

Engineering a brighter future for UK rail

Angel Trains is recognised as one of Britain's leading train asset management companies. It's easy to see how the London and Derby-based business has earned that reputation, by owning, maintaining and renewing more than a third of the UK's total passenger rolling stock. That equates to more than 4,000 rail vehicles, running the length and breadth of the network under the management of 17 different operators.

Individual fleets range from familiar regional stalwarts including Class 15x, '350s' and '465s', through to the iconic Class 390 Pendolinos and Class 43 HSTs in service on inter-city routes.

Since its inception in 1994, Angel Trains has invested more than £5 billion in procuring new rolling stock and funding large-scale refurbishment programmes.

Most recently, it embarked on the £900 million financing of 665 Class 720 Aventura vehicles for Greater Anglia, plus the £320m purchase of 24 Class 802 bi-mode trains for TransPennine Express and Hull Trains.

To maintain its sizeable fleet, a further £50m is spent annually by Angel Trains in the UK rail supply chain. Each year, more than 700 engineering changes and more than 1,000 heavy maintenance overhauls and component changes are managed by Angel Trains as it recruits largely UK-based small to medium-sized enterprises to undertake the work.

Meanwhile, an additional £117m has been invested since 2021 as part of a major interior

As one of the largest investors in UK rail, ANGEL TRAINS is playing a key role in accelerating the industry's post-COVID recovery. RAIL finds out how the rolling stock owning company is spearheading innovation, while also supporting businesses and jobs

refresh programme for all 56 Pendolinos operated by Avanti West Coast.

With the work currently being completed by Alstom at Widnes (Cheshire), it is a clear example of how Angel Trains is supporting more than 4,000 jobs across the wider industry.

The flagship project also demonstrates how the company ensures that changing passenger needs are regularly reflected through changes to its rolling stock, such as improved accessibility, comfort and connectivity.

According to Chief Operating Officer David Jordan, the impressive scale of this investment is made possible thanks to Angel Trains' long-term vision. The 'cradle-to-grave' approach that the company takes to rolling stock, which typically has an asset lifecycle of up to 35 years, has made the sector attractive to investors - including PSP Investments.

This approach enables Angel Trains to mobilise significant capital from international markets, with investment borne by the private

sector and at no cost to an increasingly stretched public purse.

Jordan explains: "We are owned by some of the largest pension funds and investment managers in the world. As long-term investors, they want predictability.

"The way we make investment decisions and raise finance is very much for the long-term - it's not some sort of 1980s-style venture capitalism."

CEO Malcolm Brown adds: "We are a B2B business that sells our products and services to train operators and local authorities, which is exactly as it should be. In the absence of shouting about what we do, and quietly getting on with things and doing our job well, other people may make up their own minds [about our business model].

"But if these long-term pension funds didn't invest in rail, this money could be invested in other infrastructure assets instead, such as wind turbines in Spain. We operate in a highly competitive global finance market for long-term assets, and we need to provide a service for that.

"I think the numbers speak for themselves, with one of our last investments in new rolling stock totalling almost £1bn. We have continued to invest in the supply chain throughout the pandemic, and are delivering an excellent Pendolino refresh programme - with trains that look just as good as new - to West Coast Main Line users."

Angel Trains also continues to invest heavily in innovation, to help drive down operational costs and to make trains the cleanest and greenest mode of long-distance travel.

Among more than 80 technical projects that are currently in research and development is a partnership with Arcola Energy and support for the University of St Andrews to deliver Scotland's first zero-emission hydrogen-powered train.

As part of this collaboration, Angel Trains is offering technical advice and expertise, parts and equipment, plus more than £500,000 worth of investment in green hydrogen refuelling infrastructure.

Elsewhere, it has partnered with Hitachi and TransPennine Express to trial a retrofitted battery pack on one of the operator's Class 802 bi-mode trains. It is anticipated that the move will help cut fuel usage and carbon emissions by at least 20%, while also improving air quality and noise pollution in urban areas.

Successful completion of the trial should pave



TransPennine Express 802204 passes Spittal (near Berwick-upon-Tweed) on August 17 2022 with the 1410 Edinburgh-Newcastle. An innovative trial is due to get under way later this year to retrofit batteries to a member of this Angel Trains-owned fleet. ANTONY GUPPY



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David Jordan, Chief Operating Officer, Angel Trains

the way for batteries to be retrofitted for all 19 trains in TPE's Nova 1 fleet.

Other investments in low-carbon or cost-saving technology, including the increased use of Hydro-treated Vegetable Oil (HVO) as a greener alternative to diesel, will further support high-skilled green jobs in the UK and will help the nation reach its net zero ambitions by 2050.

"We will continue to invest in our trains, our people and our industry to help engineer the brightest future for UK rail," says Brown.

"We know it is unlikely that the whole network will be electrified any time soon, so there is a definite need for alternative self-powered trains in the market.

"It is right that we invest in R&D. We won't get it right all the time, but we are continually learning and need to take the rest of the industry with us.

"There will soon come a tipping point to invest in the UK's first fleet of hydrogen or battery-powered trains and we, and our investors, are ready to do that. We are more than happy to be the first off the mark."

Jordan adds: "We are all set for the Class 802 battery trial, which we'd love to have under way by the end of the year. It has the potential to save a significant amount of money on the cost of electrification."

Away from its core market in rolling stock, Angel Trains has also shown its commitment to improving wider network infrastructure through its acquisition of Readipower Group

in early 2022.

The specialist rail and infrastructure services and on-track plant equipment provider is a key player in helping to modernise and decarbonise the UK rail network, through its involvement in transformational projects including the TransPennine Route Upgrade, Midland Main Line electrification, and the transformation of the Core Valley Lines in south Wales.

Jordan, who led the acquisition on behalf of Angel Trains, says: "Angel Trains is very proud to support Readipower and remains amazed at how many people are ready to work on the network at all times and in any weather.

"We are really pleased with the acquisition and are making sure they have the best plant and equipment to do the job.

"We are busy trying to integrate our technical teams to work on mutually beneficial developments, such as the deployment of Light Detection and Ranging (LiDAR) technology."

Brown, who is also chairman of Readipower Group, adds: "We are committed to continued investment in rail decarbonisation to ensure the UK achieves its net zero ambitions.

"On infrastructure, we looked for the best in the business as well as a complementary business that shared the same singular focus on supporting those aims.

"We are supporting Readipower's growth by investing in the latest machinery and technology.

"We have brought upfront resource and capital, and can be patient for a return, so they

have an investor that is perfectly aligned to an industry which is capital intensive and long-term in nature.

"The knowledge flow also extends both ways. Angel Trains has learned that Readipower has incredible safety matrixes and sophisticated finance systems - many of which we are looking to adopt."

Looking to the future, Brown says that rolling stock companies owning other businesses - and the private sector expertise and capital they leverage - will become more vital than ever.

Amid widespread uncertainty over the future direction of rail reform, the potential for a General Election within the next 18 months, and mounting pressure on public finances, Angel Trains will continue to play its part in helping the rail sector meet the challenges ahead.

Brown concludes: "What we have demonstrated with new rolling stock in the last six or seven years is that there is a healthy market. We have multiple new entrants and there is a high degree of competition so, by any measure, that market is working well.

"We know what a difficult macro-economic environment we are operating in, but it doesn't have to be all public spending or all private. You can have an optimal combination of the two.

"But we are not complacent, and we know that we must keep demonstrating value every day. Everybody here wants the rail industry to succeed, and it's about trying to thrive." ■