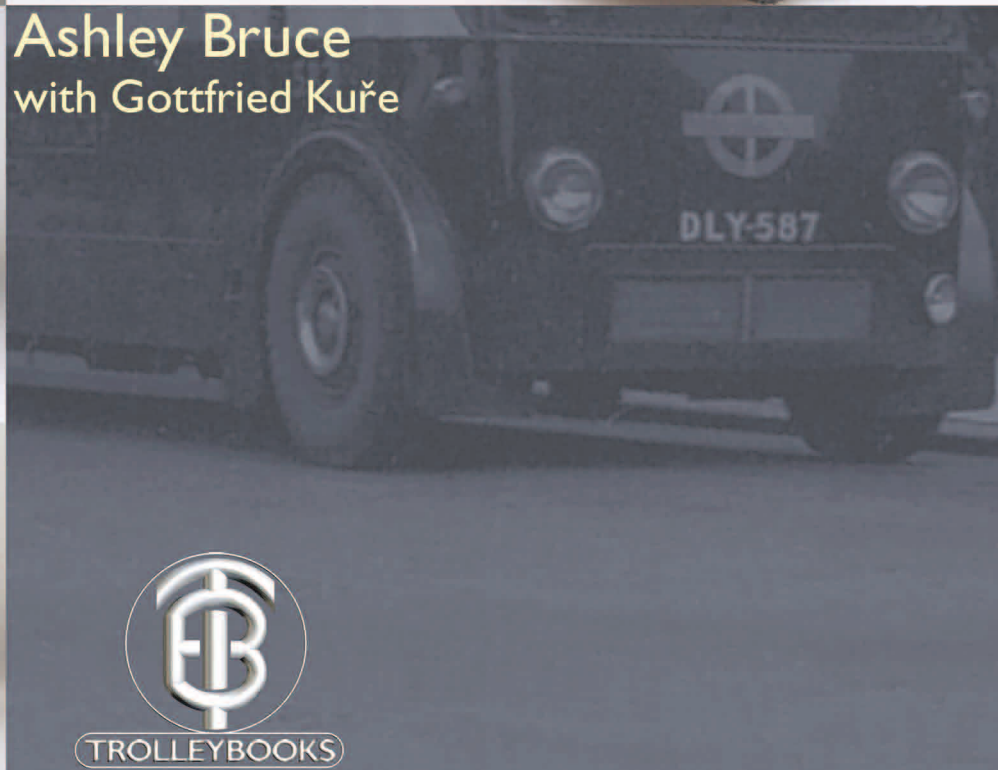




Trolleybus miniatures, models and the real things



Ashley Bruce
with Gottfried Kuře



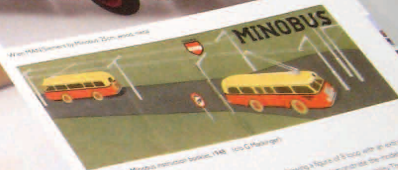
TROLLEYBOOKS



When MAN Siemens by Minobus, 25cm, wood, metal

Kreibitz Minobus
 1948 was not a very auspicious time to be considering producing a luxury toy trolleybus product. Vienna was occupied by France, the Soviet Union, UK and USA (and would be until 1955). For most people the issues were finding enough to eat and a place to sleep. But persevere

Karl Kreibitz is thought to have taken his inspiration from Bratislava where he was living at the end of the war. One of the first things the Nazis Slovak state did in 1940 was to import the first 1944 trolleybus built at the original 'Sudomka' plant. It had the centre front grille, circular route indicator and the Benz wheel arches that are still used in the Minobus. Kreibitz didn't manage the latter trolleybus but he did manage the wonderful model trolleybus, but he did manage to engineer the electrically illuminated model. It had a body made of wood, wheels with full rubber tyres and a motor



Colour of the Minobus motorised model, 1948, 10cm, 1/24 scale

and the Benz wheel arches that are still used in the Minobus. Kreibitz didn't manage the latter trolleybus but he did manage the wonderful model trolleybus, but he did manage to engineer the electrically illuminated model. It had a body made of wood, wheels with full rubber tyres and a motor

showing a figure of 8 hours with 1000 passengers. It was intended to demonstrate the model's reliability and also to show the public that the trolleybus was a viable mode of transport. The model was also featured in the 'Radio' magazine in 1952 by 'Gunter' 'Radio' magazine. The trolleybus was also featured in a book 'The trolleybus' by the author 'Gunter' 'Radio' magazine. The trolleybus was also featured in a book 'The trolleybus' by the author 'Gunter' 'Radio' magazine.



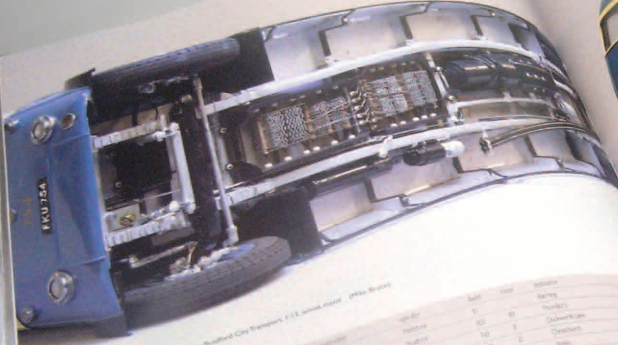
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE by Gio. Modelli, 1:43, petrol model

Model	Year	Scale	Material	Power	Notes
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	First model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Second model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Third model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Fourth model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Fifth model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Sixth model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Seventh model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Eighth model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Ninth model
Milano 456 Alfa Romeo 140A/150A Marchetti/GCE	1950	1:43	Wood/Metal	1.4L Petrol	Tenth model



Milano 456 Alfa Romeo 140A/150A Marchetti/GCE by Gio. Modelli, 1:43, petrol model





BUT 9611T

Bradford 75A BUT 9611T trolleybus

Year	Model	Quantity	Notes
1954	9611T	1	1st
1955	9611T	1	2nd
1956	9611T	1	3rd
1957	9611T	1	4th
1958	9611T	1	5th
1959	9611T	1	6th
1960	9611T	1	7th
1961	9611T	1	8th
1962	9611T	1	9th
1963	9611T	1	10th
1964	9611T	1	11th
1965	9611T	1	12th
1966	9611T	1	13th
1967	9611T	1	14th
1968	9611T	1	15th
1969	9611T	1	16th
1970	9611T	1	17th
1971	9611T	1	18th
1972	9611T	1	19th
1973	9611T	1	20th
1974	9611T	1	21st
1975	9611T	1	22nd
1976	9611T	1	23rd
1977	9611T	1	24th
1978	9611T	1	25th
1979	9611T	1	26th
1980	9611T	1	27th
1981	9611T	1	28th
1982	9611T	1	29th
1983	9611T	1	30th
1984	9611T	1	31st
1985	9611T	1	32nd
1986	9611T	1	33rd
1987	9611T	1	34th
1988	9611T	1	35th
1989	9611T	1	36th
1990	9611T	1	37th
1991	9611T	1	38th
1992	9611T	1	39th
1993	9611T	1	40th
1994	9611T	1	41st
1995	9611T	1	42nd
1996	9611T	1	43rd
1997	9611T	1	44th
1998	9611T	1	45th
1999	9611T	1	46th
2000	9611T	1	47th
2001	9611T	1	48th
2002	9611T	1	49th
2003	9611T	1	50th
2004	9611T	1	51st
2005	9611T	1	52nd
2006	9611T	1	53rd
2007	9611T	1	54th
2008	9611T	1	55th
2009	9611T	1	56th
2010	9611T	1	57th
2011	9611T	1	58th
2012	9611T	1	59th
2013	9611T	1	60th
2014	9611T	1	61st
2015	9611T	1	62nd
2016	9611T	1	63rd
2017	9611T	1	64th
2018	9611T	1	65th
2019	9611T	1	66th
2020	9611T	1	67th
2021	9611T	1	68th
2022	9611T	1	69th
2023	9611T	1	70th
2024	9611T	1	71st
2025	9611T	1	72nd
2026	9611T	1	73rd
2027	9611T	1	74th
2028	9611T	1	75th
2029	9611T	1	76th
2030	9611T	1	77th
2031	9611T	1	78th
2032	9611T	1	79th
2033	9611T	1	80th
2034	9611T	1	81st
2035	9611T	1	82nd
2036	9611T	1	83rd
2037	9611T	1	84th
2038	9611T	1	85th
2039	9611T	1	86th
2040	9611T	1	87th
2041	9611T	1	88th
2042	9611T	1	89th
2043	9611T	1	90th
2044	9611T	1	91st
2045	9611T	1	92nd
2046	9611T	1	93rd
2047	9611T	1	94th
2048	9611T	1	95th
2049	9611T	1	96th
2050	9611T	1	97th
2051	9611T	1	98th
2052	9611T	1	99th
2053	9611T	1	100th



Bradford 75A BUT 9611T trolleybus in Bradford City Transport livery (1954-1960)



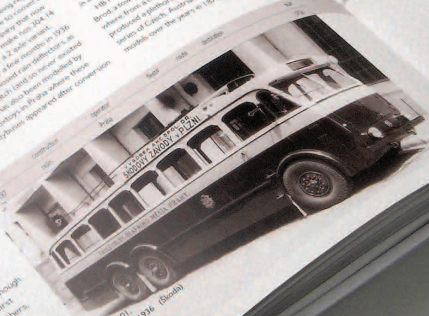
Bradford 75A BUT 9611T trolleybus in Bradford City Transport livery (1954-1960)

The trolleybus system in Bradford was a pioneer in the use of trolley poles and was the first in the world to use a trolley pole. It was built in 1954 by Bradford City Transport. The trolleybus was built in Bradford and was the first trolleybus to be built in the Bradford area. It was built in Bradford and was the first trolleybus to be built in the Bradford area. It was built in Bradford and was the first trolleybus to be built in the Bradford area.



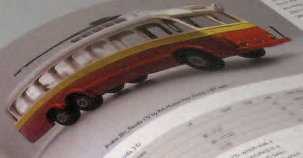
Praha 98 trolleybus (1954-1960) built by Praha, Czechoslovakia

The Praha 98 trolleybus was built in Praha, Czechoslovakia. It was built in Praha and was the first trolleybus to be built in the Praha area. It was built in Praha and was the first trolleybus to be built in the Praha area. It was built in Praha and was the first trolleybus to be built in the Praha area.



Praha 98 trolleybus (1954-1960) built by Praha, Czechoslovakia

The first route in Praha ran 1.5 km from the Hlavní nádraží to Hradčanská. The route was opened on 20th August 1954. The Praha 98 trolleybus was the first trolleybus to be built in the Praha area. It was built in Praha and was the first trolleybus to be built in the Praha area. It was built in Praha and was the first trolleybus to be built in the Praha area.



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Keighley 10, Straker Squire A/Brush/BTH, 1924 (BTH)

While the rest of the world faltered, Britain can fairly be said to be the flag bearer for the trolleybus in the 1920s when 800 were built, of which 123 were double-deckers. Incredibly, one survives - Keighley no.5 is a Brush bodied Straker Clough A type that's stored at Keighley Bus Museum. Ken, who lived in Yorkshire in his teens 'discovered' this eccentric system with under and over running trolleybuses and built an evocative model of under- running no.5 in 1984.

Keighley 5, Straker Squire A/
Brush/BTH by Ken Allbon,
1:43, balsa, card



Rotherham 53, AEC 664T/East Lancs/EE, 1939 (unknown)

By the end of the twenties, Britain had more trolleybuses than anywhere else and by 1939 had the largest (London) and the fastest (Rotherham) systems in the world. The streamlined livery of Rotherham's high powered AEC, Guy and Sunbeam single-deckers typified the 'modern electric' age. Ken's model of preserved 73, a Sunbeam MS2C, shows her as modernised in 1950, with additional roof faring to enclose the resistances and new trolleygear.

Rotherham 74, Sunbeam MS2C/East Lancs/BTH
by Ken Allbon, 1:43, balsa, card

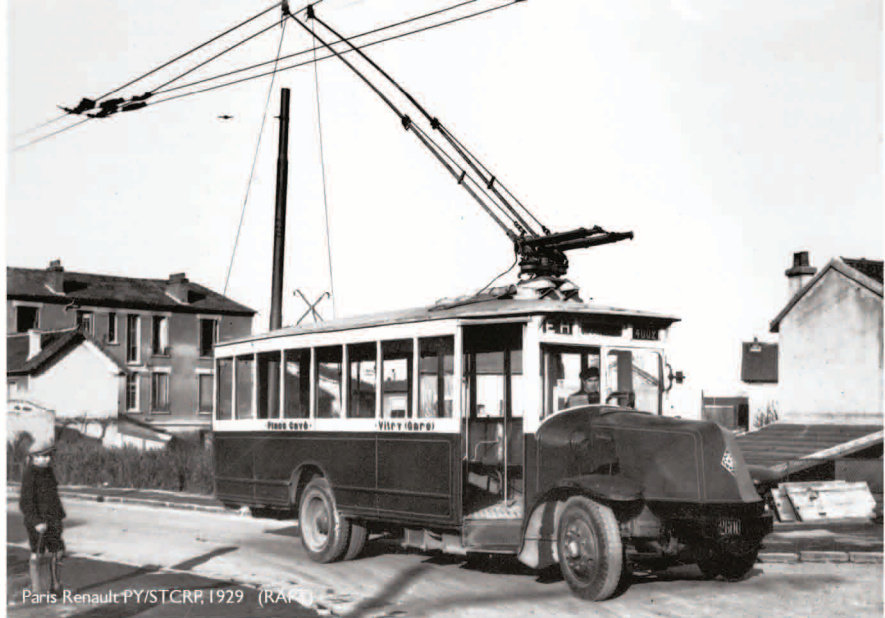


London Transport's staggering deployment of 1660 trolleybuses on 256 miles of route in only six years between 1933 and 1940, has never been equalled. Suddenly they were everywhere and throughout the country trolleybuses had gone from 684 in service in 1933 to 2462 in service in 1940, a 360% increase. No wonder toy makers felt compelled to introduce commercial trolleybus toys. There were at least 4 makers in the 30s - Betal, Taylor & Barrett and Wells who were all in London and Güntherman whose toys were imported from Germany. There was very nearly a fifth, the Minic, but it was not to be, as the war intervened. Before looking at models, we'll examine these toys and those that followed after the war.

London Transport
664, Leyland TTB4/
Leyland/MV by
St.Petersburg,
1:43, resin



The experimental Vitry-sur-Seine line, a result of the poor reliability of buses, next received two Renault PY trolleybuses in 1929 that were very similar to those deployed in Bouches-du-Rhône and Savoie. These too were apparently not reliable, but lasted until 1934, to be replaced by petrol electric hybrids that lasted a year, after which the overhead came down. Trolleybuses didn't return to Paris until 1943. The 1929 Renaults have been accurately modelled in 1:43 scale by C.C.C. of Rouen as a resin kit with whitmetal booms and transfers of the Place Cavé to Vitry Gare route. Being a dual purpose kit, with the option to build the bus version, it



Paris Renault PY/STCRP, 1929 (RAF)



Paris Renault PY/STCRP by C.C.C., 1:43, resin, whitmetal

looks very good but only has three window pillars instead of the requisite seven, perhaps added to take the weight of the trolleygear. A little simplified in model form, but the booms do include the unusual cantilever arrangement. The tricky-to-apply lining transfers are too thick. Four of the Electrobus de Savoie 1930 trolleybuses that ran to Villard-du-Planay were similar, and did have three pillars, but staggered trolleyboom

mountings and headlights at the very front of the mudguards. The door and the windscreen were different, still, with a little surgery etc. they could be modelled - what else should kits be for?

Electrobus de Savoie Renault PY/STCRP, 1930 (coll. Lartilleux)



added one window, but service finished two years later.

PM Modellbau, aka. the late Peter Möller, modelled the 2 axle version and said his vision was to produce a selection of trolleybus models based on rarer prototypes – perhaps he planned to produce the original 3 axle Krupp version or even, what came next.

Incredibly, having been re-chassisised, these trolleybuses went on to be re-bodied. Osnabrück bought the two chassis in 1957 to build one new 1½ deck trolleybus with a Ludewig body (209) and an extra axle.

Collector Andreas Zeitmann has converted a Brekina Mercedes Benz O317 bus model to represent these uniquely German trolleybuses, one of which, from Aachen, is preserved at Sandtoft Trolleybus Museum.



Mettmann Rheinbahn Krupp/Ueringen/AEG, 1930 (GH Kohler)



Mettmann Rheinbahn Henschel II/Ueringen/AEG, 1950 (Hans-Reinhard Ehlers)



Osnabrück 209, Henschel/Ludewig/BBC, 1957 (Werner Stock arkiv)



Osnabrück 209, Henschel/Ludewig/BBC, 1957 (Werner Stock arkiv)

Wuppertal Krupp/Ludewig by Brekina (converted), 1:87, resin (Andreas Zietemann)

Henschel III/NWF

model maker	ref.	issued	total	scale	construction	operator	fleet#	route	destination	built
V&V Model Company	3431			1:87	resin	Hamburg	331-335			1952
V&V Model Company	3441			1:87	resin	Erfurt	12-16			1957

Hamburg Henschel III/NWF by V&V Model Company, 1:87, resin



Hamburg 331, Henschel III/NWF/AEG, 1952, advert. (AEG)



Berlin 2001, IFA ES6 DoSa, 1955 (werkphoto)



Berlin 2001, IFA ES6 DoSa by PM Modellbau, 1:87, resin

Berlin 2001, IFA ES6 DoSa by HB Model, 1:87, resin

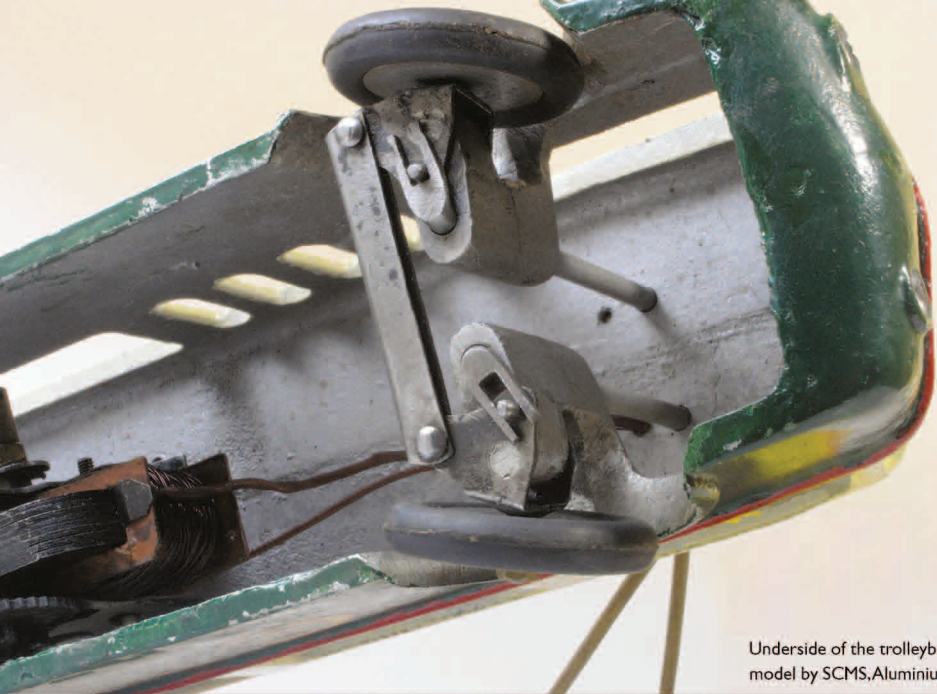


Berlin 2001, IFA ES6 Dobus by Beka (conversion), 1:87, resin (Andreas Zietemann)

PM Modellbau of Frankfurt, used to make trolleybus models when its founder, the late Peter Möller, was the first to commercially model the imposing IFA ES6 DoSa as a kit.

Some years later the Czech model manufacturer HB selected the same original to manufacture a very fine ready built and painted resin cast model. When the model was still available, the price was around 80 EUR. It sold out quickly. Andreas Zietemann couldn't resist converting Beka and SES models of the LOWA 602a (see above), on which the front tractor unit was based, into an ES6, including the huge trolley base





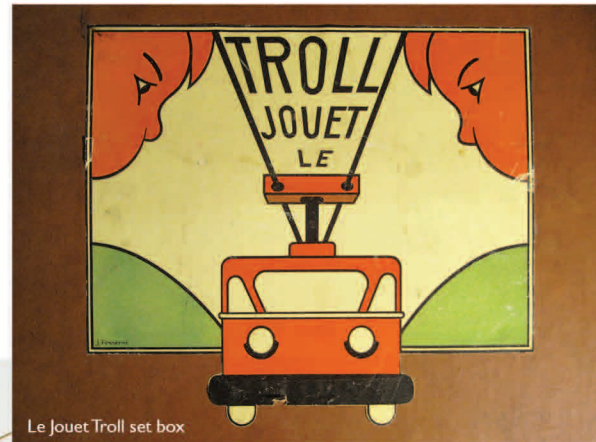
Underside of the trolleybus model by SCMS, Aluminium

trolleybus technology. The first problem is the Bakelite cross bar that has two 1mm tubes through which passes what can only be a single section of overhead. There is no evidence of more than one wire passing down the un-sprung single boom that deviates only horizontally. You can see the problem we face with this model – how on earth did it work? Constant examination hasn't helped, but seemingly a single wire feeds a DC motor which drives the rear axle through a worm gear. Return current was presumably through the aluminium boom, although we can't quite see how this was achieved at the roof/boom interface, perhaps wires are missing on our model.

There is also a wonderful control panel that has a speed control (or is that for direction or



Generic Vetra CS60 by SCMS, 25cm, aluminium (Philippe Morro)



Le Jouet Troll set box

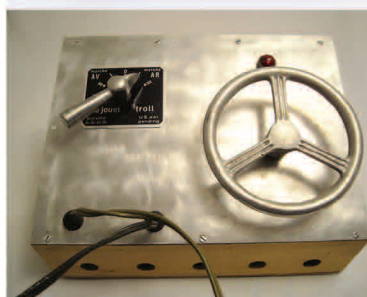
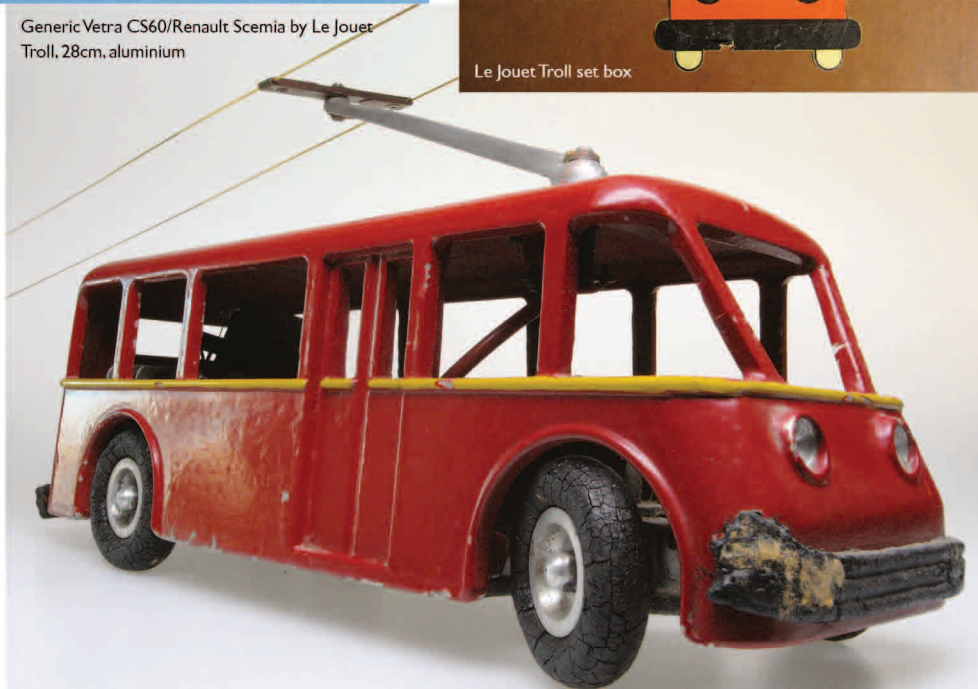
The mechanical steering was unique, and seems to have had no patent applied for. There are two vertical rods from the two booms that each turn forked pieces and act on pins attached to triangular plates that act on the king pins of the Ackermann style steering. Quite why both booms are connected is hard to fathom, as they could be in contradiction via the cross bar. Without trying to get one these museum pieces to run, we don't know how well they worked, although turning the booms by hand does indeed effectively steer the front wheels.

Each of the five examples we know of have different trolleygear mechanisms and none look as though they would apply sufficient upward pressure. Apparently, the trolley shoes "realistically flash during vehicle operation". Speed control was by a "low voltage rheostat". The model is big, diecast in aluminium and fairly heavy – it's difficult to imagine it performing other than a little ponderously. And the only two that survive compete are too precious to try applying the required 24 volts. The instructions talk of 30 watts and anyway, we didn't have the right transformer to hand!

Le Jouet Troll

Possibly the most bizarre powered model trolleybus was the large, 28cm long, Le Jouet Troll of around 1950. Claimed to have been patented (though we've been unable to find any record), it was produced in Paris and cost 14,000 francs (approximately £360). It uses a unique power collection system that owes very little to actual

Generic Vetra CS60/Renault Scemia by Le Jouet Troll, 28cm, aluminium



Le Jouet Troll steering and control box, aluminium and plywood



Disassembled Le Jouet Troll, 28cm, aluminium (Philippe Moro)

Glasgow has warranted three livery variants over four models. They could also have included the original version with its cream roof and 'illegal' trolleybus emblem on the front, quickly removed after protests from London Transport. The original model of TB4 with orange lower panels doesn't have its lower window frames properly painted green, but has inherited the livery of buses and trams of the time – something the double deck trolleys never had.



Glasgow TB9, BUT 9641T/MCCW/EE, 1949
(C Carter)



Glasgow TD18, Daimler CTM6/MCCW/MV, 1950
(Marcus Eavis)



Glasgow TD16, Daimler CTM6/MCCW/MV, 1949
(Fred Ivey)



Glasgow TB4, BUT 9641T/MCCW/EE by Corgi
OOC, 1:76, diecast



Glasgow TB4, BUT 9641T/MCCW/EE by Corgi
OOC, 1:76, diecast



Glasgow TB4, BUT 9641T/MCCW/EE by Corgi
OOC, 1:76, diecast

Leyland Twin Steer

model maker	ref.	issued	total	scale	construction	operator	fleet#	route	destination	built
Pirate Models	4905		0	1:76		London Transport	1671	654	Sutton	1939
Southern Miniature Models				1:76		London Transport	1671	607	Shepherds Bush	1939
Tony Chlad				1:87	scratchbuilt	London Transport	1671	607	Shepherds Bush	1939



London 1671, Leyland Twin Steer/ Leyland/MV, 1939 (Leyland Motors)

London 1671, Leyland Twin Steer/ Leyland/MV by Tony Chlad, 1:76, plasticard (Tony Chlad)



London 1671, Leyland Twin Steer/Leyland/MV by Pirate Models, 1:76, diecast

Conceived as an answer to the rear bogie tyre scrub problem, and designed as giving greater tyre mileage, a better turning circle and less likelihood of front wheel skids, London's 1671 always turned heads whenever she passed. With two front steering axles and one axle at the rear, albeit using doubles, she had eight tyres in all. This was Leyland's state-of-the-art thinking for 1939 and their first attempt at a chassisless trolleybus. She apparently gave a rougher ride at the rear and wore the front tyres quicker than expected but could out-brake any standard trolleybus. She gave 16 years of service, without any recorded major problems. And inevitably, she has been modelled. The late Tony Chlad built a powered 00 scale version from scratch, complete with 4 wheel steering and Fallar guidance.

Static models of 1671 include an accurate Pirate Models kit and an adaptation by Southern Miniature Models, that involved cutting up two Corgi AEC 661Ts that you preferably sent to them for conversion.

London 1671, Leyland Twin Steer/Leyland/MV by Southern Miniature Models, 1:76, diecast



Twin Coach 40TT

model maker	ref.	issued	total	scale	construction	operator	fleet#	route	destination	built
St.Petersburg	183	2000	50	1:48	resin	Detroit Street Railway	401			1930
St.Petersburg	183a	2000	50	1:48	resin	Cincinnati Street Ry	599			1930
St.Petersburg	183b	2000	50	1:48	resin	Brooklyn & Queens Transit	1001			1930
St.Petersburg	184	1999	80	1:48	resin	Chicago CSL	64		Central	1930
St.Petersburg	184a	1999	10	1:48	resin	Chicago CTA	9063	85	Central	1930
St.Petersburg	184b	1999	50	1:48	resin	Chicago CTA	9051-9079		40TT	



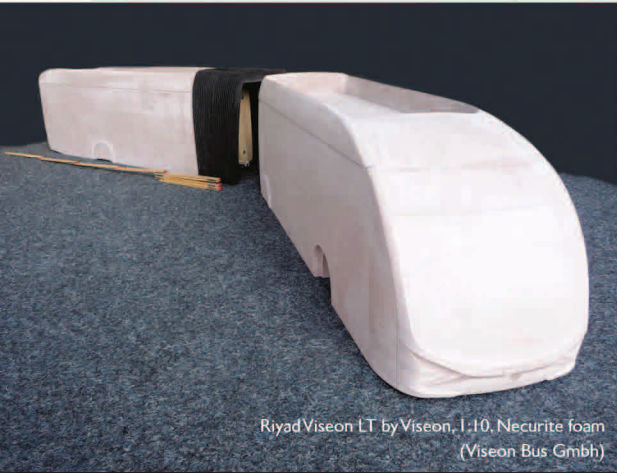
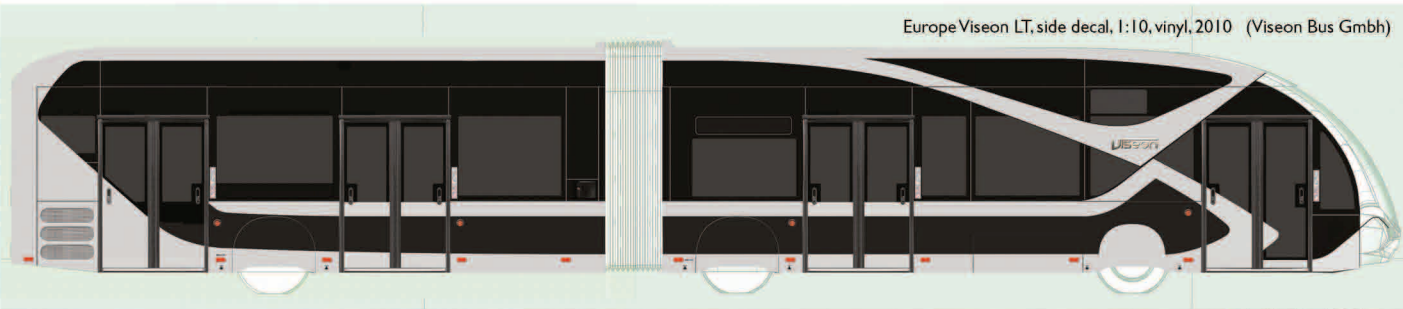
San Francisco 593, Twin Coach 44TTW, 1949 (Scalzo col. trolleybus.net)

Twin Coaches penchant for innovative design saw an unsuccessful attempt at an articulated trolleybus in 1940 that, articulating only vertically, caused traffic hold-ups. But it symbolised the hope that there would be a public transit boom; instead people bought cars and operators tried to compete. Immediately after the war Twin Coach's final fling was the rather exuberantly styled T series that was based on the S (single-engined) bus. The aluminium fluting, ornate insignia and front roof mounted "flashes" were slightly bizarre art deco embellishments that looked derived from 30s cinemas but added a certain panache to the otherwise dreary 40s and 50s. In 1949, Detroit had 60 and San Francisco had 90, one of which, 614 is at Illinois Railway Museum. SPTC has faithfully reproduced all three variants of San Francisco Municipal Railways green and cream livery including the experimental, mostly cream version of 1963. No.570 was painted in the new red and yellow livery of 1969. The SF Twins were in service until the mid 70s. Detroit's Twins lasted until 1961, when they were scrapped, despite a rider poll that showed 87% preferred trolleys to diesels.



San Francisco 621, Twin Coach 44TTW by St.Petersburg, 1:48, resin

EuropeViseon LT, side decal, 1:10, vinyl, 2010 (Viseon Bus GmbH)



RiyadViseon LT by Viseon, 1:10, Necurite foam (Viseon Bus GmbH)



RiyadViseon LT concept, 2010 (Viseon Bus GmbH)

RiyadViseon LT by Viseon, 1:10, plastic (Viseon Bus GmbH)



Riyad prototypeViseon LT, 2011 (Marcus Fey)



includes the air conditioning, double glazing and air curtains needed to cope with extreme desert temperatures.

These professional model-making processes are expensive and not intended as a way of batch producing models. But the future (as always) promises new technologies that could be used to produce small model runs for collectors. Many will still want to cast resin trolleybuses and the Ukrainians of Kherson have a particular fondness for electroforming copper, but it is now possible to use a '3d printer', which has the advantage of being able to build the exterior, the interior and the glazing all at the same time.