
Safety report

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LTW635
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1. Introduction

This year has been exceptional in terms of passenger safety for a number of reasons, primarily the Covid-19 pandemic, but also for the first passenger fatality on the rail network since 2007 when the accident at Stonehaven in Scotland occurred in August 2020. There was also a freight train accident on the central Wales line at Llangennech in September 2020 which has significant implications for passenger train operation.

2. Covid-19

Planning and co-ordination of the rail industry response to the pandemic is done through a series of conferences¹ consisting of Network Rail, the owning groups of the train operating companies and the Department for Transport (DfT) brought together by the Rail Delivery Group. Other bodies such as the Office of Rail and Road, Transport Focus, Transport for London, transport unions and other regional transport bodies also attend.

The DfT is also able to direct Network Rail in its operations as a public sector body if necessary, and the train operating companies through the Emergency Recovery Management Agreements that have replaced existing franchise agreements.

So far it appears that these arrangements have worked very well and have produced some really good practice in co-ordination between operators to ensure that service can operate well and with a minimum amount of known risk to passengers and staff alike. This has even been privately acknowledged by some trade unions².

Various global academic studies of COVID-19 and other flu like diseases transmitted from person to person, show that with social distancing, the

¹ Rail Industry Coronavirus Forum and Joint Executive Oversight Team.

² Meeting of the Rail Industry Health and Safety Committee, October 2020.

wearing of face masks and enhanced cleaning regimes the risk of catching the virus whilst travelling on public transport is low³. Work by the Rail Standards and Safety Board has shown a possible infection rate of 1 in 11,000 journeys or 0.05%. However, infection rates have recently increased, and so this instance will go up, but so far there is no definitive correlation between use of public transport and increased infection rates in an area, with other factors being more important factors in the transmission of the virus. Interestingly, in some areas, car sharing has been identified as a vector for transmission, leading to local authorities to recommend that this is avoided⁴.

The role of air-conditioning and forced air ventilation systems on buses and trains is an area of possible concern, but as yet there is no definitive answer as to whether these have a positive, negative or neutral effect on virus transmission. In the airline industry although passenger planes (with the exception of very small aircraft), have filters in their air conditioning and pressurising systems, there is no conclusive evidence that these are able to stop coronavirus droplets from being recirculated. It appears that the greatest risk is from passengers circulating themselves within the aircraft. This would also apply to systems used on buses and trains.

There is a supposition that colder temperatures with freer flowing air from the atmosphere make it more difficult for the virus to survive. Bus and train operators have therefore been changing heat settings to lower temperatures and encouraging the opening of windows. However, most modern trains do not have opening windows, and so rely entirely on air-conditioning to regulate air quality and flow on board. As colder temperatures, and autumnal / winter weather becomes prevalent it will become more difficult to keep temperatures at a lower level, and the opening of windows will also introduce other safety hazards, such as slippery floors and stairs, particularly on double deck buses. For the moment, therefore this would suggest that social distancing, use of face coverings and enhanced cleaning regimes are the best means of reducing the risk of viral transmission on public transport.

To give a better understanding of the risks of Coronavirus transmission on public transport, a Transport Risk Assessment for Covid Knowledge has been commissioned from the University of Leeds, by the Department for Transport and supported by Public Health England⁵, and also the Universities of Newcastle and Manchester and the Defence Science & Technology Laboratory.

3. Derailment at Carmont, near Stonehaven on 12 August 2020

³ <https://www.rssb.co.uk/en/what-we-do/insights-and-news/News/Innovative-data-methods-for-passenger-safety-during-the-Covid-19-outbreak>; <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-018-0427-5>

; [https://www.researchgate.net/publication/342353367 Preliminary Implications of COVID-19 on Long-Distance Traffic of Deutsche Bahn](https://www.researchgate.net/publication/342353367_Preliminary_Implications_of_COVID-19_on_Long-Distance_Traffic_of_Deutsche_Bahn);

⁴ <https://www.glasgowlive.co.uk/news/glasgow-news/coronavirus-scotland-car-sharing-rules-18981171>

⁵ <https://www.railwaygazette.com/uk/scientific-study-to-improve-understanding-of-covid-19-transmission-on-trains-and-buses/57613.article>

A Scotrail Inter City was derailed when it hit a landslide caused by excessive amounts of rain. This overwhelmed the drainage system of the adjacent land and consequently caused the cutting side to move, blocking the track. The severity of the incident was made worse by the geography of the site, where the train partially demolished a bridge parapet. The power car and several coaches then overturned, killing three people (two members of staff and one passenger) and injuring several others.

This incident is indicative of the increased threat of weather-related incidents on the rail network as a result of climate change, which had previously been identified by the Office of Rail and Road⁶ as the single largest source of train accident risk to passengers. These weather-related risks include more intense and sustained rainfall and long dry and hot periods, that in both cases can cause earthworks (embankments, cuttings, tunnels, bridge supports etc) to fail quickly. In recent years there have been a number of similar incidents, including at Corby⁷ in Northamptonshire where a drainage system was blocked and caused material to slide and flood on to the railway in June 2019. In that incident, it was fortunate that no one was seriously injured or killed. However, in other cases such as that at Watford Tunnel in September 2016 injuries were sustained that could have been much more serious in other circumstances.⁸

Network Rail has stepped up a previously agreed programme of infrastructure monitoring to identify other earthworks that might be vulnerable to failure. However, as was the case at Corby and at East Croydon (no accident but major disruption)⁹ the inaction of other land or infrastructure owners can be a threat to the railway infrastructure.

This is a national issue that affects Network Rail, TfL (London Underground, Docklands Light Railway, Tramlink and the East London Line), regional transport authorities and heritage railways. In all of these cases much of the railway infrastructure was mostly built in the 19th Century to standards very different to current engineering knowledge, and weather climate. However, London with its reliance on public transport is particularly vulnerable to service disruptions and hazards of this nature. It is therefore extremely important that this issue is taken seriously, to avoid future failures.

Network Rail, as a result of this increasing trend and the ORR's direction to it, has a programme of asset inspection and investment in measures to proactively deal with issues on its network. This has resulted in several significant engineering projects such as the recent Bexleyheath line blockade that involved substantive works on embankments and cuttings that were at risk of failure. It also requires an increase in activity in vegetation, litter and

⁶ <https://www.orr.gov.uk/sites/default/files/2020-09/annual-health-and-safety-report-2019-20.pdf> and <https://www.orr.gov.uk/sites/default/files/om/annual-health-and-safety-report-2018-19.pdf>

⁷ <https://www.gov.uk/government/news/report-042020-train-collision-with-material-washed-out-from-a-cutting-slope-at-corby-northamptonshire>

⁸ <https://www.gov.uk/raib-reports/derailment-and-subsequent-collision-at-watford>

⁹ <https://www.yourlocalguardian.co.uk/news/9171062.flooding-from-burst-water-main-disrupts-trains-from-east-croydon-station/>

rubbish, and drainage management, on a day to day basis. These latter activities have not previously had such a high profile, but have increased in importance in recent years. Examples of this would include, the increase in numbers of trains striking fallen trees and other objects on the line during high winds in recent years; flooding caused by litter and rubbish blocking drainage systems or interfering with track and signalling systems.

TfL have similar programmes covering London Underground, Docklands Light Railway and the other infrastructure that TfL owns. They have an asset management system and plan, that has included studies of the effect of climate change in 2009/10 and 2017, with a recent revisit in the light of the Carmont accident. These plans also cover landscaping and vegetation management, with a Network Heavy Rain and Flooding plan to manage potential risks to passenger services.

4. Freight train fire at Llangennech in South Wales on 27 August 2020.

A freight train carrying diesel fuel oil was derailed late at night on 27 August 2020. The train then caught fire and began leaking diesel fuel oil into the surrounding area.

The cause of the derailment is being investigated by the Rail Accident Investigation Branch, however, initial investigations indicated that the cause was poor maintenance of the freight wagons' wheel sets.

The Office of Rail and Road has previously identified that poor maintenance of rail freight wagons is an area of concern¹⁰. The incident at Llangennech is one of a series of incidents that have had a major impact on the passenger railway, including the derailment on the Barking – Gospel Oak line on 23 January 2020, which damaged a substantial section of railway line and disrupted passenger services for over a month.

The rail freight sector is funded and operated in a completely different way to the passenger train operators. It does not receive any direct operating subsidy from the taxpayer and operates on a purely commercial basis. It also is a highly competitive sector with a number of companies operating in the supply and operation of locomotives and wagons. This means that there is significant pressure on costs, and maintenance of wagons seems to be an area where companies are not prioritising activity or expenditure.

For the London area, given the significant volumes of freight traffic that uses the rail network alongside passenger trains, the risk of disruption, collisions with passenger trains and or damage to passenger areas of stations is one of concern.

There are a number of routes in the London area that carry significant volumes of freight such as:-

¹⁰ <https://www.orr.gov.uk/sites/default/files/om/annual-health-and-safety-report-2017-18.pdf>

- Reading – Acton (Great Western and TfL Rail Elizabeth Line)
- The North, South and West London lines (London Overground and Southern use these)
- Gospel Oak – Barking – Tilbury and Thames Haven ports (London Overground and c2c use these)
- The West Coast Main Line (Avanti West Coast, London North Western Railway and Southern)
- Stratford – Shenfield (Greater Anglia and TfL Rail Elizabeth Line)
- Catford loop to Channel Tunnel and North Kent routes (Thameslink and Southeastern)
- Clapham Junction – Purley (Southern and Thameslink)
- Woking – Kew Bridge / Clapham Junction via Staines (South Western Railway)
- The Midland Main Line (East Midland Railway and Thameslink)

5. London TravelWatch policy and recommendations

For Covid-19, this is an evolving situation, on a day by day basis. It is not possible to come up with a comprehensive policy position that would necessarily stand scrutiny in the long term, given the known unknowns that arise from it.

It is recommended that London TravelWatch get in touch with the University of Leeds to find out more details of their study, and to ask that they include in their work the safety of air conditioning / forced air ventilation systems to determine whether these systems help or hinder the spread of respiratory diseases.

The risk of accidents arising from earthwork failure caused by climate change is however, quantifiable and potentially controllable. Network Rail and London Underground as infrastructure providers can ensure that their structures are maintained to the appropriate standard, and that policies of vegetation and litter / rubbish management are adhered to; that drainage systems are well kept and functional with higher volumes of water and that wind blown objects are less likely to fall on railway tracks and overhead wires. London TravelWatch policy is that litter and rubbish on railway tracks are an issue for passengers both in terms of sightliness and safety, and therefore their removal should be given priority. Letters to Network Rail, London Underground and the Office of Rail and Road reminding these bodies of this policy would be worthwhile.

The poor record of rail freight wagon maintenance is of concern because of the potential disruption to passenger services when incidents occur. London TravelWatch does not have a policy as such on this issue, however, it would be worthwhile writing letters to both the Office of Rail and Road, and Network Rail asking them to increase their inspection regimes of rail freight wagons to reduce the risk of such disruption.