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INTERNATIONAL
RAILWAY SAFETY COUNCIL

Management of passengers

- ▶ Stratford Station in London during a period of substantial growth in patronage

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Stratford Station – East London



Significant investment pre-London 2012 Olympics

Stratford station



This modernisation of London's transport infrastructure keeps us on track to host a fantastic Games in 2012. It is also delivering a great transport legacy that will benefit Londoners for decades to come.'

*Milly Norwood
Secretary of State for Transport
June 2011*

The facts
London 2012 Games
Stratford station is one of three railway stations providing access to the Olympic Park during the Games. Improvements to the station will help accommodate spectators during the Games, and are already providing benefits to regular passengers even from a year before the Games.

120,000
People will pass through Stratford station during the morning peak in 2012

£125m
spent on upgrades to double capacity of Stratford station, with more than 200 trains passing through each hour in 2012.

After the Games
The different rail routes will serve Stratford station during and after the London 2012 Games, making it one of the most connected parts of the capital.

After the Games
An accessible mezzanine-level entrance has been opened at Stratford station, enabling opening of the existing entrance and taking passengers directly to the westbound Central line and DLR services. Capacity and frequency of services have been increased on the London Overground's North London line.



The DLR has been extended from Canning Town to Stratford International station. It will stop at Stratford and West Ham stations, as well as new DLR stations at Stratford International, Star Line, Abbey Road and Stratford High Street. Only five new stations will enable it to run three carriage trains on most of its network.



Major redevelopment of whole area

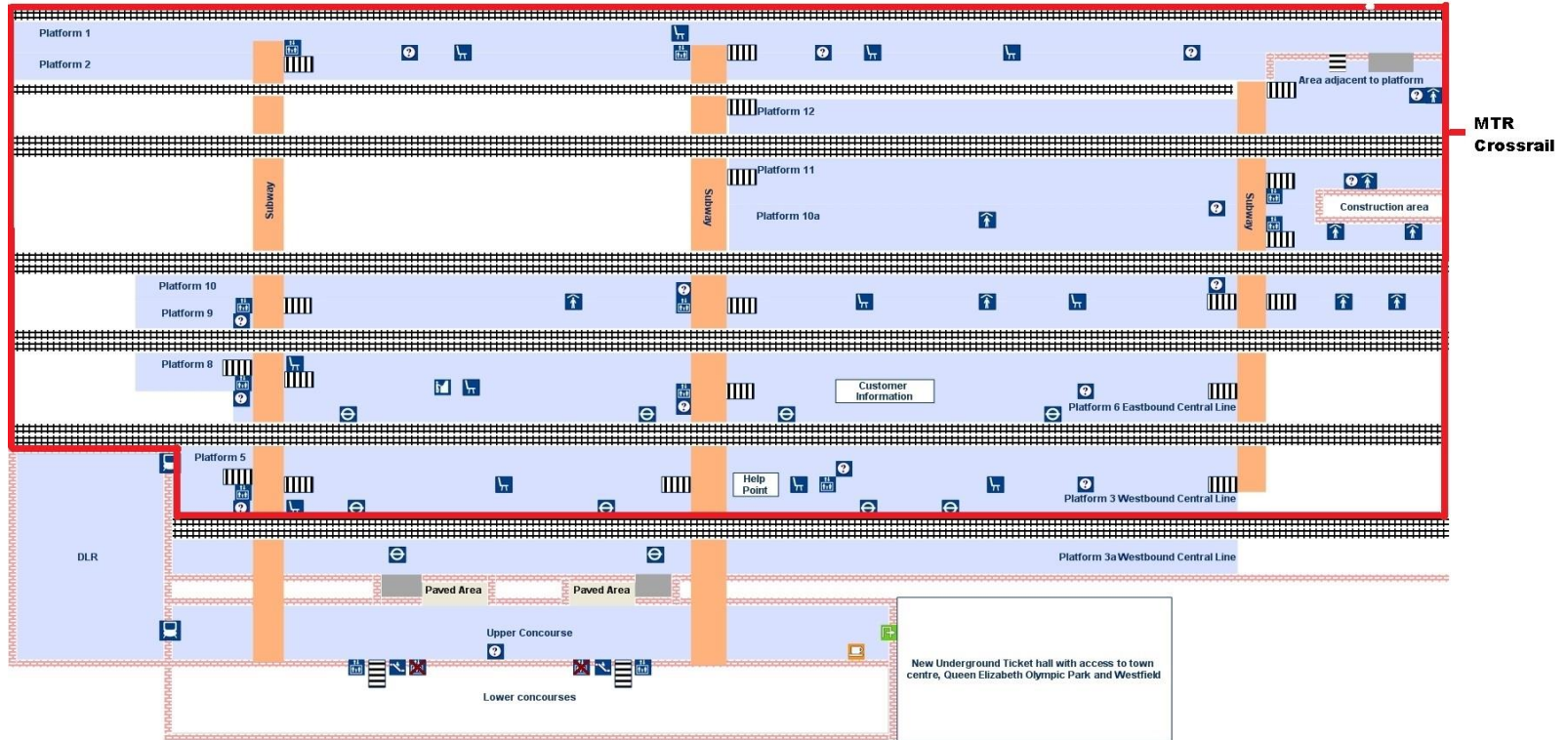


Future Crossrail service will be transformative

Elizabeth line



Stratford Station – Internal Layout



Two incidents of significant over-crowding



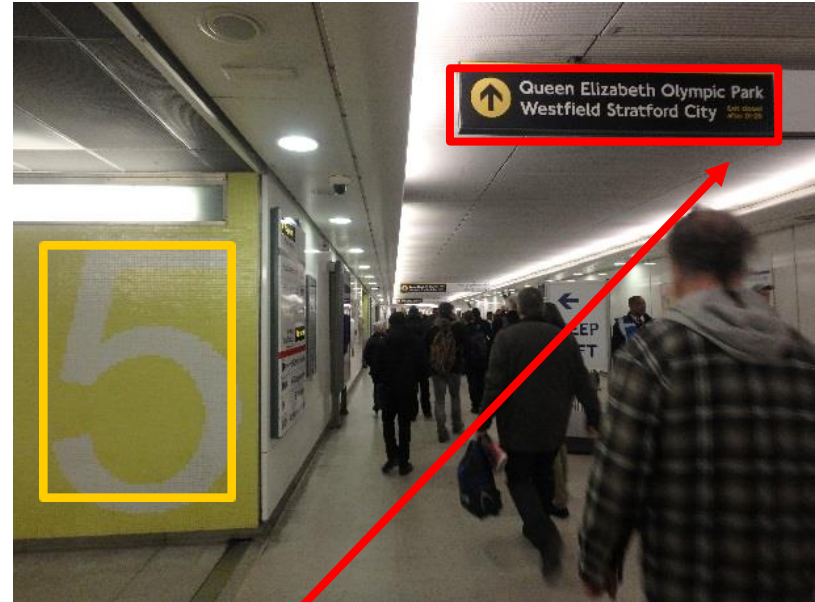
Over-crowding throughout the whole station



Challenges – physical layout



Signage not helping



Lack of directions

Most predominant sign

Good practice exists – but not picked-up

Escalation triggers

- Rail Safety and Standards Board (RSSB) categorises crowding into four levels in its *Crowd Management at Stations – A good practice guide (October 2004)*. The different categories below could also be used as a qualitative way of assessing the crowd density.



No Customer Crowding

All Body Visible – no Crowding Issues
Large Spaces, free standing and movement



Severe Customer Crowding

Only shoulder and head visible – crowded.

Customers severely restricting circulation, personal contact unavoidable.

Long queues start to form at start of escalators or near automatic ticket gates.



Low to Moderate Customer Crowding

Only body and head visible – possible overcrowding
Some restricted circulation but personal contact avoidable.
Minimal queues near stairs, escalators and automatic ticket gates

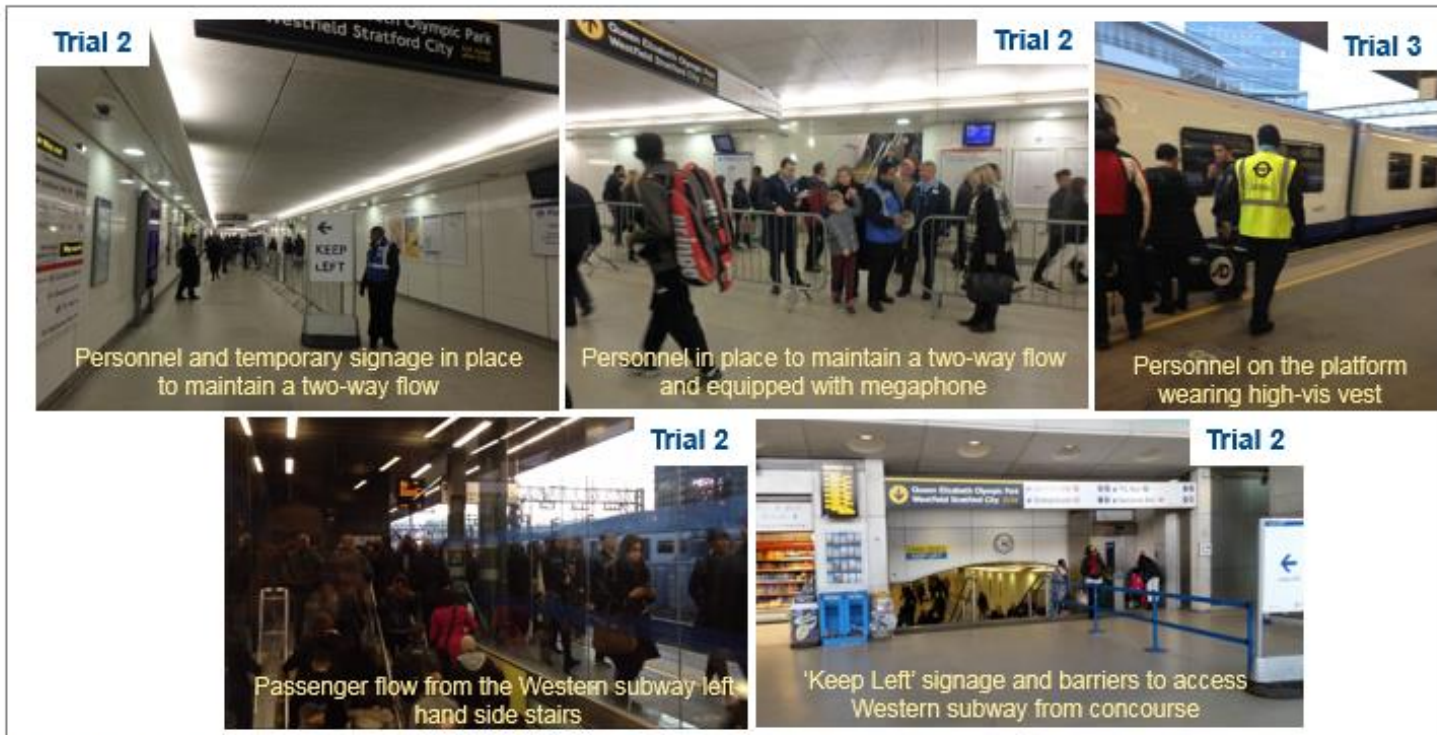


Unacceptable Customer Crowding

Only head visible – Crowding unacceptable

Very crowded with personal space equivalent to area of body ellipse.
Standing wrong side of yellow line on platform.

Practical trials undertaken – and monitored



Source: Arthur D. Little

Conclusions

Following these trials, the changes in measures to manage passengers at Stratford Station have had a positive impact on crowd regulation and management across the station in general

- ▶ All of these measures are only short to medium-term solutions. External changes are expected to further increase passenger numbers using Stratford Station ;
- ▶ There is a need for multi-stakeholder cooperation (including both local and national government, railway infrastructure managers and landlords) to develop a “master plan” to improve the passenger capacity at Stratford Station.
- ▶ This needs to model the flows through and around the Stratford Station – integrating the train services.