

# Tram vs trolleybus:

## They can't be seen as enemies

Trolleybuses fell out of fashion in the UK in the 1950s, but they are 'cleaner' than motor buses and can pave the way for trams. Robert Davidson puts the case for their place in the transport mix

The recent announcement of UK Government plans to electrify nearly 300 miles (500km) of 'heavy' railway over the next decade was accompanied by the Prime Minister's statement that "This will reduce carbon dioxide emissions and mean faster and more reliable services for millions."

This recognises that electric public transport is more efficient and attractive, and that the state is investing to improve the environment. To hit the UK's planned 80% target cut in carbon emissions however, it will not be enough to rely on renewables and technical 'fixes' – we also have slash our daily energy consumption by 40%.

Transport has a vital role in achieving this. While it is true that motor buses are not the only vehicles which create tailpipe pollution, bus-derived exhaust is the easiest to get rid of. This is because buses generally follow fixed routes along comparatively few of the roads in a city, so equipping just a few roads for trolleybuses is a very quick fix.

### The right solution for the problem

Passengers prefer trolleybuses to buses; they prefer trams even more, but there are situations where light rail cannot be justified. Thus the message should be given loud and clear: Go for trams where you can, go for trolleybuses everywhere else. Trolleybuses and trams are not enemies and converting busy bus routes could begin almost immediately.

Hard-line *TAUT* readers will vociferously argue against trolleybuses, but they are missing the point in a 21st Century world. We all know that the most effective way of electrifying urban transport is by tram, as Croydon, Manchester and Nottingham demonstrate. These systems are hugely popular, a catalyst for urban regeneration and getting people out of their cars. Unfortunately, tramways require significant investment and take a long time to build, so will probably only open in our largest and best-organised cities. Something simpler, quick, and lower cost is needed elsewhere – and that is the trolleybus.

### Why trolleybuses?

The technology is well proven, and every required component can be found in the catalogues of established manufacturers. That is why over 60 European cities are sold on the idea.



Left: The Solaris *Trollino* operates in a number of cities in Eastern Europe and on the new line in Landskrone, Sweden. Solaris also supplies Swiss systems also providing some of these elegant buses to the new system in Rome. Solaris

### TROLLEYBUSES...

...have lower and more predictable operating costs. Diesel fuel is imported, and we have no control over prices and availability.

...can last longer than diesel buses, offsetting higher initial costs to give lower lifecycle costs.

...regenerate current when braking and feed this back, reducing overall network power demand.

...accelerate better than diesel buses, reducing overall journey times and therefore fleet numbers.

...can be combined with trams. Many European networks combine trams and trolleybuses, sharing electricity sub-stations and maintenance to cut the cost of both.

...cannot easily overtake each other. This forces operators to provide a railway-like service - rather than the free-for-all experience on motor bus routes.

Critics allege that generating electricity from fossil fuels simply shifts pollution up the energy chain to the power station. However, the University of California found that even with low-grade coal producing large amounts of CO<sup>2</sup> (as used in Germany) electric traction almost completely eliminates carbon monoxide and hydrocarbons. Diesel engines are only 40% efficient at best and if you include idling and part loads, this plummets to below 30%. Engines powered by other fossil fuels achieve even lower figures – and all the pollution hits the street.

Rome chose trolleybuses after examining all options for cleaner urban air and benefits from reduced healthcare costs, and the first route opened in 2005. A 3km (2 mile) unwired city centre section is covered on batteries which recharge while running under the wires. This unwired capability reduces the need for complex junction work and allows turnbacks anywhere. The first route has been so successful that January 2008 saw Rome announce an expanded 60-vehicle system.

### Growing European adoption

Trolleybuses are generally popular with the customers who use them every day and also with the local residents whose properties they pass. Low noise and ride comfort, coupled with the sense of permanency provided by investment in wires, sends a positive message to property owners and investors.

In Arnhem, Netherlands, ridership has risen 20% on routes converted from diesel buses. In Salzburg, Austria, business is up 16%. Surveys in London have shown that people have an overwhelming preference for trams and trolleybuses over buses of any type.

It is pleasing to see that British consultants recognise the potential benefits; Mott MacDonald and Steer Davies Gleave are working on trolleybuses plans for the Leeds 'NGT' system, and *TAUT*'s last issue showed trolleybuses are also part of the package of measures proposed by MVA and Mott MacDonald for greater Glasgow.

Supporters of better public transport must fight to ensure these proposals are not salami-sliced away by uninformed politicians and Treasury officials. The bottom line? We all deserve better urban public transport and our children deserve to inherit a better environment. **TAUT**

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Left: Leeds wanted trams, as in this artist's impression of 2002, but the Government would not fund them. The current NGT proposals provide the opportunity to provide clean, electric public transport, albeit with smaller trolleybuses rather than big trams. WYITA