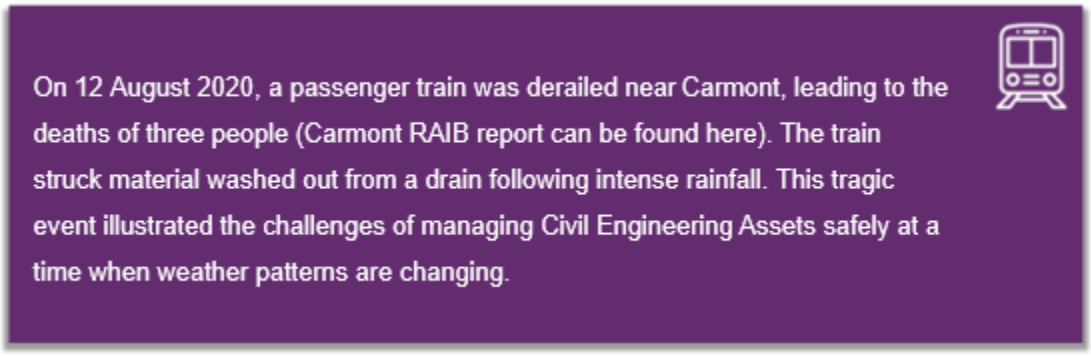
Civil engineering assets

1. Executive summary

The integrity of Civil Engineering Assets ('Civils') is fundamental to safe railway operation. Many earthworks and structures are over 150 years old and do not benefit from the resilience of modern designs. Having lasted for decades with little degradation, many are now near the end of their lifecycle, and their condition may deteriorate suddenly, particularly under the pressures of climate change and increasing rail traffic. Failures can be difficult to predict due to vulnerability to sudden, highly localised weather events, regardless of asset condition.



Carmont RAIB report: Derailment of a passenger train at Carmont, Aberdeenshire on 12 August 2020 - ORR letter to RAIB dated 23 September 2024.

ORR's strategy for regulating the risk from Civils assets is to promote optimal integrity of the asset base to minimise precursors to catastrophic failure. For legacy infrastructure, we recognise there are no quick, reasonably practicable routes to modern resilience thresholds. In the interim, our focus is to achieve the best understanding of the consequences of failure, so that mitigation can be appropriately prioritised and implemented.

ORR will support and challenge industry to:

Dutyholders must:

Strengthen Civils Resilience

- Improve asset information
- Understand asset behaviour in extreme weather
- Apply risk-based renewals and proportionate mitigations
- Maintain balanced asset management regimes
- Adopt innovation and remote monitoring
- Apply systems-engineering approaches to reduce both the likelihood and consequence of failure
- Consider consequence management

- → Next 2. Our view of the risk