

Addendum to Victoria Line Door Chimes Report – Visual Door Warnings

The trial of longer audible door warnings on the Victoria line set out to understand if there were any implications on safety, accessibility or capacity by being compliant with the 3 seconds required by the Rail Vehicle Accessibility Regulations, 2010 (RVAR).

By changing the whole fleet to be compliant for six months, the study could understand any behavioural changes which may have occurred as a result of the duration change with all other factors being unchanged.

Visual warnings

The system which controls the audible door warnings on the Victoria line trains (09TS) also controls the visual door closing indicators, which are located in the upper part of the door pillar. The behaviour of both indicators is mirrored such that when the audible warnings are increased, so are the visual warnings. Because of this it would be technically challenging to operate compliant visual warnings with shorter audible warnings. Furthermore, London Underground believes that it is important to maintain this consistency between the two types of warning for passengers. Emitting warnings of different lengths may make it unclear when the doors are closing, particularly to those who rely more heavily on only one form warning. The impact of this could be more injuries to passengers through door strikes, entrapment or rushing behaviour through confusion.

During the trial the visual warning was also operating at 3 seconds. The position of the indicator on the 09TS impacts the exterior viewing distance and angle meaning it cannot be seen from all positions on the platform or from passageways. In a position where the visual indicator can be seen, people are quite close to the doorway meaning successful boarding is more likely. Because of this, it was discounted as an indicator during the trial in having an impact on the 'hustle effect' and safety.

From an accessibility perspective the answers from the questionnaire on audible warnings are a good proxy for those which would be given to a similar question for visual warnings. As such, it is expected that some people would feel safer with longer warnings; however being shorter is not a barrier to using the Underground.

On other trains operated by London Underground the visual indicators are mounted more prominently on the exterior of the doors. They may be a contributing factor to the 'hustle effect' if they are illuminated longer, allowing more people to surge towards the train. Where people are unable to hear the audible warnings, through impairment or because they are using headphones, this has a potential to increase the hazards associated with rushing. In these cases, it is believed that the implication on safety would be an equally negative contributor as longer audible warnings to safety.

Rationale for Exemption

It would be technically challenging to separate out both elements of the door warnings to make one compliant and the other shorter. Systems on board the trains are not designed to operate in this way. Moreover, London Underground does not believe this to be suitable in operation. It is highly likely that passengers could become confused by the mixed signals, particularly those who depend

on one form of warning more. This in turn could lead to more injuries whilst boarding and alighting trains, both as a contribution to rushing and entrapment related risks.

As such, London Underground is requesting exemption against clause 4(2) of RVAR such that both door warnings maintain a consistent length across train fleets.