

## TROLLEY BUSES

The electric trolley bus is a transport hybrid. It is half tram, half bus - it has the rubber tyres, a chassis and a body of the diesel bus but it draws its power from overhead wires as does the tram. The hybrid nature of the trolley bus may have assisted in creating its own destruction in many parts of the world.

Transport officials have been quoted as saying that the trolley bus has neither the advantages of the motor bus nor the advantages of the tram but possesses all the disadvantages of both forms of transport. The trolley bus does not have the capacity of the tram nor does it have the complete flexibility of operation of the motor bus. At the same time the trolley bus possesses the same characteristics of a tram in that it depends for its current supply on overhead wiring and so its route is 'fixed' in the short term.

For all its faults the trolley bus has several very desirable features which places it above other forms of street transport vehicles, features which are causing a renewed interest in this form of traction in many parts of the world. The trolley bus is extremely quiet and it has a swift, smooth acceleration with unexcelled hill climbing ability. Compared with the diesel bus the trolley bus is free from vibration and all exhaust fumes. Successful operators of trolley buses have acknowledged that the electric vehicle has a high degree of availability and reliability and has a comparatively low cost of maintenance. Like the tram it does not require refuelling and therefore can stay out on the road all day if necessary.

Trolley bus capital costs are high, both for vehicles and overhead wiring, although vehicle life easily exceeds that of a diesel bus. Whilst energy costs and vehicle maintenance costs of trolley buses are lower than those of diesel buses, the total costs of maintenance per kilometre for a trolley bus system would be approximately 30% higher than for a diesel bus system because of the maintenance requirements of the overhead lines and electrical system.

In general terms, trolley buses appear to be favoured as a means of transport in the following urban, institutional and political environments:

- (a) in cities with steep hills eg Seattle, San Francisco, Wellington;
- (b) in cities where governments wish to provide a degree of transport security for citizens (usually in countries with no indigenous liquid fuel supplies) eg cities and towns in Switzerland, Austria;
- (c) in cities where governments are environmentally conscious and/or there has been a long history of management and citizen interest in electric transport eg Bergen (Norway), Dayton (Ohio USA), Grenoble and St Etienne (France).

Trolley buses operate in about 350 cities in the world. Trolley bus systems under construction appear restricted to Brazil, England, Eastern Europe, Italy and USSR, although extensions are being built in many cities including San Francisco and Vancouver.



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