

Network Rail launches task forces in wake of Stonehaven tragedy

August 25, 2020



Network Rail has launched two independent task forces, led by world renowned experts, to help it better manage its massive earthworks (cuttings and embankments) portfolio and its understanding and response to severe weather events.

It follows the tragic events near Stonehaven on 12 August, where a train derailment led to driver Brett McCullough, conductor Donald Dinnie and passenger Christopher Stuchbury sadly losing their lives.

Dame Julia Slingo FRS, former chief scientist at the Met Office and a world-renowned expert in climatology, will lead a weather action task force with the objective of better equipping Network Rail to understand the risk of rainfall to its infrastructure, drawing on the latest scientific developments in monitoring, real-time observations and weather forecasting.

Meanwhile, Lord Robert Mair CBE FREng FRS will spearhead an earthworks management task force to see how Network Rail can improve the management of its massive earthworks portfolio, looking at past incidents, latest technologies and innovations and best practice from across the globe.

Network Rail's current safety management system provides a framework for the management of cuttings, embankments, structures and drainage. These have helped the company to limit the effects of rainfall on its infrastructure, but the events at Stonehaven on 12 August have shown that more understanding is needed to help mitigate the risks further.

Andrew Haines, Network Rail chief executive, said: "The Stonehaven tragedy resulted in three people losing their lives – this is a stark reminder that we must never take running a safe railway for granted.

"With more and more extreme weather and tens of thousands of earthwork assets across Great Britain, our challenge is massive. And while we are making record investment in these areas, we have asked world renowned experts, Dame Julia Slingo and Lord Mair, to help us address these issues as effectively as possible, and at pace."

Weather action task force

Dame Julia Slingo FRS, meteorologist and former chief scientist at the UK Met Office, will lead a review of Network Rail's capability to manage and understand the effects of heavy rainfall on the railway. It will look at:

- How the data and research collected by Network Rail could be used to understand likely levels of rainfall at a location level in the present and 10 years in the future, in order to estimate potential damage to infrastructure
- How data can be used to ensure future engineering decisions take local weather factors into account, and to better understand how changing land use or river management policies near the railway affect how quickly rain enters and leaves the system
- The effectiveness of Network Rail's use of existing forecasting and weather monitoring technology to identify where rainfall could pose a risk to the railway, and how that might be improved – for example through state-of-the-art nowcasting
- The extent to which Network Rail has explored the potential of real-time weather monitoring technology
- How Network Rail might use the weather expertise available to provide input into longer-term planning and procurement decisions – for example earthworks engineering, or providing guidance to track and rolling stock design specifications

Earthworks management task force

Network Rail's investment in its earthworks and drainage portfolio has increase significantly in recent years with its spend in 2009 to 2014 of £550m, increasing to £952m from 2014 to 2019, and with a budget of £1.3bn from 2019 to 2024

Lord Robert Mair CBE FEng FRS, geotechnical engineer and member of the House of Lords Select Committee on Science and Technology, will look at Network Rail's management of its earthworks – including high-risk assets such as cuttings and embankments. This work will cover:

- The effectiveness of Network Rail's existing approach to managing drainage and earthworks assets, and whether or not a more integrated, co-ordinated approach is required
- An independent view of the suitability of our controls framework – whether it is effective in controlling risks and whether it is too onerous for frontline engineers
- Whether Network Rail has sufficient resources and skills to manage earthworks and drainage, and whether certain teams or regions could be strengthened
- What Network Rail might learn from other organisations with responsibility for managing earthwork risks
- Whether Network Rail is fully aware of the latest technologies and whether or not they are deployed effectively

Immediately after the incident on 12 August, Network Rail **introduced** a range of additional safety measures, including:

- As an immediate precaution, hundreds of sites nationwide with higher-risk trackside slopes, similar to Stonehaven, were inspected. These were carried out by both in-house engineers and specialist contractors, supplemented by helicopter surveys
- In the light of the current extreme weather conditions we mobilised our extreme weather action teams and instructed them to incorporate immediate learning into their plans as soon as it becomes available
- Discussions with meteorologists to understand how we can strengthen real time information for flash flooding caused by unpredictable extreme weather to inform our train operations, in cooperation with our industry partners
- Our engineers continue to review our existing programme for remote monitoring of high-risk sites to test whether this can go faster or further.

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