

THE NEW PICCADILLY LINE TRAINS

On Thursday 4 March 2021, TfL and Siemens Mobility unveiled the detailed design of the new generation Underground trains for the Piccadilly Line, which will soon be in production to replace the existing 1973 Tube Stock fleet.

Despite the devastating impact that the coronavirus pandemic has had on its finances, TfL is continuing to replace these assets, meaning that from 2025, the first of 94 new spacious “Inspiro London” trains will be introduced, replacing the 1973 Tube Stock.

As the new trains are introduced to the Piccadilly Line, the current fleet of 86½ trains will be gradually withdrawn from passenger service and the frequency of trains in peak hours will rise from 24 to 27 trains per hour from mid-2027. This equates to a train every 135 seconds at the busiest times and represents a 23% increase in peak service capacity. The state-of-the-art Underground trains will significantly improve the experience of millions of passengers, with wider doors and longer, walk-through, air-conditioned carriages for more comfortable journeys.

The new trains optimise space to boast 10% more capacity, as well as being significantly lighter than existing designs, meaning energy efficiency is increased and damage to tracks is reduced. This is achieved by using an innovative articulated design, meaning fewer bogies (the structures containing the wheels, motors and suspension to support and power the train) are required per full-length train. This provides the additional benefit of a smoother ride.

The new trains will have regenerative braking capability, cutting-edge traction systems, LED lighting throughout and advanced energy management. Energy consumption is thus reduced by 20% compared with the existing fleet.

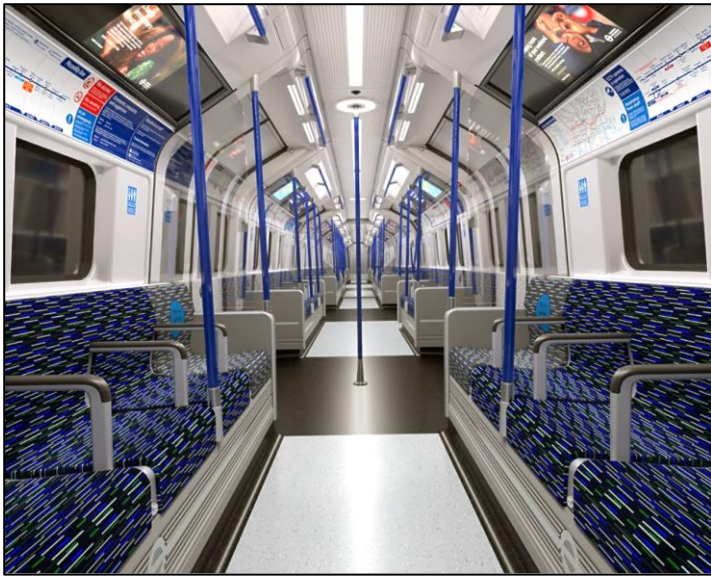
HIGHLIGHTS

- **HERITAGE DESIGN** – aligned with London Underground’s iconic global image.
- **OPEN, WALK-THROUGH CARRIAGES** – creating a light and airy look as well as allowing more space to move for passengers, enhancing passenger safety and passenger flow.
- **MAXIMISED INTERIOR SPACE** – 10% increased passenger capacity.
- **LARGE DOOR OPENINGS** – to enable easy access on and off the train and to improve passenger flow
- **MORE COMFORTABLE, COOLER TRAVEL ENVIRONMENT** – thanks to innovative underfloor air conditioning units
- **PASSENGER INFORMATION SYSTEM** – with multiple screens in all carriages to provide dynamic travel information plus advertisement / video displays
- **BUILT WITH SUSTAINABILITY IN MIND** – the train will consume 20% less energy than the existing fleet.
- **A TRACK FRIENDLY DESIGN** – significantly lighter, track friendly, multi articulated design for a smoother ride and reduced maintenance cost
- **INCREASED RELIABILITY AND HIGH AVAILABILITY** – thanks to redundant system design of vital components
- **OPTIMISED WHOLE LIFECYCLE COSTS** – to ensure best long term cost efficiency
- **EXTENSIVE TESTING IN THE SIEMENS TEST CENTRE IN WILDENRATH, GERMANY** – ensures reliability from the first day of operation.
- **SMART REMOTE MONITORING AND DIGITAL SERVICES** – using Railigent® to improve train performance.
- **FUTURE PROOFING** – with trains designed for a long life.

TECHNICAL DATA

Train configuration	9-car train
Train length over couplings	113.7 m
Train width (over passenger doors)	2,648 mm
Train height (above top of rail)	2,844 mm
Entrance height (above top of rail)	700 mm

Passenger capacity per train (5 passengers/m ²)	1,076 passengers (268 seating)
Number of passenger double doors per train	18
Width of passenger doors	1,690 mm
Maximum traction power	2,500 kW
Line voltage	630/750V d.c. third and fourth rail
Maximum operating speed	100 km/h



Previous Page and Left: Artists' impressions of the interior of the new trains. Previous Page Lower Left shows the walk-through, which will be possible throughout the nine-car train, while Previous Page Lower Right looks towards a driving cab. A section of seating in the centre section is illustrated Left, with the seats nearest the doors being for passengers with special needs. The interior has a prominence of Piccadilly Line 'blue'. Below is an exterior view showing that the new trains will have a driving cab, contrary to what was originally proposed a few years ago. The saloon 'porthole' windows are remarkably small but not as quite as small as on the C&SLR's 'padded cell' carriages of 1890! Compared with other and previous views of the proposed new train, it seems (Below) that the livery has gone back (almost) to the Corporate livery first introduced some 30-plus years ago. However, there seems to be a blue waist line stripe added for some reason.

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All Illustrations: Transport for London



And who remembers the bold statement a few years back that “no more (Underground) trains will be built with cabs”