Winter

Winter weather presents real challenges for the railway

While most people think of ice and snow as traditional winter weather, changing weather patterns mean that episodes of heavy rainfall, flooding and high winds are an increasing challenge for the railway.

Wind
With millions of trees lining the railway, high winds can cause branches and trees to fall on to the track, damaging overhead wires and blocking the railway. High winds also mean that objects from further away can be blown onto the tracks.

Rain
In very wet conditions trains must brake and accelerate more slowly to keep everyone safe, adding time to journeys. Prolonged, heavy rain can also cause flooding and landslips which mean trains can't run until lines are cleared and repaired.

Snow and ice
In very cold weather, snow and ice can build up on the tracks blocking points, the equipment that allows trains to move between tracks. Ice can coat the electrified third rail and overhead power cables, preventing trains from drawing the power they need to run and leaving them stranded. Icicles on tunnels, bridges and other structures can also damage trains and overhead power cables.

In very snowy weather where snow lies deeper than 30cm, trains can't run safely unless they have been fitted with snow ploughs.

In extreme weather our priority is to get everyone home safely

Our priorities for how we run the railway change depending on the severity of the weather.

Adverse weather - During adverse weather we do our best to run a full, normal service, but punctuality may be affected. Weather is classed as 'adverse' if any of the below are true:

2cm (in London) | **60mph** | **-3°C** (temperatures below)

Extreme weather - In extreme weather conditions, we prioritise getting people home safely over running the normal timetable. We also prioritise vital rail freight to ensure the supply of essential goods across the country and fuel to power stations. Weather is classed as 'extreme' if any of the below are true:

15cm | **70mph** | **-7°C** (temperatures below)

After high winds this might mean we start services later in the morning so that our teams can make sure that lines are clear of branches and debris and are safe.

When extreme weather is forecast we also sometimes put contingency timetables in place that help us to run fewer but more reliable services.

Did you know?

Network Rail uses around **700,000** litres of anti-icing fluid each year to keep trains moving safely around the network.

Working for you

We work all year round to prepare for winter

Making our infrastructure more resilient

We've already:

- Put over 100km of special heating strips on critical sections of the electrified third rail which powers trains in the south of England. This prevents ice forming and minimises the risk of stranded trains. This has reduced ice-related disruptive incidents by almost 80 per cent.
- Added protective covers to 4,000 points and 2,500 points motors to keep snow out and prevent damage by ice falling from trains.
- Fitted many points with heating strips to melt snow and ice.
- Put up fences on major routes to prevent snow blowing onto the tracks.

Our climate teams are doing detailed research into the resilience of our railway. This work helps us to understand where more investment is needed to improve resilience and prevent problems. To find out more visit:
www.networkrail.co.uk/climate-change-weather-resilience

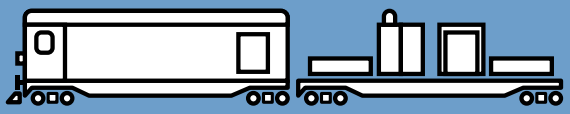
Before winter

Before winter arrives, we do everything we can to minimise delays by preparing effectively.

This includes:

- Cutting back overhanging trees that could be affected by high winds or snow.
- Pre-preparing contingency timetables with train companies.
- Using detailed expert weather forecasts to create localised action plans. These forecasts don't just cover the weather but tell us how conditions will impact the specific railway infrastructure. Our network of hundreds of monitoring stations then provides us with real-time weather data, enabling us to respond to conditions as they develop.

During winter



To help keep passengers moving we operate a special winter fleet, complete with snowploughs, hot air blowers, steam jets, brushes, scrapers and anti-freeze to clear snow and ice from the tracks.

We use technology, such as visual and thermal imaging from our helicopter and drones, to help us identify issues before they become a problem and respond as fast as possible.

When snow is forecast we work with train operators to fit snow plough attachments to the front of passenger trains. Our winter timetables also allow empty passenger trains, known as ghost trains, to be run overnight to keep the tracks clear of snow and ice.

Thousands of our people also work around the clock in all weathers, monitoring, maintaining and repairing the tracks so that we can run a safe and reliable service for passengers.

Did you know?

Our winter treatment train travelled around **220,000** miles last winter – that's almost nine times the distance around the earth.