

# TROLLEYBUS

Vol. 62 No. 738

January 2023



**The Magazine of the British Trolleybus Society**



*Memories of 1963  
Lausanne  
Ukraine  
Index to 2022*

# TROLLEYBUS

The magazine of the  
British Trolleybus Society

No. 738 January 2023

**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: Andrew Barton**

2 Josephine Court, Southcote  
Road, Reading, Berkshire RG30  
2DG 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 £2.50, Juniors £1.50. Non-members £3.50. Meetings commence at 19.30. Organised by the BTS. NTA members welcome (Please note that there has been a small increase in the admission charge but that there will now be no charge for tea and coffee).

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

**Friday 3 February. Reading Buses' CEO Robert Williams** will update us on the operator's latest news and the bus industry generally.

### London Meetings

Held at The Model Railway Club, 4 Calshot Street, London N1 9DA (nearest Underground station: King's Cross). Organised by the NTA. BTS members welcome. Start 19.00 – doors open 18.30.

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

**Wednesday 18 January** Martin Eady presents a film show on trolleybuses in the Baltic states and Eastern Europe.

### Bradford Meetings

Meetings are not being held at present.

### 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.

**Wednesday 11 January** Railways of the West Midlands. Part Two – Walsall, Wolverhampton & Dudley, by David Goodwin

**Wednesday 8 February** Annual General Meeting, for WMTC members only.

Organised by Mike Richardes. [michael.richardes64@btinternet.com](mailto:michael.richardes64@btinternet.com)

### MONTHLY PRIZE DRAW.

The winners in the December Prize Draw were:

£130 Neil Preston, Walsall  
£100 David Snellgrove, Watford, Herts  
£70 Andrew Barton, Reading

*Front Cover: On 2 October 2022, the 90th anniversary of the opening of the Lausanne trolleybus system, Hess ligh Tram No. 705 stands at the Boston stop, Avenue d' Echallens. It is one of a batch of twelve battery-electric trolleybuses (701-12) built in 2020-21.*

[Tom Douce]

# Memories of 1963

## Article and photographs by Tony Belton

The first in the new series remembering 1963 covers the final extension to the Reading system that took place on 13 January of that year.

The extension in question was just over a quarter of a mile long starting from the Northumberland Avenue terminus, that was situated at an enormous expanse of ground at Durham Close and continuing along Northumberland Avenue to its junction with Whitley Wood Road. A further extension

was planned to meet up with the reverser at Whitley Wood in order to make a circular service. However, this did not take place due to the decision to abandon the system, although I understand that the wiring for the extension had been purchased!

The final day of the original terminus was a very cold and snowy Saturday 12 January. Due to work commitments I couldn't make the Saturday and had to make do with taking my final photographs on Thursday 10 January instead.

*Below: Reading 181, with destination blind already changed for the return journey to Caversham Bridge, is turning right from Northumberland Avenue on to the original terminus. In the foreground on the right of the photo can be seen the first traction standard to be erected for the then proposed extension.*

*Page 4, upper: A couple of months further on and the extension is making good progress with span wiring and twin-line hangers being attached to the traction standards at the junction with the old terminus. The work is being carried out by the crews on the beautifully turned-out tower wagons 33 (CDP 583) and 32 (RD 8892).*

*Page 4, lower: It's 10 January and number 179 is cautiously turning right from Northumberland Avenue on to the terminal loop at Durham Close. A heavy fall of snow had recently taken place and without any sand being laid the roads were in a precarious condition!.*

*Page 5, upper: It's ten days later, 20 January, and the snow is still around! 173 showing Stations is parked at the new Northumberland Avenue terminus. The new terminus was smaller and a much better layout than the original and it is still used by buses to this day.*

*Page 5, lower: 176 was the last trolleybus to depart the original terminus of Northumberland Avenue on Thursday 10 January. By now the temperature had dropped considerably and the roads were in an atrocious condition which made the journey back to St. Mary's Butts a nightmare for the driver. The trolleybus was sliding all over the place and skidded whenever the brakes were applied; however, we arrived safely and then I had to think about my journey back to North London.*







# Lausanne

By Tom Douce

Tom Douce visited Lausanne between 1 and 3 October. The system opened on 2 October 1932 and it is both Switzerland's

and Europe's oldest trolleybus system and the third oldest in the world, after Shanghai and Philadelphia. All photos by Tom.





Page 6, upper: Shown crossing Pont Chauderon on 2 October is 883, one of a batch of twenty-seven (865-92) Hess/Vossloh-Kiepe "Swisstrolley 4" duobuses built between 2012-13. October 2nd.

Page 6, lower: A rear view of 832, seen ascending Avenue W. Fraisse. It is one of a batch of thirty five (831-65) Hess/Vossloh-Kiepe "Swisstrolley 3" duobuses built between 2009-10. October 2nd.

Above: 865, on driver training duties (note the 'L BUS-ECOLE' in the destination screen) is shown ascending Avenue de Morges on 3 October.

Below: Trolleybuses are well suited for Lausanne's hilly terrain. Also seen on 3 October is 814 at the Jurigoz stop, Avenue de Jurigoz.



# Ukraine

## A Ukraine Roadtrip by Lars Richter (Part 3)

This article was written following a visit in October 2021 when it could not have been imagined that the country would soon be the target of Russian invaders.

As there isn't much to see in Lysychansk really, we decided to do a third system on this day: Bakhmut. They have rebuilt some of their older trolleybuses. A few low floor vehicles were also seen in service. We waited at various locations for good photos, but few trolleybuses appeared.

The next day we spent some time in Slavyansk. We had seen photos of line 5B running again in battery mode but the new bridge they recently built was not quite ready and we waited for a very long time by the bridge, and nothing appeared. We only saw one older trolleybus in service, the rest was all modern. Quite a contrast to our last visit there. Line 2 was running this time, so we did see some parts of the city we had

not seen before. We soon headed to Kramatorsk.

In Kramatorsk we decided to visit the depot again to see if we could get permission to see inside the old tram depot (we had no such luck last time). This was again denied, and we learned that the trams would now be scrapped in the next 3 weeks or so. They have scrapped many of their old trolleybuses and the two ex-Winterthur vehicles sat out of use in the depot (during our previous visit one of them was running and we later even managed to get the original technical drawings for them from Switzerland – the dealer that sold them the two trolleybuses did not supply them with anything and they soon had problems keeping them roadworthy).

Dnipro was our next destination.

To be continued.









Page 8: Lysychansk 077 (LAZ-52522 ex-Stakhanov from 1997) on the only line (route 1) reaching the southeastern terminus Kirpychnyi. This operator has two more of this type, but they are out of service (only 9 of this type survive in service in Ukraine).

Page 9, upper: Lysychansk 069 (1990 vintage ZiU-682V-012[V0A]) somewhere along the west of Sosiury Street. This part of the long street is one-way and the trolleybuses going east are running against the traffic. The second "ZiU-9" that is still serviceable is 079 (ZiU-682G-016[018] built in 2006).

Page 9, lower: Bakhmut 160 (ZiU-682 KR RUTA rebuilt in 2017 from a 682V-013[V0V] of 1991. Seen here entering Freedom Street from Peace (or World) Street on line 4. It is the only vehicle of this type anywhere. 9 "Ziu-9s" remain on the property. Until 2016 this city was called Artemivs'k (Ukrainian name).

Page 10, upper: Bakhmut 210 (1998 YMZ T2 – it was somewhat modernised around 2020) on line 2. Eight "T2s" are in service (4 of them shortened T1s – now T2P). This railway crossing is south of the depot – freight trains enter a factory here.

Page 10, lower: Slavyansk 404 (Dnipro T203 new in 2020 – 200 of this type operate in Ukraine plus another 11 in Balti) in battery mode on line 5B at Molokozavod = milk factory. The Yuzmash rocket factory in Dnipro is where these are built. Tatra-Yug trams are also manufactured there and originally also the YMZ (or rather YuMZ) trolleybuses – all different companies but they all use/used the same facility (and most likely the same workforce).

This page: Slavyansk 302 (Etalon T12110 "Barvinok" = periwinkle – delivered in 2018). Line 7 coming from the railway station crosses the railway in the aptly named Station Street. 301/302 are the only T12110s here (Chernihiv has 37 and Sumy 4).

Page 12, upper: Kramatorsk 0202 (Mercedes-Benz O405GTZ ex-Winterthur 161 from 1992) sitting in the depot. Winterthur used to have 21 of these. This and sister 0201 (ex 152) arrived here in 2016. All the older vehicles we see here are retired (though they hope to bring back to life one of the O405s).

Page 12, lower: Kramatorsk 0219 (2018 Dnipro T203). 200 203s were delivered to Ukraine (plus 11 to Balti) and nine of the 16 Kramatorsk trolleybuses can run in battery mode: we see two of these on line 7 near the southern terminus.



# MUSEUM & PRESERVATION NEWS

Edited by Jody White



## Cardiff and South Wales Trolleybus Project

By Keith Walker

As usual, trolleybus restoration here in the 'Land of Dragons' has progressed at a good pace. Both Cardiff trolleybuses have received attention, though 262 gets the bulk of work, while 243 (the 'doodlebug') continues to double as a sales vehicle with a wide range of transport books and the recent addition of over 15,000 b&w trolleybus, bus and tram photographs from all over the UK. These are priced at 50p each, so if you or any local preservation group are interested, please contact the project with your requirements. Discounts are available.



*Jeff White priming seat frames inside 243  
[Keith Walker]*

All of 262's main window glass is now in place, while all the narrow glass for the fourteen window sliders are on site, so all that remains is the construction of the frames. Member John Webb continues replacing the hardwood timber surrounds, concentrating on the upper deck. With all six wheels off 262, their hubs have been completely de-rusted, primed, and a top coat applied. In anticipation of fitting the wheels, all the sets of brake shoes have been replaced while the adjuster mechanisms are being attended to prior to setting. As this will take time, it was decided that the shoes need protecting and their drums loose fitted.

Work at the front of 262 has seen the two half lower panels removed by Bob Heatley, due to some previous damage. However, it opened a can of worms. As Bob carried on making more suitable under panel hardwood framing for the headlights, we discovered that the steel brake balance pipe at the rear of the front axle had been crushed in places during the previous ownership. But what can we do? Keith



*Ty, John and Chris use the plasma cutter to produce the various parts for 262's new front wings.  
[Keith Walker]*

remembered that project member Malcolm Kirk had contacts at heavy engineering firm Finnings, near Cardiff. After an introduction we were invited to take the pipe assemblies to see what could be done. Fast forward just three days, and thanks to Finnings, we have new rubber hydraulic pipes and fittings to complement parts salvaged.

One major advance in fabrication is thanks to new member Ty Cochlin, who arrived with a plasma cutter and his welcome skill base. Both front wings on the decker had been damaged beyond repair,

but after purchasing a sheet of steel, Ty, John and Chris used templates to cut the wing parts and both have been completed and are in various stages of fitting. Meanwhile, the more mundane tasks such as de-rusting and priming seat frames continues.

243's internal ceiling panels were replaced, as well as its advertising strips, when Jeff White came up his bimonthly Saturday excursion and wired up the offside light fittings.

**Have a Happy New Year!**

## The Trolleybus Museum at Sandtoft

The opening days for the museum this year are shown below:

| <div>  <div> <b>2023 OPENING DAYS</b><br/> <i>(PLEASE NOTE THESE MAY BE SUBJECT TO ALTERATION)</i> </div> </div>          |                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Saturday 8 April                                                                                                                                                                                           |  <b>Easter Weekend Trolleydays</b> with an Easter Egg Hunt and tracker dog displays                 |
| Sunday 9 April                                                                                                                                                                                             |                                                                                                                                                                                      |
| Monday 10 April                                                                                                                                                                                            |                                                                                                                                                                                      |
| Saturday 29 April                                                                                                                                                                                          |  <b>Bank Holiday Trolleydays</b> featuring the trolleybuses of the British Trolleybus Society       |
| Sunday 30 April                                                                                                                                                                                            |                                                                                                                                                                                      |
| Monday 1 May                                                                                                                                                                                               |                                                                                                                                                                                      |
| Saturday 13 May                                                                                                                                                                                            | <b>Weekend Trolleydays</b> featuring our 3-axle vehicles                                                                                                                             |
| Sunday 14 May                                                                                                                                                                                              |                                                                                                                                                                                      |
| Saturday 27 May                                                                                                                                                                                            |  <b>Bank Holiday Trolleydays</b> featuring our BUT trolleybuses                                     |
| Sunday 28 May                                                                                                                                                                                              |                                                                                                                                                                                      |
| Monday 29 May                                                                                                                                                                                              |                                                                                                                                                                                      |
| Tuesday 30 May to Friday 2 June                                                                                                                                                                            | <b>WEEKDAY OPENING</b>                                                                                                                                                               |
| Saturday 17 June                                                                                                                                                                                           | <b>Fathers Day Weekend</b> featuring (on Sunday) a display of vintage cars                                                                                                           |
| Sunday 18 June                                                                                                                                                                                             |                                                                                                                                                                                      |
| Saturday 1 July                                                                                                                                                                                            |  <b>Weekend Trolleydays</b> featuring a display of classic Atkinson lorries                         |
| Sunday 2 July                                                                                                                                                                                              |                                                                                                                                                                                      |
| Saturday 15 July                                                                                                                                                                                           | <b>Huddersfield Weekend</b> commemorating the town's last trolleybus in July 1968                                                                                                    |
| Sunday 16 July                                                                                                                                                                                             |                                                                                                                                                                                      |
| Saturday 29 July                                                                                                                                                                                           | <b>Sandtoft Gathering '23 Preview</b>                                                                                                                                                |
| Sunday 30 July (Open 10-6)                                                                                                                                                                                 |  <b>Sandtoft Gathering '23:</b> displays of vintage buses, cars, jazz band, beer tent - and more! |
| Saturday 12 August                                                                                                                                                                                         |                                                                                                                                                                                      |
| Sunday 13 August                                                                                                                                                                                           |  <b>Weekend Trolleydays</b>                                                                       |
| Monday 21 to Friday 25 August                                                                                                                                                                              | <b>WEEKDAY OPENING</b>                                                                                                                                                               |
| Saturday 26 August                                                                                                                                                                                         |  <b>Bank Holiday Trolleydays</b> featuring our Roe-bodied trolleybuses                            |
| Sunday 27 August                                                                                                                                                                                           |                                                                                                                                                                                      |
| Monday 28 August                                                                                                                                                                                           |                                                                                                                                                                                      |
| Saturday 16 September                                                                                                                                                                                      | <b>1940's Weekend</b> plus (on Saturday) a display of vintage cars                                                                                                                   |
| Sunday 17 September                                                                                                                                                                                        |                                                                                                                                                                                      |
| Saturday 30 Sept                                                                                                                                                                                           | <b>Blues &amp; Twos Weekend:</b> retired emergency vehicle displays and demonstrations                                                                                               |
| Sunday 1 October                                                                                                                                                                                           |                                                                                                                                                                                      |
| Sunday 15 October                                                                                                                                                                                          |  <b>Isle of Axholme Running Day:</b> visiting vehicles and motorbus tours of the local area       |
| Monday 23 to Friday 27 October                                                                                                                                                                             | <b>WEEKDAY OPENING</b>                                                                                                                                                               |
| Saturday 28 October                                                                                                                                                                                        |  <b>Weekend Trolleydays</b> commemorating Doncaster's last trolleybus in December 1963            |
| Sunday 29 October                                                                                                                                                                                          |                                                                                                                                                                                      |
| Sat 18 November (Open 11.30-6.00)                                                                                                                                                                          | <b>Twilight Trolleys</b> with atmospheric trolleybus operation after dusk                                                                                                            |
|  <b>Accessible Weekends:</b> At least one trolleybus in service will be wheelchair accessible (subject to availability) |                                                                                                                                                                                      |

# World News

Edited by Bruce Lake



## **ARGENTINA Rosario**

A Mercedes-Benz bus has been converted into a trolleybus and was ceremonially launched into service on line K by the Mayor, who said that after replacing the old Brazilian trolleybuses on Line K, trolleybus operation should return to Line M.

## **AUSTRIA Salzburg**

Further lighTram 19DCs have been ordered from HESS from the options of the framework agreement. Six articulated trolleybuses (Nos. 430 to 435) will be delivered in February and a further seven (Nos. 436 to 442) in July/August 2023, then another eight to follow in the third quarter of 2024.

## **CHINA Shanghai**

Trolleybus route 25 was converted to battery bus operation from 15 August. Services 6, 8, 22 and 28 officially are not converted but most are served by battery buses. Route 13 will be converted to battery bus operation. As previously reported, new trolleybuses were purchased for service 20 this year. A fleet of 108 new Sunwin trolleybuses was due to be delivered at the end of 2022, for use on lines 14, 15, 19, 23 and 24.

## **CZECH REPUBLIC Brno**

DPMB has donated three decommissioned Škoda 14 TrM trolleybuses to Kharkiv in Ukraine. The first of them, 3284, was sent on a low-loader on 20 October. Work on the first SOR TNS 12 to be delivered as a body without electrical equipment is progressing well. DPMB installs the equipment and thus

saves considerably in procurement costs.

## **CZECH REPUBLIC Industry**

Test running of the Škoda 36 Tr prototype (marketed as the Škoda T'City) ended on Sunday 11 December. It has operated in service in Plzeň with fleet number 989, mainly on line 13, and has achieved the necessary 20,000 km in service.

## **CZECH REPUBLIC Plzeň**

Four new Škoda 26 Trs are numbered 605 – 608. The first to enter service were 605 and 608 on 25 November. The PMDP Board has approved the purchase of 13 new trolleybuses (Škoda 26 Tr NU and 27 Tr NU) by 2025. They will be the first from the framework order which provides for up to 33 12m and up to 20 articulated vehicles between 2024 and 2030. All will be equipped with traction batteries. Škoda 24 Trs 501 and 507 have been donated for further service in Kharkiv, Ukraine. Similar vehicle 502 has been acquired for service in Khmel'nitski, having originally been sold to Autobusy Jihlavy in 2020.

## **CZECH REPUBLIC Praha**

The first part of the construction site of the second trolleybus line was handed over on 29 November. Construction activities are currently concentrated exclusively in the area of the Řepy garages, where the necessary charging infrastructure and a new trolleybus substation will be created. The line to Václav Havel Airport should take 15 months to build.

## **FRANCE Lyon**

Transport authority Sytral Mobilités is accelerating its fleet renewal and expanding its electric traction networks. Operator TCL (Transport en Commun Lyonnais) currently has 143 trolleybuses, including 34 Hess lighTram DC19 and 102 Irisbus Cristalis ETBs, of which 54 are articulated. New Hess trolleybuses will replace the Cristalis ETBs.

The lighTrams already in service work on the C lines (reinforced service lines): C11 (Saxe Gambetta-Laurent Bonneville) and C3 (Garage Blanche-Montessuy). The future deliveries will replace the articulated Cristalis on lines C1, C2, C3 and the rigid Cristalis currently used on lines C4, C14, C18, which will increase capacity by more than 30 %.

The services to be converted to trolleybus operation by 2026 are C5 (Cordeliers/Centre Lyon-Vanciel/Rilleux Semaines) and C25 (Gare Part – Dieu – Saint Priest, with extended runs to Sogaris) and the BHNS (Bus à Haut Niveau de Service) Part Dieu – Sept Chemins.

## **HUNGARY Debrecen**

Hungary's dependence on imports from the Russian Federation has led to a deep energy crisis. Debreceni Közlekedési Zrt. (DKV) significantly reduced tram and trolleybus services outside peak hours from 14 November until the end of the year. From 1 January 2023 until at least March all three trolleybus lines are being replaced by buses on all days, and buses

on lines 1 and 2 will also replace trams at weekends.

#### **ITALY Avellino**

The new trolleybus system had still not opened by mid-December 12, 2022 and because of the bureaucratic processes that remained to be completed it seemed likely that opening would be delayed until 2023.

#### **ITALY Chieti**

On 11 November the city launched a call for expressions of interest for the construction of a new 4.8km trolleybus line.

#### **ITALY Pescara**

The new trolleybus line cannot be put into operation after its opponents won their case at the Administrative Court of the Abruzzo Region of Pescara. An appeal will be filed immediately, which will be dealt with by the Council of State. Two of the six Van Hool Exqui.City 18T trolleybuses have arrived so far.

#### **ITALY Rimini Metromare**

Although all 9 VanHool Exqui.City 18T trolleybuses were in service by early summer diesel buses started appearing again and by the end of October only two trolleybuses were operational. Two were out of service to replace the batteries, two for unspecified technical defects, with the remaining three waiting for technicians to travel to Rimini to perform an annual inspection.

#### **MEXICO Mexico City**

At the end of October the mayor said that the extension of the BRT corridor by about 14 km between the terminus of Constitución de 1917 and the district of Mixcoac should be ready in about 6 months. In parallel, the construction of the partially above-ground BRT corridor Santa Martha – Chalco continues and construction may be completed by the end of 2023. On 24 November an international tender for 102

new articulated trolleybuses was announced. The first are due to arrive in August 2023 and when all 102 have been delivered the number of new trolleybuses will increase to more than 400.

#### **POLAND Lublin**

Following the introduction of statutory limitations of electricity prices for some users, including city transport operators, trolleybus operation fully resumed from 1 December.

#### **SWITZERLAND Lausanne**

After reconstruction of the Grand-Pont, normal trolleybus operation resumed from 3 December with trolleybus lines 1, 2, 4, 7 and 9, but line 8 now continues to Pully gare and line 21 beyond the station to Paudex, Verrière. Line 4 now continues from St-François to Faverges, using battery power from the Léman stop on line 9 to Bonne-Espérance and back. Former bus line 12 has been discontinued.

Line 7 no longer runs via St-François, but from Ours via Tunnel, Riponne, Bel-Air and Chauderon and continues via its former route with a new terminus in Galicia-Arena. Due to the construction of the tramway, the trolleybus runs from Prélaz to Galicia and back in diesel or battery mode. Line 20 is now electrically operated, for which overhead line was built in Casernes.

#### **SWITZERLAND St Gallen**

Eleven more Hess lighTram® 19 DC trolleybuses have been delivered, numbered 107 and 111 to 120. Following the delivery of 108-110 in May, bus lines 7 and 8 can now also be served with battery trolleybuses, meaning that eight lines are now operated electrically.

Four cost-cutting measures were implemented from the timetable change in December, including trolleybus lines 1, 2, 5, 6, 7

and 8 being slightly thinned out during the week from 20.00 and on Saturdays trolleybus lines 1, 2 and 5 will run every 15 minutes.

#### **SWITZERLAND Winterthur**

After increasingly being used on driver-training duties and then occasionally in passenger service, the 11 Hess lighTram 25 DC double-articulated trolleybuses officially took over operations on service 1 Oberwinterthur - Hauptbahnhof - Töss with the new timetable on 11 December. With the additional passenger capacity offered, the normal frequency of service 1 has been reduced from 6 minutes to every 7 1/2 minutes throughout the day. The background colour of service 1 in the indicator boxes has been changed from black to olive green to avoid duplication with night services throughout the Zürcher Verkehrsverbund area which all use white digits on a black background.

Stadtbuss has called for six more lighTram® 19 DC (Nos. 134-139) from the framework agreement for delivery in November 2024. They are to be used to convert motor bus line 5 to battery trolleybus operation.

#### **SWITZERLAND Zurich**

An order has been placed with Hess AG for 13 lighTram 19 DC articulated trolleybuses and 13 double-articulated lighTram® 25 DC trolleybuses for delivery in 2024. The contract includes an option for a further 140 trolleybuses, 85 two-section and 55 three-section, to be supplied up to the end of 2032.

The new vehicles will gradually replace the existing 80-strong trolleybus fleet manufactured from 2007 to the present day, as well as replace diesel buses. The oldest of the double-articulated trolleybuses have

already reliably covered well over one million kilometres.

### **TURKEY Industry**

The Bozankaya company presented its Trambus model, which it describes as "Turkey's first battery-powered high-tech domestic trolleybus", at a ceremony at its factory in Ankara. The vehicle is the first to be delivered for the Şanlıurfa Metropolitan Municipality's new trolleybus system.

The vehicles have a maximum range of 50 km in battery mode, with the batteries charging while connected to the overhead line.

In his speech at the ceremony, Bozankaya Board Chairman Aytunç Günay said that these trolleybuses will be an ideal green transport solution in major cities with their low initial and operating costs.

### **TURKEY Şanlıurfa**

The first of 12 articulated trolleybuses for the city's new system has been delivered and all are expected to enter service in 2023. Vehicle safety and maintenance periods will be monitored remotely thanks to the intelligent on-board software. The original plan had been to introduce double-articulated trolleybuses but this was changed as the shorter vehicles were thought to be more suitable for the city's narrow streets.

### **UKRAINE Kharkiv**

Ex- Plzeň Škoda 24 Trs 501 and 507 arrived here on 28 November after a week-long journey from the Czech city, which has donated them as humanitarian aid. Immediately after delivery, preparations for commissioning them began. By early December 507 had been given fleet no. 2802 and

painted into the fleet livery of light green.

### **UKRAINE Khmelnytskyi**

Ex- Plzeň Škoda 24 Tr 502 has been acquired and is the town's first Škoda. It entered service in Plzeň in September 2015 and was last used in passenger service in March 2020, following which it was sold to the company Autobusy Jihlava. Under this ownership it was used for a tour on the local network by an association in Jihlava. The auxiliary diesel generator was dismantled before sale. Three more 24 Trs with Citybus bodies and one 25 Tr Citelis (from Prešov) have also been purchased.

### **UKRAINE Kyiv**

In November a tender was announced for new low-floor articulated and rigid trolleybuses, including spare parts, maintenance tools and services. The contract will be financed by a €50 million loan from the European Investment Bank, whose rules also govern the selection of the vehicle supplier. Shortly before the Russian invasion the city's attempt to procure 137 trolleybuses failed. Deliveries should commence no later than 24 weeks after the arrival of the advance payment and the rest must arrive within 78 weeks.

### **UKRAINE Mariupol**

With the help of technical specialists from St. Petersburg, some of the few relatively undamaged battery-equipped trolleybuses at the depot were prepared for service and on 23 November a pseudo-trolleybus route was introduced, running from the destroyed Drama Theatre to the TFD. A 30-minute interval service operates from 07.00 –

11.00 and 15.00 – 18.30. The vehicles are recharged at the depot because there is no longer any trolleybus overhead.

All other public transport is provided by buses, some of which have been restored from the existing fleet and the rest by elderly buses transferred as "humanitarian aid" from St. Petersburg and other Russian cities.

### **UKRAINE Mikolaiv**

Since the Russian army destroyed the water pipes in the Kherson region, public transport vehicles have been distributing drinking water in the city, with 1989 freight tram TK-28 no. 1001 being converted for the purpose and KTG-2 freight trolleybus no. TG-4 from 1983 also being used. The KTG series freight trolleybuses were manufactured in Kyiv by the KZET plant from 1976 until 1993. Mykolaiv no. TG-4 was used for the transport of spare parts between the trolleybus depot and the maintenance workshops, but a tank was placed on the rear platform allowing the transport of up to 4,000 litres of drinking water. This would not have been suitable during winter and since 10 November this duty has been taken over by ZiU-682V trolleybus no. 3159 from 1987.

With thanks to: David Bowler, Dave Chick, Wenchao Song, Jan Spousta, České noviny, Československý Dopravák, Plzenske Trolejbusy, sustainable-bus.com, Škoda Group, Trolleybus Trollino, Turquie-news.com Urban Transport Magazine, Ville Rail & Transports, zdopravy.cz

## **Calendars!**

A very small number of BTS and Ukraine calendars remained in stock as we went to press. This is your final opportunity to buy copies; every penny from the sale of the BTS calendar aids trolleybus preservation while every penny from the donation for a Ukraine calendar helps to provide humanitarian aid to that country. Use the link below to access the BTS online shop.

[British Trolleybus Society](https://www.british-trolleybus-society.org/)

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*Rear Cover upper: Winterthur is the latest Swiss system to add double-articulated trolleybuses to its fleet. Two days after the new trolleybuses officially took over operations on service 1, 403 is seen in Stadthausstrasse. Note the olive green background to the service number, which is explained in World News.*

[David RH Bowler]

*Rear Cover, lower: Also seen in Stadthausstrasse on 13 December is No. 411*

[David RH Bowler]

