Safety and Security Panel

Date: **12 February 2025**

Item: **Rail Customer Safety Update**

This paper will be considered in public

1 Summary

1.1 This paper sets out the current status in relation to performance and achieving our targets for customer safety on rail modes (London Underground (LU), London Overground (LO), Docklands Light Railway (DLR), London Trams and the Elizabeth line). It follows the paper entitled "Trends in Safety and Key Improvement Activity", presented to the Panel in December 2024, and focuses particularly on safety of our rail customers.

1.2 It identifies that while the LU safety record compares favourably to other operators, we will need to do more to reduce risk to customers if we are to meet our ambitious safety targets. The paper identifies the most significant causes of customer injury and the actions we are taking to reduce risk.

2 Recommendation

2.1 The Panel is asked to note the paper.

3 Background

3.1 The Mayor's Transport Strategy Policy 11 establishes the goal of eliminating death and serious injury from London's transport networks by 2041. Our internal TfL Strategy for Safety sets out the interim target to halve customer deaths and serious injuries by 2030. This is against a baseline of 2022/23 performance, when the TfL strategy was adopted.

3.2 Since we adopted the current serious injury definition aligned to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) definitions in 2020/21, performance shows that the rate of deaths and serious injuries for customers using our rail modes has fallen slightly since the coronavirus pandemic and remains broadly stable, as shown in Figure 1.

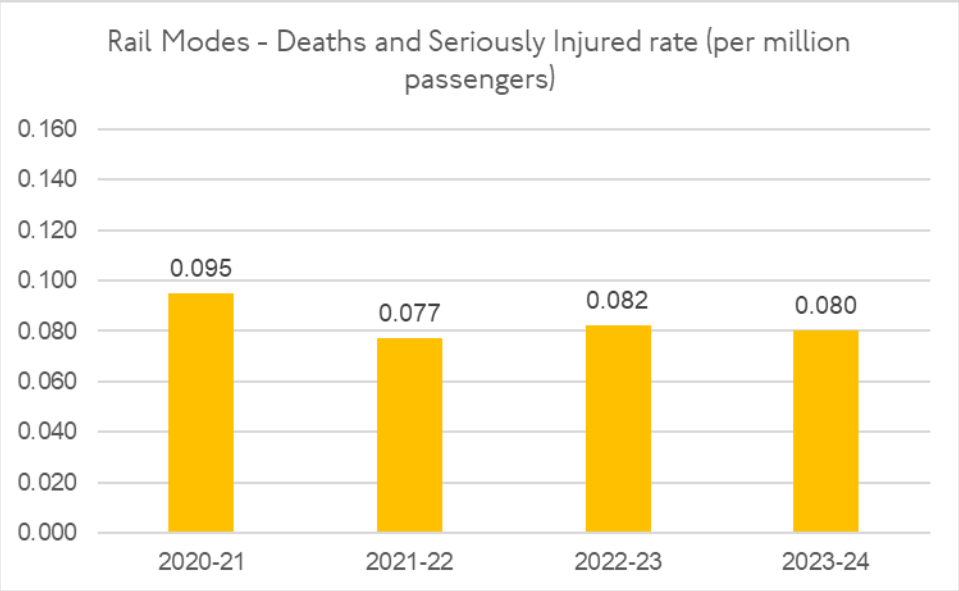

Figure 1: Rate of deaths and serious injuries per million passengers

3.3 We have introduced a range of measures, described in detail in the paper entitled "Trends in Safety and Key Improvement Activity", presented to the meeting of the Panel on 2 December 2024, to strengthen our management of risks to customers and colleagues. Nevertheless, over the last four years, the generally consistent risk rate has meant that, as rail customer numbers have grown as part of the recovery from the pandemic, the absolute number of customers killed or seriously injured has grown in proportion as shown in Figure 2.

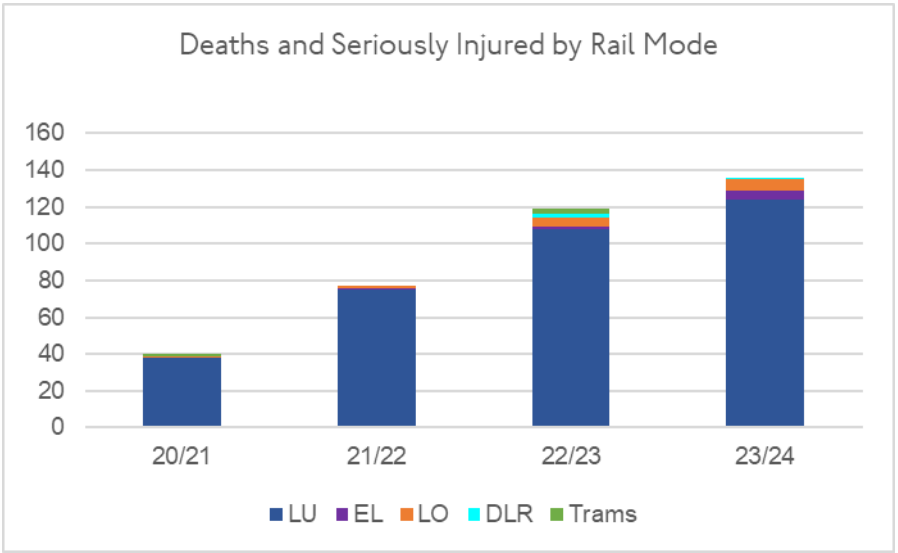

Figure 2: Absolute numbers of deaths and serious injuries on TfL rail services

3.4 The great majority of the incidents that are included within the 'killed and seriously injured' category are serious injuries, not fatalities. While direct comparisons of serious injuries prior to 2020 are not possible due to the alignment of serious injury definition with industry standard RIDDOR classification at that time, customer fatalities from financial year 2018/19 have been provided in Table 1 to give a longer time series (this excludes incidents where people deliberately take their own life).

Financial Year	Rail modes
2018/19	2
2019/20	2
2020/21	4
2021/22	2
2022/23	3
2023/24	7

Table 1: Customer fatalities since 2018/19

3.5 Every single death is a tragedy, and we are determined to eventually eliminate the number that occur, in line with our Vision Zero ambition. Nevertheless, the total number is small when compared to the overall number of passenger journeys and so trends must be interpreted with caution. Since 2018/19 rail customer fatalities per year have ranged from two to seven per annum, in the context of over 1.7 billion customer journey stages (in 2023/24, Travel in London 2024 - Trends in public transport demand and operational performance (tfl.gov.uk)).

3.6 As is evident from Figure 2 above, the majority of rail customer injuries on TfL modes take place on LU, reflecting the high numbers of users of LU services. However, the overall injury rate on LU is comparable to that of mainline services at a national level and the rate of more severe injuries is notably lower. The passenger injury rate for LU in 2023/24 was 3.44 injuries (of any severity) per million journeys (against a total of over 1.18 billion journeys in 2023/24). Comparison to data published by the Office of Rail and Road (ORR), the regulator for rail services, shows that for mainline services the injury rate was 3.88 injuries per million journeys in the same period.

3.7 It is also possible to look at comparative data for the more significant injuries between LU and the mainline network. The ORR uses an injury classification of 'Severe Hospital', defined as 'An injury to any non-workforce (or workforce off-duty) which occurs on or in connection with the transport system, resulting in that person being taken from the site of the accident to a hospital for treatment, in respect of that injury.' (Rail Safety, April 2023 to March 2024 (orr.gov.uk)).

3.8 When normalised to a rate per million passenger journeys, analysis of injury data in 2023/24 indicates that there are 0.03 Severe Hospital injuries per million journeys on LU compared to 0.74 on mainline rail. For fatalities the equivalent rates are 0.0017 and 0.0043 respectively. In real terms on LU these rates mean that, in 2023/24, one Severe Hospital injury occurred for approximately every 33.7 million journeys and one fatality for approximately every 590 million journeys.

3.9 Nevertheless, while comparative performance between LU and mainline rail may be favourable, our ambition is to eliminate deaths and serious injuries and therefore the relatively stable rate of incidents on our rail services presents us with a significant challenge. To close the gap between current performance and our ambition to eliminate the incidents of people killed or seriously injured, while also encouraging increases in rail journeys, we need to focus on reducing the risk of death or serious injury per journey. This demands we focus on the greatest risks and most common incident types.

Incident Types and Risk Areas

3.10 The most common causes of deaths and serious injuries, and where they occur, have remained consistent as shown in Figure 3. Incidents on stairs and escalators, while customers are boarding or alighting trains (the platform train interface (PTI)) and unauthorised access to the track account for most incidents. The proportion of incidents of each type has remained stable, with an average of 77 per cent of most serious incidents involving a slip, trip or fall. Most serious or fatal slip, trip and fall incidents occur while changing levels on escalators (39 per cent) or stairs (38 per cent).

3.11 Fourteen percent per cent of the most serious incidents have occurred at the PTI across the last four years. Incidents at the PTI can take different forms and can include falls while boarding or alighting, door entrapments, falls from the platform onto the track and customers being struck by trains as they pass along the platform.

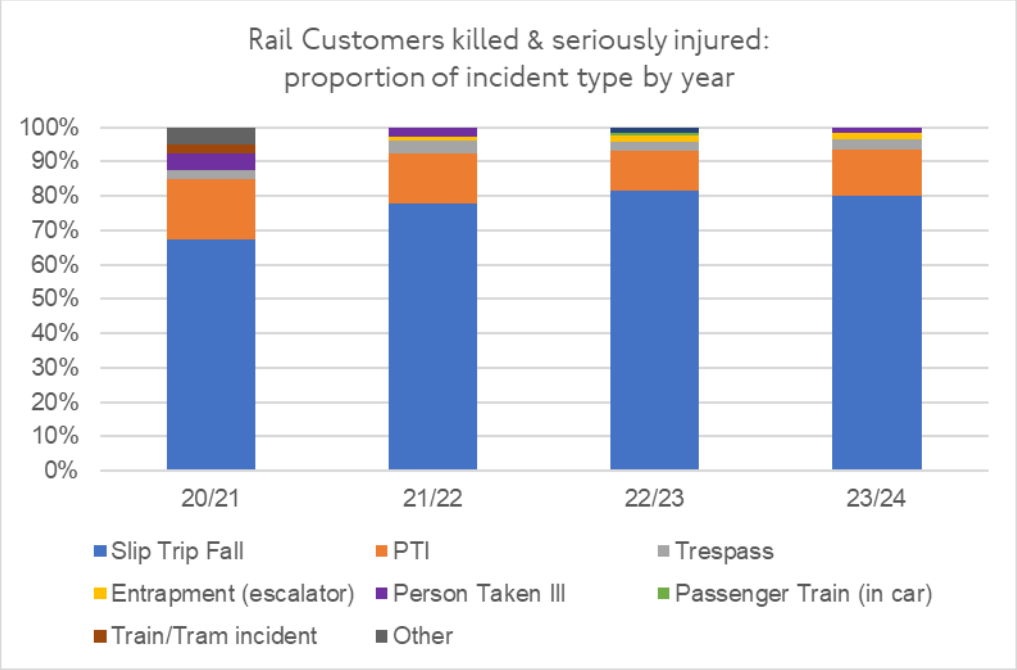

Figure 3: Proportions of Incident Type

3.12 When looking at the potential for an incident to result in fatal injury, in the last four years on our rail networks (total 16: of which 14 were on LU, one on LO, and one on Tram), the incident types of greatest note are those involving the PTI, which account for 38 per cent of fatalities, and unauthorised track access (31 per cent), followed by 25 per cent involving slips, trips and falls, mostly on stairs and escalators.

3.13 We can gain high level insight from contributory factor information captured alongside casualty records in our incident reporting system, noting that individual incident records may be subjective based on the views of the colleague entering or reading the report. Following an incident, we carry out our own detailed investigations to give further insight into the reasons for customer fatalities, as well as working with national agencies (the ORR, the Rail Accident Investigation Branch), should they undertake investigations.

3.14 Where contributory factors have been entered, many relate to some form of customer behaviour. In order to ensure that customers can travel safely on our network, we need to ensure that we create safe environments in which they can do so, as well as seeking to influence their behaviour.

Summary of Evidence

3.15 The ways in which people get hurt and where they get hurt have not changed in recent years, so we need to maintain a continual and sustained focus on these issues in order to reduce risks and close the absolute gap between current level of deaths and serious injuries and our strategic goals.

3.16 From our benchmarking work, we know we are not alone in facing these challenges. Slips, trips and falls, PTI and customer behaviour are the top incident types for other rail operations nationally and internationally. It is a shared challenge, and not easy or quick to fix. Where relevant we continue to collaborate with industry partners to identify best practice and new approaches, for example having set up a cross-industry working group on escalator safety.

4 Taking Action to Reduce Risk

4.1 Our experience of making progress on Vision Zero for roads is that, to drive consistent year on year improvement, we need to do more in a safe system framework. We will look at all aspects to manage and reduce risk, specifically focusing on the risk of customers being killed or seriously injured while travelling on the rail network.

4.2 Adapting the roads safe system framework into a rail customer context means that we will deliver:

(a) **Safe places**: safely designed and well-maintained stations, platforms and infrastructure;

(b) **Safe vehicles**: safely designed and maintained rail vehicles with new technologies retrofitted where viable;

(c) **Safe operations**: safer and clearer operating procedures, rules, compliance, assurance, contract management, training, innovation and technologies;

(d) **Safe behaviours**: empowering staff and influencing customer behaviour to manage risk and keep everybody on our network safe; and

(e) **Post-incident response:** learning when things go wrong through effective investigation, corporate learning, sharing public data and research and offering the appropriate support for incident victims.

4.3 Applying this programmatic and systematic approach will allow us to drive and deliver actions which we believe will reduce the number of customers who are killed or seriously injured on our rail services.

Platform Train Interface

4.4 In the first instance, we have developed a focused plan to reduce risk at the PTI. This has been prioritised because of the high representation of PTI incidents in the most serious, or fatal, injuries. As noted above, incidents at the PTI can take several different forms and no single intervention will respond to every type of incident, so our plan aims to take a systemic approach to improving safety at the PTI.

4.5 Our PTI plan identifies that 50 per cent of customer injuries (of all severities) happen at 12 per cent of our rail stations, while the other 50 per cent are spread widely across the rest of the network. For locations with higher numbers of injury the best long-term solutions are likely to be physical changes to platforms to prevent incidents occurring, where engineering analysis indicates that this possible. A number of these are underway, but capital costs are often significant, and will therefore take time.

4.6 Location specific mitigation will not be effective in dealing with some risks such as falls on track because incident data tells us that these incidents can occur at any location across the network. To reduce the risk of customers being killed or seriously injured in these incidents cost-effective mitigations are needed that can be rolled out across the full range of stations on our network. The PTI plan identifies CCTV and/or sensor-based solutions as an opportunity that meets these criteria. These technologies would be paired with an operational response to react to an incident occurring before a passenger is harmed. These types of solutions are already in operational use across the world – e.g. a CCTV based solution is used by SMRT in Singapore, and have been trialled on our own network at Custom House station on the DLR. The CCTV-based concept has also been proven at Willesden Green station as part of the “LU Smart Operations” project.

4.7 Further work is needed to test these solutions in other operational environments and implement a robust operational response before we can be confident in being able to roll them out more widely.

4.8 Consequently our planned interventions are based around our opportunities to mitigate risk by preventing incidents, where possible, detecting them if they occur and ensuring the right operational responses take place once detected.

4.9 The plan will continue to evolve as we learn more about addressing this issue but at the time of writing includes the interventions described below.

Safe Places

4.10 **PTI platform improvements:** We have identified stations where falls between the train and the platform are most common and are developing projects to make boarding and alighting safer for our customers:

(a) this year, our plans to move the stopping mark to shift opening doors away from the curved part of the platform at Baker Street will move into a detailed design phase ahead of delivery;

(b) we will also progress our plans to move the stones on the edge of platforms to reduce the gap between the train and the platform at Waterloo, Farringdon and Embankment; and

(c) we will further look at the feasibility of installing passive gap fillers to reduce the size of the gap at Embankment and Leytonstone.

4.11 **Piccadilly line platform adjustments:** The introduction of new rolling stock on the Piccadilly line creates an opportunity to make platform adjustments at stations ahead of the arrival of the new trains.

Safe Vehicles

4.12 **Piccadilly line upgrades:** We are introducing new Piccadilly line trains with safety improvements including in-cab CCTV and sensitive edge and obstacle detection technology, which are an upgrade on the existing fleet. We will monitor the effectiveness of these measures to identify lessons and opportunities from the use of this technology.

Safe Operations

4.13 PTI technology improvements and innovations:

(a) We are reviewing new technological and innovative solutions to test the opportunity for improving our ability to detect PTI incidents and alert colleagues with the intention to launch trials of relevant technology on our network later this year. This follows a successful trial at Custom House DLR station and includes plans to install an obstacle detection system at DLR Pudding Mill Lane station to alert our colleagues in the event of a person falling on the track.

(b) We will continue to roll out improved cameras on the Jubilee line, giving train operators a better view of customers boarding and alighting the train. We also continue to review the quality of camera images across the network.

4.14 **Working with our partners:** We have committed to host a 'PTI Industry Summit' in 2025, bringing together the operators, third parties and partners that collectively run our rail network. These partners are each accountable for managing PTI with the same regulatory and risk management principles as TfL and we recognise that there are opportunities to share, learn and deliver together.

Safe Behaviours

4.15 **Empowering our frontline colleagues:** We will help our colleagues play a significant role in reducing PTI incidents in the locations they know and understand:

(a) we will be incorporating PTI safety risks in training resources, reviewing how PTI incidents are captured and reported. We have already introduced competence assessment training focussed on lessons learnt from recent incidents and investigations; and

(b) we are raising awareness of PTI safety risks with train operators and reducing the risk of cognitive underload whereby automation and technology can contribute to fatigue and may affect operator vigilance.

4.16 Influencing customer behaviours:

(a) We continue to implement, and evaluate the effectiveness of, our interventions and campaigns around intoxication, inattention and rushing as well as routine operational customer communications around minding the gap and not attempting to board or leave trains while the doors are closing.

(b) We carry out research and analysis to understand how our diverse customer base behaves and interacts in different times and locations to support our planning of behavioural interventions.

Post-incident response

4.17 Learning and supporting victims:

(a) As described in the Trends in Safety and Key Improvement Activity paper in December 2024, the Sarah Hope Line provides support to people that have been affected by incidents on our network.

(b) Our frontline colleagues are trained to support people involved in incidents on our network and are regularly commended for looking after customers.

(c) We work closely with our regulators, operators and other stakeholders to thoroughly investigate serious incidents on our network and ensure that lessons are learnt and shared. In 2024, we took steps to strengthen our capacity and processes around investigation of the most serious incidents and will see this implemented over the coming year.

(d) We have independently reviewed our governance and processes around investigation of the most serious incidents and from March 2025 will use a new Corrective Actions Review Group, composed of nominated Directors, to review actions taken as a result of investigations and ensure that they have been effective in preventing reoccurrence.

Other Risks

4.18 As set out in the Trends in Safety and Key Improvement Activity paper, we have already taken action to improve safety on escalators as well as continuing customer safety campaigns around stairs. This includes technology trials, leading a wider industry discussion on escalator design, deploying staff at key locations and testing automated customer announcements.

4.19 Our next step will be to conduct a review to identify other interventions that may be trialled to further reduce the risk of slips, trips and falls at stairs and escalators. This work will be taking place in 2025.

List of appendices to this report:

None

List of Background Papers:

Trends in Safety and Key Improvement Activity, Safety and Security Panel, 2 December 2024

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