

Velocity

NEWS FROM L.B. FOSTER EUROPE

ISSUE 5 WINTER 2018 / 2019

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It's two years since we launched our brand at InnoTrans. Learn about our mission to discover more.

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INNOVATION
How our innovations keep your world moving

LB Foster[®]

KEEPING YOUR WORLD MOVING

L.B. FOSTER EUROPE HEADS INTO 2019 IN A STRONG POSITION TO GROW. OUR ASSOCIATION WITH MAJOR INFRASTRUCTURE PROJECTS CONTINUES TO DELIVER A STRONG PIPELINE OF OPPORTUNITIES, WHILST OUR STRATEGIC PARTNERSHIPS TAKE US INTO EXCITING NEW TERRITORIES.

ADDED TO THIS, OUR APPETITE FOR NEW MARKET INNOVATIONS IS OPENING NEW OPPORTUNITIES IN THE CORE SECTORS WE SERVE.



As we begin a new year, it's a good time to reflect on the past 12 months and to look forward to future trading opportunities. Brexit has dominated our thoughts but rather than act as a barrier, we see it as an opportunity to explore new markets for our innovative solutions.

There should be no limits to innovation. It can come from our own teams, what competitors are doing, and our markets. It's all about what our customers want and need. So it's up to us as a business which prides itself on innovation to make sure we have a good set of antennae to pick up on market trends.

In rail our innovative technology solutions underpin our business strategy, delivering excellence in network safety and security. That's because the work we do integrating obstacle detection safety solutions, such as CCTV and LIDAR technologies, is setting standards here in Europe and in the US. Then there's our SmartStation solutions. Our pioneering technologies enhance the passenger experience across their whole journey with personalised, consistent, real-time information wherever and whenever the customer needs it.

What we do in condition monitoring helps to significantly improve the performance and availability of assets for our customers, and our customers' customers. We have monitoring solutions in place for bridge strike, flooding, landslip, temperature, rail wear and damage. It's all in a day's work for our innovators at L.B. Foster Europe.

Sticking with the theme of innovation, the UK's forthcoming exit from Europe requires a reset and rewiring of how we do business. The Eurozone is an important market for our businesses and will continue to be in the future. At the same time, we are looking further afield, opening up new market opportunities through our technology transfer to north and south America. The uncertainty is not helpful, especially in the automotive sector, but we remain focused. That's testimony to the quality of our people, whose constant innovation inspires excellence throughout our company.

Peter Jones
Managing Director
L.B. Foster Europe

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How our new website focuses on solutions



Image courtesy Rail Engineer

The Edinburgh Gateway station provides a rail-tram interchange for passengers heading to Edinburgh International Airport. Neil Sheffield explains our involvement.

Gateway to Edinburgh

Our Telecoms business works on some of the UK's most prestigious infrastructure projects, delivering excellence in integrated telecoms solutions. In Scotland, our Telecoms business was contracted by mechanical and electrical engineering specialists SES Engineering Services to supply, install and commission integrated Station Information and Surveillance Systems (SISS) at the new £26m Edinburgh Gateway station.

The overarching contract to build the prestigious Edinburgh Gateway station was let to Balfour Beatty. The designer was WSP, working with IDP Architects. Specialist sub-contractors SES Engineering Services undertook the mechanical and electrical engineering fit out.

With two 265-metre platforms that can accommodate 10-coach trains and a 1,500 square-metre floor area, the Gateway station is a substantial structure. The L.B. Foster Telecoms integrated SISS solution at Edinburgh Gateway includes a PA system covering all public areas of the station, ensuring thousands of daily passengers receive up-to-date travel information under the watchful eye of a sophisticated CCTV security system.

The Gateway station's SISS includes control equipment, audio routers, amplifiers, speakers, microphones, microphone receivers, ambient noise sensors and associated cabling. We also supplied and installed CCTV systems to cover all public areas of the station, including IP cameras, encoders, decoders, network video recorders, storage arrays, passenger awareness monitors, review stations and associated cabling.

Located 9km to the west of Edinburgh and 4.8km from Edinburgh International Airport, Edinburgh Gateway is part of the Edinburgh to Glasgow Improvement Programme (EGIP), a major Scottish transport project involving infrastructure improvements and the electrification of most railway lines between Glasgow and Edinburgh.

Cover Photo:

Terry Coulson of L.B. Foster Telecoms adjusts a DOO camera at Crossrail, Tottenham Court Road.

L.B. Foster Europe

Lauren shortlisted for 'Women in Construction' award

Recognition for the fantastic work our female colleagues do day in, day out has led to Nottingham's Lauren Cassady reaching the finals of a Women in Construction Award.

Lauren works as Health, Safety, Quality and Environment (HSQE) advisor for L.B. Foster Europe. Based in Nottingham, she was encouraged to enter the Nottingham Post Women in Business Awards 2018. In its sixth year, the Awards celebrate the outstanding achievements of female entrepreneurs and professionals.

Matthew Bunn is Business Editor at the Nottingham Post. He says: "While the construction industry is traditionally male-dominated, there are now more women than ever working in the sector. We aim to highlight outstanding examples of women working in the construction industry and we hope that celebrating their achievements will encourage other females to choose a career in the construction."

Lauren says: "I joined what was then The TEW Group over nine years ago, having left school with no GCSEs. But I was given the chance to work within the 'goods inwards' area and I haven't looked back. I've worked in purchasing and then got involved in HSQE. Now I'm a HSQE advisor.

"My own drive and determination comes from being brought up around strong women and men. I also wanted to prove I was able to succeed. I had my first child the day before my 18th birthday. There were a lot of opinions at that time that I was never going to achieve a good career. I also felt that after my dad passed away I needed to make changes in my life to make him proud of me. Luckily, I've had the backing of a great company that believed in me and nurtured a talent they identified in me, making my goals achievable.

"I've enjoyed the backing of L.B. Foster, which has really boosted my confidence. Just reaching the shortlist of the Women in Business Awards is an achievement in itself."

Marilyn Coulton is head of HR at L.B. Foster Europe. She adds: "Well done Lauren. You've achieved great things and it's fantastic that this has been recognised. Everyone at L.B. Foster is very proud of you."



L.B. Foster Netpractise, Lincoln

Damian receives President's Silver Award

Joining the growing list of winners of the President's Award from the UK is a member of the L.B. Foster Netpractise team in Lincoln.

Damian McCracken is the latest recipient of the President's Silver Award, recognising the fantastic turnaround in fortunes of Netpractise following a turbulent couple of trading years. Congratulating Damian, John Kasel, Senior Vice President, L.B. Foster, said: "Due to exceptional operational circumstances, there have been a number of challenges that the L.B. Foster Netpractise team has faced over the last couple of years.

"Damian has stepped up and demonstrated real leadership, guiding the Liberty project team forward. His 'never-say-die' attitude has seen the business turnaround, recording a sizeable operating profit in this financial year.

"The Liberty project is a true example of inspiration in action and demonstrates the L.B. Foster values of collaboration, partnership, expertise and innovation. Congratulations Damian, this award is recognition of your personal endeavour."

Over the last year L.B. Foster Netpractise has been working to tailor its Fingerprint asset maintenance software for property services specialist Liberty Group. Liberty manages over 220,000 properties for local authorities, housing associations, public sector and commercial enterprises. Fingerprint provides base level root cause analysis for engineers and managers. Users record data on tablets, building a detailed picture of individual asset performance and maintenance.

The President's Silver Award is awarded to employees considered to have performed above and beyond what is expected of them. Candidates are nominated anonymously by colleagues with submissions reviewed by a group of judges.



Rail Technologies, Sheffield

Overseas consortium visits Sheffield

A large trade delegation representing the State Railway of Thailand and the Mitsubishi Hitachi Sumitomo Consortium visited our Sheffield site in November.

Tony McEwen, Commercial Manager at L.B. Foster Rail Technologies, was part of the team that briefed the delegation on what we do. He said: "Everyone in Sheffield extended a really warm welcome to our friends from Thailand and Japan.

"The delegations were given a comprehensive tour of our rail technologies manufacturing facilities, as well as enjoying a powerful presentation about our integrated, group-wide capabilities."



L.B. Foster Europe

Apprentice success

Two of our Nottingham employees are Advanced Apprentices who have successfully completed their Level 3 BTEC Diploma in Engineering and are currently studying towards their NVQ in Mechanical Manufacturing Engineering.

Harry Thornton and Ethan Giblett both attended Nottingham College, combining their studies with their work roles at L.B. Foster.



Marilyn Coulton, Head of HR, says: "Well done Harry and Ethan. You've shown great application during your studies and we're delighted at your success."

Harry and Ethan are now pursuing their Level 4 Higher National Certificate in Electrical/Electronic Engineering.

Obituary

Gone, but not forgotten

We were sad to hear that one of our oldest former employees has passed away recently, aged 95.

Jack Shipley joined the original WH Tew & Company as an electrical apprentice in 1948. Remarkably, the original owner of the business, founded in 1914, Mr William Henry Tew was still alive when Jack joined. When Mr WH Tew died the following year, the business continued to be run by his sons Harold and Fred Tew. Jack remembered all the original owners, now long since passed away and talked fondly of the times he was growing up and learning his trade.

When the firm's ownership was taken over by long-term general manager Derek Spencer in the early 1970s, Jack was quickly promoted to Electrical Engineering Foreman. He became the go-to person for colleagues, apprentices and customers.

Jack retired in the late 1980s, but such was his incredible knowledge, experience and influence, he quickly returned in an R&D capacity and continued to work for the business well into his 80s.

More recently, Jack was welcomed back to the business in 2014 as part of The TEW Group's centenary celebrations. He stole the limelight, sharing stories and memories with former colleagues about his time in the business.

His legacy is carried on by his son Gareth, who is one of our highly skilled sheet metal fabricators in Nottingham, along with the many electrical engineers around the UK who were trained and supported by Jack in his time at the company.

Right: Jack Shipley enjoying a tour of our manufacturing facilities in Nottingham in 2014.

L.B. Foster Europe, Nottingham

Chair of Transport Select Committee Drops in for a Breakfast Briefing

Adding to our list of high profile UK politicians whose ear we've bent this month is Lillian Greenwood, Chair of the House of Commons Transport Select Committee.

Lilian dropped in on a busy breakfast business briefing at our Nottingham office on 2 November 2018, organised by the East Midlands Chamber. She joined a number of East Midlands business leaders at a forum for local firms to share their observations and concerns about localised trading conditions.

Peter Jones is Managing Director of L.B. Foster Europe. He says: "This is the second senior politician that we have hosted in recent weeks, having met Chris Grayling MP, Secretary of State for Transport in Berlin to air our concerns about Brexit and the potential impact this will have upon us as business that operates in markets throughout Europe.

"We are keen to get our voice heard, whether with government or the opposition. This is Lilian's third visit to our Nottingham operations so it was a pleasure to welcome her back and provide an update on how we are progressing in the various markets we serve."



The East Midlands Chamber (Derbyshire, Nottinghamshire, Leicestershire) organises regular business briefing sessions across the region. Each is an opportunity for host businesses to showcase activities and highlight any recent achievements, as well as to take part in a productive discussion.

Lilian Greenwood is Labour Member of Parliament for Nottingham South. She has represented her constituency since 2010. She adds: "It's always good to catch up on the progress of companies in my constituency and L.B. Foster is a business that I have kept a close eye on. I am delighted to see the progress the business is making and what it continues to deliver to local people. Today's question and answer session was very engaging and it was excellent to see such a diverse mix of solutions represented."



A journey of discovery



Mike Hull recently visited InnoTrans rail expo in Berlin. Here he talks about his experience.



A record-breaking InnoTrans 2018 in Berlin saw 3,062 exhibitors from 61 countries and around 160,000 trade visitors from more than 110 countries.

Our mission was very different to that in 2016, taking a step back from the day-to-day and focusing on market intelligence gathering. The fair takes place every two years covering Railway Technology, Railway Infrastructure, Public Transport, Interiors and Tunnel Construction. It's absolutely vast, occupying all 41 halls at Messe Berlin; that's over 180,000m² of exhibition space.

One of the truly unique features of InnoTrans is the extraordinary outdoor and track display area, where everything from tank wagons to high-speed trains are displayed on 3,500 metres of track. Our Rail Technologies team spent time investigating onboard friction management solutions, as well as familiarising ourselves with new rolling stock designs.

It's incredible to think that we are two years on from InnoTrans 2016, where we launched our new brand expression 'keeping our world moving' to much applause.

Our world-class engineering solutions have positioned us favourably on the global rail supply chain. We have achieved this by listening to, and understanding, the requirements of today's modern railways. Our presence at InnoTrans 2018 was all about understanding how to align what we do with the future requirements of the global transit markets. So instead of showing our products, we attended with a brief to 'discover'.

We aligned ourselves with the Railway Industry Association (RIA), which represents the British railway supply industry, taking space in the RIA's area in CityCube A. This acted as a base from which to explore the fair, as well as to meet past, present and future customers, representatives of the Department for Trade & Industry and a senior UK government minister. It was also a great opportunity to meet people from the UK and European rail press as all titles were represented at the show.

InnoTrans is one of those events that brings together everyone from across the global rail industries. What was clearly evident this year was the rise and rise of China and its

influence on global markets. There are some huge infrastructure projects, such as HS2, that present our business with fantastic opportunities for growth. The groundwork we are doing now will deliver future success as these projects come online. InnoTrans is a great place to meet and share our expertise, experience and innovation.

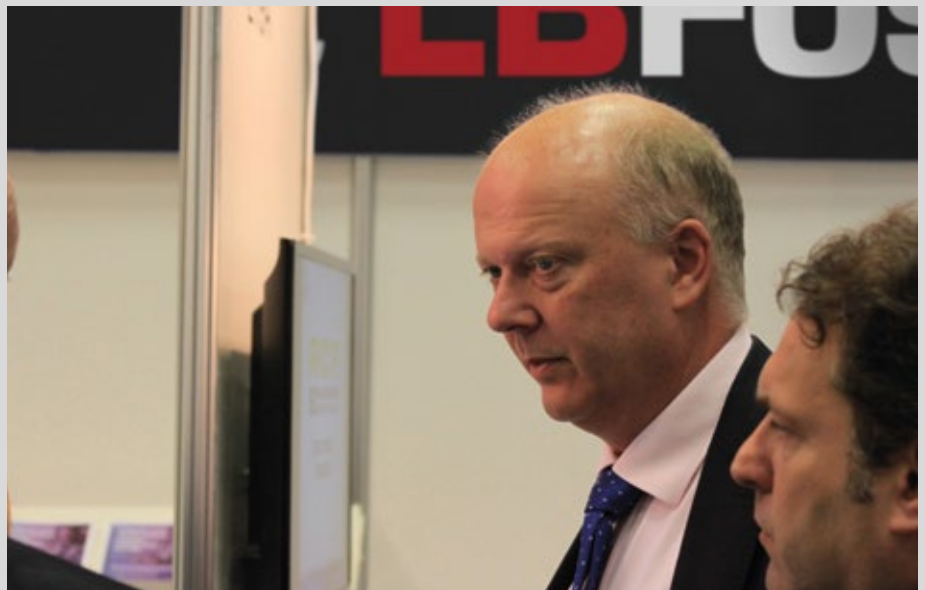
"Our world-class engineering solutions have positioned us favourably on the global rail supply chain. We have achieved this by listening to and understanding the requirements of today's modern railways."

Getting the ear of senior government ministers is no mean feat. So our Head of Marketing tracked down the UK's Secretary of State for Transport in Berlin to share his thoughts at InnoTrans 2018.

Phil Chester explains.



Secretary of State visit



The InnoTrans international trade fair for transport technology in Berlin at the tail end of summer provided the perfect backdrop to a visit from one of the UK's top politicians.

As Railway Industry Association members, we were invited to meet with Chris Grayling MP, Secretary of State for Transport through the Association's close ties with the Department for International Trade.

So bright and early on day two of the show, I headed into the CityCube in readiness for a short, sharp audience with the MP. I got to talk to Chris Grayling about burning issues facing the rail technologies side of our business. We're a truly global business and as such our operations here in Europe are currently of most concern given the lack of clarity around Brexit. We generate considerable sales into the Eurozone transport markets so the comments circulating in the automotive sector about moving assembly out of the UK also adds to our disquiet, given this sector's importance to our business.

In addition, we have a very clear goal of growing our Eurozone sales. So whilst it was a fleeting visit, we got the L.B. Foster name in front of a senior government minister and it gave us the chance to talk about the government's preparations for Brexit, amongst other things. What was clear from our conversation was that the UK's exit from Europe was the main talking point of all UK exhibitors.

We also had a conversation about our new Inform disruption management information totem, which was displayed on our stand. The minister was very impressed with the technological innovation that we demonstrated and wished us well for a successful exhibition.

"We got the L.B. Foster name in front of a senior government minister and it gave us the chance to talk about the government's preparations for Brexit, amongst other things."

Standards certification success



All L.B. Foster Europe sites and companies are now up to the same certification level for compliance against a number of key safety standards. That's credit to the people who work across our business and a reflection of our commitment to best practice in all that we do. **Jonathan Wilson** explains.



Jonathan Wilson from L.B. Foster Europe led the audit and assessment process. He says: "We have now achieved a consistent set of operational standards across our European businesses. That's to be commended but the process is one of continual improvement. The next phase is to develop our audit plan leading up to recertification."

We worked with certification body ACM Limited in Leicester. Joanna Lanham is our Account Coordinator at ACM. She says: "We are delighted that following a review of L.B. Foster Europe's assessment and a formal on-site audit process, we can now confirm our auditor's recommendation for certification. Please accept our warmest congratulations on achieving and maintaining the high standards required."

The standards are as follows:

ISO 9001:2015

This specifies requirements for a quality management system when an organisation needs to demonstrate its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements. It also aims to enhance customer satisfaction through the effective application of the system, including processes for improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

ISO 14001:2015

ISO 14001:2015 specifies the requirements for an environmental management system that an organisation can use to enhance its environmental performance. ISO 14001:2015 is intended for use by an organisation seeking to manage its environmental responsibilities in a systematic manner that contributes to the environmental pillar of sustainability.

ISO 14001:2015 helps an organisation achieve the intended outcomes of its environmental management system, which provide value for the environment, the organisation itself and interested parties. The intended outcomes of an environmental management system include:

- > enhancement of environmental performance
- > fulfilment of compliance obligations
- > achievement of environmental objectives.

BS OHSAS 18001:2007

OHSAS 18001:2007 Occupational Health and Safety Management Certification is an international standard which provides a framework to identify, control and decrease the risks associated with health and safety within the workplace. Implementing the standard will send a clear signal to your stakeholders that you view employee's health and safety as a priority within your organisation.

For more information contact Jonathan Wilson jwilson@lbfoster.co.uk



International Organization for Standardization

Driving Telecoms forward

L.B. Foster Telecoms has successfully completed its Silver Fleet Operator Recognition Scheme (FORS) accreditation, which recognises the business's commitment to the continual improvement, safety and sustainability of its fleet operations.



The Fleet Operator Recognition Scheme (FORS) is a voluntary accreditation scheme for fleet operators. It aims to raise the level of quality within fleet operations and to demonstrate which operators are achieving exemplary levels of best practice in safety, efficiency, and environmental protection.

Peter Jones, Managing Director, L.B. Foster Europe, says: "FORS is only awarded to those businesses demonstrating the highest levels of fleet management, with emphasis on the safety of other road users. It's great to see that our Telecoms business has now achieved Silver FORS accreditation.

"L.B. Foster Telecoms has held FORS Bronze accreditation since 2014 and this year decided to work towards FORS Silver accreditation. Achieving FORS Silver accreditation requires operators to commit to monitoring fuel, reducing levels of harmful emissions, implement safe operating practices and deliver a progressive driver training programme that focuses on the safety of vulnerable road users." Paul Unwin, Director, L.B. Foster Telecoms, says: "We have a dedicated Fuel Champion that monitors fuel consumption costs to reduce carbon dioxide emissions and nitrous oxide particulate matter. We also have an experienced road risk champion who has seven years work experience and is a FORS Practitioner."

"Over the past four years, we trained our drivers ensuring that they complete the required FORS Road Safety Learning Programmes through our dedicated HSQE and Training Manager. All driver training is assessed annually by our Training Manager, which has resulted in an improvement in driver skills, knowledge and awareness. The result of this has seen a reduction in fuel consumption, accidents and fines." Natasha Sterling is HSQE Compliance Assistant at L.B. Foster Telecoms. She explains: "Our new accreditation means we are now Crossrail site compliant, as the accreditation is aligned with the work-related road risk (WRRR)

contractual clauses specified by Crossrail, as well as other organisations such as Transport for London and City of London. Our clients can be assured we are committed to continual improvement, which in turn makes us safer and greener."

A FORS spokesperson said: "FORS accreditation can bring peace of mind that your company is managing its work-related road risk and demonstrates to your customers and supply chain your commitment to exceeding the industry standard."

"FORS is only awarded to those businesses demonstrating the highest levels of fleet management, with emphasis on the safety of other road users. It's great to see that our Telecoms business has achieved Silver FORS accreditation."

Innovation in motion

Across L.B. Foster Europe, we constantly provide our customers with the forward thinking they need to drive their businesses. Take our SmartStation technology. Our Chief Technical Officer, **Dr Mark Aston**, explains.



L.B. Foster Europe operates in challenging and often complex environments. We're embedded in the rail industry, so understanding the future of the UK's railway network is a commercial imperative. What will it look like? More importantly, how can we be part of it?

Rail passenger numbers are predicted to double in the next 25 years. Network Rail's 'Delivering for our Customers' is a plan to transform its organisation to deliver services that passengers will want and need in the years ahead. That requires major upgrades to the railway to allow more and longer trains to run, as well as the development of new lines such as HS2 and Crossrail 2. These interventions alone will not be sufficient to meet demand. That's why the digitalisation of the railway to increase capacity is so important.

Market opportunities such as the digital railway are once in a generation. So how is L.B. Foster innovating in its response?

Solutions integration

The digital railway is already upon us and the opportunities it affords are far reaching. At L.B. Foster Europe we've been asking ourselves how our traditional engineering solutions and our in-house expertise in software development and information technology can work better together to deliver extraordinary capabilities for the digital railway.

We are already progressing with the digital integration of all L.B. Foster solutions, including intelligent consumable monitoring of our on-board and trackside Friction Management solutions.

The capability for Network Rail to remotely monitor track products is also in development, with all L.B. Foster Rail Technologies' track products network ready by 2020.

But what about at a customer level? Imagine the ability to forward plan the best place to board your train, or check the real-time status of your train from your mobile, smoothing your journey through the station.

SmartStation by L.B.Foster is a new overarching concept that we are developing to inform the future of customer journeys. It includes mobile displays to deliver dynamic customer information, helping travellers at stations make informed decisions. SmartStation technologies will deliver improvements to current information systems with:

- > dynamic wayfinding depending on service and station usage
- > dynamic service updates with live train location
- > dynamic disruption management using near field technology.

Using mobile display technology, information screens update remotely advising travellers of changes to the route service in a more accessible way. SmartStation's total signage solution covers every station touchpoint putting decision making in the hands of travellers. And by integrating CCTV surveillance into the solution, decisions such as delaying journeys or wayfinding choices can be made ahead of travel. SmartStation is a part of L.B. Foster's Intelligent Transport strategy.



 intelligent
transport

smartstation
by LBFoster.

inform[®]
by LBFoster



Low power, solar gateway camera

The Solar Gateway solves the need for customers to keep themselves informed where power and data cables cannot be provided. As part of a comprehensive remote asset condition monitoring scheme, the Solar Gateway becomes a fully integrated monitoring, recording and communication device all-in-one.

Mexico

In Mexico we are helping protect and warn against attack and vandalism of trackside bungalows. Bungalows contain signal and communications computers that control switches, crossings and other controls, whilst relaying information to and from rail traffic control.

Our solution is a ballistic resistant security surveillance system that records live images 24/7. Integrated with our Solar Gateway capability, our solution integrates 3G communications delivering real time video monitoring with 'audio challenge' voice alarms, as well as high definition infrared and movement detection.

Obstacle detection in North America

We are using LIDAR to enhance security levels across a wide range of applications. This now positions our LIDAR technology in level crossings, rail and road interfaces where security for pedestrians and users is paramount.

In addition to developing country specific solutions with Network Rail level crossings in the UK and Deutsche Bahn level crossings in Germany, we are working with approval agencies, such as TUFSUD in Germany, to provide Cenelec SIL3 generic approvals for global applications for obstacle detections.

LIDAR is also being trialled for rockfall and avalanche applications in the US.

Remote condition monitoring (RCM)

In the US, our long-life battery-powered RCM tilt and position sensors are attached to posts and swept along with an avalanche. When a change in position is detected, data is relayed wirelessly to a local gateway receiver. This launches an avalanche alert over the local train communications network, potentially saving lives and costs.

For more information contact
Dr Mark Aston
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The SmartStation Concept

- > Real time information
- > Information relevant to the journey line and based on passenger behaviour, needs and habits
- > Tone of voice – personalised display content replicating the 'human touch'
- > Making customers feel confident and cared for
- > Simple approach to dynamic wayfinding and accessibility
- > Multi-modal delivery of information
- > Station management of footfall and potential risks

See our innovations at


RAILTEX

14 - 16 May 2019


RAILLIVE
2019 In association with railalliance

19 - 20 June 2019

+600,000

level crossings worldwide

+213,000

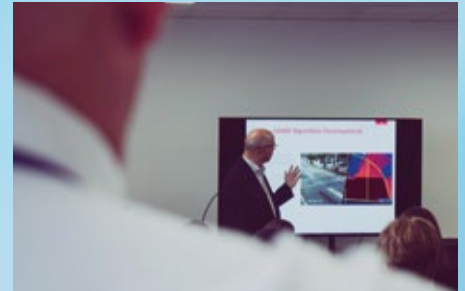
In the US

+114,000

in Europe

+37,000

in Canada



LIDAR security applications impress Optex

One of the world's leading manufacturers of detection systems hosted an open day to showcase its wide range of innovative technology solutions for applications in the securities industries. **Dr Mark Aston** explains further.

Among Optex's partners attending was our team from L.B. Foster Control & Display Solutions, showcasing LIDAR obstacle detection. Dr Mark Aston is L.B. Foster Europe's Chief Technical Officer. He explains: "Our partnership with Optex is an opportunity to showcase our innovative LIDAR obstacle detection solution to a whole new area of the security market.

LIDAR

"We apply LIDAR technology to railway level crossings to enhance safety for level crossing users, operators, network owners and train operators. Hitting an obstacle on a level crossing can cause major disruption, adding to costs and delays.

"Early warning using laser technology means collisions can be avoided. When the barriers are down, the laser sensor scans the area to detect if any object or person is trapped on the crossing area and might be hit by an oncoming train. The detection system is linked to the signalling system and automatically stops the train if an obstacle is detected.

"We use well-proven technology that is now being developed to enable reliable obstacle detection down to 115mm from the ground. That's absolutely cutting-edge."

Level crossings

Causes of collisions at level crossings can be very different, but it is recognised that human behaviour is the main factor. A survey by the EU Agency for Railways found that 48% of all level crossings are 'passive', with no barriers or obstacle detection. Level crossings account for the second highest cause of total accidents on the UK's railways.

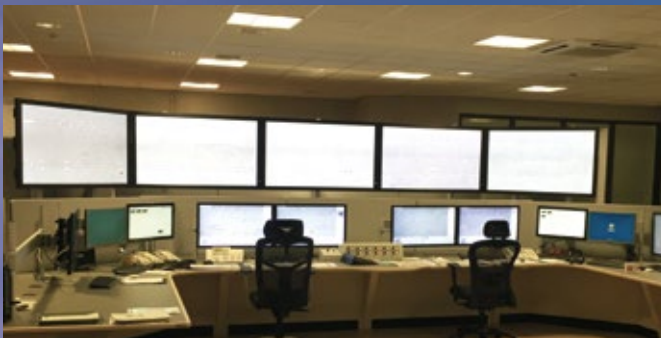
Masaya Kida, Managing Director, Optex EMEA Headquarters, says: "What L.B. Foster offers with its LIDAR obstacle detection is exceptional. The work it is doing to develop its next-generation SIL-3 solution for the European market is a game-changer. The company has already secured over 100 railway level crossings in the UK and has undertaken field trials in Germany, which have delivered positive results."

For more information contact

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New workstations for Tyne & Wear Metro

Second only in size to the London Underground, the Tyne and Wear Metro rapid transit and light rail system serves Newcastle upon Tyne, Gateshead, South Tyneside, North Tyneside and Sunderland. **Paul Parkinson** explains.



In August our Control & Display Solutions business was part of a team that installed a new signalling control system for operator Nexus in the Metro Control Room – the single biggest upgrade for almost 40 years.

Nearly 38 million passenger journeys were made on Tyne & Wear Metro in 2016/17. The network runs over 77.5 kilometres and has two lines with a total of 60 stations, nine of which are underground. Martin Foster was L.B. Foster Control & Display Solutions' Project Manager. He says: "We installed the original signalling control room console back in 2007, designed around a hard-wired control panel and large, tiled overview mimic. The objective of the new project was to implement a screen-based control system, using the footprint of the old console, but built to current day ergonomic standards.

The new screen-based control system was set up several weeks before the commissioning date and split into three operational sections, all remote from the existing console. Once tested successfully, the console was decommissioned in readiness for the first stage of the refurbishment. The Metro had to remain operational at all times during the changeover, so all work was carried out in and around a fully operational control room.

Martin continues: "We stripped off the old work surface and fitted an infill section to the existing steel base units, so the new work surface would meet current height and knee-well dimensional standards. Our data storage and CAD files ensured the new infill steel section was a perfect fit on the old base units.

"As each section of the console approached completion, the L.B. Foster Telecoms team moved in with screens, keyboards and an operational section of the screen-based control system. At the end of the third night, the new control system was fully operational."

The final part of the overall project involved dismantling the old overview mimic display to make way for a five-bay 65" overview screen system mounted on a free-standing plinth.

The work forms part of the £389m Metro: all change modernisation programme, a Government-funded scheme to modernise the Tyne and Wear Metro which began in 2010. The work focuses on Metro track replacement, station refurbishment and essential new technology.

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world moving

New Mimic control panel for major London telecoms project

A major new infrastructure project in London for the telecoms industry is the beneficiary of a bespoke mimic control panel designed and manufactured by L.B. Foster Control & Display Solutions on behalf of project lead Pharos Field Engineering Services.

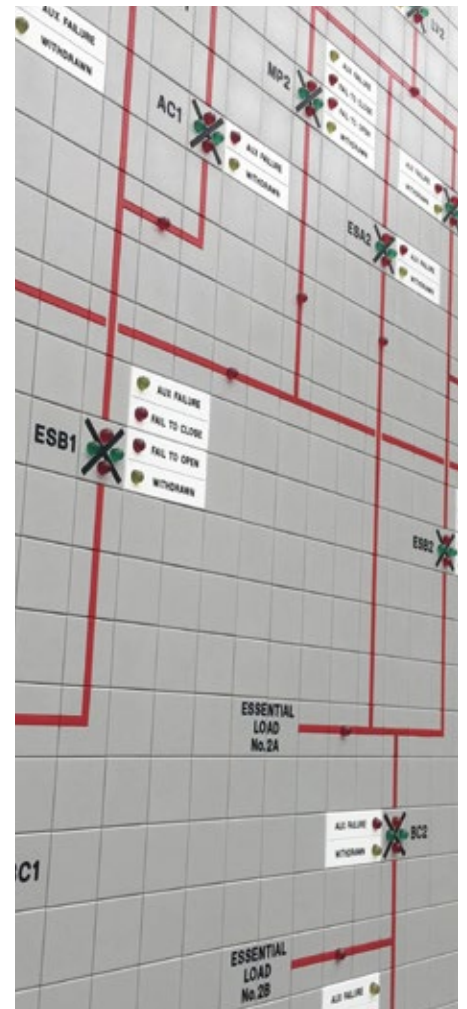
Paul Hyatt is Operations Director at Pharos Field Engineering Services. He explains: "The project consisted of replacing four mains standby switchboards feeding essential loads across the large project site.

"The new mimic control panel was a joint venture with the team at L.B. Foster Control & Display Solutions. They provided the new panel, mimic tiles and indicator lamps, designing in space within the enclosure for an automated programmable logic controller (PLC) system supplied by Pharos."

Each of the automated and non-automated circuit breakers has auxiliary breaker status contacts, which are connected to the mimic lamps indicating open, close and fault scenarios. Wiring was series connected from each status lamp to the Pharos PLC enabling the PLC to look at how the system is operating and automate circuit breaker open/close scenarios to re-divert supplies to essential circuits as required.

Paul Hyatt continues: "The main benefit with the mimic system is that if an alarm or serious fault conditions arise at site, the on-site maintenance engineer can go to the mosaic mimic diagram and review what is happening with the entire system and take relevant actions to restore power to critical equipment."

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Digging deep in quarrying

We are always exploring new market opportunities for our innovative engineering solutions. Take quarrying. Whilst it may not be the first sector you think of as an outlet for our products and services, our Control & Display Solutions team has been hard at work aligning our capability.

The core areas of our Control & Display Solutions expertise that fit with what goes on in quarries are Remote Condition Monitoring (RCM), LIDAR and security solutions. With over 500,000 active extraction sites worldwide producing over 50 billion tonnes of aggregates per year, it's a market of unprecedented scale.

Neil Roberts, Product Manager, L.B. Foster Control & Display Solutions, explains: "We have a number of innovative solutions that have been developed with the rail market in mind. However, it's not a huge step to see how these

can also be applied in other markets, such as mineral extraction.

"Our Remote Condition Monitoring solutions suite includes landslip and flood monitoring - both of which are commonplace problems in quarries. Then there's the issue of site security. The sheer scale of operations means that quarries are open to trespass, so for health and safety reasons it is essential that operators are able to remotely monitor and record often isolated sites.

"Safety of personnel is at the very top of the list of priorities for all quarry operators. Zero Harm is a goal that is on everyone's radar. With over four million people working in quarrying, innovations like our Light Imaging Detection and Ranging (LIDAR), which is capable of detecting people, objects and vehicles in allocated 'danger areas' is another solution crying out for use in quarries."

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Tailoring our Fingerprint asset maintenance software for property services specialist Liberty Group has taken on a life of its own.

Damian McCracken explains.



Fingerprint Makes its Mark on Liberty

The success of the solution has been such that we have now seconded our own L.B. Foster Netpractice development team to work out of Liberty's head office in Liverpool. Liberty manages over 220,000 properties for local authorities, housing associations, public sector and commercial enterprises. Our new team is providing technical support on Liberty's existing legacy systems in the lead up to the full rollout of Fingerprint.

Damian McCracken is Operations Manager at L.B. Foster Netpractice. He explains: "Liberty reached out to us for help to provide business continuity. That meant placing a team to support Liberty whilst their legacy systems are replaced. The newly formed team is working together in the Knowsley offices in Liverpool. It's made up of Paul Taylor, our lead developer, who is supported by developer Adam Kearsley,

business intelligence developer Allan Doolan and a junior developer Louise Jones. "It has only been a month since the team was brought together so it's very much early days, but they have settled in well to the world of L.B. Foster. We are regularly spending time over in their office too and have plans to bring them over to Lincoln on a regular basis so that they feel part of the Software Development centre.

"We see this team as absolutely pivotable to our success with Fingerprint and Anatomy going forward, not only with Liberty but as a wider marketable product. Long term, this team will form part of our core development, working with our India and other UK colleagues."

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New faces

Our software development team in Lincoln is growing, bolstered by the success of our sector-leading asset maintenance solution Fingerprint.

Joining us in Lincoln is Andrew Leivers, who takes on the role of Client Support Technician. As you'd expect, Andrew comes to us with a strong technical background with a wide range of experience in servers, desktops, networks, security and build process. In his past working life, Andrew has supported multi-site environments, managing quite literally thousands of devices live in the field.

Andrew joined us in October and is getting to grips with the work we are doing with Liberty Gas on Fingerprint, as well as learning our off the shelf signage and queueing products.



Software innovation

Whilst we may not readily be recognised as a software solutions business, our team at L.B. Foster Netpractice provides an intellectual and skills technology capability that is being applied and adapted across our business.

Take Inform by L.B. Foster, our mobile disruption management information display totem. Here we combine the manufacturing innovation and design expertise of our Control & Display Solutions business with the technology of Netpractice to deliver a wireless, mobile display that gets messages to customers

and travellers when and where it is needed. Graham Kett is Technical Operations Manager at L.B. Foster Netpractice. He observes: "More and more you are seeing the innovative application of information technology to deliver better solutions for customers, particularly in communications.

"Inform is a great example. We've used wireless, mobile technology, combined with great mechanical and electrical engineering, to create a solution that is disrupting the traditional, fixed visual communications market place."

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“Our business is a big supporter of innovation, so to see its application in action in the IMechE boardroom was something else. That’s why we’ve already committed to sponsoring next year’s Mechatronics Engineering Student of the Year.”



How do we get closer to the engineers of the future? And how can we align our brand with the brightest undergraduates to encourage innovation and engineering excellence?

**Institution of
MECHANICAL
ENGINEERS**

Mechatronics Student of the Year Awards Sponsorship

That’s exactly what we’ve done with our sponsorship of the Institution of Mechanical Engineers (IMechE) ‘Mechatronics Engineering Student of the Year’. The finals of this prestigious competition were hosted at the historic headquarters of IMechE on Birdcage Walk in London in late October.

Four student finalists from some of the UK’s leading universities battled it out to win the coveted title. Adam Fry, 23, is studying Electronics Engineering at the University of Bath. His unmanned ground vehicle platform design project was judged the best example of the application of mechatronics by a panel of industry and academic experts, including our own Dr Mark Aston.

Dr Mark Aston presented Adam with a €1000 cheque on behalf of sponsor L.B. Foster Europe. He said: “The quality of the entries in this year’s competition was exceptional, as were the four finalists. “The depth of intellect, research and development demonstrated in each candidate’s final presentation was truly inspiring and made the job all the more difficult for the panel.”

“However, Adam’s entry stood out for its application of mechatronics in its truest sense. The complex design of his unmanned ground vehicle platform showed a real understanding of the challenges we face day-to-day as design engineers. Our congratulations to Adam.”

Adam says: “Obviously I am over the moon to win. It was a big surprise as the other entries in the room gave me stiff competition. It was a great experience presenting to the judges and members of the IMechE board. Winning is great for my CV and I hope the award will prove attractive to future employers too.”

This year’s finalists included Edward Sayer from the University of Bristol (Project: Medical device for assessing patients with peripheral neuropathy); Harry Page, University of Southampton (Project: Low cost, tendon-driven robotic hand with controller); and Paul Yule, University of Strathclyde with his Drone Gimbal.

Phil Chester is Head of Marketing at L.B. Foster Europe. He says: “Our business is a big supporter of innovation so to see its application in action in the IMechE boardroom was something else. That’s why we’ve already committed to sponsoring next year’s Mechatronics Engineering Student of the Year.

“I was blown away by the finalists’ presentations. With that depth of thought and level of application, these guys really look to have a very bright future ahead of them.”

Hosted at the IMechE headquarters at 1 Birdcage Walk, London, the annual awards celebrate the best undergraduate or recent graduate student project in the field of mechatronics. Judges included Dr Martyn Paradise, Dr Mark Aston, Chief Technical Officer at L.B. Foster Europe and Dr Chris Ward from Loughborough University.



Improving quality

A major production quality concern for advanced component manufacturers is the issue of foreign materials left inside precision castings. **Alex Morgan** explains how our Automation & Materials Handling team created an innovative, automated cleaning solution.



An advanced engineering component manufacturer based in Leeds approached us to come up with a smart ceramic mould cleaning solution to aid the removal of foreign materials from ceramic aerofoil casts. Our design team quickly got to work fashioning an innovative fabricated machine, housing a rotating frame with clamps to securely hold ceramic casts across a range of sizes. A powerful vacuum system is then used to transport foreign materials out of the casts. Where our solution really stands out is the inclusion of a sophisticated vision system. This performs a particle check of the foreign material collected in the filter, prior to returning the cast to the production line.

Our automated mould cleaning machine allows the company to fine-tune programs, providing flexibility, plus a range of tools, to remove all foreign particles. The ceramic part clamps, rotation mechanism, vacuum system and vision system are all housed in a mild steel machine frame.

A customer spokesperson adds: "The issue of casting imperfections is a production challenge for all precision component manufacturers. Left unchecked, castings end up with inclusions, leading to rework and scrap and associated costs and lost time.

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"The solution that the team at L.B. Foster Automation & Materials Handling designed demonstrated a high level of innovation and pragmatism. It's not overdesigned and how it cleans the moulds is simple, but it's the combination of features and benefits that make it a highly effective solution."

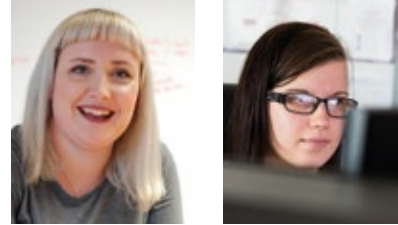
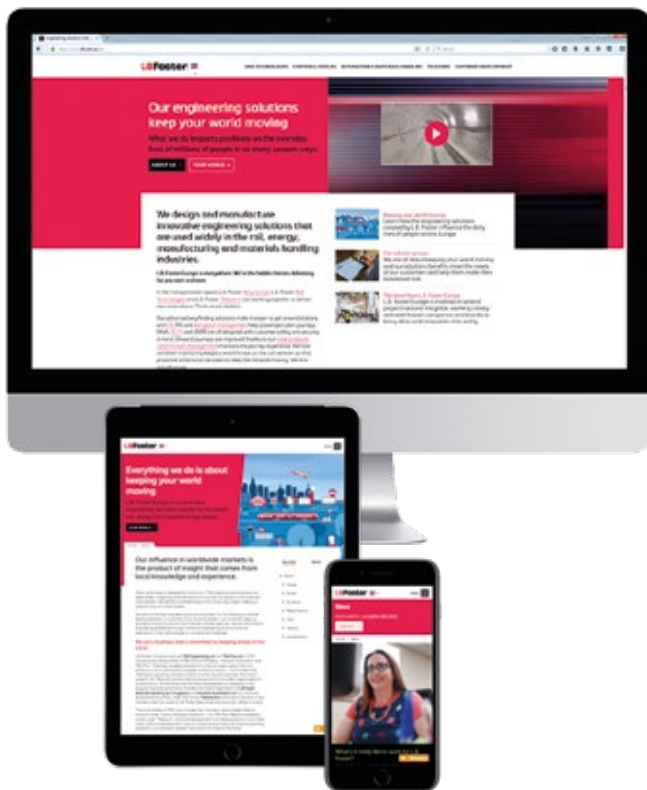
New Solutions Centred Website Launches

There has been a lot of talk about our new website. It has been eagerly awaited, and now it's here.

Take a look at www.lbfoster.eu

That's largely thanks to the hard work and determination of Jenny Jones and Naomi Hudson, who have spearheaded the project under the guidance of Phil Chester, Head of Marketing. Phil explains: "This has been an all-consuming project for Jenny and Naomi. They worked with an external consultant on the design, architecture and build, then collated and cleansed content from our sprawling old web estate - we had almost a dozen legacy sites - under a single, consolidated L.B. Foster Europe, mobile ready website.

"They have delivered a best in class site that will support the business as we continue to grow. The flexible architecture means we can add and remove content quickly and simply. The site will also become a central pillar of our marketing activity, with campaigns directed at specific pages to drive interest and sales."



Solutions centres

In the past we have talked about our operating divisions, which are very much part of our world. We're not about silos, we're about cross-selling solutions. So our new website focuses on how we want our customers to see us; solutions front and centre. We want them to understand our broad solutions capability and that starts with our website.

New architecture

Users of our new site are welcomed on our home page. They can find out more about our group capability or navigate to each of our solutions centres:

- > Rail Technologies
- > Control & Display Solutions
- > Automation & Materials Handling
- > Telecoms
- > Software development.

Users can also navigate by solutions groups, such as Detect, Protect and Inform, which brings together all of our solutions in this area on a single page. Or search by sector, such as rail or energy. Everything has been designed to enable customers to find what they want just a click away.

Content rich

Not only is the site easier to navigate, it's now full of rich content. We've introduced the 'Your World' infographic - a dynamic, interactive landscape that invites users to explore the range of our solutions. There are also photos, videos, press releases, case studies and datasheets. Plus we've added personal touches such as named contacts for customer enquiries.

- > Sector leading digital sales and web experience - and globally
- > Set up metrics for success - using google analytics to see trends and opportunities
- > Promotes our technology transfer solutions - directing marketing globally
- > Consistently aligned information from our CRM
- > Tells customers the benefits of why they should choose our solutions.
- > Visit www.lbfoster.eu

For more information contact

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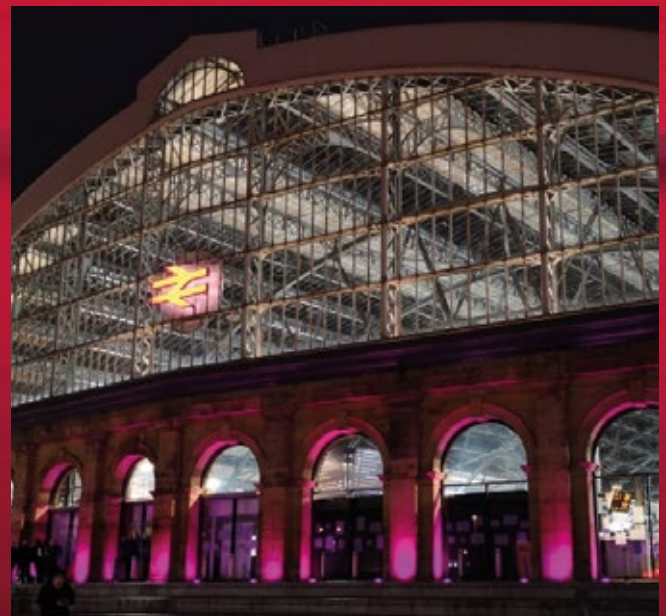


#PurpleLightUp

At the start of December we lent our support to #PurpleLightUp International Day of Disabled Persons.

A team from our Control & Display Solutions business helped spread the word at London Bridge station with colleagues from Network Rail. We deployed a number of our Inform by L.B. Foster wireless, mobile disruption management information totems around the concourse, each displaying messages in support of #PurpleLightUp. Network Rail also lit up stations around the country.

We've included a few snapshots to reflect the strength of support for the campaign.



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