

Cedes Stoll Replica



The Trolleybus Museum at Sandtoft has commissioned the construction of a full-size working replica of a pioneer 1911 trolleybus. It was built in the Czech Republic in just 15 months from inception to testing and delivery, arriving at the Trolleybus Museum on Saturday, 4 May 2019.

The trolleybus our replica is based on had a chassis manufactured in Vienna by the Austro-Daimler company to a Mercedes design (hence the name “Cedes” was used in the UK), a body built in London by E.H. Bayley, and hub-mounted electric motors designed by Ferdinand Porsche who went on to found the Porsche car company and to also design the VW “Beetle”. The use of hub motors obviated the need for expensive, complicated, high-maintenance and unreliable (at the time) gearing and transmission components such as chain drive or prop-shaft, differential and drive-shafts. The technology was demonstrated in West Ham (at that time part of the county of Essex) in September 1912, where it became the first trolleybus in London to run on a public road and the first there to carry passengers. The vehicle was demonstrated in Keighley, West Yorkshire, for a 3-month period in early 1913, following which Keighley Corporation decided to adopt trolleybuses and purchased eight such vehicles; they subsequently purchased the demonstrator - and gave it the fleet number 0! It was eventually withdrawn from service in 1924.

A further feature of this trolleybus (and our replica) is the use of a current collection system that is completely different to the two-pole under-running system ultimately universally adopted throughout the world and, of course, used at our Museum. In the very early days of trolleybuses, several variants of “troller” - contraptions running on top of two bare electric cables suspended over the roadways and connected to the vehicle by a long, cable - were tried with various degrees of success. In the main, it was the Stoll system and “troller” that evolved to become the most satisfactory of these current collection methods - and was demonstrated in West Ham in 1912 and adopted in Keighley in 1913.

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The aim of the project was to construct an as accurate as possible replica of the 1911-built prototype, and to then provide a stretch of roadway equipped with the Stoll system of overhead wiring to allow it to operate in an authentic manner with its “troller”. Admittedly, there have had to be some compromises, but these are mainly “behind the scenes” and out of sight (it includes non-original battery operation) and don’t detract from the appearance and traveller experience.



An amazing amount of research and trial-and-error work was required to achieve this aim. Some information about the original’s chassis was gleaned from records in the Vienna Technical Museum but there are no known plans or blueprints of the overall original vehicle: the vast majority of the design was built up from the mere six known photographs of the original using CAD 3-D software to create a virtual computer model that could be scaled. The only known dimension of the 1911-built trolleybus was the wheel diameter - and even then, there was a choice of two possibilities so it was comparing scaled-up dimensions of other elements of the vehicle that determined which wheel measurement was correct. With no photographs of the interior to examine, our design team resorted to looking at contemporary preserved buses for evidence of what details were likely to have been used and, amongst other things, the seats in “Ole Bill”, the Imperial War Museum’s AEC “B”-type bus, stored at the time at the London Transport Museum Acton Depot, were measured to enable a batch of seats to be made, but more importantly, to determine the likely width of the body.

The finished product is certainly a very credible replication of the 1911 trolleybus and thus the Trolleybus Museum at Sandtoft can now tell another chapter in the history of the trolleybus - and tell it in the best way it can by allowing visitors to take a ride on it! It provides a rare opportunity to sample what it was like over 100 years ago to ride on a solid-tired, wooden-seated “trackless trolley”.

The Trolleybus Museum is now poised to construct a dedicated building where the development of early trolleybuses can be explained and illustrated in more detail - and to house this fascinating exhibit. The provision of a suitable roadway and Stoll overhead wiring so that our Cedes-Stoll trackless trolley can operate with its troller as its prototype would have done all those years ago will follow as funding permits.

The owners of London 260 were joined by Don Jones, another London RTS member, and together they set up an associated group called the London Trolleybus Group (LTG) to oversee the future of Cardiff 203. The first thing they did was to find temporary accommodation for 203 in a yard at Chadwell Heath, on the outskirts of London, and subsequently the vehicle was towed there from Cardiff on 19 May 1963. The towing vehicle used was a preserved Southdown Leyland TS7 coach, DUF 179, owned privately by a bus enthusiast.

203 remained at Chadwell Heath until 8 March 1964 by which time Alfred Smith had agreed to the storage of more RTS trolleybuses at his depot. Tony Belton, Secretary of the LTG, had purchased a Dennis Lancet J3 coach, KJH 900, from Smiths Coaches, and it was this vehicle which eventually towed 203 to Reading on 22 March 1964. By this time Bournemouth 212 (now 99), Reading 113 and London 260 were also stored at Smith Coaches depot yard. Soon afterwards the LTG members commenced restoration work on 203 by stripping the paintwork from the offside of the vehicle.

In 1967 the RTS offered to sell 203 to the LTG which by now was known as the London Trolleybus Preservation Society (LTPS) for a nominal sum. This offer was accepted and on 24 March 1967, 203 was towed by KJH 900 to undercover storage at a yard in Charing, Kent. The LTPS had, by now, formed an alliance with the East Anglia Transport Museum with the intention of eventually operating a fleet of trolleybuses at their Carlton Colville site. As a result of this the LTPS moved a number of their trolleybuses to Carlton Colville, 203 being moved there overnight on 14 and 15 September 1968.

Further restoration work was carried out on 203 but by 1981 the pressure for space for storing trolleybuses at Carlton Colville was becoming critical. As a result of this the LTPS offered the RTS (by now the British Trolleybus Society) the chance to take over responsibility for 203 once again, which was accepted. Almost immediately, BTS member David Gledhill expressed an interest in becoming custodian of 203. After paying a nominal sum to purchase her from the BTS he transferred 203 to the premises of the Oxford Bus Museum at Lower Hanborough.

Between 1981 and 1993 David Gledhill had almost completely restored 203 back to original condition, including painting it in the regulation wartime grey primer livery. However, due to personal circumstances David could not continue to look after 203 and consequently it returned to the BTS fleet once again. With Walsall 872 departing from Sandtoft to go to the Aston Manor Road Transport Museum on 21 March 1993, the opportunity was taken to tow Cardiff 203 to Sandtoft where it took 872's depot space. Throughout 1993 David Gledhill and others worked hard to finish off 203's restoration and by June 1994 it was ready to operate at the Black Country Museum during their 'Trolleybuses Galore' event.

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Following its stay at the Black Country Museum 203 was towed back to Sandtoft. The towing of 203 over the years has seen a few incidents take place and this tow was no exception. On the journey back a rear nearside tyre exploded causing damage to the underside on the vehicle and lifting out part of the rear wing! Repairs were carried out on arrival back at Sandtoft but sadly 203 did not see much service after that as serious problems with its motor began to manifest themselves.

203 remained in the depot until such time as funds could be obtained to carry out repairs and as a result the bodywork began to deteriorate. Following the restoration of South Shields 204 in 2005, Cardiff 203 was Mike Dare's choice as the next vehicle to be restored when funds permitted.

Sadly Mike passed away in 2005 as had another staunch trolleybus enthusiast in 2003: Geoff Griffiths, a Welshman and author of the Trolleybooks history on Llanelli Trolleybuses. Geoff was also well known at Sandtoft, Black Country Museum and Carlton Colville for all the electrical work he carried out at these museums as well as the Cardiff and South Wales Trolleybus Project team. The BTS committee considered it would be a good idea if Cardiff 203 was restored in memory of both Mike Dare and Geoff Griffiths and an appeal for funds was made.

With enough funds now in place, restoration work was started in early 2009. It has proved to be quite a costly restoration job as the electric motor had to be sent away to repair a serious defect and also all internal seating has had to be completely re-upholstered. 203 has been repainted into the streamlined livery it wore between 1946 and 1950 and was re-launched into service at Sandtoft on Sunday 30 May 2010 following a ceremony performed by BTS Trustee Lord Stoddart of Swindon.

This vehicle regularly runs at the Museum.