

# IRTE

OFFICIAL JOURNAL

## TRANSPORT ENGINEER

OCTOBER 2024

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› Gearing up for a closer look at EV truck transmissions

› Overcoming key challenges in road transport engineering



# BETTER BUSES

The latest engineering improvements being introduced to PSVs as fleets transition from diesel to electric powertrains





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## 'Tis the season... for awards!

**T**ime flies when you're having fun – and we've somehow made it to the final quarter of 2024. But before all the attention turns to annual reports and appraisals, the Christmas/new year break and plans for 2025, there's another occasion of note to draw your attention to.

The SOE Safety & Resilience in Engineering Awards 2024 take place on 17 October at ThinkTank, Birmingham Museums. The event will be an opportunity to celebrate those visionaries – both individuals and organisations – at the forefront of groundbreaking technologies, innovations and solutions. Through their efforts, economies can thrive, road users are kept safe and future generations can live on a planet that has been cared for.

Safety and resilience are two major themes in the engineering community and experts are working hard on projects to ensure improvements are being made to make people's lives easier. With that in mind, the awards will honour engineers, engineering leaders and companies that are making a difference. With 12 categories being decided at the awards, all bases will be covered – from road transport, to plant to personnel development. There are also accolades for the SOE volunteer of the year and also the region of the year.

Guest speakers will include Emma Thompson, designate executive director of the SOE, who will deliver the keynote address, with more names to be revealed before the event. Presiding over proceedings will be Roger Atkins, a 'LinkedIn Top Voice for EV' and founder of Electric Vehicles Outlook.

It would be remiss of me not to mention the supporters and sponsors of the SOE Safety & Resilience in Engineering Awards 2024. Our thanks and appreciation goes to: DAF Trucks; RHA; Net Zero Week 2025; Energy Security and Green Infrastructure Week 2024; SAFed; the Society for the Environment; and Beverley Bell Consulting and Training Services.

• October also welcomes 'For The Sake Of Safety', the new SOE podcast. Featuring judges involved in the Safety & Resilience in Engineering Awards and the winners, it is also classed as CPD content for members. For more details on the podcast, see next month's issue.

John Challen  
Editor



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## in brief

The **Society of Operations Engineers** (SOE) has announced the Road Haulage Association (RHA) will be a sponsor for its Safety and Resilience in Engineering Awards 2024. The Safety and Resilience in Engineering Awards recognise excellence, innovation, and a commitment to safety across the engineering sector. The addition of the RHA as a sponsor highlights a shared dedication to advancing safety standards and fostering the next generation of industry leaders. As part of its sponsorship, the RHA will play a role in the awards by judging the 'Future Leader' award.

**Isuzu Truck UK** has opened a second full sales, parts and service dealership with Allports Group in a move to expand its footprint in the Midlands. It follows the dealership's completion of a £5 million project to expand and upgrade the facilities at its Lichfield site. The investment has seen the location at Fradley Park double in size to 10 acres. The site now boasts a new sales, rental and contract hire centre, alongside a 6,500sqft workshop fitted with the latest tools, equipment and technology, a dedicated ATF lane and six maintenance bays. Mark Sanders, managing director for Allports Group, said: "The goal for the expansion project was to improve the customer experience across every aspect of the business, which includes a new dedicated sales team for Isuzu."

**XPO** has announced that its partner site with Daimler Truck UK in Milton Keynes has been awarded carbon neutral status. The certification covers the 140,000sqft Milton Keynes distribution centre, which opened in 2022, and the domestic UK distribution of aftersales parts. This industry first demonstrates the power of partnership in moving toward carbon neutral status for transport facilities. Carbon Neutral Britain awarded the certificate to the site in June, following a collaboration between XPO Logistics and Daimler Truck UK. Initiatives to control emissions included building the site to BREEAM Excellent rating, supplying green energy to complement on-site renewable energy generation via the solar array and controlling all material flows on site, thus minimising waste.

## Hultsteins links with Courage

Hultsteins has joined forces with specialist electric fridge manufacturer Courage to provide sales and aftermarket services for the UK, Ireland and Sweden.

Courage Technologies designs, develops and produces a range of all-electric refrigeration systems for urban, inner city and 'last-mile' logistics operators.

Designed for vans and box bodies from 2m<sup>3</sup> to 32m<sup>3</sup>, for both mono and multi-temp configurations, the Courage system features a 24V or 48V lithium battery built into the housing of the fridge.

It is said to operate at full speed for approximately six to eight hours on a single charge. Optional flexible lightweight solar panels on the roof of the box will bring even more autonomy.

According to Hultsteins, this is ideal for battery-electric vehicle (BEV) vans and 7.5t -14t trucks as the fridge operation will not negatively impact the driving range of the vehicle. The system can also be fitted to diesel vehicles and combined with the Courage 'Move on loading system' the fridge never runs short of power - even for the most demanding multidrop operations.

Hultsteins managing director for the UK, Graham Usher, said: "As environmental regulations bring pressure to bear across our industry, this patented system ticks every requirement in



the sustainability box, offering zero emissions and virtually silent refrigeration for all urban transporters."

Usher added: "Moreover, because the Courage electric fridge is substantially lighter than a conventional diesel system and has virtually no internal moving parts, it requires very low maintenance which means operators can also expect to benefit from significant cost savings."

Edwin Van Der Flier, business development manager, Courage Technologies, said: "We are always looking for committed 'E-Spirit' dealers and like-minded innovators who can help bring our fully electric refrigeration solutions to the market. Hultsteins' long experience and proven success in the provision of sustainable transport refrigeration systems make them the obvious choice."

## New van trailers for Evri

Evri has ordered 139 additional twin-axle van trailers from Tiger, with the order split into three batches.

The first batch is nearing completion, with the remainder to be delivered by mid Q4 ready for the UK's Black Friday retail period followed by Christmas, during which time it expects to transport over 3 million parcels.

David Landy, Evri's head of fleet, said: "We're delighted with the new trailers, they look great and are helping us celebrate our heritage and 50 years of courier deliveries. We have a great

relationship with Tiger and they have been superb in meeting our unique needs for the new trailers."

At 4 metres in height, the new trailers come with a galvanised rear frame with integrated rear buffers.

Operator safety has been taken into consideration as the stutter door strap enables closure from ground level to mitigate any potential strain injuries, and a retractable tail-lift from Dhollandia with P-gates aids loading and unloading. Yellow side infills are said to



increase safety for cyclists, and Haldex's GEN-4 braking system along with its TEM (trailer emergency module) parking valve heighten safety during yard operation and driving on the road.

Joining the 200 trailers supplied in 2015 and the 189 trailers added in 2022, this latest order from Evri takes the operator's Tiger Trailers fleet over the 525 mark.

## EJC grabs new tippers

Northern Ireland-based EJC Contracts has taken delivery of three new DAF CF 450 8x4 32-tonne tipper grabs, each equipped with Thompsons bodies and Palfinger Epsilon cranes.

The new trucks from MV Commercial follow an identical order supplied into the business last year and join a mixed commercial fleet of around 150 vehicles, which includes 3.5-tonne vans through to tippers and agricultural units. Run by father and son, Edward and Daniel Connolly, EJC Contracts has been a returning MV Commercial customer since 2019.

Paul Marley, transport manager at EJC Contracts, said: "The reason we keep coming back to MV Commercial is because we know we can rely on them to deliver the vehicles we need with minimal lead times. On top of that, the aftersales support we receive is always excellent.

"For any issue we may have, the team at MV are always available and work hard to get any problem – no matter how big or small – sorted extremely quickly."



EJC Contracts turned to MV Commercial to fit Kelsa light bars and bespoke livery wraps at its Airdrie site. The trucks have also been kitted out to ensure they meet the FORS Silver requirements, including camera systems to enhance pedestrian and road user safety.

Of the three vehicles, one is a new addition to the company's fleet and will be based in Northern Ireland, helping to meet growing demand for services there. The remaining two are fleet renewals, replacing older assets and are based at the EJC Contracts depots in Bath and Southend-On-Sea.

The operator, headquartered in Newtownabbey, was established in 1993 with an initial focus on civil engineering and construction. It now offers private grab hire services, undertakes utility and landscaping work, alongside partnering with major telecoms providers across the UK, designing, building and deploying high-speed fibre networks.

## All-female crew to operate special Daily

Resurfacing and utilities specialist Remac has announced that an all-female crew will drive one of the eight new IVECO vans that have joined its fleet.

Claire Chivers, director at Remac, said: "It is so important in the construction industry that we give equal opportunities to all our staff and celebrate that diversity where we can."

In addition to the special Daily, Remac has added another four IVECO Daily 3.5-tonne vans and three IVECO Daily 7.2-tonne dropsides to join the fleet of over 60 light commercial vehicles. The IVECO's strength



and durability are tested daily by Remac as the teams transport heavy tools, equipment and materials to various sites around the UK. The Daily's strong truck-based chassis and up to 3.5-tonne towing capacity make it suitable for towing and transporting substantial equipment.

Chivers added: "We are extremely happy with the new vehicles as they perform well in all conditions. The twin rear wheels give us the confidence and stability when towing heavy equipment and the turning circle of the Daily is unmatched."

Remac crews spend long hours in the cab. Hi-comfort memory foam seats and fatigue-reducing 'City Mode' steering are said to enhance drivability. The specification is further enhanced by manual air conditioning, front fog lights, cruise control and electrically heated door mirrors.

## in brief

**Brigade** welcomed the lord lieutenant of Kent, Lady Colgrain, to its headquarters as she presented the company with The King's Award for Enterprise in International Trade. Brigade was announced as one of only 252 organisations nationally to be recognised with a King's Award for Enterprise in May. The company was chosen for its excellence in international trade. It is the second time Brigade has achieved the accolade, having previously been presented with the Queen's Award for Enterprise in International Trade in 2019. Joining Lady Colgrain on the visit were deputy lord lieutenant Kevin Holford and the leader of Kent County Council, Roger Gough. The guests were accompanied by managing director Philip Hanson-Abbott and the Brigade team on the tour of its facilities, including its research and development department.

**K+H Bakewell** has added three Renault Trucks T High 6x2s to its fleet to replace existing trucks from other manufacturers. The firm has returned to RH Commercial Vehicles after introducing the first Renaults to its fleet in 2022. Director Peter Lowery said: "The availability and service backup from RHCV is why we have chosen Renault again, the level of service is second to none. The Alfreton depot, where our trucks are serviced, go above and beyond to ensure that our trucks return in fantastic condition. Any queries and needs have always been sorted quickly and efficiently." He added: "The trucks will be working as tippers and general haulage up and down the country, so a reliable service offering is essential to ensure confidence in the trucks – Renault does just that."

**Giti Tire** has launched the Giti GTR956 HD Combi Road, a trailer tyre for severe heavy-duty regional applications. Initially available in size 385/65R22.5 – with 265/70R19.5 planned for Q4 2024 – the tyre is designed for rugged working sites, heavy loads, mountainous and winding roads, rough terrains and has limited off-road capacity. The GTR956 HD will sit alongside the GTR955 Combi Road in the trailer portfolio, with the new pattern having an added emphasis in chunking resistance. The results are achieved through a reinforced structure and newly developed tread compound designed to work in severe regional conditions and heavy-duty operations.

# New Schmitz trailers for chemical specialist

WM Cyril McGuinness has expanded its fleet with the addition of three Manchester-built S.CS Fixed Roof curtainsiders from Schmitz Cargobull.

Cyril McGuinness, owner of the Rush, County Dublin-based haulier, said: "I knew right there and then that I wanted to do business with Schmitz Cargobull. However, the competitive pricing of the trailers and the short production lead time offered at Manchester sealed the deal.

"The level of service throughout the process was fantastic and, if any issues arose, we were kept informed," furthered McGuinness. "Ultimately, we received the trailers that we wanted, on



time, and with no messing about."

The haulier specialises in hazardous waste transportation mainly in Ireland, complementing this with general haulage services in the Greater Dublin area, which is home to both an airport and major port. "It means we need flexibility with our trailers, as we can be heavy going one way but light on the return journey," explained McGuinness.

Meeting these requirements,

each S.CS Fixed Roof semi-trailer has a straight front wall for free side loading and tarpaulin tensioning, a DIN EN 12642 Code XL load securing side curtain with standard anti-theft protection and a Schmitz Cargobull aluminium roof, which allows a side loading height of 2,700mm.

McGuinness also opted for additional 7,100kg heavy-duty flooring on the trailers, internal lighting to assist with loading and LED taillights. The trailers feature load securing lashing eyes down both sides of the side raves with roof straps – essential due to the nature of the firm's work with many customers requiring chemical loads to

be secured internally from the top of the trailer for safety.

Each unit has Schmitz Cargobull's TrailerConnect telematics as standard, which provides 24/7 monitoring of the trailer's exact location.

The 4.1m-tall trailers are said to be a better option for deliveries to many of the firm's chemical customers who often have gantries at their sites that taller equipment could strike.

"The environmental impact is also important to me, and these trailers will fit snug against the cabs, reducing drag and making sure we're not pushing air when we don't need to be," said McGuinness.

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# All aboard the battery buses

The move from diesel to electric might appear more straightforward for buses than for trucks, but challenges and considerations remain. Steve Banner looks at how engineers and commercial fleets are coping with the transition

Switching from diesel to electric traction is leading to big maintenance savings for bus and coach operators – as well as changes in workshop practice. With electric vehicles typically requiring 30% to 40% less maintenance than anything with an internal combustion engine, fewer technicians are required, says Keith Bradbury, co-founder of Ember, an all-electric coach operator. “Our technicians-to-vehicles ratio is lower than would be necessary if we ran diesels,” he observes.

Ember operates 38 electric Yutong coaches on scheduled multiple-stop inter-urban services across central Scotland and plans to acquire another 100 over the next two years. Destinations it serves include Glasgow, Edinburgh, Perth, Stirling and Dundee. The company maintains its fleet at a central workshop in Dundee and each of its coaches goes there once a month for a scheduled inspection.

With a drivetrain made up of an electric motor and a battery pack, there is far less to potentially go wrong than there is with a diesel with its cylinders, pistons, turbocharger and fuel injection system. “Reducing the parts count means you reduce the complexity – and our electric vehicles are proving to be reliable,” Bradbury comments.

Within the workshop, there is no need to worry about the disposal of waste oil and used oil and fuel filters and no requirement to top up an AdBlue reservoir regularly. Nor is the Ember fleet plagued by problems triggered by faulty emission sensors that can put a diesel off the road until a defect is rectified. “You can have a situation where a diesel vehicle ends up stranded at the roadside because there is a fault with a £5 sensor and it costs £250 to send out an engineer to get it fixed,” Bradbury remarks.

The increasing use of remote diagnosis should mean that this is less





likely to happen, but it is not, of course, available on all vehicles. If a bus or coach is stranded, then it is not garnering revenue for the operator. "It's the downtime that really costs you money," he says.

### BETTER BATTERIES

Safety is paramount when working on electric buses, given the likely consequences of chopping through a live high-voltage cable and the need to follow precautions. "The only technicians who are allowed to go near a coach's high-voltage system are those who are categorised as high-voltage qualified, and have been on the appropriate safety course," says Bradbury.

Ember has to pay attention to battery balancing, he adds. That means ensuring all the cells are charged and discharged evenly, thereby ensuring the battery pack delivers optimum performance - and prolonging its life. Yutong has addressed any worries about a battery fire by fitting the cells into a modular pack made from flame-retardant material, which it says will cope with temperatures of up to 1,300°C.

Defended by steel collision protection bars, the pack is fitted with a flame-retardant cover. A thermal runaway of the battery will result in the pack filling with nitrogen, displacing any oxygen and reducing the amount of combustible gas present.

Electric buses still have fluid levels that require monitoring and here Bradbury is thinking about the coolant for the battery pack. Checks have to be carried out to ensure that the brakes, steering and lights are all working properly, that the tyres are undamaged - and their tread depth remains legal.

Ancillary equipment including the air-conditioning system and ticketing machine have to be given the once-over too, while the wheelchair lift has to be cycled. If it sticks, then the vehicle has to be taken off the road until it is repaired.

Much of the foregoing is covered by the daily checks that must be undertaken prior to a bus or coach leaving the depot, no matter how it is powered. Increasingly, these checks are digitised, with Go-Ahead among those operators ditching paper-based reports in favour of smartphone apps that allow defects to be reported in real time, and accompanied by photographs if necessary.

Go-Ahead recently announced that it is doing so using an app developed by Tranzaura, which is scheduled to cover all of the company's 6,000-plus UK buses by the end of the year. Other operators using the technology include Nottingham City Transport (NCT).

Tranzaura has integrated the app with NCT's third-party digital workshop management system, which receives the defect reports. Notifications are sent out once the defects are cleared. Before the app was introduced, NCT relied on paper dockets that were collected from drivers every evening – and rectified any faults overnight. Technicians had no idea what defects they would be dealing with until the dockets were handed in, or if any faults would be reported at all. Switching to a digital approach means that the need for staff to work overnight has been reduced by 50%.

### NEW RUBBER FOR READING

Returning to tyres, electric buses are being fitted with rubber specifically designed for battery-powered vehicles which can cope with any increases in weight and torque. For example, the 24 zero-emission Alexander Dennis Enviro400EV double-deckers ordered by Reading Buses for delivery next April



will be wearing Michelin X InCity EV Z boots.

An existing Michelin customer, Reading Buses has just signed a five-year agreement with the manufacturer's services and solutions division, which will involve the latter overseeing the supply, fitment and management of all tyres across the operator's 260-strong fleet. Michelin technicians will mount, demount and inspect all built-up wheel assemblies. The operator will be running on a mixture of new tyres and retreads; Michelin markets the latter under the 'Remix' banner.

Reading is already having the newly-launched X InCity EV Z Remix fitted to the drive axles of some of its existing buses. Michelin contends that it is just as effective on non-zero-emission vehicles as it is on their electric counterparts, has similar levels of rolling resistance and mileage potential to the new version, and can stand up to damage – including kerbing damage – just as effectively.


### OPPORTUNITY KNOCKS

Getting to grips with the maintenance schedules of electric buses while keeping diesel and possibly biogas-powered models on the highway poses some exciting challenges for youngsters joining the transport industry. While Bradbury has referred to a reduced need for technicians as more electric vehicles come into service, vehicles fitted with internal combustion engines will be around for many years to come – and the career prospects for apprentices look good.

At the time of writing, two apprentices were due to arrive at the First Bus depot in Rochdale, which has recently benefited from a £750,000 investment. The premises now has a double-height workshop bay, two pits to maintain single-deckers, a brake tester, new tooling and an external bay with lifting gear. "All this allows us to take a proactive approach to planned maintenance and introduce new preventive maintenance processes," says First Bus engineering manager, Aaron Taylor.

First Bus operates more than 30 routes for the much-publicised franchised Bee Network in the Rochdale and Bury area, together with six school services using a fleet of over 65 buses with the capacity to expand the depot to 90 vehicles.

The need for bus and coach apprentices to cope with changes in technology was highlighted at this year's IRTE Skills Challenge, which was held at S&B Automotive Academy in Bristol in June. The challenges set by Alexander Dennis focused on door systems and reflected how mechanical issues are increasingly intertwined with electrical components, with pneumatic pumps – for example – becoming electrically controlled.

"We want to arm people with the knowledge to go in and diagnose more challenging faults as vehicle systems get more complex and more electrically based," says Laura Tofts, head of product information and training at Alexander Dennis. "The IRTE Skills Challenge always gives us a great platform to do this outside of our own courses – and the experience informs how we develop our courses further." 

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# The circular economy

Fleet managers are tasked with more and more vehicle components to look after, but tyres - and all of the technology that keeps them in optimal condition - remain one of the most important.

By John Kendall

It has been a while since tyre manufacturers produced just tyres. Helping their customers to look after their tyres today inevitably means embracing the digital world. Not all commercial vehicle and bus tyres can go through the use, regroove, remould, recycle working life pattern - but many can, helping to reduce operating costs in the process. That situation gives fleet engineers another few jobs to do.

Obviously, tyre pressures need to be checked regularly. Tread depth also needs to be monitored and visual



inspections for damage and uneven wear are needed. These

jobs are not necessarily easy, especially if you are dealing with aerodynamic side fairings, or coach and bus bodywork, or have twin tyres fitted. Can you reach that inner tyre and use a tread depth gauge accurately? Can you find the tyre valve extension to take a pressure reading and pump up the tyres when necessary?

The daily walk-around checks should help, but as Matt Childs, marketing manager for the UK and France at Michelin Connected Fleet explains, it's not that easy. "Drivers are not obliged to look at pressure, nor are they obliged to look necessarily at how much tread is left. Their obligation is to look for things such as signs of wear and damage and that they believe there is enough tread there to meet legal requirements.



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***"If a fleet is monitoring its tyres, it needs to keep checks on tyre pressures, temperatures and tread depths"***

Matt Childs

"Sometimes when we talk to a customer, they look at tyres as representing only 3% of their total costs," he adds. "But the reality of it is they have an impact on over 30% of the total cost of the fleet when you factor in elements such as the impact they have on fuel, the cost of roadside breakdowns, accidents and maintenance and the impact on productivity as well."

**DATA ON DEMAND**

Tyre temperature can impact pressure readings, introducing a variance of up to 10%, according to Childs. So, if a fleet is monitoring its tyres, it needs to keep checks on tyre pressures, temperatures and tread depths. Add in a fleet of vehicles operating from a number of depots - and keeping regular checks on all this information becomes much more of a challenge.

Tyre pressure monitoring systems (TPMS) can provide regular tyre pressure data, which can be shared with the driver on a dashboard display, warning of any loss of pressure. The data can also be shared with anyone else who might need it, using telematics. This might be a fleet manager or maintenance provider. Michelin's tyre pressure sensor also incorporates a temperature sensor. It is attached to the wheel with a Velcro belt and sits snugly in the well of the wheel rim. "The sensor sits inside the rim -



specifically, in the well of the rim - so the data that it reads in terms of temperature comes directly from there, giving very accurate output about potential braking issues," says Childs. "This unit communicates with the telematics device in the vehicle and that sends the data up to our platforms."

Michelin's QuickScan system, which monitors tread depth, can also be added into this network. The visible part of the system looks like a set of weight pads and works in a similar way. QuickScan can be either mains- or battery-powered and uses electromagnets to measure the depth of the remaining tread. The tyres contain steel bands as part of their construction and, because Michelin knows how far below the tread surface they are located, this can be used to determine how much tread remains.

The pads are used in conjunction with automatic number plate recognition (ANPR) cameras. "It tallies up the

vehicle's registration number with the readings that are taken," says Childs. "We often put them close to or near a gatehouse or a truck wash bay - somewhere where there's a power source. Then we just run off two mains power sources: one for the cameras and one for the plates themselves. They are accurate to within 0.1mm and it takes three readings across the circumference of the tyre, alerting any uneven wear across the tyre."

Childs advises weekly tread depth inspections is the most frequent, with monthly being "probably adequate", depending on the operation. "You can also set tolerance levels - such as a traffic light system. So, when tyres get to 5mm tread depth, I want an amber alert. When they get to 3mm, I want a red alert and the same with pressures as well."

**UNDER NEW MANAGEMENT**

At September's IAA Transportation show, in Hanover, Continental unveiled two versions of its ContiConnect digital tyre management systems. One is a mobile-only version called ContiConnect Lite, which enables data from tyre sensors to be transferred via Bluetooth. This is joined by ContiConnect Pro, the complete version including digital tyre management and prediction services. The Pro is designed to give a comprehensive overview of

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Utilising digital technology solutions to monitor tyre performance is an essential part of efficient tyre management. To further maximise a fleet's sustainability, high mileage, long tyre life and retreading are also key factors. Many fleets remain unaware that a comprehensive retread policy can lessen their tyre costs by up to 35%, as well as significantly lowering the carbon impact associated with new tyre manufacture.

The perception that retreaded tyres offer less in terms of quality and safety when compared to new tyres may also still persist in some quarters, while in fact, retread tyres provide fleet operators with a sustainable choice that offers the safety and durability of a brand-new tyre, without compromising on quality.

The research, development, and engineering involved in delivering a new retread tyre is comprehensive. Stringent regulations within the retreading industry serve as a benchmark for manufacturers to follow. In addition, ContiLifeCycle retreading plants, manufacturing ContiRe and Bandvulc tyres, operate in line with ISO auditing criteria ensuring consistently high production standards.

As well as being a more environmentally sound option, a correctly used retread is more cost-effective in the long term. A retread can cost around 75-80% of the price of a brand-new tyre, offering excellent value for money and significantly reducing running costs in a competitive market.

Just as Continental's range of digital tyre management solutions work to help operators reduce the impact of tyre-related cost, which can contribute to around 53% of operating expenses, so too does investing in retread tyres. Both options allow operators to reduce their carbon footprint, while realising significant savings in the total cost of ownership of their tyre management process.

To find out more visit:  
<https://tinyurl.com/aepwz4xy>

*By Tony Mailling,  
Head of Hot Retread  
Production EMEA  
and Plant Manager  
of ContiLifeCycle  
Ivybridge and Stöcken*



the condition of a fleet's tyres and includes alerts and data displayed in a web portal and mobile app.

The company also launched an EV-compatible bus tyre at the show, the Conti Urban HA 5. Specifically, it offers low rolling resistance and features recycled, renewable and mass-balanced certified materials. Other features include an enhanced tread cap and base compound, specifically formulated for urban road conditions. Continental claims that this results in higher mileage, reducing tyre replacement frequency. The company also unveiled a truck tyre that claims to offer best in class energy efficiency and braking performance.

Hankook has also launched a tyre developed specifically for electric city buses, the e-Smart City AU56. The company claims that it offers a greater range for each battery charge, while efficiently transferring high torque to the road. It will also offer a higher weight rating to allow for the extra weight of the battery pack, compared with an

internal combustion engine powered vehicle. "The tyre's structure also makes it ideal for regrooving and retreading, which contributes to reducing resource consumption," says Guy Heywood, vice president, marketing strategy for truck and bus at Hankook Tire Europe.

The e-Smart City AU56 has S-shaped sipes between the lateral and tangential tread blocks to improve the interlocking between the blocks. This layout is designed to extend the durability and improve grip, aided by three-dimensional zig-zag lines within the tread blocks. The improved grip is required because of the greater torque of the electric motor. As the tyre wears, concealed

grooves and sipes are exposed, the result of 3D printing technology and ensure the continued performance of the tyre through its life.

For even wear and to guard against stone trapping, the tread pattern features step-shaped blocks, too. The sidewalls are reinforced to protect against kerb and bus stop bay impacts. [TE](#)



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# Gear to the ground

**A**s the number of battery-electric heavy trucks continues to grow, the more we are taught about their motors and batteries.

One thing that isn't discussed in any meaningful detail, however, is how the transmissions work. So, we asked four major OEMs exactly what's going on between the electric motors and wheels on their battery-powered offerings.

## DUAL DAF OPTIONS

DAF has gone for two solutions to cover its full vehicle line-up, although this time only one of them actually has a gearbox at all. "On the XBs - and the LF before that - there's just a direct drive motor

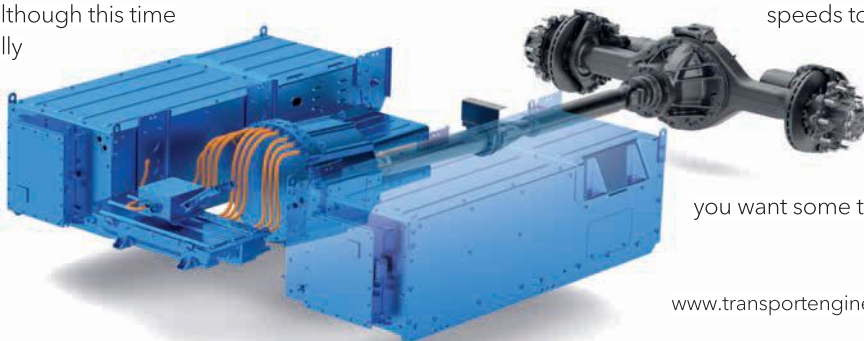
**Information about battery packs, motors, charging times and driving ranges are more than forthcoming from manufacturers when they debut heavy trucks. However, transmissions barely get a mention. Lucy Radley discovers there's actually quite a lot to talk about**

with an output flange [shown below], that bolts to a prop shaft in the normal way," says DAF's marketing manager Phil Moon. A gearbox is seen as unnecessary in this instance, because the motor itself operates over a large rev range. "Matching the motor to the road

speed right up to 90kph is eminently achievable."

Achievable doesn't always mean desirable, however. As you increase the speed of a motor, it's then turning the armature at a higher speed as well, which takes slightly more energy. Gearing the drivetrain at higher road speeds to reduce the speed

of the motor itself, therefore, produces a gain in efficiency. "Then, of course, at higher weights, you want some torque multiplication, in





order to ensure your motor has enough tractive effort to start off and climb hills," says Moon.

"On the XD and XF, which are operating at weights of up to 42 tonnes or more, it's useful to have a gearbox for those two reasons," he adds. As well as needing the multiplication factor at low speeds, these vehicles are likely to spend a much higher proportion of their working lives cruising on motorways. "We don't actually need a lot of power at that point, but we do want maximum efficiency, so we can lower the motor speed."

Needless to say, there's a fine balance to be struck here, between the inefficiencies inherent in using any kind of gearing and those potentially appearing at speed within the motor itself. The more gears you have to go through, the less efficient that side of the balance becomes. "On our bigger vehicles, which actually have two motors, you've got a three-speed gearbox," Moon says. "But it's all one unit, built by ZF, the gears being integral to the motor itself."

The unit itself is very compact, about the size of the gearbox in a traditional truck, and DAF has mounted it in the same place. From there, the output shaft can simply connect to the prop shaft in the normal way. "Generally it starts off in second gear, the middle of the three, then when you get up to cruising speed it changes up," Moon explains. "But when you're starting off heavily laden or on a slope, it uses the lower gear, effectively a form of crawler." Determination of this is, however, entirely controlled by ECUs, just like in a full automatic. "There's no manual intervention by the driver at all," Moon confirms. "It's just a two-pedal drive situation - press the throttle, the vehicle responds accordingly."

#### **VOLVO'S VENTURE**

Volvo is another manufacturer using two different solutions to cover its full



vehicle line-up. Firstly, its 4x2 tractor, which can run at 42 tonnes with a tri-axle trailer, uses the existing tried and tested, 12-speed I-Shift gearbox. Like all Volvo BEVs, this heaviest product boasts a prop shaft to transfer drive to the rear axle. Together, this use of existing technology has enabled Volvo to both be quick to market and also to offer a familiar gearbox PTO.

Perhaps the biggest difference between Volvo's diesel and electric drivetrains is the lack of a clutch. "The heavy 4x2 FH and FM tractors have three electric motors, each connecting to the

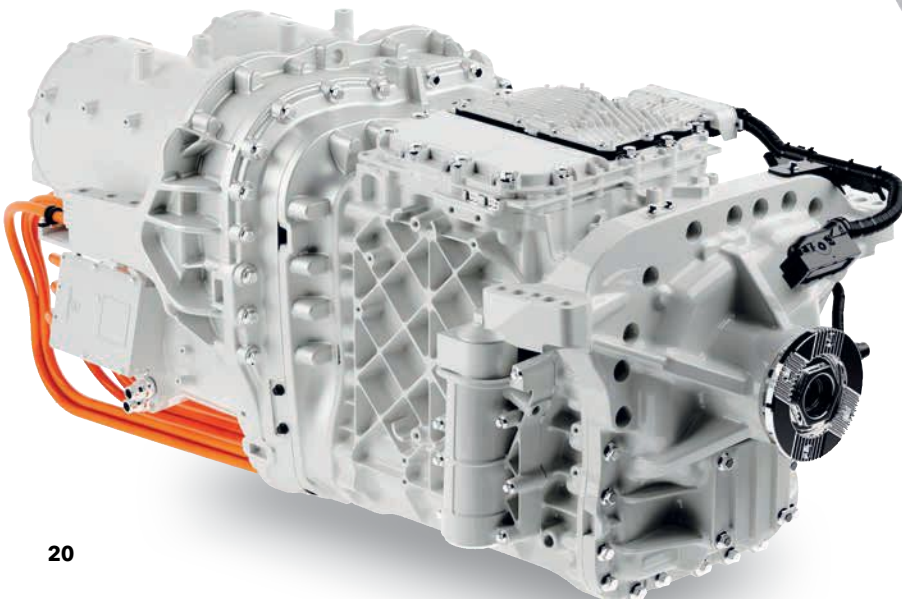
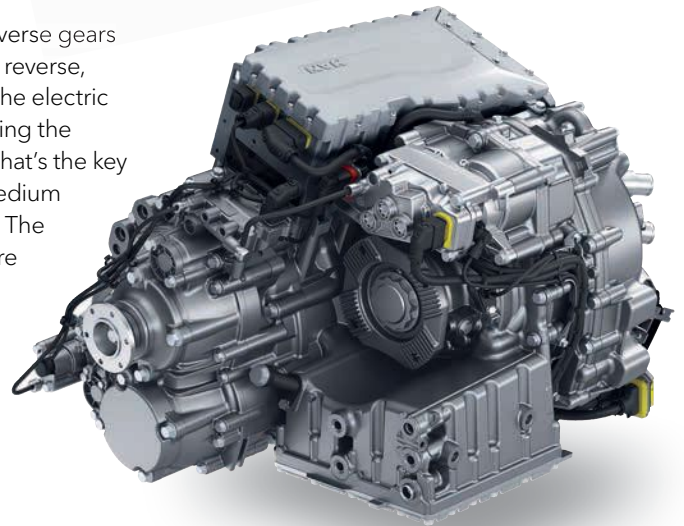
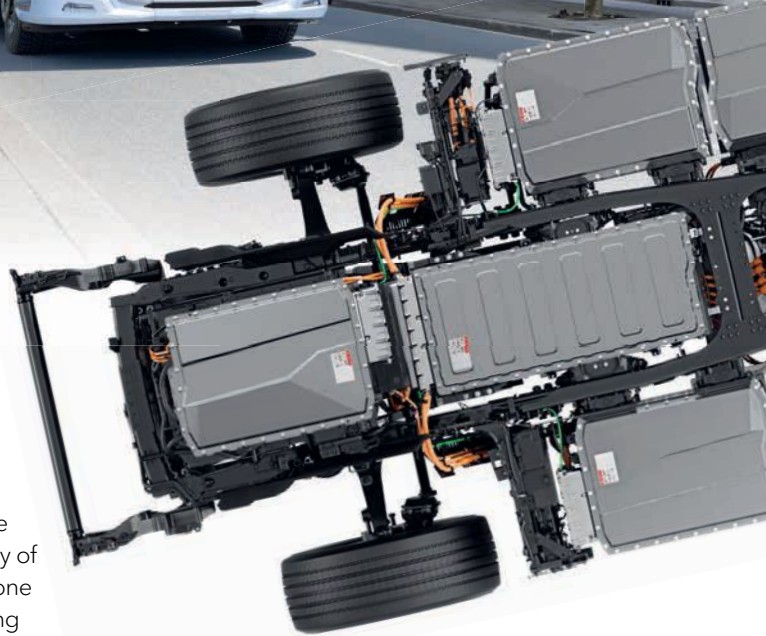
front housing of the gearbox, behind which are three reduction shafts," says Mark Collins, e-mobility product manager. (FH/FM gearbox pictured below.) These motors rotate at between 5,000 and 8,000rpm, which is much faster than a diesel engine, hence the need to downspeed. "With those shafts, which are configured in a triangle, there's a reduction gear, with a single shaft then connected to the gearbox."

While all 12 forward gears and four reverse are available for use, the lower gears are used far less than with an ICE. "Even when the vehicle is heavy, it'll never really start in gears one to five," Collins says. "For, say, general haulage, you might use six, seven or even eight." It is important to remember, however, that Volvo is a Swedish brand, and a lot of the Scandinavians run at 65 tonnes. "Using I-Shift means we've already enabled a gross combination weight of up to 50 tonnes," he reminds us. "So rest assured the electric vehicles will definitely be capable of expansion at the heavy end."

For Volvo's lighter product, meanwhile, there's a brand new two-speed medium-duty gearbox, built specifically for the task (pictured p19). Again, the motors connect to the front face of the gearbox. "The FL, which is only available as a 4x2, has one motor,

while the FE, which can be a 4x2 or 6x2, has two motors," explains Collins. "It's an automated gear-shifting system but, in effect, the first gear is there for when you're heavy or starting on a steep gradient," he continues. "The majority of the driving will all be done in second gear, including pulling off."

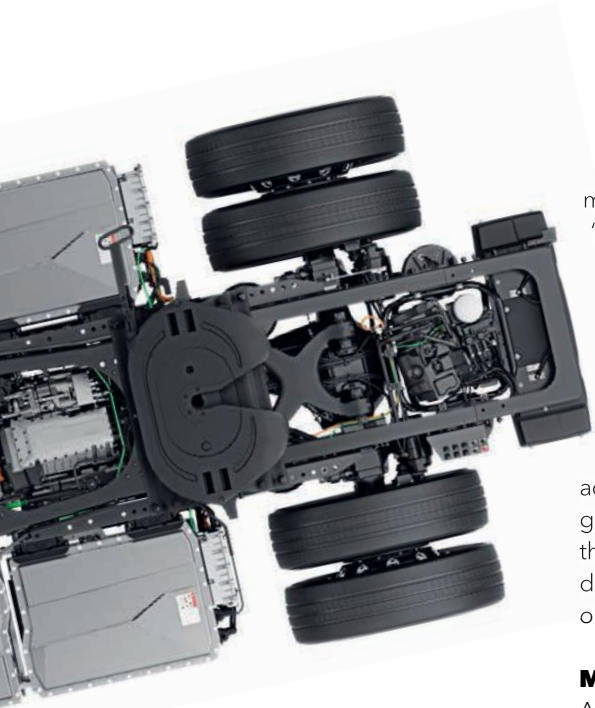
There are no specific reverse gears with this unit, however. "To reverse, the rotational direction of the electric motors switches, by changing the polarity," Collins says. "So that's the key difference between the medium and heavy-duty products." The other difference is that there is no option for a gearbox PTO with the two-speed transmission, although there are other solutions should one be needed.



**DRIVE TO SURVIVE**

MAN has opted for what it calls a "central drive unit", which sits slightly behind where the gearbox would be in a diesel. A self-contained motor and gearbox in one, it then connects to the rear axle via a prop shaft (pictured above). "We've got three motor power types and two gearbox types: a two-speed or a four-speed gearbox, both Tipmatic," says Ashlea Awbery, product manager.

***“The heavy 4x2 FH and FM tractors have three electric motors, each connecting to the front housing of the gearbox, behind which are three reduction shafts”***



The two-speed is for lightweight distribution vehicles and is coupled to the smallest (245kW) motor - it has a maximum load weight of 28 tonnes. The more common variant is the four-speed, which couples to the 330 and 400kW motors and can be used at gross train weights up to 50 tonnes. “Top gear is the same ratio in both gearboxes, because you still want to maintain a reasonable top speed,” Awbery tells us, “while the lower speeds have different ratios.”

This central drive unit solution has been chosen as it can be suspended in the chassis, keeping it safe from vibration. It also means operators can have mechanical PTOs on their electric gearbox as well, in the same way as with a diesel gearbox. Unlike most, however, MAN only uses a single motor for its CDU, mounted directly to the gearbox.

“Electric motors have a huge amount of torque from zero,” says Awbery. “But, in reality, to get one motor to give us enough torque to both pull away and get us completely moving, you’d need quite a big motor.” It works out to be slightly more efficient to use a smaller motor and a set of gears to achieve the same thing - having a bigger motor would, of course, consume a lot more power.

Again, one familiar component missing from this set up is a clutch. “When you pull up to a standstill with an electric motor, unlike an engine it just stops turning, which makes gear selection really easy,” Awbery explains. “When the vehicle is driving along, it’s necessary to synchronise the motor speed with the output gear, in order to be able to switch across. That is all done through the gearbox software, which can interrupt the power to the motor without actually disconnecting it, to allow it to slow down or stop.”

#### **MERCEDES MACHINERY**

Always fond of being first over the line when it comes to technology, as seen with MirrorCam, Mercedes has gone straight to what most see as being the ultimate solution - an eAxle.

The most recent version was built specifically for its long-haul model, eActros 600. An 800V eAxle, this has two Bosch 400kW electric motors, each controlled by a separate HV inverter. These sit in front of the axle, followed by an epicyclic gear system and differential (pictured below).

“The epicyclic gear system shifts four forward gears and two reverse

gears; the gear ratios are automatically selected depending on the vehicle’s load and inclination,” says David Simm, product manager at Mercedes-Benz Trucks UK. To do this, it uses an electric transmission control module, or eTCM. “This has similar sensors and data that today’s diesel trucks house, triggering the power train inverters to control each motor to change through those speeds.” In overrun mode, kinetic energy is converted into electrical energy. “Because there are no connecting parts - unlike other current competitor vehicles, we’ve got no prop shaft - those transitions go pretty much unnoticed by the driver,” Simms adds.

This does beg one final question - why is it that truck marketeers, including those connected to Mercedes, continue to use talk about the “gearbox” when describing their product? Is it purely about keeping things familiar while the technology beds in? “We’ve tried to drive the language away from ‘gearbox’ to ‘transmission’, although even that still isn’t really right,” Simms says. “I think it’s about those newer to the industry, or early adopters, challenging the status quo and creating a new glossary. If we speak again in five years’ time, the approach will be completely different.” **TE**



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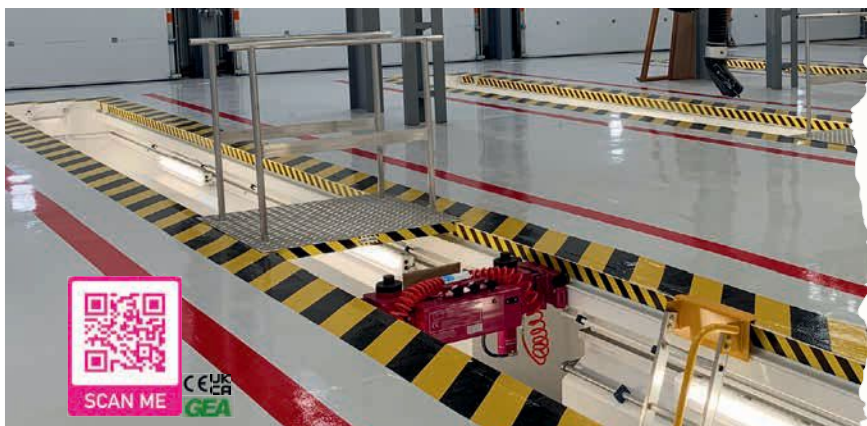


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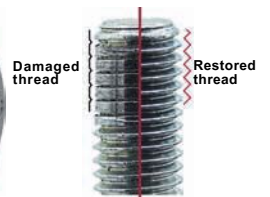
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# Temperature checks

**W**hen it comes to understanding the potential issues of operating a fleet of trucks in winter conditions, few fleet engineers will be better prepared than Krzys Dziama, a principal consultant at engineering and design consultancy Atkins Réalis. He previously worked as engineering manager at Land Rover and has since been involved with the specification of over 800 gritting trucks – as well as overseeing their delivery to national and local road authorities throughout the UK and Ireland.

Dziama's work on the gritting trucks involved assessing the performance and reliability of the existing fleets and developing suitable replacement strategies in addition to overseeing the build, delivery and implementation of replacement vehicles. "Aside from components that wear quickly due to the harsh environment that they operate in, electrics are the biggest issue in winter conditions," he reports. "The issue is not so much with the manufacturer's original chassis – and one can generally expect that the manufacturers that are prepared to offer the best warranties are the best performers in this respect – but where bodywork and equipment has been interfaced with it.

"It's all too easy for a small-scale

**As the cold weather arrives for another year, fleet engineers are tasked with making sure the vehicles are best prepared to battle the elements. Richard Simpson finds out what needs to be done**

manufacturer to try to save cost by cutting corners and having poor attention to design detail," he reasons. "For example, gold-plated pin connectors will be far more reliable than tin: but there's a cost issue. Problems can also result if wiring harnesses are not made to measure – over-long wiring, which is unprotected, folded up and crunched into place with cable ties, is prone to water ingress and consequent failure.

"Equally, though, the vehicle has to be built to a price which makes it economic to buy and operate in the first place."



The sophisticated exhaust systems used on modern vehicles can also be prone to reliability issues and corrosion damage. "There are measures that can be taken, ranging from specifying stainless-steel components to using high-temperature anti-corrosion treatments."

## **EXPECT THE UNEXPECTED**

Freak weather conditions can also wreak havoc, such as the infamous 'beast from the East' storm in 2018. "There were repeated instances of windscreen wiper motors burning out," Dziama recalls. "This was caused by excessive snow build-up behind the bonnet area and wiper blades freezing to windscreens. We soon worked through the national stock of wiper motors! The truck manufacturers' response is that they can ship more over from Europe overnight, but international overnight logistics tends not to work so well when the country is snowbound."

And this factor is key to Dziama's final point. "The reliability of vehicles generally declines with age, but simple routine maintenance and, above all, regular washing is the key to getting the maximum reliable life. If windscreens had been manually cleared and de-iced in line with specified cleaning regimes at shift-end, the wiper failures would not have happened so frequently.

**“Aside from components that wear quickly due to the harsh environment that they operate in, electrics are the biggest issue in winter conditions”**

Krzysztof Dziama



“Ten years is reasonable for seasonal vehicles such as gritters – and it’s what most manufacturers will quote as a typical working life,” he says. “Beyond that, things can get expensive and money that would be better spent as capital expenditure on new equipment ends up being consumed by spares and repairs.”

**WINTER BODY READY**

Trailers and bodywork should have winter resilience built in, according to Richard Owens, technical support specialist at Don-Bur. He points out that the spray-zinced chassis used on the company’s trailers are naturally resistant to corrosion (and the process is less likely to cause damage at the manufacturing stage than zinc-dipping), but cautions that cleanliness ensures maximum chassis life irrespective of manufacturer or type, as accumulated wet and salty dirt provide an ideal environment for corrosion. Spray suppression mats and shields should also be checked for fitment and condition.

Owens deems a meaningful loaded brake test is an essential prior to the onset of winter – and such tests (or the alternative electronic brake performance monitoring) are a legal requirement anyway. Tyres should also be checked regularly for condition and tread depth.

Electrics are another matter. While Don-Bur makes every effort to ensure the reliability of electrical systems by using connectors and control boxes with high IP (ingress protection) ratings and covers vulnerable components with protective PVC bags, these measures will not be effective unless they are replaced correctly after inspections. ‘Drip loops’ in vehicle wiring, to prevent water running down wires toward vulnerable components and connections, should also be retained.

**CLEAN CONNECTIONS**

One of the most vulnerable components is the ISO EBS connection between



tractor and trailer. “This [connector] must be clear of grease and dirt,” he cautions. “It’s scarily common for them to be caked in filth. It is permissible to use white lithium grease on clean electrical connectors, but even this should never be used on switches as it is an insulator.

“Electrical lines should also be checked,” adds Owens. “What may seem like a good connection in the yard may not be so on the road when the line is under tension as the truck articulates around roundabouts. The connection may well gradually break down, leading to progressively more frequent intermittent failures which can be very dangerous.”

It’s wise to check on the condition of side-curtains, fixings and pelmets, Owens says, making sure all are free from damage and excessive dirt. “The curtains are there to protect the cargo from weather.”

The cable systems on lifting-deck trailers are prone to wear and damage in winter conditions if incorrectly maintained. “We still hear of workshops spraying these with WD40 or similar in the belief that this will lubricate them,” Owens reports. “In fact, it will just wash the grease out of the cable. We recommend using a specific lithium-based wire rope spray that will penetrate, lubricate and protect the cable right to its core.” **TE**

**IP RATINGS EXPLAINED**

The IP rating system uses two numbers to indicate the level of protection provided by an electrical connector or other piece of equipment against the ingress of solids and water.

The first digit indicates protection against solids and ranges from 1 (large objects such as human hands) to 6 (dust-tight for up to 8 hours in a vacuum). The second digit indicates protection against water, and ranges from 1 (dripping water) to 9 (a high-powered hot water jet).

Don-Bur specifies IP68 for side-marker lights and centre loom plugs, and IP69 for rear light clusters. Component boxes have IP67 ratings and their glands are IP68.

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# COGLOCK

## Could a big step forward in wheel security be on its way, courtesy of an invention from an IRTE member? Ben Spencer finds out

It's no secret that the worst-case scenario of wheel detachment on an HGV can be a serious injury or even a fatality. The numbers that illustrate this point speak for themselves: a wheel that comes loose from an HGV on a motorway at 56mph can reach speeds of up to 90mph before potentially colliding with another vehicle. "If that wheel hits an oncoming vehicle, that is a severe impact with around 10 tonnes of force," explains Chris Coghill, a technician and IRTE member. "If it does make an impact, it could potentially bounce in the air and then hit another vehicle, creating a domino effect."

The consequences of wheel loss were highlighted in an IRTE document released in 2020, called 'Wheel Security: An IRTE/RHA Best Practice Guide' (download at [www.tinyurl.com/bddzpycc](http://www.tinyurl.com/bddzpycc)). It referred to findings from Transport Research Laboratory in 2006, which estimated the typical annual frequency of wheel fixing problems in the UK: between 150 and 400 wheel detachments; between 10 and 27 resulting in injury accidents; and between three and seven fatal accidents.

### LOCK TO THE SYSTEM

To combat wheel detachment, Coghill invented a security system called CogLock, which can indicate when a wheel nut comes loose, lock it in place and streamline maintenance. Coghill is a qualified technician with more than 15 years' industry experience working



across the board as workshop controller, service manager, depot manager and fleet engineer. "I used to investigate wheel loss as part of my day job before working at CogLock - and there is no design flaw with wheel nuts; the root cause is almost always down to human error," he explains. "These issues can include scenarios where wheel nuts have not been tightened up correctly or there has been a mechanical defect that has been overlooked.

"When a vehicle goes in for routine maintenance, the technician should remove all the ancillary devices from the wheel nut and check them, but some of them will cut corners," Coghill explains. "CogLock removes the need for any ancillary device to be placed over the

***"I used to investigate wheel loss as part of my day job before working at CogLock and there is no design flaw with wheel nuts; the root cause is almost always down to human error"***

Chris Coghill



wheel nut so that the technicians can check the wheel nuts for tightness."

CogLock comes with visual indicators that alert vehicle operators and drivers to any loosening of wheel nuts, which should be picked up in regular vehicle checks. Then, the device engages to lock the wheel nut in place, ensuring the wheel remains securely attached under various driving conditions.

"The product has an indicator in the middle that is flushed through the end of the bowl when it's tight," Coghill continues. "As the wheel nut turns, the pin in the centre pops out and it locks the wheel nut in place."

#### **PROGRESS TO BE MADE**

Currently, CogLock is undergoing a research and development phase –

## **IRTE MEMBERSHIP**

Coghill joined the IRTE six years ago to advance his career in the industry. "Being in the IRTE shows employers and customers that you are a high calibre technician," he reasons. "Throughout the years, the IRTE membership has been an invaluable resource for keeping me informed and up to date with developments in the wider industry."

IRTE membership has been invaluable to the development of CogLock, says Coghill. "At the early development stages of CogLock, I referred to the IRTE website for publications surrounding best practice guides on wheel loss and wheel security," he recalls. "These documents helped to advance my knowledge of these issues."

and Coghill is interested in hearing from operators that are interested in equipping the device on their vehicles. "We're looking for feedback from operators over a two-month trial period. We intend to use this feedback to release fit for purpose product in 2025."

As part of the trial, the operators will receive the devices and training information for drivers and their primary maintenance provider and/or primary tyre supplier. In addition, any vehicle fitted with CogLocks will also be issued with a door decal with a QR code, which will provide operating and repair instructions to any driver or technician who has not yet received training on the product. CogLock is tested and certified for reliability and safety, and holds a two-year warranty. [TE](#)

# One step at a time



As a cornerstone of global innovation and infrastructure, engineering must overcome a series of obstacles as it adapts to a rapidly changing world. From talent shortages to the need for greater inclusivity, the sector must confront several critical issues if it hopes to sustain growth and remain competitive in a technology-driven future. Here are eight of the most important issues:

## 1 SKILLS SHORTAGES

As industries evolve - and demand for engineering services grows - companies are struggling to find skilled workers. For instance, a predicted

shortage of 745,000 drivers across Europe by 2028 serves as a stark reminder of the sector's vulnerability to ageing workforces and retiring professionals. Similar trends are seen in other technical fields, where roles such as advanced driver assistance systems (ADAS) certified technicians remain unfilled.

This shortfall is not just a temporary issue, but a systemic problem that could cripple industries that are reliant on engineering expertise. The scarcity of talent is partly due to an ageing workforce, but it is also exacerbated by existing talent leaving the industry.

Emma Thompson, designate executive director of the SOE, highlights eight key challenges facing the road transport engineering sector and offers potential solutions

## 2 SKILLS MISMATCH AND FUTURE DEMANDS

With the engineering sector looking to the future, it is clear that

the skills required for success are changing. The rise of autonomous vehicles, electrification and the global push towards net-zero emissions are reshaping the industry. However, the current workforce is not fully equipped to meet these demands. Technicians with expertise in hybrid and electric vehicle technologies are in short supply and there is a skills mismatch that is only becoming more pronounced as digital technologies such as artificial intelligence and machine learning gain traction.

## 3 LACK OF DIVERSITY AND INCLUSION

Diversity and inclusion are longstanding challenges in the engineering sector - and progress has been slow. Women, for example, make up only 15.7% of the

engineering and technology workforce, despite constituting

more than half of the overall workforce in other sectors. This underrepresentation is symptomatic of broader issues within the industry, where a lack of inclusivity has created barriers to entry for women and underrepresented minorities.

The consequences of this lack of diversity are far-reaching. A more diverse workforce brings a wider range of perspectives and problem-solving approaches, which is crucial for innovation. Yet, despite this well-documented benefit, the sector continues to struggle with creating environments that are welcoming to all. The challenge lies not only in attracting diverse talent but also in retaining it, ensuring that everyone has equal opportunities for advancement.

## 4 BARRIERS TO TRAINING AND APPRENTICESHIPS

Training and apprenticeship programmes are crucial for developing the next generation of engineers, but they are often hampered by a range

***“From talent shortages to the need for greater inclusivity, the sector must confront several critical issues if it hopes to sustain growth and remain competitive in a technology-driven future”***

Emma Thompson



of barriers. In many cases, these programmes fail to provide adequate career guidance and support, leaving apprentices feeling lost and unsupported. Moreover, rigid academic requirements – such as mandatory subjects such as maths and English – are causing many to drop out before completing their training.

This issue is compounded by low levels of funding for training programmes, which limits the opportunities available for apprentices to gain hands-on experience. Without sufficient financial support, businesses and educational institutions struggle to offer the kinds of comprehensive training programmes that are necessary to prepare workers for the demands of the modern engineering landscape.

### **5 RETENTION OF TALENT**

Attracting talent is only half the battle. Once skilled professionals enter the engineering sector, retaining them can be just as challenging. A large number of workers leave their roles within the first few years, often citing poor onboarding experiences and a lack of career progression opportunities as their primary reasons for moving on.

Retention is further hindered by a lack of recognition and support within many organisations. Engineers often feel that their contributions go unnoticed, which can lead to dissatisfaction and ultimately result in higher turnover rates. To lower turnover rates, companies need to create work environments that

foster growth and provide continuous feedback, as well as aligning their missions with larger societal goals such as sustainability and innovation. These elements are crucial for keeping talent engaged and committed to their roles.

### **6 FINANCIAL ACCESSIBILITY AND THE COST OF LIVING**

The cost-of-living crisis is another critical issue that disproportionately affects younger and disadvantaged workers in the engineering sector. Many potential candidates are turning down job opportunities simply because they cannot afford the associated costs, such as housing, transportation and other work-related expenses. This is particularly true for entry-level positions, where the salaries offered are often not enough to cover the basic costs of living.

This financial barrier is limiting the accessibility of engineering careers for many talented individuals, particularly those from lower-income backgrounds or individuals with dependents. As a result, the sector risks becoming even less diverse, as only those who can afford to work in the industry are able to pursue these opportunities. Addressing this issue will require a concerted effort from both employers and policymakers to ensure that wages and support systems are adequate to meet the needs of all workers.

### **7 RAPID TECHNOLOGICAL ADVANCES**

The pace of technological advancement is both a blessing and a curse for the engineering sector. While innovations such as AI, machine learning and predictive analytics offer new opportunities for efficiency and growth, they also pose challenges.

Many companies are struggling to integrate these technologies into their operations, often because their workforces lack the necessary skills or because their business models are not

agile enough to accommodate rapid change. This situation creates a paradox where the very technologies that could drive the sector forward are also contributing to its struggles. To remain competitive, companies need to invest in upskilling their workers and foster a culture of continuous learning. They must also be willing to adapt their strategies quickly to take advantage of new technological opportunities as they arise.

### **8 FUNDING AND POLICY SUPPORT**

The engineering sector is grappling with a lack of adequate funding and policy support, particularly in the areas of training and reskilling. Current restrictions on apprenticeship levy funds, for example, limit how businesses can allocate resources for workforce development. This lack of flexibility is preventing many companies from fully preparing their employees for the future challenges they will face.

There is a pressing need for more policy support at both the national and international levels. Governments must recognise the vital role that the engineering sector plays in driving economic growth and innovation – and must provide the financial and regulatory frameworks necessary to support this work. This includes not only increasing funding for training programmes but also ensuring that businesses have the freedom to use these resources in ways that best meet their needs.

### **STEPS TO BE TAKEN**

The engineering sector is at a crossroads. The challenges it faces are major, but they are not insurmountable. By addressing talent shortages, embracing diversity, adapting to new technologies and advocating for better policy support, the sector can continue to thrive in a rapidly changing world. The key to success lies in a proactive approach – one that prioritises continuous learning, inclusivity and innovation at every level. **TE**

# Ferryspeed saves more than £250,000

Freight shipping business Ferryspeed has announced savings of more than £250,000 in trailer procurement by optimising operations with Webfleet, Bridgestone's fleet management solution.

Ferryspeed introduced Webfleet to enhance its ability to track and manage its fleet of more than 600 vehicles and trailers.

Since its introduction three years ago, insights from Webfleet have supported the company's procurement strategy, allowing Ferryspeed to make data-driven decisions on trailer replacements.

The platform's trailer management solution is said to have also led to a 20% improvement in trailer usage.

"Webfleet's ability to track and optimise trailer usage was a pivotal factor in our decision to implement the solution," said Nick Green, group executive director at Ferryspeed. "With real-time visibility of all our assets, our operations have never been simpler or more efficient.

"We can now procure trailers that precisely meet our needs, resulting in substantial cost savings. Webfleet has even enabled us to design multi-purpose trailers by accurately identifying the specific nature of our trips, reducing the overall number of trailers required.

"This strategic approach has streamlined our fleet management processes, ensuring the right trailer is



always deployed for the right job, boosting overall productivity."

In addition, Ferryspeed is said to have made fuel savings and reduced incidents of idling by monitoring driver behaviour with Webfleet OptiDrive 360.

"These significant advancements underscore our company-wide commitment to operational excellence, superior customer service and sustainability," Green concluded.

## Enicor turns to Harsh for hookloader bodies

Metal recycler Enicor has put three hookloaders into service following parts and service support from Harsh.

"A few months ago, we needed a replacement pump as a matter of urgency, and only Harsh could deliver," said Enicor's transport manager Andy Lound. "That incident really showed the value to us of having responsive, local aftersales support – so as we were soon to be replacing three of our hookloaders, we were only too happy to consider Harsh bodywork for those new chassis."

From there, Harsh worked with



Lound and operations manager George Dones to deliver the specification for Enicor's needs. Having decided on Volvo FMX chassis, the final build of the trucks was done at Harsh's headquarters just outside York.

Notably, the Harsh HH26 hookloader unit provides the key benefits of a low centre of gravity, high strength and powerful performance. HH26 has a 26-tonne lift capacity while also being designed to handle 50m<sup>3</sup> containers with an internal length of up to 5,790mm.

Mounted on their high power 460hp three-axle chassis, the new Enicor hookloaders can carry a range of incoming scrap metals, operating most of the time with drawbar trailers up to the maximum legal weight of 44 tonnes gtw. The HH26's loading and unloading cycle is said to help improve overall vehicle productivity.

## Wrightbus invests in Totalkare column lifts

Wrightbus has invested in six T8DC cable-free mobile column lifts at its NewPower facility in Bicester.

The investment will support a mission at the new facility to transform older diesel buses into electric vehicles (EVs).

With the capacity to re-power mid-life diesel buses into EVs within three weeks, NewPower will contribute to reducing urban air pollution and advancing the decarbonisation of public transport.

Karsten Hall, manufacturing engineer at Wrightbus, said: "These lifts are not only pivotal to the re-powering process but also reflect the superior quality and reliability we have come to expect from Totalkare. As a returning customer, we value their exceptional equipment and unwavering service support. The T8DC lifts will play a crucial role in enabling

our teams to efficiently convert buses to electric powertrains, thus accelerating our journey towards a greener future."

The T8DC cable-free mobile column lifts are said to allow wireless operation and easy movement around the workshop. These features are essential for the NewPower facility, where engineers will work simultaneously on multiple buses to meet the goal of converting up to 500 vehicles annually.



# Pharmaceutical deliveries via Carrier Vector eCool

Trans-Bridge Freight Services has taken delivery of a Carrier Transicold Vector eCool unit to improve the efficiency of its temperature-sensitive pharmaceutical deliveries between the UK and Ireland.

The new Vector eCool is mounted to a 13.6m Gray & Adams trailer with a Carrier Transicold Vector HE 19 refrigeration unit. The combination allows Trans-Bridge Freight Services to predominantly power the system using electricity harnessed from the kinetic energy generated by the trailer axle and brakes, with the option to use the unit's diesel engine in case of emergency.

"Since welcoming our first Carrier unit in 2015, we've been consistently impressed with its performance and reliability, so bringing the advanced technology of the Vector eCool into the fleet was the next logical step," said Brian Anderton, director at Trans-Bridge Freight Services. "Even the most minute temperature change can have a significant impact on the products we transport, so set point control is vital. Bad weather regularly means our trailers can be stuck in the port or on the ferry for much longer than anticipated, so having the ability to revert to diesel power if required gives us extra peace of mind – this



combination makes the Vector eCool the ideal product for our needs."

Carrier Transicold's Vector eCool system is an autonomous electric refrigeration system, producing no direct carbon dioxide or particulate emissions. The Vector eCool is also PIEK compliant, which combined with its emissions performance, is said to make it a solution for tightening inner city and urban regulations. The trailers can be plugged into the electrical grid when parked and are charged in two hours using a standard five pin, three-phase standby plug.



## Norscot invests in Stertil lifts

Norscot Truck & Van has enhanced its Perth and Dundee depots in Scotland by investing in two sets of Stertil-Koni wireless mobile column lifts.

Norscot Truck & Van has been a provider of service and support to hauliers across North East Scotland since 1982.

According to Stertil, one of the advantages of these wireless mobile column lifts is the reduction in setup time, as technicians can quickly deploy the lifts without the need for cumbersome cables. This feature enhances workflow efficiency and reduces tripping hazards.

The mobile columns incorporate Stertil-Koni's eBright Smart Control System, allowing engineers to operate the columns individually or in unison, depending on the task at hand. The flexibility in positioning and the ability to control lifts from any column in the set is said to further enhance the adaptability of the lifts.

Furthermore, the Stertil-Koni ST1075FWA lifts are powered by durable, deep-cycle batteries that are claimed to require minimal recharging. The battery life, optimised by the lift's design that uses power only during vehicle elevation, is expected to reduce downtime and increase overall productivity.

Equipped with adjustable width forks, the lifts can accommodate a range of vehicle tyre widths, making them suitable for Norscot's fleet service needs.

## Irizar Integral i6 for Woods Travel

Woods Travel of Bognor Regis has taken delivery of a new Irizar Integral i6 as part of a partnership with Dawson Group Bus & Coach.

Dawson Group Bus & Coach is a provider of rental, hire and lease coaches in the UK with more than 2,000 vehicles in its fleet. Its diverse client base covers local authorities and major coach operators alike.

The 12.9m coach is one of the first i6 models featuring revamped styling to bring the design in line with the rest of the Irizar range.

PSVAR provision has been specified

on the i6, ensuring versatility on the second life of the vehicle.

Passenger conveniences include magazine holders and seatback tables. Multi-position footrests have been included for comfort and USB charging points have been fitted to each pair of seats. Other passenger amenities include a toilet located in the central stairwell and a drinks machine.

Additionally, three-point seat belts have also been specified for the safety of the 49 passengers onboard.



The latest addition to the fleet is powered by a DAF MX11 270kW, OBD-E Euro 6 engine, with an output of 367hp, driving through ZF's Ecolife Coachline enhancing the driveline.

Irizar UK has confirmed that an additional four Irizar Integral i6 coaches will be added to the Dawson Bus & Coach portfolio, with two coaches expected to arrive later this year and an additional two arriving in late 2025.



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# WINTER IS COMING

A range of solutions to protect vehicles from harsh winter conditions

## 1 EXACTRAK

Vehicle tracking specialist Exactrak has entered an exclusivity deal that will see its system fitted to all future gritters manufactured at Econ Engineering's Ripon factory. The system combines vehicle tracking telematics with intelligent automated salt spreading technology. The solution is said to allow all drivers to navigate any given route, giving local authorities the ability to share human resources and make the job of gritter drivers easier and safer. According to Exactrak, the cab-fitted mapping system also automates salt spreading, which can reduce salt use by up to 15%. Using the technology alongside the ability to plan gritting routes will mean salt stocks can also be optimised and accurately forecasted with detailed usage and efficiency reports.

[www.tinyurl.com/yxc26t5n](http://www.tinyurl.com/yxc26t5n)



## 2 MICHELIN

Michelin's X Multi Winter Z / T is said to offer reliability and safety in harsh winter conditions. The Winter Z tyre is expected to reduce braking distance by 5% on icy surfaces. Additionally, the level of grip is reliable in the rain. Users will be able to take advantage of a European labelling of 'B' for the Michelin X Multi Winter Z and 'A' for the Michelin X Multi Winter T. A continuous steel wire - which can be as long as 400 metres- wrapped around the circumference of the tyre provides it with greater stability throughout its lifetime. The tyre offers enhanced durability at a higher load index.

[www.tinyurl.com/4suhdujb](http://www.tinyurl.com/4suhdujb)

## 4 HILLTIP

The Hilltip IceStriker 120-300 is a 12V electric salt and sand spreader that is designed for installation on pickup tailgates, vans, utility vehicles, tractors, loaders and forklifts. It features a polymer hopper and mounted parts in stainless steel. The spreader is operated wirelessly (Bluetooth) through the next generation control system: HillTip StrikeSmart app. Android smart phone is included. Standard features include an HTrack tracking system and an automatic GPS speed control that adjusts the amount of spreading material (g/m<sup>2</sup>) according to the vehicle speed. It also comes with independent controlled dual motors for the auger and spinner, storage transport wheels and mounting solutions for a variety of vehicles and machines.

[www.tinyurl.com/bdxh5ep9](http://www.tinyurl.com/bdxh5ep9)



## 3 PROMETEON

Prometeon's FW:01 is said to be reliable and safe in winter conditions while ensuring high mileage, grip and retreadability. The shoulder tread contour design ensures even wear and high high mileage. The dense siping provides grip and steering control on wet and snow surfaces while deep siping in central rib bridges promotes traction and snow grip beyond half tyrewear. In addition, the special tread compound formulation offers resistance at low temperature. The carcass comes with high durability, which enhances the retradability, with an extended tyre lifecycle. The tyre promises improved vehicle handling and traction performance, and meets the high level of safety in all cold weather conditions. It is claimed to offer excellent performance on both dry and wet roads thanks to its wet grip.

[www.tinyurl.com/5hy8t7nx](http://www.tinyurl.com/5hy8t7nx)

LEGAL  
UPDATE

This page is brought to you by Backhouse Jones Solicitors, which runs a frequent series of podcasts – see [www.tinyurl.com/2xbv3jzv](http://www.tinyurl.com/2xbv3jzv)

# Is your company's registered office address 'appropriate'?

## LEGISLATION

If your business is a company, you need to know that there are now new rules for registered office addresses, which mean companies must, at all times, have an 'appropriate address' as their registered office.

An address is an 'appropriate address' if, in the ordinary course of events, a document addressed to the company – and delivered there by hand or by post – would be expected to come to the attention of a person acting on behalf of the company. The rule also applies if the delivery of documents to the address is capable of being recorded by obtaining an acknowledgement of delivery.

If the company's registered office address does not meet these requirements, the address is not appropriate. It is important to get this right, as Companies House may take action against the company and



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its officers as they're committing an offence.

If Companies House decides a company's registered office is not appropriate, it will change the registered office address to a default address, held at Companies House. If a company's registered office is moved to the default address, they must provide an appropriate address with evidence of proprietary ownership within 28 days.

Otherwise, Companies House may start the process to strike the company off the register of companies.

Businesses using an agent's address or another third-party provider's address as their registered office must make sure the address service they provide meets the requirements for an appropriate registered office address.

Companies can no longer use a Royal Mail PO Box, or

equivalent services offered by other parties, as their registered office address.

## Fact File

### BUSINESS FINANCE WEEK

On Monday 4 September, British Business Bank launched its Business Finance Week. The aim was to help smaller businesses to learn about the different finance options available to them to support their individual needs and grow their businesses. There are many useful resources that businesses can use on the website at: [www.tinyurl.com/3v6mecbn](http://www.tinyurl.com/3v6mecbn).

As part of Business Finance Week, Companies House and the Competition and Markets Authority (CMA) held a live webinar on 1 October 2024 'Starting and growing a company with confidence' Within the webinar, they discussed:

- Starting a company – understanding changes to UK company law
- Directors' responsibilities – annual filings and the importance of staying compliant
- Interaction with competitors and customers – dos and don'ts
- How to raise concerns about competitor conduct
- Helpful resources.

## ENFORCEMENT

### Call for evidence

The Independent Chief Inspector of Borders and Immigration (ICIBI) has begun an inspection of the Border Force operations to deter and detect clandestine entrants to the UK. As part of this, it issued a call for evidence, which included a review of the efficiency and effectiveness of the Clandestine Entrant Civil

Penalty Scheme and the Civil Penalty Accreditation Scheme. There is a specialised team at Backhouse Jones, headed up by Libby Pritchard, that deals with this area of law. The team has met with the ICIBI and put forward a number of suggestions and concerns. BackhouseJones says it will issue updates as soon as it sees any communications from the ICIBI about the results.

## EMPLOYMENT

### The fight for more predictable working conditions

Last September, the Workers (Predictable Terms and Conditions) Act 2023 (WPTCA) received royal assent and was expected to be brought into force in September 2024, but this is not the case yet. One of the aims of the WPTCA was to give workers and agency

workers the right to request more predictable terms and conditions of work. It is now understood that instead of bringing the WPTCA into force, these matters will be dealt with through strengthened rights for workers in the Employment Rights Bill. According to the Labour manifesto, the Employment Rights Bill is expected to be published by 13 October 2024.



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