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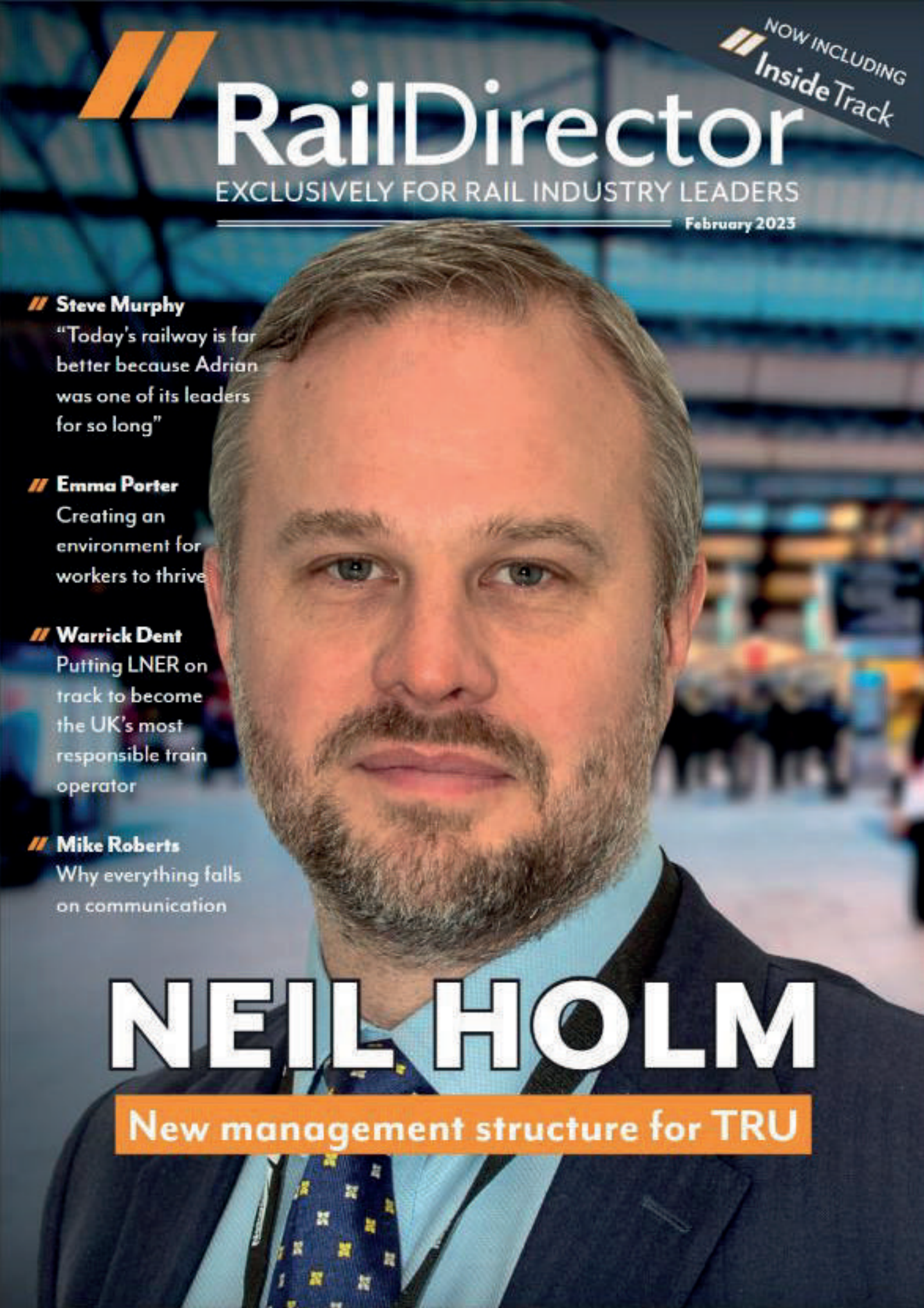

Steve Murphy
"Today's railway is far better because Adrian was one of its leaders for so long"

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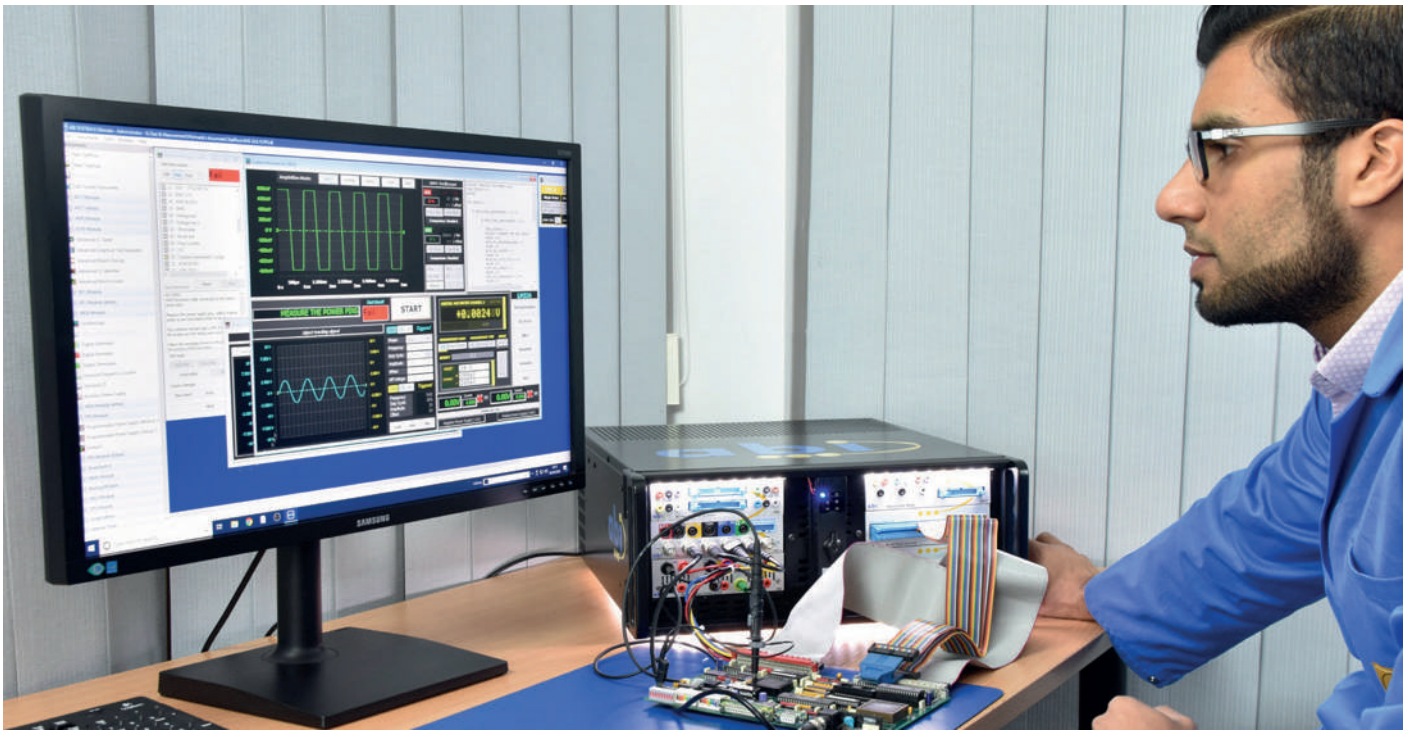
NEIL HOLM

New management structure for TRU

Willian Santos, international sales manager at ABI Electronics questions why so many circuit boards are being thrown away when it is costly and bad for the environment. ABI has the solutions to avoid this

Repair over replacement



Replacing faulty industrial technologies with new ones is wasteful, unnecessary and aggravates an E-waste issue, which according to the United Nations University equates globally to 60 million tonnes every year.

The railway is adding to this waste with circuit boards among the products being thrown away instead of repaired at the right standard. Something must change if the sector is to be fully sustainable, and leading the way in reducing the amount of waste – and in doing, so lowering emissions and saving precious resources as well as money – is ABI Electronics. For four decades, the company has been designing, manufacturing and selling test, measurement and fault diagnostics equipment for the electronics industry all over the world, with repair over replacement at the centre of everything it does.

Strong connections

Over that time, it has built partnerships in the rail industry with the likes of Alstom, Irish Rail, Metro Sao Paulo, CAF and Indian Railways. Its solutions provide a platform for a more sustainable future, while at the same time saving customers thousands – and in some cases millions – of pounds a year.

"We have never supplied more systems to the rail sector as we have done in the last five years, with more than 65 rail operators using our products and certified training from San Francisco to Beijing," said Willian Santos, international sales manager at ABI Electronics. "We have the likes of Metro Sao Paulo fully equipped to repair the one million circuit boards they have on their network in-house thanks to the partnership they developed with us 20 years ago, saving them millions of dollars.

"Worldwide the whole industry is awakening to the need to change their modus operandi. We believe that investing in your own in-house repair and maintenance capabilities is crucial for all industries that are focussed on emissions and E-waste reductions and our specialist test and measurement systems enable companies to do just that."

ABI was founded in 1983, with the initial concept of the business coming from a simple, everyday incident, when its founder (Ian Fletcher) accidentally stepped on an electronics integrated circuit (IC) which had fallen to the floor and questioned 'I wonder if it still works?'

In the wake of this question, ABI produced the ICT-24; the world's first low-cost digital IC tester. This product proved to be popular, leading to the rapid expansion of the fledgling business, and the rest is history.

Willian, who has been at the business for 16 years, said: "As technology has advanced, so has ABI. The business brought to the international market the BoardMaster; an advanced diagnostic solution which provided a previously unseen level of fault diagnosis capabilities.

In reaction to the ball grid array devices on the market, it released the JTAGMaster, and the acclaimed SENTRY Counterfeit IC Detector to combat the rising counterfeit issue. Another ABI solution loved by the rail industry is RevEng, a piece of equipment that can recreate schematics aiding reverse engineering and obsolescence management requirements."

As part of the company's passion for change, it created the 'Repair, Don't Waste' international movement, which started as a hashtag in 2015 to emphasise the sustainability and cost-effectiveness of repair over replacement, and educate those in the industry who may not be engineers themselves on solutions to their faulty printed circuit board troubles.

Willian said: "The modern world runs on electronic systems that are designed to last many years with tonnes of natural resources carved out every day to produce semiconductor chips and other components, which are eventually mounted on printed circuit board.

"Replacing faulty industrial technologies for new ones is wasteful, unnecessary, and really aggravates the E-waste issue, so we really need to phase out this replace-not-repair mentality, which is an essential step in eliminating waste, lowering emissions, and saving precious resources.

"Repair, Don't Waste has gone from strength to strength, centred on the ethos that a technician or engineer armed with the right diagnostic tools and training can diagnose the issue, replace the broken down and generally inexpensive components and save other components in the device from being dumped along with the circuit board."

Last year VLT Carioca, Rio de Janeiro's light rail operator, made a big commitment to the Repair, Don't Waste ethos by investing in specialist test and measurement equipment by ABI, helping it to secure a future that is immune to component obsolescence and costly machine downtime, while taking high steps towards net-zero targets.

Training

VLT's engineers and technicians have been trained in how to utilise and optimise every function of its specialist test equipment BoardMaster by its partners in Brazil, RCBI Instruments.

"Repair, Don't Waste was born out of our frustration going to the market and finding that mentality of circuit boards being seen as consumables and seeing it add to the huge E-waste issue," said Willian.

"We don't just talk about the environmental benefits, of which repairing a board produces 85 per cent fewer emissions than a new one taking into account the sourcing of the materials, but it is also 10 per cent of the cost of a new one. To help with that we develop systems that are easy to use, easy to be implemented, and ones that you don't require someone with a PhD degree to operate."

As well as customer service and striving to provide quick and efficient support to customers, another thing important to Willian and the team is education. Over the last 15 years, the company has developed its training courses, offering hands-on training, and going through lots of different aspects of the troubleshooting application, covering as many issues as possible that customers could encounter in the rewire.

"There is much talk about sustainability, but education to repair is still very much stuck in the old ways of training engineers in this country," he said. "A lot of the training is simulation-based, with virtually no hands-on training, so people don't learn the hardware and they don't know how to identify the components on a board.

"We need to see more action and for the Repair, Don't Waste movement to continue to be a success we need to ensure people are trained to repair things such as circuit boards. In some sectors, we are seeing people being brought out of retirement to be trained on systems to troubleshoot and repair the boards because they are from a generation when they were repaired not replaced.

"If organisations are serious about sustainability, a practical thing they should be doing is stopping E-waste and working with academia and education organisations to attract and train a new generation of workers to repair. Industries need them and they are key to taking us to net zero and key if we want to make the world more sustainable.

"We train people how to use our test and reverse engineering products and when you have the ability to use our equipment, should any malfunction affect rail systems such as door controls, braking or traction technologies, passenger announcement and so on, you can easily replace just the faulty component on a board, rather than having to manufacture a new board. Our equipment is designed to be easy to use and our systems are universal so they can be used with any type of rail electronics regardless of brand, age, and technology."

Looking ahead

Overall, the future looks very bright for the Yorkshire-based ABI, with Willan explaining how the plan for the future is to take the Repair, Don't Waste movement to new heights, building on the support it is already getting from across the world.

"For the latest eight years we've had a global partnership with Alstom, initially starting in Chile but now covering 10 locations across the world which are using our systems, with more than half a dozen new ones this year, including three sites in the UK," he said.

"The aim is to see that relationship growing and for even more organisations to see the benefits of working with us. In terms of Alstom, it is already reaping the results of investing in in-house repair and really seeing this as the future for the organisation.

"For me personally, I have thoroughly enjoyed the last 16 years at the ABI. It has been a great success in which we've tripled the size of the company. The most rewarding thing for me has been the jobs we've created through training people how to repair circuit boards and knowing that what we are doing in Barnsley is having a positive impact all over the world. We are seeing our technology adding value, changing lives and challenging the status quo."

Please visit www.abielectronics.co.uk and www.repairdontwaste.com for more details

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