

Date: 15 October 2014

Item 7: Update on Platform Train Interface (PTI) Incidents

This report will be considered in public

1 Purpose

- 1.1 The TfL Safety Accessibility and Sustainability Panel has asked for a more detailed breakdown of the causes of Platform Train Interface Incidents (PTIs). The purpose of this paper is to update Members on the progress being made in managing the PTI risks.

2 Recommendation

- 2.1 **The Panel is asked to note this paper.**

3 Background

- 3.1 Risks at the platform train interface are one of the main contributors (26 per cent) to the overall London Underground major accident risk profile. The PTI safety key performance indicator for high potential incidents is monitored on the LU scorecard and is comprised of the following high potential incidents:
- a) Falls from the platform;
 - b) Falls between train and platform;
 - c) Contact between person and train (including falling against moving or stationary trains); and
 - d) Person(s) caught in or struck by train doors.
- 3.2 There are around 870 recorded PTI incidents per year out of approximately 3.3 billion crossings of the platform train interface each year¹ The main type of incident is passengers caught in or struck by train doors (circa 60 per cent), with falls between the train and platform the next largest contributor (circa 27 per cent of incidents)

¹ . (There are around 1.3 billion passenger journeys each year and each of these will involve at least two crossings of the platform train interface as passengers' board and alight trains. Approximately 54 per cent of all journeys also involve one or more interchanges eg to change lines therefore the total number of crossing of the PTI is around 3.3 billion)

- 3.3 The majority of these incidents (98 per cent) involve no or very minor injuries. One fatality has occurred in each of the last three years. Overall, the risks arising at the PTI are thus controlled to very low indeed.
- 3.4 Comparison with the mainline railway shows there were four fatalities at the PTI in 2013/14.

4 Analysis of the Current Situation

- 4.1 Our current measure of PTI incidents monitors frequency of occurrence without differentiating incidents by severity. The above categories of PTI incidents are high potential incidents i.e. may result in fatalities should existing controls fail.
- 4.2 The overall trend in these types of PTI incidents has increased over the last two years. The number of incidents of falls between the train and platform has increased mainly due to the changing profile of the PTI with the introduction of new level access rolling stock on the Metropolitan line. A similar pattern is also predicted as the new trains are introduced on the District and Circles lines. The number of falls between the train and platform has specifically been affected with the change in horizontal step distance. The number of incidents of persons being caught in train doors has also increased. The majority of these result in no or minor injuries. The majority of these incidents result from either inadvisable customer behaviour including rushing, slips and trips, late boarding and the prior consumption of alcohol or the shape of the infrastructure, e.g. curvature of the platforms resulting in a gap between the train and platform.
- 4.3 The risks at the PTI are controlled by a combination of measures such as:
 - a) checking of the PTI by the train operator via mirror(s) and/or CCTV monitor(s) during each train departure, with the functioning of the equipment used to do this checked daily on both trains and platforms;
 - b) influencing customer behaviour by yellow lines on platforms, 'mind the gap' notices and dot matrix signs displaying 'stand back next train approaching';
 - c) at certain locations only, (determined historically by experience and in more recent years by risk assessments), providing automatic 'mind the gap' announcements, below platform edge lighting at curved platforms, and by railings along short parts of the platform edge at 'risky' entrances on to the platform (where people have a tendency to rush, and/or the platform is unusually narrow and/or the entrance is at the train running in end for example).
 - d) the above are reinforced by platform staff train arrival/despatch duties and live PA announcements at busy platforms/periods only and more generally by the on system safety poster campaigns. These communication campaigns are regularly reviewed and developed to keep the messages fresh and to look for new ways of communicating the messages;

- e) on the Jubilee Line Extension below ground platforms only, by provision of platform edge doors (where some of the above measures are clearly not needed);
- f) specific measures such as installing barriers, improving lighting; enhancing train door and platform signage; moving customer information boards away from the platform edge; adjusting platform nosing stones, undertaking platform realignment work to close the gap; altering customer flow patterns at interchange platforms; are being reviewed and tailored for implementation at locations where incidents are occurring where the horizontal gap has increased due to the new level access trains. At platforms where trains terminate and wait before the next journey the auto-door close has been inhibited;
- g) until the above measures have been implemented or the number of incidents is very low, dedicated platform staff are provided at locations where the horizontal gap has increased significantly or where and incidents have occurred. These staff monitor the PTI, make PA announcements in between trains and provide on the spot assistance following a PTI incident including preventing the train from moving. If these staff are not in place the new trains cannot call at these platforms;
- h) furthermore a programme of research and development including trials to identify additional mitigation measures such as static and mechanical gap fillers and different methods of highlighting the platform train interface on those platforms where incidents are occurring with the new level access rolling stock is being implemented and monitored funded as part of the LU Business Plan.;
- i) all of the above are underpinned by congestion control measures (also known more colloquially as 'station control') specific to every station. The Congestion Control and Emergency Plan (CCEP) is based on station specific risk assessments. Each CCEP specifies the precise arrangements, including the appropriate triggers, for controlling congestion at all critical points on the station, including each platform, run-off areas from escalators, lifts and stairways and other 'pinch points' on the station. The control measures include the use of ticket gates, Bostwick gates, trains non-stopping at stations and PA messages. All station staff are trained and are familiarised with the specifics of the CCEP for each station they work at;
- j) the CCEPs are reviewed and updated annually, and when changes are made (either temporarily or permanently) at that station, when special events impose or are likely to impose much higher than usual customer loadings, or when a congestion control failure incident occurs; and
- k) the fallback control in a congestion control failure event (e.g. station control initiated too late / wrongly / not at all / etc) is to non-stop all train services to the station and to evacuate the station completely.

4.4 The main way of controlling the PTI risk is to limit the maximum number of people allowed in any station and thus on any platform. This is extremely well proven in practice at a whole range of stations where huge volumes of people occur regularly (e.g. Victoria, King's Cross, Liverpool Street) and virtually all

other stations to varying extents when disruption to service or other unplanned events occur.

- 4.5 We measure the frequency of the use of congestion control as well as the actual volume of customers at each station. Over the long term these factors lead to capital intensive congestion relief schemes at particularly busy stations. In the meantime, however, the controls we have in place will continue to ensure safety at the PTI.
- 4.6 The above controls are kept under review to ensure they remain effective. Station and train staff report faults such that any flaws in them can be quickly identified and rectified. As part of the ongoing review we look for more effective, reasonably practicable means of reducing the risk.
- 4.7 London Underground is part of the dedicated industry PTI strategy group which is working collaborative to set standards for reducing the PTI risk.

List of Appendices to this Report:

None

List of Background Papers:

None

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