

Estonia Railways

the heavy hauler

Estonia benefits from being on the very short transit corridor from the Commonwealth of Independent states (CIS) countries, as well as the western European countries. Recently, considerable investment has been made into the ports in Tallinn (importantly an ice free zone in winter) and export business is now thriving and bringing much money to the economy of this small country. Philip Wormald looks at what this interesting part of the world has to offer the railway enthusiast and photographer.

At the end of August 2001 Estonian Railways was privatised, and within a very short time a division of the World Bank granted a \$50 million (US) credit. Before this it had been very difficult for the railway to get much needed money for improvements to infrastructure (track renewal and lengthening of passing loops were a high priority) and much required new locomotives. Re-signalling is still required across much of the network and expansion of the current CTC (Central Traffic Control) system is planned.

BRS (Baltic Rail Services) run the rail operation nowadays, 66 per cent being owned by BRS and 34 per cent by the Republic of Estonia. Shareholders of BRS

include: Jarvis Estonia BV (the majority shareholder Jarvis PLC, the UK railway administration company), EEIF Rail BV (subsidiary of AIG Emerging Europe Infrastructure Fund), American railway and investment companies Rail World Estonia

BELOW: An RZD 2TE116, built by Lugansk from 1972, passes No. 1538, a C36-7i, (previously Union Pacific No. 2615 in the USA, and built by GE in 1985). Both locos are hauling oil trains near Jäneda on 23 June 2003, this illustration gives some impression of the heavy traffic level and very different traction in everyday use on this line. All photos: Phil Wormald



LLC and Railroad Development Corporation, and an Estonian investment group.

History, 1870 to date

November 1870 saw the first railway open for traffic with a line between Paldiski-Tallinn-Narva-Gatchina. In 1893 it was nationalised, and the first measure taken was for the Baltic railway to be connected to the Riga-Valga-Tartu and Valga-Pskov lines to make up the Baltic-Pskov railway network. In 1918 Estonian Railways (EVR) came into being, and on the broad gauge lines had 90 locomotives, 228 passenger coaches and 912 freight wagons. On narrow gauge tracks they had 72 locomotives, 38 passenger coaches and 1,392 freight wagons. EVR owned 648 km (403 miles) of broad-gauge and 187 km (116 miles) of narrow-gauge tracks. The length of the private Pärnu-Tallinn line was 268 kilometres (166.5 miles).

In 1940 EVR became part of the Russian railways, and at that stage 1,447 km (899 miles) were operated, 772 km (480 miles) were of broad-gauge and 675 km (419 miles)





ABOVE: C36-7i Nos. 1551 and 1547 (former UP Nos. 624 and 7947 built by GE in 1985) approach Vikipalu with an empty eastbound oil train on 21 April 2003. A local EMU from Aegviidu to Tallinn can be seen in the distance.

RIGHT: RZD 2TE116-1550, built by Lugansk around 1972, belches torrents of 'Kolonna' (fumes) into the atmosphere as it works hard just west of Kehra on a massive loaded westbound oil train on 20 April 2003. Each half section of the loco is fitted with a Kolonna 5D49 engine of 2,200 kW (3,000hp).



of narrow-gauge railways. In 1941 the railways were taken over by Germany, and all the broad-gauge track (1,524 mm) in Estonia was narrowed to 1,435 mm (standard gauge). Rolling stock from Deutsche Reichsbahn (DR) was then imported and used. In 1944, when the Russian Ministry of Transport reinstated its authority over the railways, the Red Army railway units returned all broad-gauge track to its original 1,524 mm gauge. ▶

Estonia Railways Infrastructure

Track gauge	1,520 mm (59.84 inches)
Total length of main lines, station tracks and sidings	1,353.2 km (841 miles)
Total length of main lines	693 km (430.6 miles)
Double track	115 km (71.4 miles)
Electrified	264.4 km (164.2 miles)
Lines with automatic blocking	503 km (312.5 miles)
Lines with semi-automatic blocking	182 km (113 miles)
Lines on reinforced concrete sleepers	521.5 km (324 miles)
Lines on wooden sleepers	831.7 km (516.7 miles)
Voltage of overhead contact system	3.3 kV, direct current
Sleepers/km	1,840 or 1,600 (station tracks)
Basic rail types on main lines	R65, (weight 64.6 kg/m), UIC60
Bridges and viaducts on main lines	340
Number of stations and passenger shelters	146
Government land used by Estonian Railways	5,000 ha
Buildings and facilities of Estonian Railways	1,190

◀ It was in 1957 when the transfer from steam to diesel traction commenced, and was completed two years later. The Russian council of ministers then decided to close down the narrow gauge network, with the final sections lasting until the 1970's. After some lines were closed or others converted, this left EVR with just 955 km (593 miles) of broad gauge lines.

BELOW: Class C36-7i No. 1525 (previously No. UP 7961 built by GE in 1985) hammers eastbound through Raasiku with a huge train consisting of grain hoppers, containers, wood and various empty vehicles on 21 April 2003.

Freight traffic today

During the entire Soviet period passenger traffic soared, jumping from 12.2 million in 1945 to 36.5 million in 1980, 10 times more than today. Freight traffic also increased dramatically from 4.3 million tons in 1945 to 30.1 in 1990. The main key in this huge transit potential is the massive port facilities near Tallinn at Muuga that was started in 1980, with operation commencing in 1986. Initially the main purpose of the port was for grain imports into Russia, but in the early 1990s major fuel terminals also began being based at Muuga, which led to a major share of exported petroleum products coming to the new terminals.

Growth of the oil traffic was enhanced

with co-operation and agreement between EVR and the October Railway of the Russian Federation. By 1999, 37.1 million tons of freight was carried, of which 18.6 million tons were petroleum products in transit from Russia. An average of 542 wagons were loaded and 1,499 unloaded daily. Freight traffic is heaviest at the stations at the Tallinn railway junction at Muuga (641 wagons daily), Maardu (295 wagons) and the yards close to Tallinn station (256 wagons). Traffic has continued to grow, and in the first half of 2000, 20.6 million tons of freight were handled with more than 60 per cent being petroleum products.

Much co-operation occurs today between Estonia and Russia, especially at the border stations, with customs procedures designed to assist in speeding up transit moves. Trains are now delivered so that officials from both sides are involved in simultaneous clearing of paperwork. Some trains also benefit from being through-worked by Russian diesels.

In 2002, EVR carried over 42 million tons of various goods, 3.65 million tons (9.5 per cent) more than in 2001. 8.9 per cent was domestic, 84.3 per cent transit, 5.6 per cent import and 1.2 per cent exports. Petroleum products consisted of about 70 per cent (29.5 million tons) of this total. The second largest product group was oil shale, with a volume of 3.3 million tons. The freight volume of fertilizers amounted to 2.7 million tons, showing an increase of more than 0.5 million tons compared to 2001. Transportation of grain amounted to 1.75 million tons, an increase that was 8.4 times compared to 0.2





ABOVE: Elderly RZD 2TE116-641 (built by Lugansk around 1972) painted in green livery is seen at Raasiku powering a loaded westbound oil train on the afternoon of 21 April 2003.

million tons in the previous year. Coal transportation volume amounted to 1.3 million tons, showing a decrease of three per cent. One million tons of wood was transported, about 0.5 per cent less than in 2001. Cargos of metals amounted to 0.69 million tons, also slightly less than the previous year.

Providing transit services for exports from Russia is a very important function for EVR. Approximately 35 million tons, around 83 per cent of the total transport volume, was related to Russian trade in 2002. The volume of transportation with Kazakhstan increased by 36 per cent and reached one million tons. Their largest freight transportation partners also include Belorussia (660,000 tons), Lithuania (560,000 tons), and Ukraine (550,000 tons).

Rolling stock

A 1997 project concerning the acquisition of main line diesel locomotives to increase the capacity of the railway was completed in 1999. The scheme provided Estonian Railways Ltd with 10 new main line diesel locomotives of Class 2TE116, constructed in Lugansk in the Ukraine. These are numbered 1411+1412 to 1429+1430, each bi-section loco having two numbers. The 2TE116 has been produced in vast quantities since 1972, and to date it is estimated that about 1,680 double section locomotives have

been built. They will be familiar in sound to many European enthusiasts as they have same Kolomna 5D49 engine as fitted to the German 232 family.

To permit operation of heavier traction and stock, EVR has raised its maximum axle load from 23 to 31 tonnes. Bridges and structures were carefully evaluated, and only minor work was required to accommodate this change. However, if the railway had not been vertically integrated, it is doubtful the axle load issue would have been dealt with so successfully. The similarity between Soviet and North American practice allowed the successful introduction of second-hand locos from North America. A fleet of second-hand General Electric-built C36-7 and C30-7A were re-gauged and equipped with Russian-style couplers and suitable cab signalling,

the locomotives having been built in 1984 and 1985 by GE. The aim was to replace EVRs existing Russian and Ukrainian-built loco fleet with the C36-7s. The first ▶

BELOW: Brand new 'Link Oil' 2TE116-1679, built by Lugansk in Ukraine in 2003, is seen just west of Lehtse heading a loaded westbound oil train on the morning of 24 June 2003. Some models of this loco design were fitted with dynamic brakes, these can be identified by a 'hump' behind the air conditioning pods on the cab roof. Note the body side windows missing on the leading section, this quite a common sight. Also note the 'washing line' radio aerial wire on roof, and lettering on front of loco indicating the 300th anniversary of Saint Petersburg.





ABOVE: A pair of C36-7i Ges, Nos. 1556 and 1526 (former UP 633 and 7967 built in 1985) pull hard uphill on the approach to Kehra on the evening of 21 April 2003 with a westbound train consisting mainly of oil tanks.

◀ of 74 locos reached Estonia in April 2001, and all had arrived by 2002. The deal also represents a significant initiative for General Electric, as successful introduction of these fleets in Estonia is expected to open the door to other countries in the former Soviet region. Already GE has purchased the shell of a section of a 2TE10 type loco and has installed a GE engine into it in the USA. It will soon return to Russia for extensive testing.

The 58 locos of C36-7 are now classified as C36-7i and the 19 C30-7As (the 'A' designates a 12-cylinder engine) are now classified C30-7Ai. Conventional USA-style driving stands are still included, but with digital displays added in the Estonian language. Generally, a single C36-7i (numbered in the 1500-1557 series) operates any train, although pairs can frequently be seen for balancing purposes or for avoiding the need to turn locomotives during the course of a duty. The smaller C30-7Ai locos (numbered 1558-1576) can assist on the heavy trains with another GE, or often work smaller freights on their own.

Some trains are still 'worked through' by Russian 2TE116s, some of which are branded with 'Link Oil' lettering on the side. During mid-2003, some brand new 2TE116s were supplied. These are in standard green livery with large yellow branding on the side. Unique electric train heat fitted 2TE116UP-0001 is also now branded with 'Link Oil' lettering, but it's not known if this loco is currently permitted to operate in Estonia. It certainly was seen there in 2001, but recent observations indicate that it may only work close to Saint Petersburg. Also, some much older 2TE116 locos dating from the mid-1970s still work though on some trains.

EVR today

In terms of its structure, EVR most closely resembles a North American railway. It is a

vertically integrated freight railway that provides access to suburban passenger operator Elektriraudtee, Inter-City passenger operator Edelaraudtee, and international passenger operator EVR Ekspress, which is 49 per cent owned by EVR. There are also certain European characteristics, such as the presence of a significant open access freight operator, Link Oil, based in Saint Petersburg.

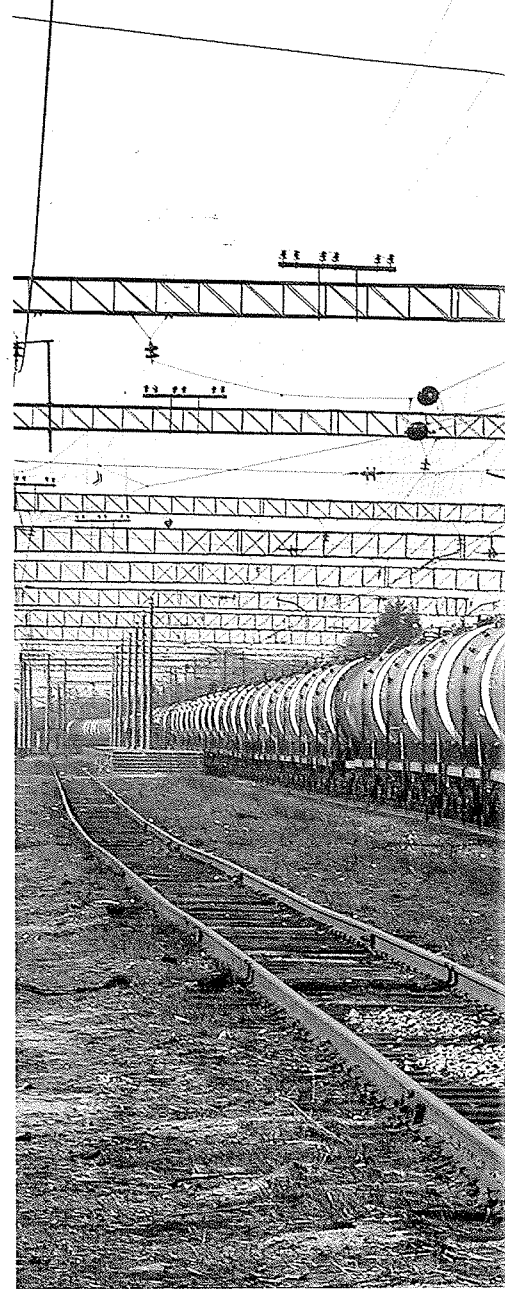
Freight operations bear a strong resemblance to North American practice. Block trains predominate, primarily export oil products, and these make up around 50 per cent of EVR's tonnage, including traffic handled by Link Oil. This is supplemented by export fertiliser and domestic oil shale movements for the power generation industry.

There is also significant wagonload traffic such as timber and cement for the domestic market and metals for export. EVR hauls around 40 million tonnes a year, which by US standards would rank it at the top of the Class II railways or a small Class I operator. EVR's 695 km (432 miles) of main lines consist of a mixture of double and single track, some controlled by CTC.

The future

In two or three years time it is hoped to improve border-crossing operations at Petseri, as currently there is no Estonian customs facility on the border crossing opposite Petseri, and trains therefore do not get customs clearance until arrival at Tartu (87 kilometres/54 miles away). On the busier Ivangorod-Narva crossing, 20-22 trains pass each day. October Railway in Russia is planning to provide electric power to the Estonian border in 2004-2005. The railway of course has its limits, the current capacity of 30-32 trains per day, can only be increased to 37.

Russia is now developing its own port capacities and is building new terminals. It is too early to predict the evolving competitive environment in the transit business, however, but when all conditions are set, the customer will best be able to choose where freight will be dealt with - via the Russian, Latvian, Lithuanian or Estonian ports. One thing is definite, the management of EVR is committed to maximizing the



ABOVE: Elderly RZD 2TE116-699 (built by Lugansk around 1972), in a rare red livery, passes Raasiku in the early afternoon of 21 April 2003, with an empty eastbound oil train of mainly very clean vehicles. Most of these trains normally consist of 60 wagons.

opportunity for Estonian ports to be the first choice for customers in the future.

Photography

The busy Tapa-Tallinn double track section is often chosen as the best place for railway photography, as it handles the most amount of traffic. Trains from Russia enter Estonia at either Petseri or Narva, and from the junction at Tapa they all come towards the capital. As the line is east-west it is best to try and capture eastbound traffic in the morning and the westbound later in the day. Traffic is fairly balanced, and on an average summer day about 25-30 freights pass in daylight hours (a lot less in winter, as the days are much shorter being so far north).

Enthusiasts should have no problems whatsoever taking photos from any public



place. Consider Estonia as free and easy as any European country. Falk security staff man the depots and yards, and anyone will soon be politely asked to leave if entering. Permission can be granted for depot visits from the main offices: Eesti Raudtee in 36 Pikk Street, Tallinn 15073, Estonia. (e-mail raudtee@evr.ee).

A suburban passenger service of local EMUs runs from Tallinn as far as Aegviidu. Once past Lagedi station, the busiest section, is reached as many oil trains branch off at Lagedi to reach oil terminals at Maardu and Muuga. To go a little bit further and away from the electrification, a DMU (these do not run very often, so an early start is needed!) needs to be taken. These stop at small stations before Tapa and provide good locations to see the heavy freight. The ▶

RIGHT: GEs Nos. 1530 and 1547 (previously UP 643 and 7990 built in 1985) languish in the setting sun at Tapa depot on the afternoon of 20 April 2003. Maintenance is shared between the depots at Tapa and Tallinn.



FACT FILE

National name of Estonia: 'Eesti Vabariik' (Republic of Estonia).

Size: 45,000 square kilometres (17,374 square miles).

Population: Approximately 1,396,000 (2000 figures).

Capital: Tallinn

Other major towns/ cities: Tartu, Narva and Parnu.

Main physical features: Lakes and marshes in a partly forested plain with 774 km (481 miles) of coastline. Lake Peipus and Narva River form the border with the Russian Federation.

Visa requirements: Not required for UK / USA or most (if not all European visitors).

Time difference: GMT +2 hours.

Chief tourist attractions: Splendid historic towns of Tallinn and Tartu, nature reserves and coastal resorts.

Major holidays: 1 January, 24 February, 1 May, 23/24 June, 25/26 December and Good Friday.

Accommodation: There are plenty of hotels in Tallinn, and they tend to cost about the same price as in any major western city. Much cheaper and perfectly adequate hotels can be found out of town in the smaller towns.

Reaching Estonia: Getting to Estonia from many European cities can be quite expensive as there are no cheap airlines flying there (yet). One very good option is to fly to Helsinki, and then take the ferry. A number of ferry companies operate regular sailings, and the crossing takes four hours. The Finnish people make regular trips to stock up on cheap goods. The fares on the boats are very cheap. A return ticket can be as little as about 25 Euro. There is a daily international train from Moscow, and every second day a train from Saint Petersburg. Both are sleeping car trains and reservation is compulsory. Trains are through worked by Russian (RZD) TEP70 locomotives.

Gauge: 5 feet

Network: 693 km (500 miles) operated by EVR

Currency: Kroon, (1 GB pound = 22 Kroon)

Tickets: Local tickets on trains or at stations

Reservations: Only on Moscow or Saint Petersburg trains

Photography: Free and easy!

Security: Very safe. Taxi drivers can over charge

Tours: Very few operated

Health/food/general: Excellent. Very clean and good food

Web sites to check out

Eesti Raudtee: <http://www.evr.ee>

EVR Ekspress: <http://www.evreksspress.ee>, Operator of international passenger trains to Russia

Edelaraudtee: <http://www.edel.ee>, Operator of domestic intercity passenger trains in Estonia

Elektriraudtee: <http://www.elektriraudtee.ee>, Operator of passenger trains to Tallinn's suburbs

Trains Estonia: <http://trains.future.ee/> Growing local railfans site

RIGHT: C36-7i and C30-7Ai Nos. 1545 and 1566 (previously UP 7947 built by GE in 1985 and Conrail 8124 built by GE in 1984) prepare to leave Tapa yard with a westbound mixed freight to Ülemiste yards (8 kilometres east of Tallinn) at midday on 22 April 2003.



◀ author has spent many hours near Lehtse, and the afternoon view of heavy trains slogging up the hill from the distant yards at Tapa is a favourite spot, with a road crossing at the east end of the station an almost perfect location. ■

■ Many thanks to EVR, Rail World and especially Henry Posner III, of the Railway Development Corporation for their kind assistance with this article.

RIGHT: A triple light loco move, formed of C36-7i, C30-7Ai and C36-7i, Nos. 1554, 1558 and 1523 (former UP 7998, Conrail 8084 and UP 7997 all built by GE in 1984/5), pass west of Lehtse in the mid morning heading west to Tallinn on 24 June 2003. These locos were most likely to have come off maintenance at Tapa depot and were heading to the yards at Muuga to return with eastbound services.

