

Tashkent automobile-roads institute  
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Referat on theme:

# Types of buses



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A bus plural "buses" or "busses", archaically also omnibus, multibus, or autobus) is a road vehicle designed to carry passengers. Buses can have a capacity as high as 300 passengers. The most common type of bus is the single-decker rigid bus, with larger loads carried by double-decker buses and articulated buses, and smaller loads carried by midibuses and minibuses; coaches are used for longer distance services. Bus manufacturing is increasingly globalised, with the same design appearing around the world.

Buses may be used for scheduled bus transport, scheduled coach transport, school transport, private hire, tourism; promotional buses may be used for political campaigns and others are privately operated for a wide range of purposes.



Volvo B10M articulated bus in Chiba, Japan.

Horse-drawn buses were used from the 1820s, followed by steam buses in the 1830s, and electric trolleybuses in 1882. The first internal combustion engine buses, or motor buses, were used in 1895. Recently there has been growing interest in hybrid electric buses, fuel cell buses, electric buses as well as ones powered by compressed natural gas or bio-diesel.

# Etymology

*Bus* is a clipped form of the Latin word *Omnibus*. It appeared in Paris in 1819–20 as *(voiture) omnibus* meaning *(carriage) for all*, and appeared in London in 1829. One etymology holds that "omnibus" is derived from a hatter's shop which was situated in front of one of the first bus stations in Nantes, France in 1823. "Omnes Omnibus" was a pun on the Latin sounding name of that hatter Omnès: *omnes* meaning "all" and *omnibus* means "for all" in Latin. Nantes citizens soon gave the nickname of Omnibus to the vehicle.

## History

### Early history

A short-lived early public bus line (known as a "Carriage" at that time) was launched by Blaise Pascal in Paris in 1662 and was quite popular until fares were increased and access to the service was restricted to high society members by regulation. Services ceased after 15 years and no further such services were known until the 1820s.



Brooklyn Museum - In the Omnibus  
(The Tramway) –  
Mary Cassatt - overall

First omnibus services  
Shillibeer's first Omnibus

**John Greenwood** arguably established the first modern omnibus service in 1824. As the keeper of a toll-gate in **Pendleton** on the **Manchester** to Liverpool **turnpike**, he purchased a horse and a cart with several seats and began an omnibus service between those two locations. His pioneering idea was to offer a service where, unlike with a **stagecoach**, no prior booking was necessary and the driver would pick up or set down passengers anywhere on request. Later on he added daily services to **Buxton**, **Chester**, and **Sheffield**. His line immediately sparked fierce competition and a dense network of omnibus services quickly sprouted in the area, often acting as feeders to the railways. In 1865, Greenwood's company and its competitors amalgamated into the **Manchester Carriage Company**.

In **Nantes**, France, a similar service to Greenwood's was established by Stanislas Baudry in 1826 and soon expanded into the **Bordeaux** region. By 1828 he was licensed by the city authorities of **Paris** for the provision of ten services throughout the capital. The coaches used along this line were of innovative design; they were capable of transporting as many as two dozen people at a time and had three in-built compartments for the different paying classes. The coaches were commissioned from the English engineer **George Shillibeer** and were introduced into the streets of Paris in 1827. Shillibeer built another bus for the **Quaker Newington Academy for Girls** near London; this had a total of twenty-five seats, and entered history as the first **school bus**.

Whilst in Paris, Shillibeer concluded that operating similar vehicles in London, but for the fare-paying public with multiple stops, would be a paying enterprise, so he returned to his native city. His first London "Omnibus" took up service on 4 July 1829 on the route between [Paddington](#) (The [Yorkshire Stingo](#)) and "Bank" ([Bank of England](#)) via the "[New Road](#)" (now [Marylebone Rd](#)), [Somers Town](#) and [City Rd](#). Four services were provided in each direction daily. Shillibeer's success prompted many competitors to enter the market and for a time buses were referred to as 'Shillibeers' despite Shillibeers having previously coined the term 'omnibus'.

Although passenger-carrying carriages had operated for many years, the new 'Omnibus' pioneered a new service of picking up and setting down customers all along a particular route without the need to book in advance. Buses soon expanded their capacity, with additional seats for a few extra passengers provided alongside the driver. By 1845 passengers were being accommodated on the curved roofs, seated back to back in a configuration known as 'knife-board'. In 1852, Greenwood's in Manchester introduced the double-Decker vehicle that could seat up to 42.



In Germany, the first bus service was established in [Berlin](#) in 1825, running from [Brandenburger Tor](#) to [Charlottenburg](#). In 1850 [Thomas Tilling](#) started [horse bus](#) services in London,<sup>[11]</sup> and in 1855 the [London General Omnibus Company](#) or LGOC was founded to amalgamate and regulate the horse-drawn omnibus services then operating in London.

By the 1880s, bus services were a commonplace in [England](#), [Continental Europe](#) and [North America](#) - one company in London was operating over 220 horse-buses. Horse-bus use declined with the advent of steam-buses and motor-buses; the last horse bus in London stopped operation in 1914.

# STEAM BUSES



Regular intercity bus services by steam-powered buses were pioneered in England in the 1830s by Walter Hancock and by associates of Sir Goldsworthy Gurney among others, running reliable services over road conditions which were too hazardous for horse-drawn transportation. Steam carriages were much less likely to overturn, they travelled faster than horse-drawn carriages, they were much cheaper to run and caused much less damage to the road surface due to their wide tyres.

However, the heavy road tolls imposed by the turnpike trusts discouraged steam road vehicles and left the way clear for the horse bus companies, and from 1861 onwards, harsh legislation virtually eliminated mechanically-propelled vehicles altogether from the roads of Great Britain for 30 years, the Locomotive Act of that year imposing restrictive speed limits on "road locomotives" of 5 mph in towns and cities, and 10 mph in the country.

# TROLLEY-BUSES



In parallel to the development of the bus was the invention of the electric trolleybus, typically fed through trolley poles by overhead wires. The Siemens brothers, William in England and Ernst Werner in Germany collaborated on the development of the trolleybus concept. Sir William first proposed the idea in an article to the Journal of the Society of Arts in 1881 as an "...arrangement by which an ordinary omnibus...would have a suspender thrown at intervals from one side of the street to the other, and two wires hanging from these suspenders; allowing contact-rollers to run on these two wires, the current could be conveyed to the tram-car, and back again to the dynamo machine at the station, without the necessity of running upon rails at all."

The first such vehicle, the Electromote, was made by his brother Dr. Ernst Werner von Siemens and presented to the public in 1882 in Halensee, Germany.<sup>[17]</sup> Although this experimental vehicle fulfilled all the technical criteria of a typical trolleybus, it was dismantled in the same year after the demonstration.

Max Schiemann opened the world's first passenger-carrying trolleybus in 1901 near Dresden, in Germany. Although this system operated only until 1904, Schiemann had developed what is now the standard trolleybus current collection system. In the early days there were a few other methods of current collection. Leeds and Bradford became the first cities to put trolleybuses into service in Great Britain on 20 June 1911.

# Motor buses

In [Siegerland](#), Germany two passenger bus lines ran briefly, but unprofitably, in 1895 using a 6 passenger motor carriage developed from the 1893 [Benz Viktoria](#).<sup>[2]</sup> Another commercial bus line using the same model Benz omnibuses ran for a short time in 1898 in the rural area around [Llandudno, Wales](#).



[Daimler](#) also produced one of the earliest motor-bus models in 1898, selling a double-decker bus to the Motor Traction Company for use on the streets of London. The vehicle had a maximum speed of 18 kph and accommodated up to 20 passengers, in an enclosed area below and on an open-air platform above. With the success and popularity of this bus, Daimler expanded production, selling more buses to companies in London and, in 1899, to [Stockholm](#) and [Speyer](#).<sup>[20]</sup> Daimler also entered into a partnership with the British company Milnes and developed a new double-decker in 1902 that became the market standard.

# TYPES

Formats include single-decker bus, double-decker bus (both usually with a rigid chassis) and articulated bus (or 'bendy-bus') the prevalence of which varies from country to country. Bi-articulated buses are also manufactured, and passenger-carrying trailers—either towed behind a rigid bus (a bus trailer), or hauled as a trailer by a truck (a trailer bus). Smaller midibus have a lower capacity and open-top bus are typically used for leisure purposes. In many new fleets, particularly in local transit systems, there is an increasing shift to low-floor buses primarily for easier accessibility. Coaches are designed for longer-distance travel and are typically fitted with individual high-backed reclining seats, seat-belts, toilets, audio-visual entertainment systems and can operate at higher speeds with more capacity for luggage. Coaches may be single- or double-deckers, articulated and often include a separate luggage compartment under the passenger floor. Guided buses are fitted with technology to allow them to run in designated guideways, allowing the controlled alignment at bus stops and less space taken up by guided lanes than conventional roads or bus lanes.

Bus manufacturing may be by a single company (an integral manufacturer), or by one manufacturer's building a bus body over a chassis produced by another manufacturer.

# Design Accessibility



Transit buses used to be mainly high-floor vehicles. However, they are now increasingly of low-floor design and optionally also 'kneel' air suspension and have electrically or hydraulically extended under-floor ramps to provide level access for wheelchair users and people with baby carriages. Prior to more general use of such technology these wheelchair users could only use specialist paratransit mobility buses.

Accessible vehicles also have wider entrances and interior gangways and space for wheelchairs. Interior fittings and destination displays may also be designed to be usable by the visually impaired. Coaches generally use wheelchair lifts instead of low floor designs. In some countries vehicles are required to have these features by disability discrimination laws.

## TOURISM

Buses play a major part in the tourism industry. Tour buses around the world allow tourists to view local attractions or scenery. These are often open-top buses, but can also be by regular bus or coach.

In local sightseeing, City Sightseeing is the largest operator of local tour buses, operating on a franchised basis all over the world. Specialist tour buses are also often owned and operated by safari parks and other theme parks or resorts. Longer distance tours are also carried out by bus, either on a turn up and go basis or through a tour operator, and usually allow disembarkation from the bus to allow touring of sites of interest on foot. These may be day trips or longer excursions incorporating hotel stays. Tour buses will often carry a tour guide, although the driver or a pre-recorded audio commentary may also perform this function. The tour operator may itself be a subsidiary of a bus operating company that operates buses and coaches for other uses, or an independent company that charters buses or coaches. Commuter transport operators may also use their coaches to conduct tours within the target city between the morning and evening commuter transport journey.

Buses and coaches are also a common component of the wider package holiday industry, providing private airport transfers (in addition to general airport buses) and organised tours and day trips for holidaymakers on the package.

Public long distance coach networks are also often used as a low-cost method of travel by students or young people travelling the world. Some companies such as Topdeck Travel were set up to



specifically use buses to drive the hippie trail or travel to places like north Africa.

In many tourist or travel destinations, a bus is part of the tourist attraction, such as the North American tourist trolleys, London's Routemaster heritage routes, or the customised buses of Malta, Asia and the Americas.

# STUDENT TRANSPORT



In some countries, particularly the USA and Canada, buses used to transport school children have evolved into a specific design with specified mandatory features. These school buses feature things such as the school bus yellow livery and crossing guards. Other countries may mandate the use of seat belts. As a minimum many countries require that a bus carrying students displays a sign, and may also adopt yellow liveries. Student transport often uses older buses cascaded from service use, retro-fitted with more seats and/or seatbelts. Student transport may be operated by local authorities or private contractors. Schools may also own and operate their own buses for other transport needs, such as class field trips, or to transport associated sports, music or other school groups.

## PRIVATE CHARTER

Due to the costs involved in owning, operating, and driving buses and coaches, many bus and coach uses a private hire of vehicles from charter bus companies, either for a day or two, or a longer contract basis, where the charter company provides the vehicles and qualified drivers.

# Buses around the world



Historically, the types and features of buses have developed according to local needs. Buses were fitted with technology appropriate to the local climate or passenger needs, such as air conditioning in Asia, or [cycle](#) mounts on North American buses. The bus types in use around the world where there was little mass production were often sourced second hand from other countries, such as the [Malta bus](#), and buses in use in Africa. Other countries such as Cuba required novel solutions to import restrictions, with the creation of the "camellos" ([camel](#) bus), a specially manufactured [trailer bus](#).



After the Second World War, manufacturers in Europe and the Far East, such as [Mercedes-Benz buses](#) and [Mitsubishi Fuso](#) expanded into other continents influencing the use of buses previously served by local types. Use of buses around the world has also been influenced by colonial associations or political alliances between countries. Several of the [Commonwealth nations](#) followed the British lead and sourced buses from British manufacturers, leading to a prevalence of [double-decker buses](#). Several [Eastern Bloc](#) countries adopted trolleybus systems, and their manufacturers such as [Trolza](#) exported trolleybuses to other friendly states. In the 1930s Italy designed the world's only <sup>[[dubious](#) - [discuss](#)]</sup> triple decker bus for the busy route between Rome and Tivoli that could carry eighty-eight passengers. It was unique not only in being a triple decker but having a separate smoking compartment on the third level.

# USE OF RETIRED BUSES



Most public or private buses and coaches, once they have reached the end of their service with one or more operators, are sent to the wrecking yard for breaking up for scrap and spare parts. Some buses, while not economical to keep running as service buses, are often converted in some way for use by the operator, or another user, for purposes other than revenue earning transport. Much like old cars and trucks, buses often pass through a dealership where they can be bought for a price or at auction.

Bus operators will often find it economical to convert retired buses to use as permanent training buses for driver training, rather than taking a regular service bus out of use. Some large operators also converted retired buses into tow bus vehicles, to act as tow trucks. With the outsourcing of maintenance staff and facilities, the increase in company health and safety regulations, and the increasing curb weights of buses, many operators now contract their towing needs to a professional vehicle recovery company.

Some retired buses have been converted to static or mobile cafés, often using historic buses as a tourist attraction. Food is also provided from a catering bus, in which a bus is converted into a mobile canteen and break room. These are commonly seen at external filming locations to feed the cast and crew, and at other large events to feed staff. Another use is as an emergency vehicle, such as high-capacity ambulance bus or mobile command center.

Some organisations adapt and operate playbuses or learning buses to provide a playground or learning environments to children who might not have access to proper play areas. An ex-London Routemaster bus has been converted to a mobile theatre and catwalk fashion show.

Some buses meet a destructive end by being entered in banger races or at demolition derbys. A larger number of old retired buses have also been converted into mobile holiday homes and campers.

Thanks for your attention

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