

# Return of the tram

**David Walmsley** reports on the latest tramway developments around the country, based on reports from the LRTA Annual Officers' Conference held recently in Edinburgh

**T**here are currently seven modern tramways in Britain, in Manchester, Sheffield, West Midlands, Croydon, Nottingham, Blackpool and Edinburgh.

Together with the two light rail systems in Tyne and Wear and London Docklands, they carry 274 million passengers a year, about sixth as many as the entire rail network.

Modern tramways have proved very effective in France, Spain and other countries, and in Dublin the Luas tramway goes from strength to strength.

Transport professionals recognise that trams provide fast, frequent, high-quality public transport that shifts large numbers of people in busy urban corridors. Surveys show that around twenty to twenty-five per cent of the passengers on a tram are former car travellers, so trams are good at attracting people from their cars, much more so than bus rapid transit. Trams are accessible to mobility-impaired passengers.

They do not produce pollution in the street, neither from exhaust emissions nor from the mixture of brake, tyre and road surface dust produced by all rubber-tyred vehicles. Trams can contribute to a pleasant, car-free cityscape (as in Grenoble and Bordeaux), they attract investment and can provide a catalyst for urban development and regeneration (see London Docklands or Salford Quays), and they provide a permanent statement of a city's political will and confidence in itself.

Trams have fewer accidents than cars. One cannot ignore the horrific incident in Croydon in 2016 when, due to a lack of awareness by the driver, a tram took a bend much too fast, derailed, and seven passengers lost their lives. But it should be remembered that these were the first passenger fatalities on any modern tram system in the UK. As with all train and tram accidents, the Croydon accident has been thoroughly investigated and lessons learned

to ensure that, as far as humanly possible, it does not happen again.

So, what's not to like? Well, tram systems are undoubtedly expensive and require considerable investment in infrastructure. Their substantial fixed costs mean they work best in busy urban corridors with large flows of passengers. Sometimes tramways are over-engineered with heavy, rail-like construction, and it is also true that the construction phase of a tramway is disruptive to traffic, but so are most major city-centre construction projects, and the effect can be reduced by careful design and management.

## New battery technology

Some say: why have a tram when a bus will do the job just as well? Buses are effective over a wide range of scenarios, but on a busy route buses are limited to about three thousand passengers an hour, whereas a tram system can carry ten thousand an hour or more. Trams also last two or three times longer than buses. So, buses and trams are both components of an efficient public transport system.

A number of technical developments are emerging which might reduce the cost of tramways and encourage their wider use. One of these is tram-train, whereby a vehicle



Edinburgh Tram at the York Place terminus. From here, trams run via Princes Street and Haymarket to the Airport. From here, a three-mile extension via Leith Walk to Leith and Newhaven is planned.

can run on-street like a tram or on the railway like a train. There can be problems of course, but they are not insurmountable. There is a pilot scheme under way in Sheffield to link the existing Supertram network over the railway into Rotherham. The new vehicles are in service now and will run into Rotherham later this year.

New forms of propulsion are becoming available. Battery-powered trams operate in a number of European cities, such as Nice and Seville; they use conventional overhead wires in the suburbs, and switch to batteries in the historic city centre where wires might not be acceptable. In Bordeaux, the same effect is achieved with APS (alimentation par sol), a ground-level electricity supply which is only energised when a tram passes over it.

Other technologies such as super-capacitors and hydrogen fuel cells are being developed. What developments might we see in British tramways over the next ten years or so? Here we see an interesting difference: almost every existing tramway is successful and extending its network, but in spite of plans in many other cities, there are no definite developments. We start with the existing networks.

Manchester Metrolink has recently completed its 'Big Bang' expansion and now has nearly 62 miles of track. An extension to the Trafford Park industrial estate and Trafford Centre is under construction

Sheffield Supertram will shortly open its extension to Rotherham

West Midlands Metro has 'Big Bang' plans of its own. The extension from Birmingham Snow Hill through the city centre to Grand Central (New Street station) is being further extended to Centenary Square and on to Edgbaston. Trams will use battery power on the first section. In Wolverhampton, the line is being extended to the railway and bus stations. Further extensions to Birmingham Eastside (to link with HS2), to Birmingham International and the airport, and to Brierley Hill from Wednesbury, are planned

London (Croydon) Tramlink has several possible routes for extensions, as envisaged in the Mayor's Transport Strategy. The likely first development is a line to Sutton.

Nottingham Express Transit has recently opened two major extensions, one to Beeston and Chilwell, and one to Clifton, more than doubling the track length to just under 19 miles. An extension of the Chilwell line to an HS2 interchange at Toton is under consideration. There are proposals to extend this line into Derby via Pride Park, and a future link to East Midlands Airport is possible.

Blackpool Tramway, which dates from 1885, was completely renovated in 2012 with new infrastructure and vehicles. Two new vehicles have recently been purchased to meet rising demand, and a half-mile extension to the town's main railway station is under construction. Some of the former historic vehicles have been retained and provide a popular heritage tour service. An

Nottingham Express Transit at Beeston. Beeston is a busy district centre, and the tram station is close to the shopping centre and provides convenient interchange with local buses



extension to Lytham St Annes using tram-train vehicles is proposed.

Edinburgh became the first Scottish city with a modern tramway in 2014. Plans for a three-mile extension to Leith and Newhaven are expected to be approved during 2018.

As far as new tramways are concerned, there are various proposals in many other cities, but in the current economic climate probably only a few will be built over the next ten years. Below we summarise the most promising possibilities covered at the Edinburgh Conference.

#### New prospects

Leeds, Liverpool and Bristol are among the largest cities in Europe without trams. Currently, only improved bus services are under discussion. A promising proposal in Leeds is for tram-trains to operate from the city centre onto the railway to Leeds/Bradford Airport and possibly to Harrogate. Bristol is currently developing a 'Metrobus' bus rapid transit solution. There is a plan for a tramway in Bath with a link to Bristol.

On the south coast there is a proposal to introduce light rail or tram-train on the Southampton to Eastleigh corridor, and to Fareham, which could be extended into Portsmouth. On the Isle of Wight, South Western Railway is considering replacing the ex-Underground vehicles, possibly with light rail stock with street-running in Ryde. Northwest England has proposals for a tramway in Preston using light vehicles, and one in Warrington with possible links into Liverpool and Manchester.

Glasgow already has extensive suburban rail, and its subway is being modernised. The Glasgow Airport Rail Link (GARL) is planned to connect Glasgow Central via Paisley to the airport with tram-train vehicles. Cardiff has plans to convert the Valley Lines rail

network to Metro-style operation.

London is well served by public transport. The Docklands Light Railway and the Overground have been enormously successful, and Crossrail and Northern and Bakerloo line extensions are in the pipeline. But London still needs local high-capacity transport. Oxford Street is one of the busiest and most polluted streets in the country and buses are slow. A tramline could transport people more swiftly and create a pleasant, safe pedestrianised environment.

The Cross-River Line proposal, sadly not being pursued, would have seen trams along the busy corridor from Waterloo to Euston and Kings Cross. London also has a number of district centres similar to Croydon which are transport, shopping and employment centres in their own right, such as Stratford or Richmond/Kingston, where a tramway could be effective.

Many other cities have plans for tramway and light rail lines, but the current economic climate is not favourable. However, with the increasing devolution of transport planning powers to local partnerships and combined authorities, and increased involvement of private funding, more local funding could become available. The next decade might see some of these schemes coming into operation.

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*The Light Rail Transit Association (LRTA) is an international organisation which campaigns (as TramForward) for better fixed-track public transport, in particular tramways and light rail.*