# ST PETERSBURG

# Decline... but hope?

## Part one

St Petersburg is poised for massive international investment in light rail. Independent transport planner **Vladimir Waldin** believes that recent official policy towards what was once the world's largest tramway has been bad news disaster... but now there are grounds for hope. This is the first installment of a full survey of a remarkable Russian network: tough times up to 2005.

Despite the recent Sankt Peterburg (St. Petersburg) 'Centennial' celebrations, the city's tramway system is actually much older: the first horse-drawn cars first carried goods in 1860 and passenger traffic started three years later. The recent celebrations mark the introduction of electric traction; the first British Brush-built electric cars started running on route 4, from the corner of Nevsky and Admiralteysky Prospekts to the quays at Vasilyevsky Island via the Blagoveshchensky Bridge in 1907.

However, whatever the background to the celebrations, in reality the city's street rail system met the anniversary in crisis. In late 2002 the Dutch transit magazine *Op de Rails* published a long article on Sankt Peterburg. The main theme was apprehension regarding the future and the story was one of traffic disorganisation, a worn out fleet and tracks in poor condition, against a backdrop of rapidly growing private motor car ownership and the loss of further passenger traffic to minibus para-transit. These changes were perhaps more obvious to a stranger than to local citizens exposed to gradual change.

The Dutch article was written just as mass track lifting had started. The city system's track length was for many years reputed to be 650km (400 miles), but this was based on complicated and unreliable methods using official Soviet statistics. The up-to-date figure based on an accurate street map is a little over 230km of unduplicated track (i.e. the operational length, including currently abandoned sections still suitable for traffic). Some 72km (45 miles) were lifted during 1997-2007, added to some minor segments that closed in 1992-97. However the turn of the century brought 4km/2.5 miles of new tracks.

Part two next issue - followed by a detailed account of the multi-million scheme for a brand new system, and the recent development work carried out by UK consultants Mott MacDonald.

### No longer the World's biggest

In around 1990 the network, calculated using the Soviet methods, may in fact have even been over 700km (434 miles) although it is now hard to be certain. However what is important is not that the network has lost about a third of its size, but that its current configuration is far bigger than can be used. No more than half of it can be counted as being operated in normal mode.

The system starting showing signs of wearing out in the 1970s when it was obvious that its facilities would soon need serious reconstruction. However the then management chose to keep the tramway running with maximum speed of repairs and minimum expense per track unit or car. This was quite successful until the start of the 1990s: the socialist principles seemed to function well as long as funding never ran out. Later, it became clear that the city possessed dozens of kilometres of newly overhauled track which had no more than ten to 15 years' margin of

**Above: This segregated tram lane was rebuilt to road level in Summer 2007, with the inevitable consequences. Prospect Obukhovskoy Oborony close to River Terminus.** V. Waldin

**Left: The latest Sankt Peterburg tram type is the low-floor articulated LVS-2005. Only one exists, but four others are being built.** Sergey Sigachev

**Above: A 'normal' traffic scene in the city centre. Tram traffic here was abandoned on 1 April 2007, and the tracks lifted immediately. Did removing the trams beat the daily jam as was declared?** V. Waldin

**Below: Contemporary technology for rebuilding track. Good if they will be covered just with gravel and asphalt afterwards; in some cases they cover the wooden sleepers with concrete. The wood soon rots, and the road surface will be destroyed within two to three years after repair.** V. Waldin

safety. Other lines, which had been newly built as reserved tracks during the same period, were left without proper surfacing. The tramcar fleet, numbering almost 2100 cars in 1991, was obsolete and unreliable. The only way to keep trams running was to employ an army of depot workers for everyday maintenance.

For many years Sankt Peterburg (for some time known as Leningrad) had been unique: it operated cars mainly of its own building from the late 1920s, the first being built by the former Putilov factory. In 1934 a special tram factory opened its own production line.

In the 1960s and 1970s the LM-68 and LM-68M cars were built here. Dozens still operate. They were designed initially for multiple-unit operation; three-car trains were common in the 1980s. The city was given a choice between mass purchases of Ust-Katav factory KTM-5M3 cars (over 200 of them, also suitable for multiple-unit operation, were delivered here in 1992-1993) and constructing its own articulated trams.

Ordering more Ust-Katav cars was rejected in favour of a start on building Sankt Peterburg's own LVS-86. Over the next few years the city system took delivery of several hundred. There were many good ideas in the type's construction and design. Even so, this enfant terrible of socialism's era of decline managed to retain almost all of the drawbacks of previous models, which was combined with a lack of domestic technological background in building and operating articulated trams. Very few other cities in Russia accepted the new design for regular operation, although Leningrad-built cars had previously been warmly accepted across the USSR.

## Tough times

In 1992, political reform shifted municipal mass transit systems from the jurisdiction of ministries (trams and trolley-buses belonged to the Ministry of Housing Maintenance and Utilities, local and suburban bus traffic was supervised by the Ministry of Motor Transport) to municipalities.

Such subordination is common in many countries, but in Russia it meant that mass transit was denied any organisational support. A few cities managed to live with that, but most including Sankt Peterburg struggled.

It is important to note that the trends described took place against a background of rapid growth of motor vehicle ownership, the visible results of which began appearing from around 1994-95 when 'street overload' became a problem in Sankt Peterburg for the first time.

However although a similar process took place in other eastern-European countries, the authorities in Praha, Budapest, Warszawa and others kept their feel for the importance of public transport. Sankt Peterburg (along with many other former-Soviet cities) did not.

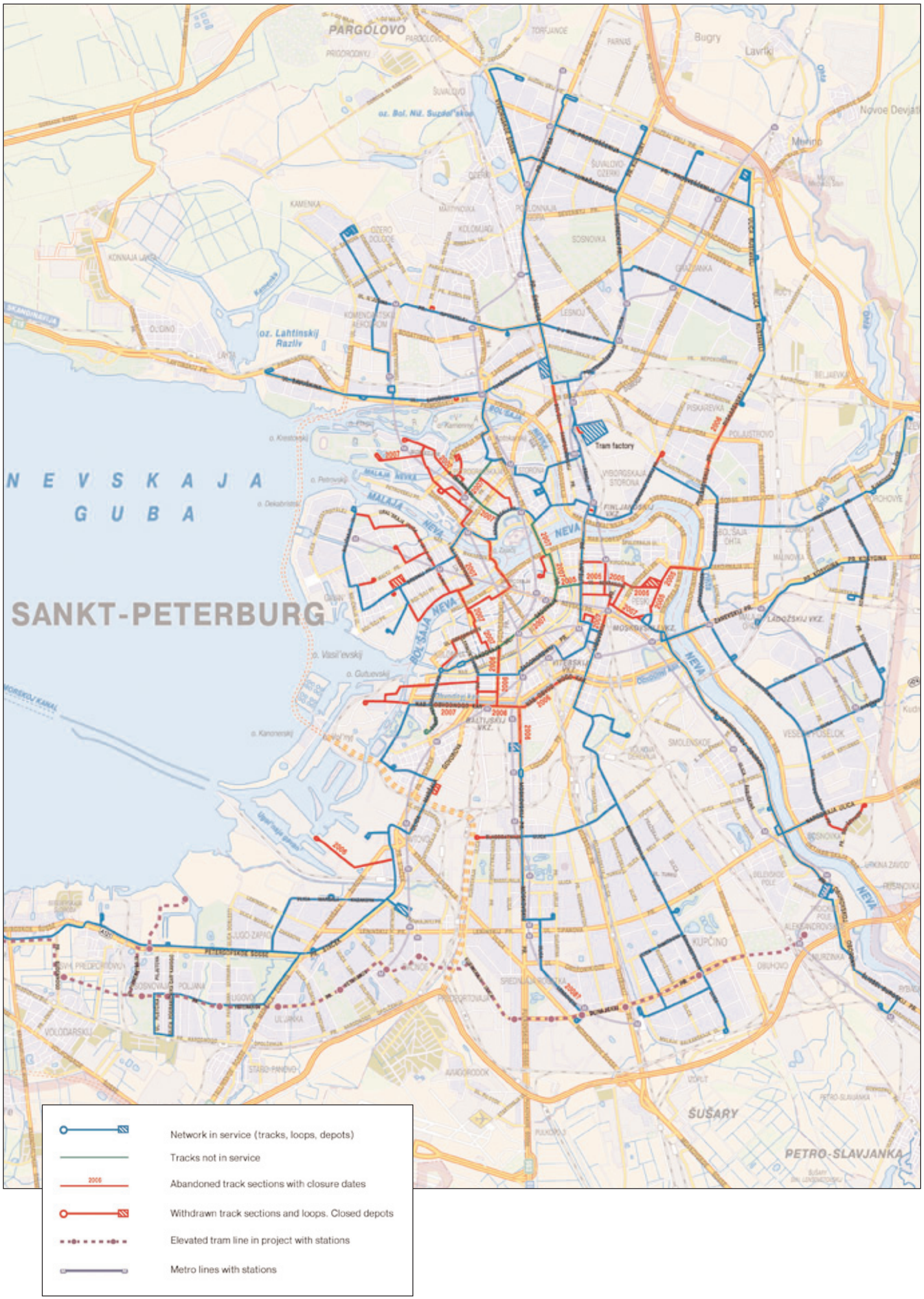
A deficit of specialists in municipal transport was palpable even in the 1980s, but from 1992 and for more than a decade afterwards there was no push to create mass transit specialists – and many of those already skilled in the art either retired or died.

Additionally, tough times in all branches of post-reform Russia forced municipalities to look for the cheapest solutions. This brought to life the idea of self-funded para-transit organised by private companies without subsidy. That resulted in the rapid growth of parallel transport networks, working without regulation, visibly profitable but not responsible for any infrastructure or social business aspects of mass transportation. After over a decade it is hard to believe that such solutions were often originally referred to as temporary. Private bus transport became seen as a mainstream activity, even in official documents. By mid-2007 there were 400 non-municipal bus and minibus routes with over 6000 vehicles operating daily.

Another 'stopgap measure' – returning to using conductors as the main system of fare collection in the mid-1990s – resulted in a dangerous trend forcing all operators to focus on cash turnover. The previously-accepted maxim of mass transit not being itself a means of gaining direct profits seemed to be forgotten.

In these circumstances, and faced by a lack of funding, the municipality started a so-called 'optimisation' of its transport networks. A keystone of such optimisation was reducing 'parallel' routes. This ideology, known here as 'one street – one route', became a dramatic factor in the short term fate of the tramway.

The majority of USSR transport systems (Sankt Peterburg being no exception) were operated in Soviet times not on a general timetable basis, but on the older idea of maintaining more or less equal headways. Considerable duplication of routes allowed passengers to use different routes to reach a destination with acceptable waiting and travel times supported by the system's general operability. No fewer than three different routes operated over most parts of the tram system and five were normal in central districts. Single-route operated tracks were restricted to a few areas in the outskirts, many of these acting primarily as feeders to other lines.


PARGOLOVO
Bugry
Lavrik
Novoe Devjatkino
oz. Bol. Niz. Suzdal'skoe
oz. Lahtinskij Razliv
Tram factory
NEVSKAJA GUBA
SANKT-PETERBURG
NEVA
BOL'SAJA NEVA
MALAJA NEVA
BOL'SAJA ONKA
Moskovskij kanal
ŠUŠARY
PETRO-SLAVJANKA
Network in service (tracks, loops, depots)
Tracks not in service
2006
Abandoned track sections with closure dates
Withdrawn track sections and loops. Closed depots
Elevated tram line in project with stations
Metro lines with stations

Farewell to the tramway across the Bolsheoktinsky Bridge. LVS-86 car No. 7008 seen in October 2005, a few days before the closure. V. Waldin

The 'one street – one route' idea probably originated from examining European mass transit maps, but without accepting their operational principles such as timetable and interchange organisation. However, since the Sankt Peterburg metro system is critically insufficient (station density in built-up city areas does not exceed one per 7 sq km, distances between stations are about 2km/1.2 miles or more and stations are extremely deep), the trams should actually have been reorganised to compensate for the lack of an easily-usable underground. However the decision made was to keep trams running 'as possible' on the 'one street – one route' basis. A second principle adopted was, unfortunately, to consider trams as metro feeder carriers.

## Vicious circle

The situation in the 1990s created a vicious circle. In general, public transportation functioned ever less suitably and reliably, encouraging ever more residents to buy motor cars, which were simultaneously becoming more affordable. On the other hand, the tramway's lack of acceptable headways, stimulating tariffs and reliable interchanges was being compensated for by the growing private para-transit services.

Meanwhile, the tram track network continued to decline. Tracks increasingly needed overhaul, slowing down services and adding extra noise to cars' running.

However, the mid-1990s also brought several attempts to modernise the tramway. Several city-centre sections were rebuilt using concrete-bedded track technology, and a new articulated car (LVS-97) was designed to overcome some of the technical drawbacks of the LVS-86, although the new design appeared too late to change the general attitude to trams and was not built in sufficient numbers.

None of these efforts could change the trend without support from municipal officers who by this time were too busy with more global (as they saw them) problems such as, for example, the terrible state of the city's streets.

The latter also played an important role in transport development. Historically Soviet/Russian cities did not have bodies responsible for all town planning and transportation; these roles had been given to bodies separately responsible for building planning, public transport and road works. These bodies were never coordinated properly as they were (and are) funded through different budgets. As the importance of road maintenance became paramount, this soon played a dominant role in decision-making.

There were also psychological factors: in contemporary Russia the words 'motor car' equated to 'wellbeing' and 'freedom'.

In around 2000 the transport authorities decreased the route network once again and the tram management introduced multiple speed limits (30, 15 and even 10 km/h) at many sections as a means of operating safely over bad tracks. Speeds went down, headways increased. Tram usage declined further.

## Track closures

Minor track closures happen from time to time on any system following passenger flow changes, but the reason for Sankt Peterburg's first track lifting, in 1996 and which destroyed the very first electric line opened in 1907, was locally specific. The tracks on Ploschad Birzhevaya were worn out and the decision was made that they took too much space with growing road traffic.

A year later another central section with an important loop was closed, because the Saviour-on-Spilled-Blood cathedral's restorers claimed that poor tracks caused dangerous vibrations to the rebuilt building. The third section closed was in the southeastern suburbs. It was abandoned because of its poor condition as well as the tram company's refusal to provide freight services. Actually, freight operations had been profitable, but the management decided to attempt to compensate for wearing out freight rolling stock with large rate rises that were rejected by customers.

These three cases could have remained isolated, because some maintenance and fleet renewal was going on, but the closures laid the foundations of a trend. Tram traffic, which had been rather a sacred cow for many years, lost that position in the eyes of officials. The thunderclap broke in 2001.

Late that spring, when a partly-overhauled line to the commercial harbour was close to opening, the marine administration lobbied for its immediate closure, as the tram tracks were "considered a hindrance to multiple trucks going to the port". A reminder of that line is retained at Rizhsky Prospect where there is a 300m section of excellent double-track on concrete bedding ending with dead ends in the middle of street asphalt. These tracks were used for a maximum of three weeks.

In 2001-02 the standing commission for provision of urban amenities, which included a weighty part of the roads administration, accepted three protocols assuming closure of more than 30km/19 miles of tram tracks in central districts.

Announcements that abandoned tram services were compensated for by the creation of new trolleybus routes or municipal bus traffic remained as mere announcements. Not a single section of trolleybus overhead wiring has so far been constructed, and the once dense tram network on Vasilyevsky Island and Petrogradskaya Side (a group of islands) was replaced with a single bus route.

All the rest were henceforth served only by private minibuses. Private operators, offering pay-as-you-enter services only (no long term tickets being accepted), have recovered more than 80% of closed municipal routes, thus disputing suggestions of "changed volumes of ridership."

This two-year period also witnessed the closure of several loops, all former service depots, two passenger depots and the conversion of another to a service facility - and the site of mass car scrapping. From a total of 1686 cars as at January 1997, the fleet decreased to 1045 by January 2005.

● In part two next issue we will cover the tramway's history from 2005… and some recent cautious grounds for optimism about the future. *TAUT*