

# TROLLEYBUS

Vol. 63 No. 750

January 2024



**The Magazine of the British Trolleybus Society**



*Mendoza  
Athens  
Index to 2023*

# TROLLEYBUS

The magazine of the  
British Trolleybus Society

**No. 750. January 2024**

**Editor: Dave Chick**

23 Pryor Close, Purley on Thames,  
Berkshire RG31 6UG  
editor@britishtrolley.org.uk

**Production Editor:**

**Peter Braybrooke**

6 Tubbenden Lane, Orpington,  
Kent BR6 9PN  
prodeditor@britishtrolley.org.uk

**Preservation News Editor:**

**Jody White**

20 Cunningham Crescent,  
Chatham, Kent ME5 0ES  
museumnews@britishtrolley.org.uk

**World News Editor: Bruce Lake**

11 Greenfinch Grove, Netherton,  
Huddersfield HD4 7LH  
worldnews@britishtrolley.org.uk

**Distribution: Derek Pearson**

25 Caldbeck Drive, Woodley,  
Berkshire RG5 4LA  
distribution@britishtrolley.org.uk

**Subscriptions and**

**Membership: Paul Dicken**

Trosgol, Deiniolen,  
Caernarfon LL55 3LU  
secretary@britishtrolley.org.uk

**Website:**

<https://www.britishtrolley.org.uk>

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## BTS NOTICE BOARD

### Reading Meetings

Held at the Reading District Oddfellows' Hall, 118b Oxford Road, Reading RG1 7NQ. Admission: Adults £3.00, Juniors £1.50. Non-members £4.00. Meetings commence at 19.30. Organised by the BTS. NTA members welcome.

Meetings Organiser Graham Bilbé, 12 Belle Avenue, Reading RG6 7BL. Email [grahamebilbe@btinternet.com](mailto:grahamebilbe@btinternet.com)

**Friday 2 February** Reading Buses CEO, Robert Williams, will give a presentation on the latest developments at the Company.

**Friday 1 March** Dave Hall and Dave Chick will cover the history of the San Francisco cable cars, PCC street cars, Metro and trolleybuses as well as "Four Daves Go To San Francisco", a story of their amazing holiday in 2023 which includes the Muni Heritage Transport Weekend.

### London Meetings

Held at The Model Railway Club, 4 Calshot Street, London N1 9DA (nearest Underground station: King's Cross). See meeting details for start time. Organised by the NTA. BTS members welcome.

Meetings Organiser John Parkin, 59 Beechwood Court, West Street Lane, Carshalton SM5 2QA. Email [trolleybus654@aol.com](mailto:trolleybus654@aol.com)

**Wednesday 17 January** Alan Murray - Czech Republic and Dayton. Start 19.00 – doors open 18.30. PLEASE NOTE: This was advertised as an afternoon meeting but has had to be moved to the later start time.

**Wednesday 21 February** Martin Jenkins - British Trolleybus Systems abandoned between 1951-1962 in colour. Start 14.30 – doors open 14.00.

### West Midlands Transport Circle

BTS members are invited to attend WMTC meetings, which are held on the second Wednesday of every month at Bradmore Community Centre (Main Hall) in Wolverhampton. Doors Open 19:05, Start presentation : 19:30 prompt!, Break (around) 20:30 - 20:45; Finish 21:45: Out of venue by 22:00 Visitor fee £3.00, just turn up and bring others with you. Organised by Mike Richardes. [michael.richardes64@btinternet.com](mailto:michael.richardes64@btinternet.com)

**Wednesday 10 January.** Subject to be arranged.

### MONTHLY PRIZE DRAW

The winners in the December Draw were:

£65 Spencer Lane, Dorchester  
£55 Andrew Barton, Reading  
£25 Charles Bicheno, Harrow  
£30 Chris Williams, Southampton

### NEW MEMBERS

We are delighted to welcome new members:

Pascal D'Astole, Collonges-sous-Salève, France  
Ciaran Grant, Reading  
Geoffrey Stones, Doncaster

*Front Cover: In this edition Tony Belton recalls the Mendoza, Argentina, trolleybus system, which closed in 2023. Trolleybus No. 39 on the Villa Nueva route carries an altered front windscreen. For their age the condition and riding qualities of these ex-Solingen trolleybuses was excellent. Location: on Lavelle crossing Godoy Gruz.*

[Tony Belton]

# Mendoza Closure

Article and photographs by Tony Belton

In 2023 unfortunately the trolleybus system in Mendoza, Argentina closed; the exact date has yet to be established.

I visited Mendoza in March 2000 when the trolleybus system was very well maintained and consisted of four routes; a

fifth route was bus operated due allegedly to a shortage of vehicles. The bulk of the trolleybuses were "TS" Krupp/Ludewig three-axle second-hand vehicles from Solingen in Germany, working alongside several Russian ZIU-9s purchased new.

*Below: Mendoza 44, one of the ex-Solingen "TS" Krupp/Ludewig three-axle trolleybuses, is turning right at Plaza Espana on the Dorrego route. Trolleybuses carried the same destination in both directions.*

*Page 4, upper: On the Pellegrini route at Mitre is ex-Solingen number 30, This livery was standard on all ex-Solingen vehicles at the time of my visit.*

*Page 4, lower: A rather tatty looking ZIU-9, number 26, is on the fourth route, PARKUE at Espana at the junction with Lavalle. The PARKUE route had a large one-way system as its terminus; interestingly when the ZIU-9 I was on arrived at the start of the one-way system an armed policeman boarded and proceeded to check all passengers. He told me to put my camera away and to put my bag on the floor; he then stood by the driver and we proceeded. I found a part of the route where I wanted to photograph but when I stood up and rang the bell the policeman told me to sit down and refused to allow me to get off the vehicle. I could only presume it must have been a very dodgy area; I repeated the journey the following day with a similar experience.*

*Page 5, upper: Russian ZIU-9 number 17 on the Pellegrini route looks either new or has been given an excellent overhaul recently. I saw ten of these in service and this was the only one in good condition; the others were rather battered and suffered badly from rust.*

*Page 5, lower: Upon a visit to the depot I found another ZIU-9 numbered 17; I tried to get an explanation as to why there were two trolleybuses with the same fleet number from the depot staff but nobody spoke sufficient English to make myself understood.*











### **Mendoza Captions**

*Page 6 Upper: Mendoza once had a fleet of Toshiba trolleybuses; the remains of three were parked at the depot. In this view are numbers 22 and 23, there was also number 5 which appeared to have been recently overhauled and sported a completely different livery. Possibly a preservation project?*

*Page 6 Lower: There were approximately twenty ex Solingen trolleybuses in the depot in various states of cannibalism. When everything had been stripped from a vehicle the remains were burnt; as you can see the wood and barrel of petrol are in situ waiting for the fateful day.*

*Above: As mentioned before the Las Haras - Godoy Cruz route was bus operated; the buses were in this special livery advertising the trolleybuses with a large red T on the front destination and on each side of the vehicle. The view was taken on Avenue San Martin on the final stop at Las Haras.*

## **BTS News**

### **London Transport 1812 Donation**

Member Branimir Pantaleev made several donations to the 1812 campaign when the Society needed to fund its major mechanical overhaul and has made another donation recently, which helps us to improve 1812's finances after the large expenditure.

Our thanks to Branimir for his support.

### **Mexborough & Swinton 34 Donation**

The Society's Committee is very grateful to member Ged Stones, who has made a generous donation to the 34 fund. The Joint Working Group, which draws its membership from the BTS, Sandtoft and the other two Contributing Societies, will shortly start to plan the Restoration Workshop, which will provide facilities for major

restoration work at the Museum, including the long-planned restoration of 34.

### **General Donations**

Many members add a donation when they renew their membership. These donations help to fund necessary preservation or restoration work. Our thanks to the members who have made these contributions in recent months.

### **Membership Renewal Reminders**

The Society has learned that the membership system has not been generating renewal reminders. Our Webmaster Peter Short has now solved the problem, which was caused by our hosting company making system changes without telling us. Our apologies for any inconvenience this may have caused to members.

**News is continued on page 19**

## A Greek Odyssey Part 2 : Athinai 2023

### Article and photographs by Ian Stubbs

Continuing from his first article in the October issue, Ian Stubbs renews his acquaintance with the capital of Greece with part two.

On Wednesday morning I travelled on route 4 to the point where it joined other routes outside of the ancient Panathinaikou Stadium which is built in white marble. I then made my first journey by articulated trolleybus, A Neoplan N6221 from 2004-5, numbered in the 9000 series, on route 10, which is mainly on a wide road to Halandiri where I saw a trolleybus on route 19. This was an infrequent peripheral service so I opted to return on an articulated trolleybus to another wiring junction with route 3.

Alighting from the trolley, I was then faced with crossing the busy dual carriageway and so just missed a number 3. I decided to walk following the wires until the next bus was due, but found the terminus within a few minutes, Neo Psychiko, where the trolleybus was waiting for its departure time. I boarded and travelled the whole route through the centre and north to the terminus outside AEK stadium at Nea Filadelfia. The traffic was heavy in the central area of the city, resulting in several stops and starts. At one point I heard the diesel engine kick-in as the bus moved forward. It shut down very quickly and I realised that we had been forced to stop in a dead section. This was the only time I experienced the diesel engine being used and did not see any dewirements.

Further north beyond the Stadium was the end of route 6 at Nea Filadelfia depot. I waited for a 6 to take me back to the centre. This route was also operated by articulated trolleybuses and soon left the wiring of the 3 and followed wide roads to the terminal stop near to Omonia Square. In some side streets in this area there was evidence of wiring which was tied-off.

Whilst having my lunch I received a text message advising me that the following day there would be a national strike which meant that all flights were cancelled and I should await further information.

I boarded a number 5 trolleybus and found that this travelled through some narrow streets close to the Acropolis before joining a main road which led to the coast. Part of the route was shared with the number 1; the turning loop for the 5 was at Jifries, just close to the coast road which was served by the 1 for a short distance before it turned inland again to reach its destination at Moschato. Jifries was also the terminus for the southern part of route 10. There did not appear to be any timetable information for these routes and, after waiting around for a while without a trolleybus coming into view, I decided to take the tram back into the centre.

I soon received another text message which advised me that the flight home had been rescheduled for Friday afternoon and my hotel reservation had been extended for the extra night.

On the strike day there was very limited public transport, the metro only ran between 10am and 3pm. Trolleybus services were very spasmodic and I thought it best not take journeys which might result in a very long walk back to the hotel. At noon there was a massive rally and demonstration in Syntagma by the parliament building, watched over by a very large contingent of police. I used the day to do some sight-seeing and explore the narrow streets in old Plaka district.

An early breakfast on Friday enabled me to make a couple more trolleybus journeys. In Syntagma I boarded a northbound 5 which followed much of the route 11, before turning off to the east and climbing through the one-way streets of a residential area to the Labrini terminus. This was also the start of route 19 which was worked by articulated trolleybuses, although it did not attract many passengers during my journey. I had seen that its eastern terminus was at Girokomeio which was part way along route 10 but did not know how it reached there. I found that it bypassed the city centre by some distance.

On alighting, I realised time was getting tight and I needed to get back to the hotel

to check out and travel to the airport. I caught the next available bus, a motor bus, to Syntagma and the metro to the hotel. After picking up my bag and checking out, I made one final trolleybus journey on the 4 to Syntagma where I would board the bus to the airport.

Although almost all the trolleybuses were now at least 20 years old, they were all smartly presented and no damaged panels were in evidence. I know that there were other routes that I would have liked to

travel on, had time permitted and an up-to-date map been available. The only map which I found on the internet was of such low resolution that it was not much help. Since returning home I found that Roger Smith had drawn a map in 1998 which was based on a survey done by Roy Makewell. This was published in the NTA 'Trolleybus Magazine' but from my own travels I found routes which must have been started since then.

*Below: Neoplan 8009 on route 11 has reached its terminus at Nea Elvetia.*

*Page 10, upper: Van Hool 7105 leads two similar vehicles at the Kessariani terminus.*

*Page 10, lower: Articulated Neoplan N6221 from 2004, 9029, accentuates the camber of the road at the Halandiri terminus of route 10.*

*Page 11, upper: Pictured at the Stadium terminus of route 3 are Neoplans 8076 and 8020.*

*Page 11, lower: Labrini is the terminus of routes 5 and 14, articulated Neoplan, 9002 is about to depart on route 14 and Neoplan 8078 has just arrived on route 5.*







# MUSEUM & PRESERVATION NEWS

Edited by Jody White



## The Trolleybus Museum at Sandtoft

The programme for 2024 has been published and can be viewed on the Museum's website. The season will commence at Easter, with an open day on Saturday 30 March and then a 1940s event on Easter Sunday and Monday (31 March and 1 April)

[Open Days – The Trolleybus Museum at Sandtoft](#)

## Working Parties

Construction of the Sandtoft District Railway is progressing very well and working parties have been set up while the Museum is closed for the winter.

Project Manager Kieran Proctor needs volunteers for these working weeks: Monday 15 to Sunday 21 January, Monday 12 to Sunday 18 February and Monday 11 to Sunday 17 March. The more volunteers we have the faster the progress we will make! To volunteer or for more information contact Kieran by email at [kproctor1204@gmail.com](mailto:kproctor1204@gmail.com)

The weekend at the end of each of these weeks will also be general working parties, preparing for the Museum's reopening.

## Cardiff and South Wales Trolleybus Project

Work carries on at the Welsh outpost of trolleybus restoration!

### Cardiff 262

- abrading the outer skin, in readiness for grey etched primer.
- application of external beading, using original beading where possible.
- riveting of rainwater deflector strips above the lower offside saloon windows.
- painting the upper deck ceiling, in readiness for its first top coat
- lower deck ceiling rubbing down process.
- front exit door stripped and rebuilt (& refitting of marine plywood step with linoleum, step nosing & aluminium kickplate).

### Cardiff 243

- searching for window rubber without success as it's an East Lancs body of 1955 vintage.
- removal of a window with good section of rubber, awaiting a response from suppliers.
- As other restorations are aware, if window rubber profiles need making, an additional cost is incurred for extrusion dies; so, if anyone is looking to renew this era of East Lancs bodywork window rubber, please get in touch for a sample to determine suitability.

The report from the Project covers the



*Cardiff 243's emergency door has been refitted.  
[Keith Walker]*

many aspects of work that make up the members' workload, and on this occasion, it wasn't all vehicle restoration. Recently we completed our main fundraising, first at the weekend Cardiff Model railway show, followed a week later by a new event at the Barry Bus Museum; at the Twilight running we were able to have our stall next to the trolleybuses. We had little competition from traders, which was fortunate, as both events raised over half our expenditure on new floor linoleum for both 243 and 262.

At the beginning of the month, rain and storms caused a deluge in our new store

area that made our wooden storage units swell so much that the units had to be disassembled, and while most attendees sorted it out, another affected a repair internally and externally on the roof. As happens, it hasn't rained since!

The outer skin rubdown of 262's outer panels was completed, apart from the roof area, and grey etched primer applied. Then with access via the emergency door, Keith (suitably fitted with a harness and lifeline) has started cleaning the roof in readiness for etched primer. Internally, John has completed the first coat of gloss white to the lower deck ceiling, but with temperatures dropping, he transferred to the fitting of a narrow ceiling panel on each deck and is currently working on internal hardwood window surrounds.

One final interesting 262 restoration project worth recording centres around an external body trim form that had us scratching our heads; the question mark-shaped aluminium section over the upper and lower deck panel join.

Due to the fire, we lost all of the straight sections, so we ordered a 3mm thick aluminium sheet and had to cut it into strips, but in trying to bend them, it was beyond the bending press. The project co-ordinator found an engineering firm in Cardiff who would bend the ten strips for £20. With the offer of a tin of Cadbury Hero chocolates, the price fell to £10! The job was completed in a week, and when a further tin was given, an arrangement was made that the project may call again!

The "doodlebug" 243 has had its lower outer panels abraded and grey etched primer has been applied to its nearside, while the problematic refitting of the emergency door has been completed.

Keith Walker

NOTE FROM JODY: How wonderful that sometimes a simple box or two of chocolates, given and accepted in friendship, can just as easily get things done, rather than cold, hard cash. What a kind engineering firm!

### Ipswich Transport Museum

Something a bit different for the Preservation report this time!

When Priory Heath was constructed as a Depot in the 1930's, not only did it

provide an operational garage and workshop/paintshop for the Ipswich Corporation trolleybus fleet, it also included a Substation for the domestic and commercial properties in the immediate area, along with a separate traction supply substation – with Mercury Arc Rectifiers – which fed into the trolleybus wiring in the south-east part of Town as well.

The main electrical substation is still in



*The Ipswich switchgear panel which still survives after nearly 90 years! Also see the close-up on page 14. [Stephen Cobb]*

full operation and has enabled us to come to a deal with a third party to fill the roof of the building with solar panels in the last couple of months (at their expense), giving us a cheap deal for electricity used in the Museum, as they can sell the surplus power to the Grid via the substation!

When the trolleybuses finished in August 1963, the section providing the traction current was switched off and fenced off from the main substation; and the only things removed, at the time, were the Mercury Arc Rectifiers and associated cabling. The 1930's control panel was left more or less intact, and this we inherited when we took the building over in the late 1980's - most people being totally unaware

of its survival. We still have the (now non-functioning) CO2 Fire suppression system of the era as well, with its pull-rods, weights and gas bottles, which is an interesting item in its own right.

This has been open for public viewing for several years now and has held a permanent exhibition of some trolleybus artefacts and information panels.

With the closing of the temporary 60/100 years trolleybus exhibition at the end of our 2023 season, the "closed" winter period is going to see a lot of this material incorporated in an expanded/refreshed display in the "Switchgear Room" and this will then open when we start next year's season at Easter 2024.

Stephen Cobb

#### **New Zealand - Ferrymead Heritage Park**

We recently had visitors when a group from the Council of Tramway Museums of Australia (COTMA) were in town, following the recent Conference in Auckland. We prepared ex-Wellington trolleybus 103 to run for them on the previous weekend. Then on 17 October we operated a trip for our guests. We haven't done much else, while we work on jobs of higher priority such as shed sorting. There has also been a lot of diesel bus work.

50 Ferrymead Park Drive, Heathcote, Christchurch NZ

E-mail: [info@ferrymead.org.nz](mailto:info@ferrymead.org.nz)

Alan Roi



# World News

Edited by Bruce Lake



## **AUSTRIA Innsbruck**

IVB and Salzburg AG have issued joint tenders for two framework supply contracts for a total of up to 80 battery trolleybuses, of which up to 20 can be called up by IVB. The tender includes rigid, articulated and double-articulated trolleybuses with traction battery and maintenance contracts.

IVB is planning to decarbonise its entire bus fleet. Most lines will be operated with battery-electric buses in the future, but battery-powered trolleybuses could be used on certain lines. A political decision is awaited.

## **BOSNIA & HERZEGOVINA Sarajevo**

A contract was signed on 22 November for the construction of a new 8.6 km interurban trolleybus line to the neighbouring town of Vogošća. The previous line to Vogošća was abandoned as a result of the war in the 1990s.

The European Investment Bank has provided a loan to fund the rebuilding of the trolleybus line. The tender for the construction was won by Turkish company Yapi Merkezi Insaat in Sanaya A.S. Some of the poles remaining from the 1980s will also be used. With the exception of the final stop in Vogošće, the trolleybus line will follow an identical route as in the years 1985 to 1992. The new line will terminate in the bus terminal in Vogošć.

## **CZECH REPUBLIC Praha**

The Škoda 38 Tr made its trial run debut on 30 November, followed by a press conference. It had been unveiled on 21 November at the Czechbus trade fair at

Prague's Letňany Exhibition Centre and delivered to Klíčův garage, which will be its temporary home for the duration of the trial operation, on 24 November.

It will run for 5,950 km without passengers between Palmovka and Čakovice, following which it will complete an additional 15,000 km of testing on line 58. Usually a new vehicle type would have to complete 20,000 km, but part of the testing was considered to have been carried out by the first Bratislava vehicle.

This is the first time ever that partial recognition will be given to test kilometres with passengers under different legislation in another EU Member State, because 5,000 km with passengers were completed by a Bratislava trolleybus in the Slovak capital, not in the Czech Republic. From March, the entire fleet of 20 trolleybuses should start serving the route of the current line No. 119 (now as 59) from Nádraží Veleslavin to Václav Havel Airport, where the construction of the second Prague trolleybus line is nearing completion.

## **CZECH REPUBLIC Ústí nad Labem**

The first of the 33 new Škoda 27 Trs, No. 638, was ceremonially "christened" on 11 December in the Všebořice trolleybus depot in the presence of the management of the transport company, representatives of the Škoda Group and invited guests. The vehicles have two driven axles for smooth driving in the city's hilly terrain city. They also have traction batteries, allowing

operation in sections without overhead. To increase safety, the trolleybus will be equipped with a camera system inside and outside the vehicle and a blind spot monitoring function. 638 entered passenger service on 14 December.

Delivery of the new vehicles will result in the elimination of the 15 Tr type from the fleet.

## **FRANCE Lyon**

New HESS articulated trolleybuses are to be supplied from the framework agreement of up to 127 trolleybuses which was concluded in 2022. At present 34 HESS trolleybuses are operated and they will be joined by around 50 new vehicles to replace the Cristalis articulated vehicles on lines C1, C2, C3 and C4, while a further 30 will replace the last Cristalis 12m trolleybuses on lines C18 and C14. Further vehicles are intended for the conversion of bus lines C5 and C25 as well as the newly planned first BHNS line.

Currently 54 Cristalis articulated vehicles are available for the C1-C4 lines, but as this is not sufficient, eleven MAN Lion's City motor buses are also allocated for use on the C3 line. 38 Cristalis 12m trolleybuses are still in use for the C14 and C18 lines, three of which are used exclusively for driver training. The 9.7 m MAN/Hess/Kiepe trolleybuses built in 1999, have not returned to service on the S6 line, which will continue to be served by diesel buses.

## **FRANCE Saint-Étienne**

Line M4 Bellevue-Chateaucieux line is to be converted to trolleybus operation and the city is

seeking to issue contracts for the installation of traction poles and overhead line as well as electrical substations.

#### **GERMANY Esslingen**

Preparation work for the installation of new traction poles commenced on 16 October. While erecting the new overhead line, the city of Esslingen will also convert the street lighting along the route to modern LED technology. The additional overhead line is designed in such a way that all urban transport lines can be served by battery-powered trolleybuses in the future. For this purpose, 46 such vehicles have been ordered from VanHool and Kiepe Electric, which are to be delivered between May 2024 and April 2025.

#### **ITALY Genoa**

Only Solaris Bus & Coach submitted a bid in the tender for the purchase of 112 battery articulated trolleybuses. The present trolleybus fleet consists of just 17 Van Hool vehicles dating from 2008.

#### **KAZAKHSTAN Almaty**

56 of the 100 trolleybuses ordered from Yutong this year had arrived by the end of November. The first entered passenger service on 18 November.

Another 100 new trolleybuses will be obtained by 2025, which should completely renew the existing fleet.

The vehicles are equipped with a powerful air-conditioning unit but also have traditional curtains.

#### **MEXICO Mexico City**

Mayor Martí Batres Guadarrama has announced that the city council is to invest in the construction of another new trolleybus line. It will see the trolleybus network extended to the south of the city by about 7 km. and will replace motor buses on lines 1 and 13. Concession companies operating buses on these lines will receive

compensation or the opportunity to participate in the operation of trolleybuses as soon as they are introduced on the planned route.

The new line 12 will start near the southern terminus of the backbone north-south trolleybus line No. 1. From there it will run mainly in a south-westerly direction along Aztecas Avenue and part of Del Imán Avenue to the Insurgentes locality. Its implementation is already included in next year's budget. 30 new trolleybuses are to be deployed on the new line.

#### **ROMANIA Vaslui**

After a long period of testing and technical adjustments the ten new Solaris Trollino 12 trolleybuses with Medcom electrical equipment officially entered service on 4 August. They have a striking lime green livery. The overhead network had not been used for seven years and was overhauled with EU funds. The substations were also renewed.

#### **RUSSIA Khabarovsk**

Another seven battery trolleybuses have arrived, bringing the total to 17, all of the MAZ-203T70 type with extended autonomous operation up to a distance of 20 km. It is planned to acquire another 16 in 2024.

#### **RUSSIA Nizhny Novgorod**

Following a test of battery trolleybuses the local authority has decided that the trolleybus fleet will be run down in favour of the arrival of battery-electric buses.

#### **RUSSIA Vladivostok**

A tender has been announced for a total of 16 new battery trolleybuses. The trolleybus fleet has been reduced to only 12 functional vehicles, 8 of which are more than 17 years old. It had been anticipated that the system would close, but the new order will ensure the future.

#### **SLOVAKIA Bratislava**

The first of 16 double-articulated Škoda-Solaris Trollino 24 trolleybuses was presented to journalists on 4 September and four days later a permit was issued for test operation without passengers. Nos 6908 and 6903 were used for these tests. During the test operation, it was confirmed, among other things, that the double-articulated trolleybus can pass through all the curves that a single-articulated trolleybus can pass through. After successfully driving the specified distance, a subsequent permit was issued on 10 November for a test run with passengers.

Subsequently No. 6908 made its debut in operation with passengers on 16 November while No. 6903 visited Žilina, as part of the testing of the vehicle under the 750 V traction system.

Of the new 12m trolleybuses, SOR TNS12 No. 5624 was the first of the type to enter service, on 12 December, after completing certification tests without passengers.

#### **SLOVAKIA Prešov**

The first of four SOR TNS 12 trolleybuses arrived on 23 November. In addition, a batch of Škoda 27 Trs will be delivered in the coming weeks. Because these vehicles are all equipped with batteries they will expand trolleybus operation and will be used on bus lines 15, 22, 29, 32 or 39.

#### **SWITZERLAND Fribourg**

To accelerate the decarbonisation of TPF's fleet, the Grand Council has approved the recapitalisation of Fribourg's public transport. CHF 60 million will be made available if the green light is given in a referendum scheduled for March 2024. This will increase the share capital of TPF Holding by 60 million Swiss francs and enable them to procure trolley

and electric buses in the coming years. Decarbonisation primarily affects the extensive diesel bus fleet for intercity routes, but 25 articulated diesel buses built between 2011 and 2022 are still in use for urban transport.

#### **SWITZERLAND Luzern**

The city has a strategy to further expand trolleybus operation at the expense of diesel buses, using vehicles equipped with traction batteries. Currently, Luzern has only five such vehicles, the HESS BGGT-N2D 25m SwissTrolley 4 trolleybuses produced in 2019.

Between 2025 and 2030 the city plans to acquire a total of 53 battery trolleybuses, up to 46 of which will be single-articulated partial trolleybuses and the other seven double-articulated. vehicles. 26 of the single-articulated vehicles are to serve as replacements for the oldest trolleybuses while the remaining 20 will expand the trolleybus fleet.

Three of the double-articulated vehicles are to be replacements and four are to increase the fleet.

If the entire contract is used, Luzern will have 87 trolleybuses by the end of 2030, an increase of 38% compared to the current fleet.

#### **TURKEY Şanlıurfa**

The local press reported that another two Bozankaya battery-equipped trolleybuses were delivered at the end of September, bringing the total to 11 units. The 12th was scheduled to be delivered within a month.

Line 63 was opened as the first trolleybus line on 28 April after several years of planning and construction, with a big celebration by the mayor Zeynel Abidin Beyazgül. For the first year journeys are free of charge for passengers. Following the severe earthquake of 6 February 2023 and a flood on 15 March, the

overhead line via Atatürk Boulevard was not usable. After the clean-up work was completed, Atatürk Boulevard was opened to traffic on 8 May. As in Malatya, the vehicles are known as trambuses.

#### **UKRAINE Chernivtsi**

The four Solaris 12AC trolleybuses being purchased from Opava, Czech Republic, where they were numbered 92, 93, 95 and 97, are expected to be delivered within six months of the contract being signed. A tender for 50 new trolleybuses was published at the beginning of August 2023. It provides for the supply of 35 two-axle cars with traction batteries for 1 km of autonomous driving, five two-axle cars with traction batteries for autonomous driving of 25 to 30 km, and ten three-axle articulated cars with two traction motors and batteries for 1 km of autonomous driving.

#### **UKRAINE Ivano-Frankivsk**

Trolleybus line 5 was extended to bus station No. 3 on 19 December 2022, after which new trolleybus line 04 was introduced connecting bus station No. 3 (Avtostancija no.3, AS-3 for short) in the southwest with bus station No. 4 (AS-4) in the east of the city. Volvo trolleybuses which formerly operated in Linz, Austria, are stored at an intermediary in Ivano-Frankivsk, but they have not yet been procured by EAT KP.

#### **UKRAINE Lutsk**

Another four used trolleybuses have been acquired from Lublin, including the last two Jelcz PR-2011E high-floor trolleybuses, 3852 and 3858, and Solaris Trollinos 3837 and 3838. They have been given fleet numbers 030 to 033. 032 is one of the first trolleybuses equipped by Medcom, the other has Cegelec equipment. The two have hardly been used in Lublin in recent years, partly

because of their uniqueness but also because of the reduced demand for vehicles without an auxiliary drive, so they have a low mileage. The procurement of a further 30 new trolleybuses is planned, but due to the war and the country's uncertain economic and financial situation, the announcement of a tender will be delayed indefinitely.

The trolleybuses are currently used on 9 lines. The one-way fare was increased from 6 to 8 UAH in July. LPE is in competition with private bus companies, which operate on several city bus routes and, despite higher fares (15 UAH), pick up passengers in front of trolleybuses. Low-floor 12m buses, mostly from the Netherlands, are being used in increasing numbers instead of the usual minibuses.

#### **UZBEKISTAN Urgench**

The country's only trolleybus service, which operates between the cities of Urgench and Khiva, was suspended between 20 and 30 November, which the Uzbek Ministry of Transport stated was "related to repair work on high-voltage lines and transformers under the control of the Khorezm trolleybus department." Replacement buses operated on the 36-km-long interurban route during that time. A previous power supply problem resulted in the trolleybus service failing to operate from November 2021 until March 2022.

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## BTS News

### Enhancing the Visitor Experience at the Trolleybus Museum at Sandtoft

In the Museum's early days, trolleybus operation on British streets was a recent experience for most visitors. A large proportion were enthusiasts who generally had a reasonable level of knowledge of the vehicles they were seeing.

It is almost 52 years since the last public service trolleybus ran in this country. Many visitors to the Museum have little or no knowledge of trolleybuses or of bus operation during the trolleybus era. An increasing proportion of visitors are families rather than enthusiasts. To find out more about the vehicles they are seeing and riding on visitors often have to ask the Museum's volunteers.

Visitors give very positive feedback about how helpful and friendly the volunteers are, but there is a need to provide the level of interpretation that should be expected at a museum that attracts visitors from all over the country and from all over the world.

### A Joint Project to Introduce Interpretation

Thanks to a generous donation by a BTS member the Society has instigated a project that is being managed jointly with the Trolleybus Museum to introduce comprehensive interpretation at the site.

The initial intention is to provide information about all the vehicles, but the project is seeking match funding from Arts Council England to extend the scope of the project to all aspects of the Museum.

A steering group has been formed and more details will be publicised as the project progresses.

### We Need Your Help!

BTS members have a great deal of knowledge and expertise that would be useful for this project. Find out more from the Editor – contact details are on page 2.





Above: The first of Prešov's four SOR TNS 12 trolleybuses is seen being delivered on 23 November.

[DPMP]

Below: The scene at the press conference on 21 November when Prague's first double-articulated trolleybus was presented at Czechbus.

[Škoda Group]

