Directory

Track & Infrastructure

LPS
LASER PRECISION SOLUTIONS

Elevating Rail Maintenance: Tackle Autumn Challenges with LaserTrain

The persistent challenge of slippage on the line has far-reaching implications for the industry. As passing trains crush fallen leaves, they become a teflon like substance with an oily residue that diminishes the coefficient of friction (COF) of the railhead and can compromise rail safety. This leads to difficulties accelerating and braking, resulting in hazardous conditions and inevitable delays.

Developed by LPS, LaserTrain introduces an effective solution for rail maintenance. Its high-intensity lasers clean various contaminants such as leaves, oil, debris and rust from the railhead without compromising track integrity, while its advanced control system enables autonomous operation for optimal results. By enhancing de-acceleration distances and improving rail traction, LaserTrain minimises accidents, prevents slip incidents and ensures safer railway operations for passengers and rail staff alike.

Operational Efficiency and Flexibility

LaserTrain offers faster and more efficient railhead decontamination compared to traditional methods, covering larger areas in less time and eliminating the need for refuelling and complex logistics associated with water-filling stations. This dramatically reduces downtime and minimises disruptions to network operations. Demonstrating exceptional performance with MTA Metro North Railroad, one LaserTrain cleaned 435 miles per day, cleaning over 55% of the network every 24 hours.

Additionally, LaserTrain's remote operations boost efficiency and safety by removing the need for workers to be near the tracks or equipment, alleviating the burden of staff planning during the slip-slide season. A selection of cleaning speeds offers operators the flexibility to adapt to individual cleaning needs. The LaserTrain can be leased or purchased with cleaning speeds of 20mph, 40mph, and 60mph.

Cost-Effectiveness

LaserTrain's higher initial investment is offset by its substantially lower running costs. LaserTrain's ability to achieve comparable cleaning performance to traditional methods like water jet, with far fewer units offers significant reductions in operational expenses over time. Since the majority of LaserTrain costs are upfront fixed expenses, the total cost per distance decreases as more distance is cleaned.

Another benefit is that it helps reduce wheel wear and prevent wheel blocks, thereby prolonging rail wheel longevity and decreasing maintenance expenses. For example, during Metro North's 2022 pilot, LaserTrain delivered savings of $1.6 million, while the Long Island Rail Road in 2020 confirmed its role in reducing wheel truing. This reduction translated to an estimated annual saving of $500,000 in shop labour and material costs. The extended lifespan of the rail due to reduced wear is still to be assessed.

Plug and Play: The Freight Model Advantage

The Freight Model of LaserTrain offers several advantages over bespoke models. Its pre-set design is simpler and more standardised, reducing engineering, build and test time and and providing ensured regulatory compliance. Designed to fit a Y25 bogey or R141 truck without modifications, the 20ft half-height container ensures compatibility with UK, EU and US loading gauges.

The pre-existing design and standardised components streamline production, installation and maintenance processes, resulting in shorter lead times, higher uptimes, reduced costs and easy spare parts management. The Freight Model is constructed and tested in the Amsterdam workshop by LPS staff before installation, minimising any risk of oversights or surprises.

Transportation, Installation and Maintenance

Transporting and installing the Freight Model is effortless, facilitated by a flatbed lorry and a forklift. Installation and de-installation times are significantly reduced, dropping from three weeks to just two days, with no need for scaffolding or LPS staff for completion. Maintenance is equally straightforward, accessible components, ensuring cost savings and shorter lead times.

Operations and Performance

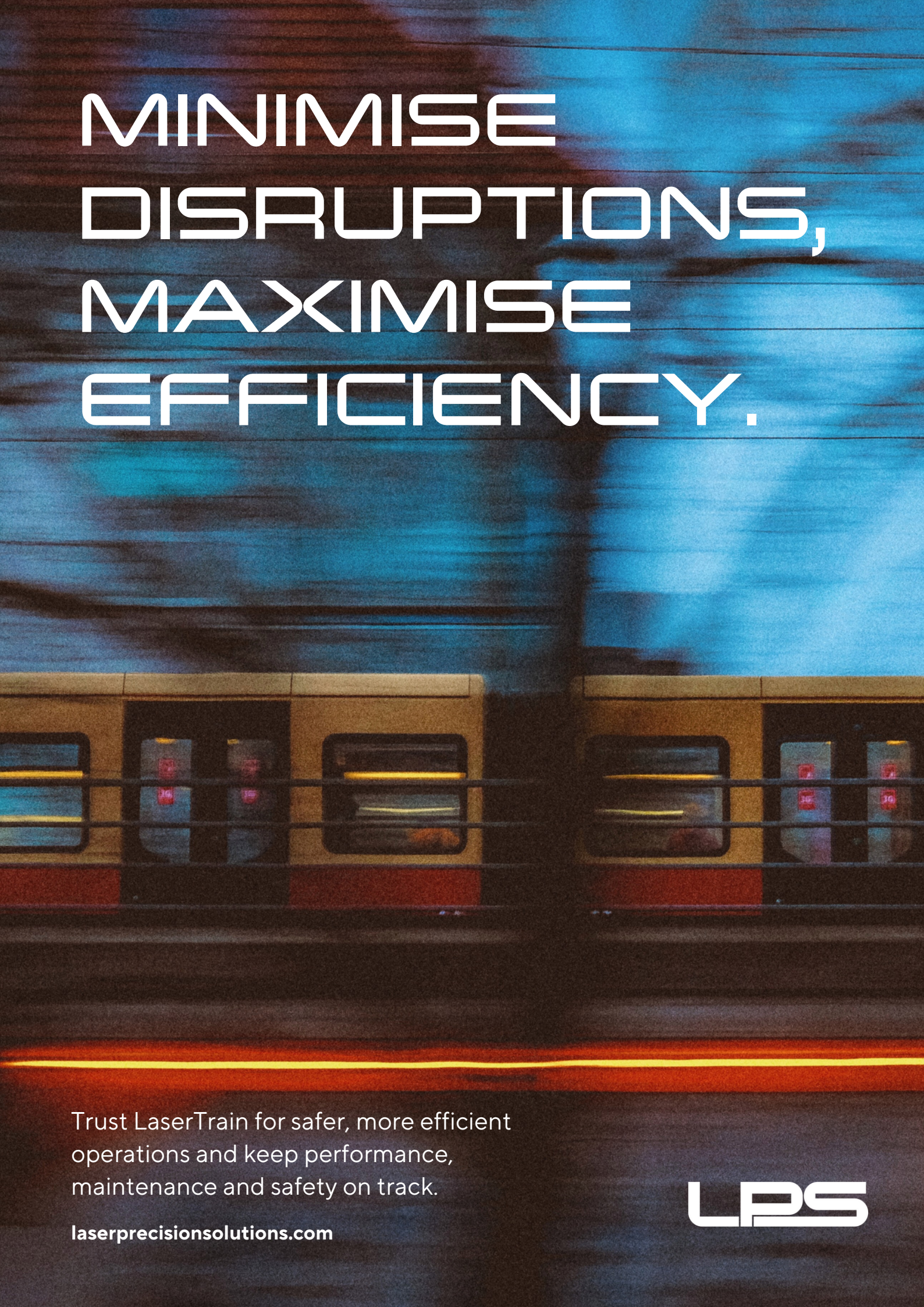
Designed to achieve 200,000 kilometres per year versus 50,000 kilometres per year, the Freight model ensures better longevity and reliability. It requires only one hour of maintenance per week compared to one hour per shift, minimising downtime and operational disruptions. Additionally, it can operate with or without a separate generator, reducing costs and boosting operational flexibility.

In conclusion, LaserTrain's Freight Model delivers superior performance, lower maintenance, enhanced operational flexibility and cost-effectiveness compared to traditional rail cleaning methods and bespoke options, making it a top choice for rail maintenance. Streamlined installation, maintenance and spare parts management further reduce overall costs and maximise return on investment.

Embrace LaserTrain and drive innovation in your rail cleaning operations today.

Get in Touch

Click here to contact **LPS** or email **info@lasertribology.com** to speak to the team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