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Rail experts come together to study safety performance in the freight yard

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Experts from across the rail industry have joined together for a ground-breaking event at Newcastle University to discuss how understanding human factors can benefit performance in the rail freight yard.

The Human Performance in the Rail Freight Yard seminar brought together rail professionals, stakeholders, human factors experts, technical specialists and academics to talk about the challenges and solutions to safe, high-performance operations.

The event was hosted by Newcastle University, the National Freight Safety Group (NFSG) and the Rail Safety and Standards Board (RSSB) who have collaborated over the last two years to deliver insight and risk management practices into safety and performance in the UK's rail freight yards. The work aims to understand human factors influencing freight train preparation and the Condition of Freight Vehicles on the Network (CFVN). This builds on recent work to understand site complexity, wagon maintenance and freight

planning, capturing the human challenges and solutions for safe and high-performance freight operations. The program of work leads the sector's collaborative approach to reducing and mitigating freight derailments.

This event at Newcastle brought together rail freight professionals, rail stakeholders, human factors expertise, and technical specialists to talk about challenges and solutions to safe, high-performance operations in the rail freight yard. Presentations and discussion first focussed on the practicalities of working in the rail freight yard, the challenges for ground staff and the impact on the wider railway, with contributions from Dougie Hill (NFSG / RSSB), Marc Binney (DB Cargo), Rob McKittrick (Victa RailFreight), Peter Williams (Network Rail), Phil Hibberd (RSSB) and Devon Johnson (Freightliner Limited).

The theme of the event then turned to insight from passenger rail and other sectors to understand technical, organisational and behavioural solutions, both for current work and the future freight railway, with presentations from Brian Wilkinson (Siemens Gamesa), Jayne Yeo (European Agency for Railways), Cristian Ulianov (Newcastle University) and Paul Davison (PPWD).

Dr David Golightly, Lecturer in Human-Systems Integration at Newcastle University, said: "If we are going to upscale operations within the rail freight industry, we need to start to think about what the impact of that will be on freight yard operations. The rail freight yard is a complex and challenging environment. It's physically demanding work relying on quick decisions.

"Despite the importance of rail freight, human performance aspects of operations in the freight yard (as opposed to driving) have, up to now, received little research attention. Human factors knowledge relating to tasks, competences, immediate and wider work environment and pressures due to cultural, commercial or policy constraints has not been widely available.

"That is why this study is so important. Our observational work has developed and shared knowledge of freight yard practices and evolved the understanding of how freight yard work may contribute to freight train incidents on the network."

Dr Golightly added: "When we look at human factors in rail freight the overriding areas must always start with safety and well-being. Our specific objectives include capturing freight yard tasks and activities; capturing the environmental and design aspects of the freight yard; and identifying future steps to address human performance risks.

"Overall, our work as part of this study has captured the role of people in the freight yard, a unique and challenging environment, highlighting physical risks, but also involving highly fluid and cognitive planning to achieve success."

David Ethell of the NFSG said: "The industry needs to better understand the role of the people working at the front end of operations, the ground staff and the wagon fitters. Their role has changed massively in the last five to 10 years, they've gone from predominantly working at the same depot preparing coal trains to, in many cases, becoming mobile operatives working at a range of different sites with a variety of goods carried, at all times of the day and night and in all weathers. They have a complex role which demands that they make quick decisions.

“There are approximately 200,000 train movements a year across the UK but just one incident can ruin the whole rail network for at least a while, and mostly importantly, put people at risk. Each freight operating company has a slightly different method of working and training. What we want to see come out of our work with Newcastle University and the RSSB is the development of a new collaboratively agreed rail industry standard for train preparation activities in the form of an NVQ at level two or three. This will ensure a standardised way of working across the industry.”

James Lonergan, Lead Human Factors Specialist at RSSB, facilitated the day alongside Dr Golightly and David Ethell. He said: “When we speak about human factors the overriding areas must always be around safety and well-being. When you get the working environment right for the person on the ground this also contributes to better performance, satisfaction in their role and inclusivity.

“Our work and the subsequent full research paper gives insight to anyone looking at human performance in freight and logistics and will also be of specific relevance to those looking at digital technologies such as ETCS and digital coupling.”

The joint work that has been undertaken by Newcastle University and conducted by Dr Golightly, the NFSG and RSSB has been running in tandem with the Condition of Freight Vehicles (CFVN) project which is endorsed by the ORR and RAIB. It is funded by Network Rail’s £22m FNPO Safety Improvement Programme (FSIP) – and has been developed to bring the freight industry together to look at processes for train preparation, wagon maintenance and the important role human factors play in performing safety critical tasks to reduce risk and improve performance across the network.