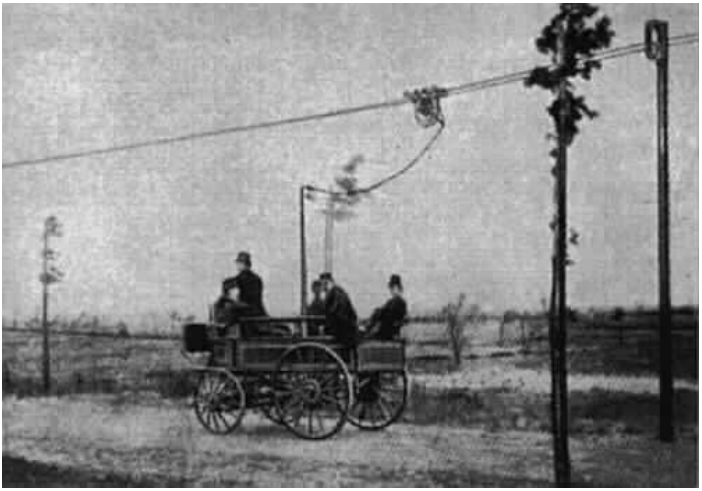
The Electric Trolleybus

Leeds Trolleybus (or New Generation Transport - NGT) is a planned trolleybus system in Leeds, West Yorkshire. If the plans go ahead, it will be the first trolleybus system to be re-introduced in the UK after almost forty years since the last trolleybus in Great Britain operated in Bradford. The predicted passenger loading of the trolleybus is 8-9 million passengers in the first year. The Tbus works by drawing its power from overhead cables, rather like an electric tram. The difference is that, whereas the tram usually gets its power from one large cable, with the current passing through the rails and into earth, a Tbus uses two, smaller, wires, drawing the current from one and returning it via the other.

When Trolleybuses were first invented back in Victorian times, the power collector took the form of a small 'trolley' which ran on wheels on top of the electric wires - hence the name: 'Trolleybus'. This was soon replaced by two sprung poles which had small wheels that ran underneath the wires instead. These days, even the small wheels have been replaced by solid graphite contacts at the end of the poles. Despite the fact that the term 'Trolleybus' is a hundred years out of date, the name has stuck! However, people nowadays are using more up-to-date names for these incredible vehicles. In Germany, they use the term 'Obus' (because of the **O**verhead wires). In Britain, the terms 'Tbus', 'Trolleycoach' and 'Electroliner' have been coined. Because Tbuses use electricity which is centrally-generated at the power station, they can use fuel more efficiently than, say, a diesel bus. This means that, even if fossil fuels are used to generate the electricity, the Tbus is still much more environmentally-friendly than any internal-combustion vehicle. On the street, of course, the Tbus gives off no emissions at all - the electric motor is completely clean and very quiet. Typically, a modern Tbus will use a 750 volt DC system, which is converted to AC onboard for greater efficiency. Some modern Tbuses use a series of hub motors to increase efficiency further and to enable an even, low floor throughout the vehicle. Tbuses are also capable of 'regenerative braking' which means that the braking system is designed to be used as a mini-generator to recapture some of the energy that might otherwise be lost when slowing down. Up to 40 percent of the electricity can be reclaimed in this way.

24-metre Tbus on the streets of Leeds (City Square/ Park Row)
Tbus design and composite by Ashley Bruce of the Electric Tbus Group. Original photograph by Gary Stevenson

Image & words with permission Leeds Tbus



The "Elektromote", the world's first trolleybus, in Berlin, Germany, 1882

***Chicago Transit Authority** control tower 18 guides elevated Chicago 'L' north and southbound Purple and Brown lines intersecting with east and westbound Pink and Green lines and the looping Orange line above the Wells and Lake Street intersection in the loop.*