

# White Heat London 7 / The Tube

## The Victoria line World's first automatic railway

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London's Underground, familiarly the tube, was the first underground railway to be built anywhere in the world. Services began in 1863 using steam engines in shallow tunnels excavated beneath main roads. The City & South London Railway, opened in 1890 and forming the core of today's Northern line, was another world first: a bored, deep-level railway, made possible by the tunnelling shield (also a British invention) and electric traction. Trains could now be routed anywhere with minimal disturbance above or below ground.

Expansion occurred by adding branches to existing lines but only after post-war austerity eased was the Victoria, the first new line in decades and also the first since the tube was nationalised, able to be started. Intended to relieve congestion, serve new districts in the capital and connect its principal mainline terminals, it was also the only line to interchange with every other and, thanks to more pioneering work, the first automatic passenger railway in the world.

The operator onboard the train simply closed and opened the doors – the train would drive itself to the next station, accelerating, braking and stopping as needed by following coded impulses received through the track. Other advances included continuously-welded track for a smoother ride, ticket gates that read information from magnetic strips and closed-circuit television to aid safety. The line – designed by London Transport's chief architect – opened in stages from September 1968 and was finally completed in 1972.





By allowing the trains to call at existing platforms whilst diverting current traffic through new tunnels, the Victoria gained another unique feature: cross-platform, same-direction interchange. At Euston, for example, the northbound Northern line platform on the Bank branch was now served by southbound Victoria line trains. Rebuilding Oxford Circus station, meanwhile, required a temporary steel traffic ramp or 'umbrella'.

The prestigious Design Research Unit brought a new aesthetic to the platforms. Melamine and enamel were used for illuminated signs and station name roundels, these with a litter bin beneath; an integrated end-wall panel containing signal lights, a clock and access hatches was formed from brushed metal. Each station had its own tiled mural backing to seating recesses; that for Stockwell was by the noted emigre designer Abram Games and depicted a stylised swan in reference to a local pub.

The line's control room watched over the entire route. Automatic Train Operation allowed for faster running. The new tunnels were ventilated and dual-speed escalators saved energy.