangerous activities taking place in areas that are in use. Logging onto the system inhibits the wheel stops from being lowered, allowing staff to create a safe zone in which to work. Beacons and klaxons have also been installed to provide visible and audible warnings of train movements.

Advanced technology

Zonegreen has extended its innovative Depot Manager software to the new extension and linked it to the existing installation in the main facility, providing an overview of DPPS activity in both sheds.

The technology records the status of the DPPS equipment and all actions completed on it, to offer advanced traceability and accurate data, should an incident occur.

Innovative interlocking technology has been tailored by the firm to Newton Heath's

requirements to provide protection to workers and prevent damage to equipment. Contactor panels operated by a mechanical key interlock have been fitted to two cranes and an engine drop table. These ensure that it is not possible to initiate a vehicle movement if a crane is out of its safe parking area or the



table's bridging rails are not in place,

Likewise, essential pit lighting has been interfaced with DPPS, so that lights can only be activated if staff are logged onto the appropriate road, providing a simple and effective way to make sure personnel follow procedures and apply the correct protection.

Christian Fletcher, Zonegreen's Technical Director, said: 'It has been a pleasure to work with Stobart Rail on this latest project and ensuring the safety of personnel at Newton Heath continues to remain a priority.

'It is testament to the reliability and flexibility of DPPS that Northern Rail has chosen to incorporate it into this latest project and continue working with us, reinforcing our longstanding relationship. The system is dynamic enough to be adapted to the specific needs of each installation and allow for future depot modifications and upgrades.'

For more information about Zonegreen's DPPS work for Northern Rail or its wide range of depot safety systems, get in touch.

Tel: 01142 300 822

Email: info@zonegreen.co.uk

Visit: www.zonegreen.co.uk

*DPPS is a registered trademark of Zonegreen.



Newton Heath Powered Wheel Stop

Conveyors offer a fast, efficient and safe solution for UK rail projects

Coveya is a Bristol-based manufacturer and supplier of conveyor systems that support a wide range of applications and industries including rail improvement, demolition and expansion projects, and the movement of ballast

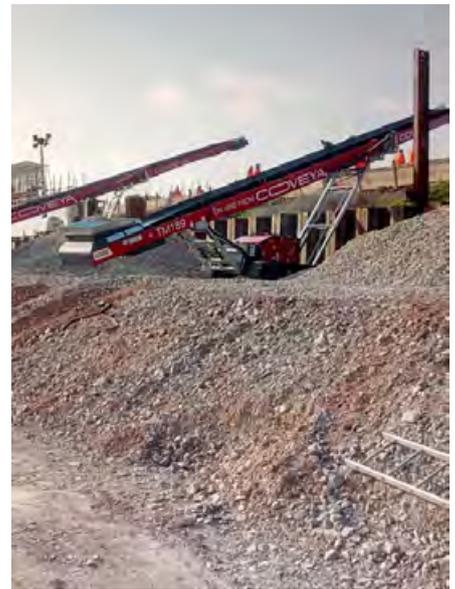
With customers throughout the UK and further afield and with a history that spans over 30 years, Coveya designs, manufactures and supplies conveyor systems for hire and purchase, all of which aim to eliminate downtime, offer flexibility, quality and a sustainable materials movement solution.

With specific experience of supporting some interesting rail projects and as a preferred supplier to Network Rail, Coveya's range of conveyors have enabled platform extensions, rail track improvements, demolition and complex tunnelling projects to take place with minimum disruption to both rail passengers and the wider rail service. Coveya is also a specialist in supporting the movement of ballast across levels working with crews throughout the night where needed.

Coveya's range of modular conveyors support any rail project regardless of its size, location or complexity and from a platform expansion project at Lime Street Station to the significant movement of ballast at the River Perret Bridge in Somerset, any one of its specialist rail conveyors enable efficient material movement within restricted timeframes.

The conveyors used for the project over the River Perret near Taunton were commissioned by K.G.J Price Rail Limited, a specialist railway company that manufactures, installs, maintains, and repairs railway tracks throughout the UK. Following a free onsite survey, both a wheeled and tracked Stockpiler was hired for two weeks. These were used to move a large amount of ballast from ground level to a raised railway line at a height of 6.38 metres. This offered an efficient alternative to the usual way of moving ballast via RRV and trailers which for this particular project was





not possible, and with Coveya engineers on site throughout the delivery of this project, they were able to oversee the operation, providing assistance and support across eight hour shifts to ensure the material throughput was constant.

Both Stockpilers were powered by a generator as backup and the tracked version was able to be easily moved around site with both Stockpilers being loaded by 20-tonne

excavators at ground level.

Coveya offers a diverse range of conveyors specifically for rail projects. From the Invader 45 which is 50 per cent more powerful than other conveyors in its class, especially within constrained sites and has a throughput of 50 tonnes per hour, or the HC1000 Monstevya which has a throughput of up to 500 tonnes per hour and is specifically designed for heavy duty

demolition materials movement, to the wheeled or tracked stockpiler that provides the perfect solution for stockpiling and handling larger quantities of materials across levels, Coveya has a conveyor solution to suit any rail project.

The Coveya team has developed a reputation for excellence and innovation and during 2020, the company has continued to work closely with its customers, responding to changing needs and delivering new products that add real value. There is a real commitment to keep track of what customers need both now and, in the future, and therefore Coveya's product range constantly evolves to meet specific customer demands.

Coveya's specialist team has a real desire to grow its presence within the UK's rail sector and with conveyors that eliminate noise pollution, disruption and downtime and which are available for short/long term hire and purchase, the company is quickly becoming the first and beset conveyor supplier to contact for rail projects throughout the UK.

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 LinkedIn: <https://www.linkedin.com/company/10917778>



HARTING showcase connectivity and digital solutions for the rail industry

With physical exhibitions looking unlikely for the foreseeable future, **HARTING** are encouraging designers and engineers to get in touch and discuss their requirements

HARTING's rail market experts are on hand to discuss a wide range of rail-focused products and solutions. The Han® connector was first developed in the 1950s and the range has since expanded and advanced significantly. With the Han-Eco® B, HARTING has developed a series of hoods and housings manufactured from high-performance, glass fibre-reinforced, polyamide plastic, which are substantially lighter than traditional metal connectors.

As well as being lightweight, the Han-Eco® B supports modular inserts, meaning data, signal and power options can all be combined into one connector. This range also simplifies installations in trackside cabinets as you can pre-assemble and rear mount the inserts into the housing from the rear. This method also gives you the flexibility to pre-assemble the switch cabinet units and cable harnesses separately.

For smaller devices such as door systems,



The Han-Modular® range has a portfolio of over 100 different inserts



Han-Eco® B is lightweight and gives you the option to pre-assemble and rear mount inserts

ramps, push buttons, lighting systems and screens, Han® 1A is the ideal solution. Like the Han-Eco® B, the 1A is made from lightweight polyamide plastic and employs a modular system of inserts, including a shielded version for areas which are susceptible to interference. Both Han-Eco® and 1A comply with standards EN 45545-2 and are fire-resistant according to UL94 V0.

For a wide range of options there's Han-Modular®, which has a portfolio of over 100 different inserts, meaning you can create and produce a bespoke connector for your specific applications. Using HARTING's online configurator tool, simply select three inputs (contacts, voltage and current) to generate the first possible solution. You'll benefit from an onscreen 3D visualisation of the current configuration and you can download all documentation, including STP files, with a single click.

HARTING has also looked at the issue of

HARTING manufacture intercar jumpers at their facility in Northampton



HARTING can also assist you with the specialist manufacture of intercar jumpers, which are designed and manufactured at its UK facility in Northampton

Save time, improve reliability and increase assembly density with the M12 PushPull



assembly solutions. When you're working in confined spaces such as cable ducts, wall ducts and the interior of control cabinets, simple installation processes are crucial. Thanks to the M12 PushPull, there's now a solution which offers handling, time and reliability benefits for the user.

Traditionally, M12 connectors were locked in place via a screw connection. However, the M12 PushPull uses an intuitive connection technique that ensures absolute dependability; as the two sections are clicked into place by hand, an audible feedback indicates the connection is secure. As well as simplifying difficult fittings, tool-free installation also means the assembly density can be significantly increased, helping to save valuable space.

In addition to connectors, HARTING is also at the forefront of digital automation for the rail industry. The UHF Radio Frequency Identification (RFID) and MICA Edge computing products have a range of uses, including improving train maintenance, tracking components across facilities, automating signalling, monitoring track temperatures and ensuring accurate train positioning at stations.

These products are IP65/67 rated and designed to cope with harsh, dirty conditions, wide temperature variations and high humidity. RFID transponders can also be securely encrypted and password protected to safeguard sensitive data.

HARTING can also assist you with the specialist manufacture of intercar jumpers, which are designed and manufactured at its UK facility in Northampton. Using the extensive Han® product range, HARTING will work closely with you to craft a solution that meets your exact requirements, whether you're seeking roof or underfloor intercar jumper systems.

To discuss connectivity and digital solutions with HARTING's rail market specialists, please get in touch via the telephone number or email address below.

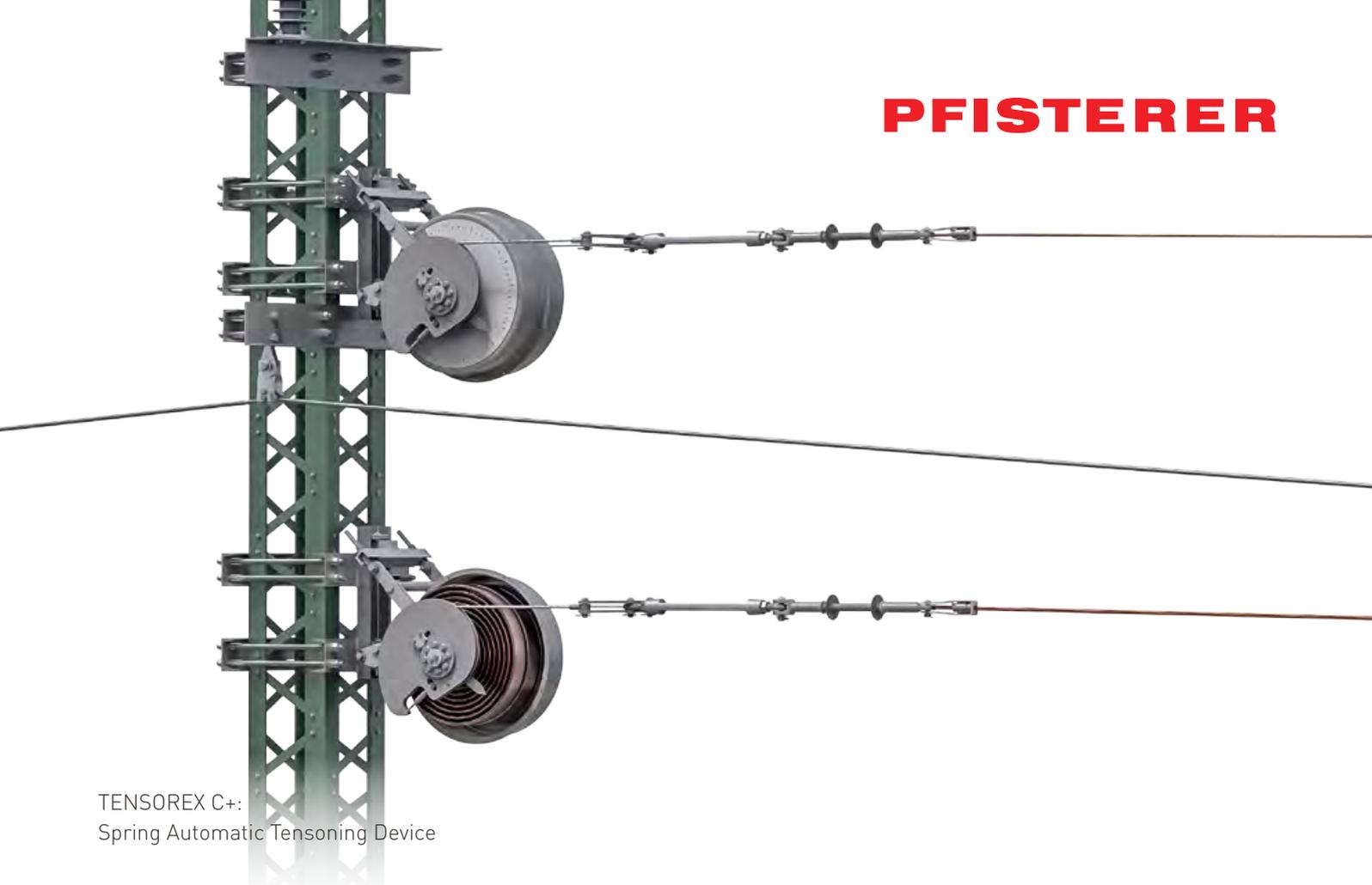
RFID has a range of uses in rail including maintenance and signalling



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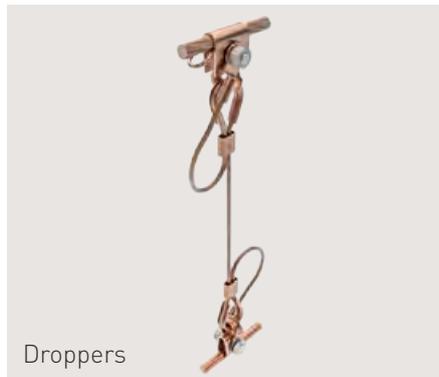


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Friction materials for the UK market



From humble beginnings back in 1983 in Northampton, UK, **EBC Brakes** was established and was initially based out of one of Northampton's many now defunct shoe manufacturing buildings

The company was founded due to one man's passion for motorcycles at a time in the 1980s when he realised that there was a demand for more choice other than original equipment and the need for better quality, more advanced brakes in the UK market.

From a handful of staff in 1983 to a worldwide work force of over 400 people today, EBC Brakes has expanded considerably and its range of products can be purchased in almost every country worldwide via its network of distributors.

What is also quite astonishing is that in today's vastly competitive global market where most friction manufacturers have been acquired by international conglomerates, EBC is in the very rare position that it is still independently owned by its founder, 37 years on.

Whilst some friction manufacturers focus on producing only one type of product EBC has, for the last 37 years, been producing such a diverse range of brake pads that it is widely considered to be the world's largest range. All of its products are produced from the company's two ISO9001 accredited friction sites in the UK and USA, both of which are wholly owned by EBC Brakes.

Today the company's heritage remains as the Head Office and World Wide Distribution Centre are still located in Northampton; however, it is now based in a purpose-built, modern, 300,000 square foot site, together with a massive 14 acres of additional land for future expansion, which already has planning permission for two new buildings ... it's from here that EBC's full range of products are distributed globally.

EBC Brakes has produced and sold millions of brake pads for all types of vehicles and with modern trends towards cheap imported brake products, EBC leads the world in its technology, quality control, product performance and customer service.



Northampton Warehouse & Distribution Centre 1983-2011

The product range includes brakes for nearly every moving vehicle on the planet from military, industrial and wind turbine brakes through to railway rolling stock.

In the demanding and competitive world of friction materials where quality, performance and safety are paramount, EBC Brakes offer total support for its products. From development and

performance testing, packaging and delivery scheduling, and with service monitoring and advice.

Research and development are the driving force of any successful brake manufacturer and EBC Brakes is proud of its extensive facilities with dedicated laboratories, which include full chemistry friction development testing on the dynamometers, including a full scale rail dynamometer.

EBC Brakes is always at the forefront of technological advancements within the

friction industry and no matter what the purpose of the brake pad, no products are produced using any harmful ingredients such as asbestos, lead or heavy metals such as mercury or antimony oxide. In fact EBC is now setting the bar higher by removing copper, a key ingredient in most brake pad compositions from its range of organic brake pads to make its brake pads more environmentally friendly.

For over 25 years EBC Brakes has been supplying rolling stock components to customers worldwide directly from their factory in Bristol, known and respected across the globe as European Friction Industries Ltd or EFI.

EFI has a very long and impressive history in the friction materials world having started out back in the 1980s as a collaboration of skilled ex-employees from other well known friction manufacturers that were also based in Bristol, back in the days when Bristol was more or less the UK's epicentre for friction materials manufacturing.

EFI has been involved in material



Representative example of rail vehicles in USA supplied by EFI



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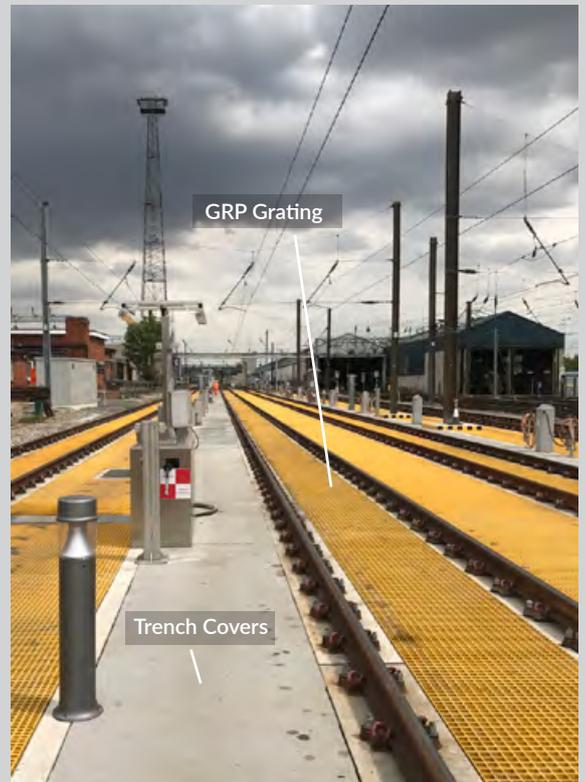
Fencing



Track- side ladder

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Trench Covers



GRP Step Over

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- GRP Trench Covers.
- GRP Hand Railing/Barriers.
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- GRP Grating Panels.
- GRP Station Platforms/Platform Extensions.



development for OE projects for EBC Brakes across the USA as well as aftermarket products for some of the largest light rail applications in the UK and in many cases its products have been so reliable that even though the rail franchises may have changed hands several times, EBC's products have been used continuously for several decades; quite an impressive feat to say the least in today's competitive world!

EBC Brakes currently offer five market-proven materials for light rail and tram systems, each of these having been developed for different types of vehicles. As part of their market development, new materials are currently being produced specifically for UK mainline rail vehicles. EBC understand that one material will not always suit applications of the same reference; individual operating requirements, rolling stock variations and local regulations will all have an effect on the materials being produced. EBC Brakes is able to run dynamometer tests before recommending any material and if necessary can modify materials for each application. At EBC's factory, a full-size rail dyno is used to test disc brake pads to national and international specifications, as well as to individual route simulations.

Quality is one of the most important aspects of any product used within the railway industry and EBC has been certified to ISO9001 for many years, however in order to enhance its position as a leading quality friction supplier to a global market, EBC's factory, EFI, is now working towards becoming IRIS certified.



EBC Brakes World Headquarters. Northampton, UK

As part of the development of new UIC approved materials, EBC Brakes will be working to the specifications set out in the UIC 541-3 leaflet. EBC is already able to test its products to this specification at the Bristol factory and over the coming months, it will be starting the process of having some

of its materials officially homologated with UIC. This certification will ensure that the products produced within the factory are suitable for the vast majority of vehicles within Europe that have a capability of reaching 200 kph. The UIC certification process is a huge investment for EBC Brakes and proves the company's commitment to the rail industry as well as its growing ability to produce world leading products.

As part of the UIC certification process, EBC Brakes is looking for companies to work with to test its products in an operational capacity; please contact EBC Brakes Technical Sales Engineer, Jonathon Fox, to find out more.

Tel: 01604 583344
 Email: rail@ebcbrakesuk.com
 Visit: www.ebcbrakesrail.com



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European Friction Industries Ltd, where all EBC Brakes rail products are produced, is ISO 9001 accredited, RISQS verified and working towards IRIS certification

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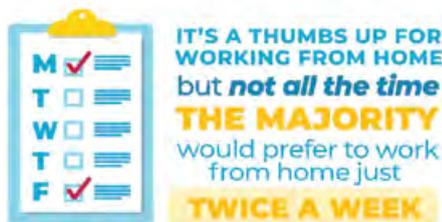
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The New Office... Home Alone

The Occupational Psychology Centre share findings from a survey exploring employees' experiences whilst working from home during the Covid-19 crisis

With the advent of the Covid-19 Pandemic, in April this year the Occupational Psychology Centre (OPC) commissioned some research looking into how peoples' working worlds had changed dramatically when they were left with no choice other than to work from home (WFH). As a team of occupational and business psychologists, with over



25 years' experience working alongside the rail industry, the OPC's interest is all about peoples' working world. With the Covid-19 lockdown it was a unique situation – possibly a once in a generation opportunity, to look at this change and its impact. The survey explored employees' experiences and reflections whilst working from home around themes such as their work-life balance, job performance and satisfaction, working relationships as well as daily stresses and wellbeing. The OPC received survey responses from over 300



workers from around the world with some interesting findings.

It is likely that working from home will stay as the 'new normal' for lots of people, for some time, until there is a vaccine. Results from the OPC's Covid-19 survey found that about half the participants said: 'On the whole they enjoyed working from home, but not all the time' – the majority of employees (56 per cent) said they would prefer to work from home twice a week, as opposed to 16 per cent who would prefer to be in the office full-time. However, nearly 15 per cent of employees said they would be happy working from home up to four times a week, which could mean opportunities to explore new working contracts or job



location for some roles where working from home hasn't previously been the norm.

The 'Jury was out' with regard to the impact WFH had on productivity. About a third of respondents said they were more productive, another third saying they were less productive and the last group reporting no change to their productivity. OPC business psychologist, Katarina Otcenas, did some advanced statistical analysis to uncover the main insights behind this split. She said: 'It was fascinating to see that productivity was relative to individuals and that it had a lot to do with their psychological need for social contact or isolation. Dependent on those needs individuals reported feeling more or less productive whilst WFH. More

importantly, many employees felt a new sense of control and responsibility whilst working from home that was very satisfying. They said that 'being in control' contributed significantly to their productivity.'

Alongside productivity the OPC survey also explored how stressed people felt whilst WFH. Over half the respondents reported feeling much less stressed. For those reporting feeling less stressed there was a moderate correlation with feelings of enjoyment, satisfaction and control, particularly in regard to control. However, worryingly over a quarter of people reported feeling more stressed. Further analysis of this group suggested they experienced more home-work life conflict; they felt less well supported by managers; they were less productive and they felt that WFH had

There are many opportunities here but in particular we can explore job design, workspace, flexible approaches to location, working hours, breaks, autonomy and daily routines

Many employees felt a new sense of control whilst working from home that was very satisfying. They said that 'being in control' contributed significantly to their productivity

a negative impact on their leisure time. Notably those people with a younger family juggling the associated lockdown childcare and schooling requirements featured within this group. Many individuals reported great coping strategies to counter stress like planning and organising their daily routine, break times and leisure activities, room swapping for quieter workspace or conference calls and rotating AM/PM childcare responsibilities.

Dr Stephen Fletcher, Occupational Psychologist and Director at the OPC stated: 'One size may not fit all with regards to home working. Whilst some employees may be more productive and less stressed in these circumstances, others may feel the opposite. Therefore, managers may need to work alongside individuals to identify



some root causes for each employee and help provide suitable and tailored job role solutions as appropriate.'

The enforced working from home did bring some positive gains. Over half of the employees reported improvements in leisure time and the research indicated a moderately significant link between those people reporting an increase in leisure time also reporting lower stress levels. Many individuals shared comments about new-

found activities, or fitness and outdoor pursuits like gardening or time with their pets.

Employees overwhelmingly reported that their organisation and managers did a great job whilst they were working from home. Over 80 per cent of employees believed their organisation tried to accommodate their home working needs and 75 per cent of respondents said they had the appropriate technology to effectively work from home – excluding the usual frustrations of intermittent Wi-Fi or insufficient broadband! Surprisingly, 63 per cent of people said they found it easy to get work related advice and the use of technology such as Zoom or Skype for Business had the most mentions. It would appear that this facilitated people talking frequently with colleagues with 82 per cent of people reporting this. Yet just under half of the



respondents reported feeling alienated and missing face-to-face interaction. Katarina Otcenas commented: 'It is essential that we recognise the importance of the social interactions experienced in our offices and the contribution they can have on performance and wellbeing. Although technology can be a useful tool, it cannot replace the informal chat about work or homelife with a colleague over a cuppa. A key question for organisational leaders isn't just about workspace design but also how they can facilitate face-to-face contact whilst still abiding by social distancing guidelines and working from home.'

The survey highlighted that remote working didn't appear to affect knowledge transfer. This may have been due to people talking frequently with colleagues online. However, 45 per cent of employees believed that home working did reduce training and mentoring opportunities. Our learning and development experts need to explore how we can embrace remote and flexible learning still further whilst WFH to equip our employees with the knowledge, skills and experience to thrive at work.



Dr Stephen Fletcher's final reflection was: 'As the OPC and OPC Assessment seek to help organisations assess, recruit and build successful teams with motivated, satisfied high performing individuals, we would encourage organisations to utilise the findings from this research. There are many opportunities here, but in particular we can explore job design, workspace, flexible approaches to location, working hours, breaks, autonomy and daily routines. Green space and leisure options may help people manage stress, and help employees achieve a good work-life balance. As we contemplate either full or part-time return to our pre-Covid work places, a failure to take this opportunity could leave some employees feeling a sense of loss or dissatisfaction and their full potential may be lost to us.'

The full infographic results from the OPC's Working from Home Covid-19 research can be found on the news page of their website.

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One size may not fit all with regards to home working. Whilst some employees may be more productive and less stressed in these circumstances, others may feel the opposite

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MTM Power® takes the present situation with highest seriousness giving the health and safety of its employees the highest priority. At the same time the company is doing the utmost to take account of the permanently changing requirements in customer needs.

Railway technology, that means long-lasting capital goods. Unaffected by the COVID-19 pandemic, MTM Power is currently working on ongoing projects. Planning concepts in the rail business are based on longer implementation periods. Many projects were scheduled before the pandemic occurred, so MTM Power does not expect any major effects on railway vehicles

that are already in production. The situation is different for projects that have not yet been finally decided. Here, it can be assumed that they will be implemented with a time delay. Especially when it comes to the test phase, projects cannot be timed as planned. With this in mind, MTM Power expects a slight decline until end of this year.

Outlook and new products

With the cancellation of InnoTrans 2020, the railway industry has lost an important communication platform this year. For MTM Power, this show has developed into the most important event for the rail business over the years. Therefore, MTM Power will definitely take part in the InnoTrans 2021 in Berlin from 27 to 30

April 2021 to inform the industry about its latest developments and general power supply trends for sophisticated use in railway technology.

MTM Power is now investing the time in developing further series and bringing them to the market by Spring 2021. The PCMDS250 series is one of the most recent developments in the DC/DC converter product range for use in railway technology.

MTM Power® GmbH has developed the new DC/DC converter series PCMDS250 for universal applications in railway and vehicle technology. The PCMDS250 series is based on a revision of the well-proven PCMD250 converter series after more than ten years of successful market presence. The aim of the development was a further increase in



MTM Power's Headquarters in Thuringia



DC/DC converter PCMDS250 110S24 W-VT

An undervoltage shutdown protects the converter as well as the application from damage during 'Brown out' effects of the supply voltage

out' effects of the supply voltage. Using a primary-related control input RC (Remote Control), they can be put in a stand-by mode with a lower power consumption; thus, contributing to a longer availability of the supplied systems, especially during battery operation. The DC/DC converters are now connected via push-in cage clamp connectors with lever, which are designed for wire cross sections up to 4 mm².

Designed for an operating temperature range of -40 to + 70 °C (class TX according to EN 50 155) the cooling is guaranteed either by the integrated heat sink (option WK) or by mounting the base plate on a heat dissipating surface. Due to their compact design, the converters are suitable for applications where only little space is available. Furthermore, they are robust against mechanical stress such as shock and

efficiency and reliability and the integration of various features such as 'Power Good' signalling and stand-by operation.

The converters with an output voltage of 24 VDC deliver an output power of 250 W. The design of the output voltage with U/I (constant voltage/constant current) characteristic allows the supply of critical loads and charging of batteries (optional U_{out}=27,6 VDC). Two input voltage ranges according to EN 50155 are available: 72 VDC (43,2...100,8 VDC) and 110 VDC (66...154 VDC) which allow the operation of the DC/DC converters on common battery or onboard networks in Europe, in track-side applications and in stationary railway systems.

The devices have got an 'Output Voltage OK' signal as potential-free contact as well as remote control to place the converter in a standby mode with the lowest power consumption. An undervoltage shutdown protects the converter as well as the application from damage during 'Brown

vibration.

The maintenance free converters are vacuum potted (EP 1 987 708, U.S. Patent No. 8,821,778 B2) and offer reliable protection against condensation, conductive dust and other environmental conditions. A version with protection degree IP67 is possible on customer request. The compact dimensions of 170mm x 110mm x 38mm (length x width x height) and the high packing density allow an efficient, cost-saving solution for different power supply tasks.

Alike resistant to mechanical stress like shock and vibration as well as to environmental influences such as condensation, humidity and conductive dusts – the MTM Power DC/DC converters series has been designed in accordance with EN 50 155, EN 45 545-2 and is suitable for sophisticated use in trains, for mounting in containers in the roof or underneath the floor, as well as in driver's cabs, engine compartments and in the wagon.

Besides these rail converters, the MTM Power product range includes transformers, filters and multi-power supply systems up to 2 kW. At the same time, custom-made products or modifications of existing products can be realised also in relatively small volumes and in a short period of time.

All MTM Power devices are especially designed to ensure the operational requirements under rough and critical conditions as well as complying with all the requirements and standards specific to railway operations. MTM Power® provides its customers the corresponding CoCs for fire protection declaration, short reports of the DVT (design verification test) and on all railway operation products.

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RAIL Asia Expo remains on track for 2020 in Bangkok

RAIL Asia 2020 once again embraces the strong support of the State Railway of Thailand as hosts of this year's event, now firmly established as Thailand's only rail and metro exhibition and conference

In an interview in the current issue of *Rail Professional Asia Pacific*, the Board Chairman of the State Railway of Thailand, Mr. Chirute Visalachitra, explained about the growth and opportunities in Thailand's railway industry and how SRT will engage with visitors at RAIL Asia this November.

'Thailand's railway network investment plan includes public railways, monorail, electric trains, long distance trains and high-speed trains. They are all interested in the major investors of Thailand, to include construction companies and the world's leading manufacturers that relate to railway development networks in Thailand.

'Choosing Thailand to be the host of RAIL Asia event has created synergies between Thai companies and overseas companies through meetings, conferences, seminars and site visits. All of which will spur future improvement in the railway network across ASEAN.

'SRT hosts and supports RAIL Asia at Makkasan Expo Halls as the business and knowledge platform for the industry bringing together the world's

leading suppliers and Southeast Asia's rail professionals and looks forward to welcoming the industry professionals to Bangkok this year.'

The State railway of Thailand is joined by the Ministry of Transport to officially open RAIL Asia 2020 on 25 November at SRT's Makkasan Expo Halls in Bangkok.

Within the Free-to-Attend Conference programme RAIL Asia 2020 will explore a wide scope of rail and metro initiatives from ASEAN inter-connectivity, high-speed rail, specialised technical papers and case studies from the region.

The main stimulus of the regional expansion of RAIL Asia in Bangkok over the past few years has been the vast investment into transport

infrastructure currently amounting to \$93 billion of confirmed spend in Asia by 2021 with Thailand accounting for over 40 per cent of all new rail and metro investment in the region.

Additional to the high-speed projects, Thailand will be expanding and upgrading its existing 4,000 kilometres of track, upgrading signaling and telecommunications systems throughout the network, vastly expanding



its rolling stock capabilities, expanding the Bangkok metro system to 14 lines and introduce light-rail networks to a further four cities.

The Free-to-Attend Conference at RAIL Asia 2020 will feature the detailed development and project opportunities of Thailand's Metro Cities as well as all the latest technology and project advancements in the region.

Book your seat or to join the industry leaders in the supporting exhibition by contacting rail@aesexhibitions.com or visiting www.RailAsiaExpo.com.





Tim Durham

New Business Development Director at Eversholt Rail

Tim Durham has joined Eversholt Rail as Business Development Director



Ashley Gierth

SLC Rail announces two new appointments to key management positions

SLC Rail has appointed **Ashley Gierth** as Head of Programme Controls and **Mark Finney** as HSEQ Manager.



Mark Finney

New Chief Executive Officer starts at CICES

Following her appointment earlier this year, **Ann Allen MBE** has become the new Chief Executive Officer at the Chartered Institution of Civil Engineering Surveyors (CICES).



Rail Forum welcomes new Team Member

Rail Forum Midlands is delighted to announce the appointment of **Karen Jackson** as the new Programme Delivery Executive, leading on events and communications together with supporting some of our wider initiatives.

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