

Rail Innovation Exhibition 2021

Innovate UK Project 971738 Zero Emissions TRT^e



Project scope and deliverables

- Unipart Rail received funding as part of the First of a Kind 2020 Rail Innovation Programme, from the DfT and delivered by InnovateUK
- Project TRT-e seeks to design, develop and manufacture a working prototype, zero-emission, Trac Rail Transposer (TRT™) for use on the world's railway infrastructure, for removing and replacing rails, particularly in confined areas
- The project started on 1st July 2020 and will be completed by the 30th June 2021
- The output of this project will be a full working prototype, performance tested, certified and ready to be worked on the UK rail network by McCulloch International and demonstrated to potential customers Worldwide

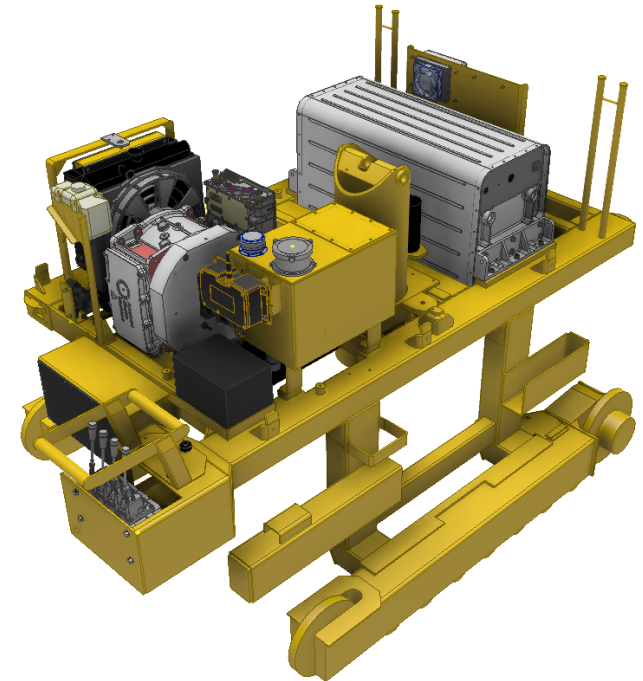
Project TRT-e – Zero Emissions TRT

Using the base TRT™ machines that have been designed, developed and successfully used over the last 15 years by McCulloch International, the consortium will work together to remove the current diesel power unit and develop an electric motor, battery power pack and electronic control system with remote condition monitoring to produce a zero-emissions machine that will enable it to be worked more extensively on the rail infrastructure where diesel emissions and noise pollution are a particular problem, for example, underground systems, tunnels and enclosed stations.

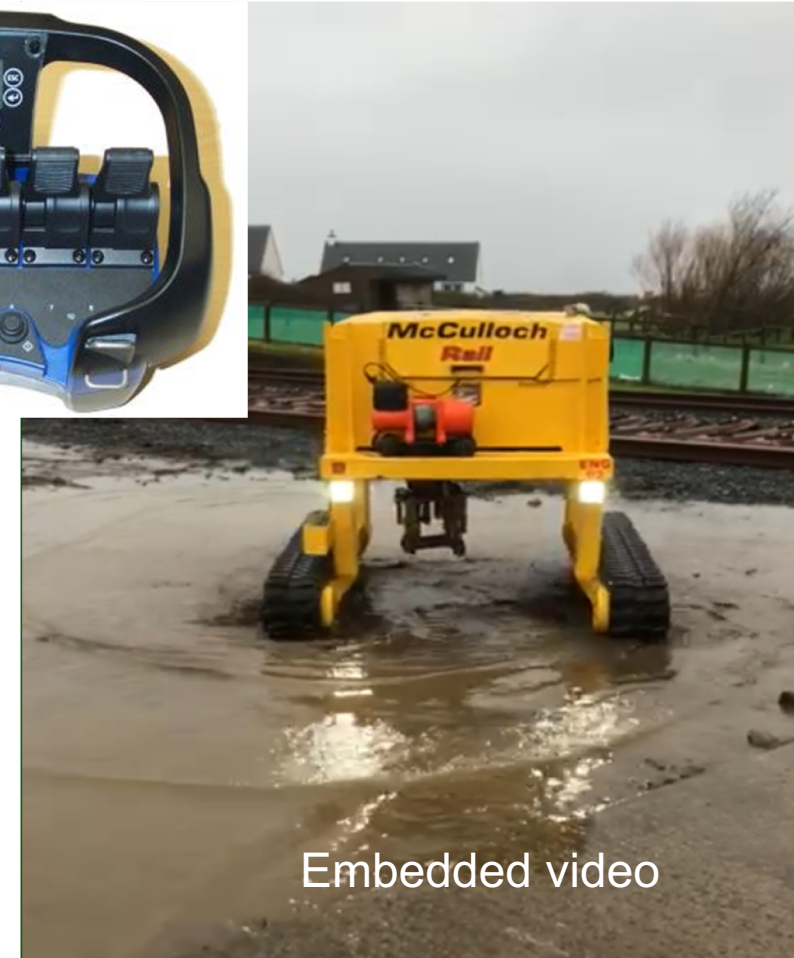
From this ICE version.....



To this



From lever operated to remote control



Collaborators in the project are.....



UNIPART RAIL LIMITED is part of the Unipart Group of Companies, a large, independently-owned industrial conglomerate active across a range of industrial sectors around the globe. The company employs ca 7,000 employees and had revenues in 2017 of ca £890 million.



McCulloch International are specialists in rail handling and rail logistics providing a highly successful range of services on the rail infrastructure, making it the U.K.'s number one company in its field. Established in 1992, Billy and Danny McCulloch discovered a niche in the market, and started developing bespoke track work machines that enable revolutionary methodologies over traditional approaches. Since then, the company has grown from strength to strength, with several unique and innovative technologies that deliver safer methods and achieve greater productivity.



Hyperbat is a joint venture between Williams Advanced Engineering and Unipart Manufacturing Group that was formed with a mission to manufacture innovative high voltage battery solutions, optimised for high-performance and specialist applications.

Hyperbat is the UK's largest independent vehicle battery manufacturer and aims to become the UK leader in high voltage battery systems, supporting UK plc by growing the UK battery technology supply chain.



AEM design and manufacture the World's most sustainable motor technologies that do not contain rare earth magnets from their facility in Washington Tyne and Wear. AEM has designed electric motor and transmission systems for world-leading organisations including Jaguar Land Rover and Airbus.

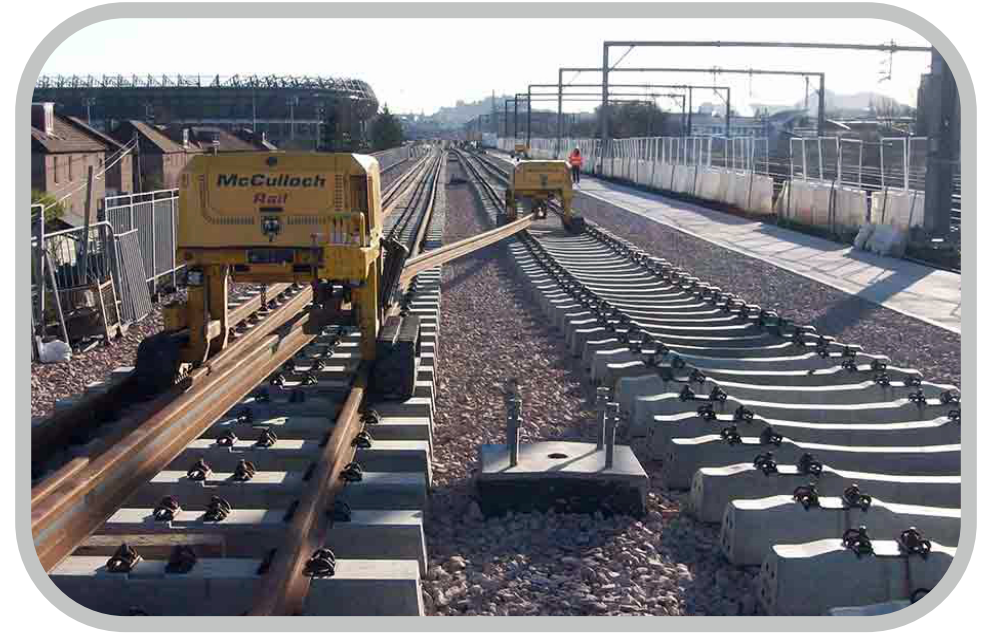
Benefits of the TRT™ (Trac Rail Transposer)

- Used extensively for 15 years, the **TRT** is a rubber tracked machine that is fully approved to work throughout the UK rail network including under live OLE, and ALO (Any Line Open)
- Approved for use in the US, New Zealand, Australia and Malaysia
- With no rail gauge limitations, removes, transposes, moves and installs all types of rail in a safe, controlled manner
- For use on both single or multiple line track layouts
- Can cross multiple tracks including areas with conductor rails
- Capable of threading past lineside equipment/masts



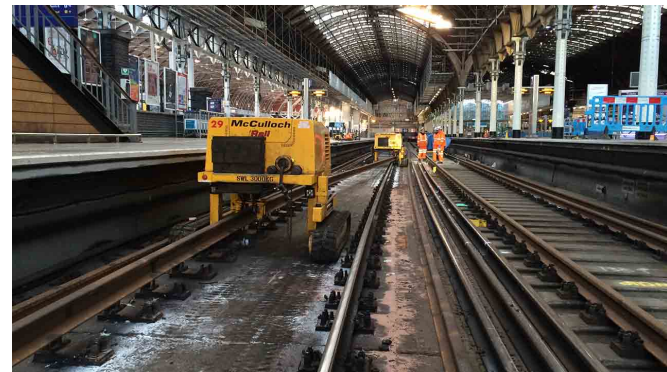
Benefits of the TRT™ (Trac Rail Transposer)

- Can be used in confined spaces such as tunnels, bridges and cuttings
- A pair of TRTs can be used to move any length of rail up to 216m and can also be utilised to transport, remove and install associated ironwork such as switches and crossings
- Compact size and manoeuvrability enables easy transportation, rapid deployment and demobilisation - 1,400 kilos in weight
- Utilised as a mobile powerpack, a number of accessories, can be deployed for a variety of uses
- Lifting Capacity of 3,000kgs, dimensions: 2.3 metres long, 1.8 metres wide, 1.7 metres high



Additional benefits of a zero-emissions TRT-e

- Cleaner and healthier for operatives than traditional ICE plant, particularly in enclosed areas
- Zero emissions will enable this machine to be used more extensively and for longer periods in confined and enclosed spaces where ICE equipment might be restricted. This will remove the need for manual handling therefore increasing saving and improving productivity
- The quietness of a battery powered machine with help to reduce construction noise that might have previously disturbed residents in urban areas when a lot of track construction/repair work has to be done during the night when possession of the track is often only possible
- The efficient use of power ensures that a low voltage and compact battery power pack can be utilised
- Reducing the mechanical complexity of a diesel ICE powered and hydraulic driven TRT will reduce maintenance and cost of ownership
- Can be further used as an electric power pack to power electric tools, lighting rigs, etc



Plans already in progress to produce zero emissions versions of other McCulloch machines

The benefits of our solutions:

- Designed specifically for purpose within the rail sector
- Proven innovative machine technologies delivering reduced construction time
- Efficient rail handling and movement equipment to save time and costs
- Safer handling methods to minimise accident risks
- Flexible solutions for small, medium and large-scale projects
- Life-time spares and maintenance packages available to reduce total cost of ownership



TRT



FLASS



Panel Lifter



MMPV

A physical and virtual demonstration of the TRT-e is planned for 16th June 2021 at:



Lodge Lane Industrial Estate
Tuxford
Nottinghamshire
NG22 0NL

Please register your interest if you would like to attend by scanning the QR code or e-mailing:

andrew.davies@unipartrail.com



Thank you for your time – for further details on the TRT-e or any other McCulloch products please contact.....

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