

Estonian railways today



Left: M62-1111 heads a mixed freight through Kulli on 3 September 2002.

Philip Wormald

Right: Until the US locos started operating, EVR was forced to hire extra Class 2M62 from Latvian Railways. Here, LDZ 2M62-0339 is seen passing a Finnish track renewal train at Raasikua on 21 April 2002. **Sakari Salo**

by Sakari Salo and Ilkka Hovi

Estonia (Eesti to its inhabitants) is one of the "Baltic States", the others being Latvia and Lithuania. The country lies across the waterway from Finland and is bordered by Russia to the east and Latvia to the south. In a country the size of the Netherlands, Estonia has a population of only 1.5 million. The main language spoken is Estonian, which is related to Finnish although many words are

slightly different (*edela* means south-west in Estonian but south in Finnish) or completely different (*pulmat* means marriage in Estonian and problems in Finnish!) Gross domestic product per head is about €8000 – less than half that of Finland but somewhat higher than its Baltic neighbours.

Agriculture has been traditionally very important in the Estonian economy as has timber, 45% of the country being afforested. Dairy farming and fishing are the most important agricultural activities. Heavy industry includes oil shale and phosphate

mining, shipbuilding, textiles and machinery manufacturing. However, the majority of the workforce are employed in service industries. The main one of these which affects the railways is the ports. Estonia's railways carry far more freight than passengers and most of this is oil coming from Russia for export.

Railway history

The first railway line in Estonia opened on 5 November 1870 (or according to the Julian calendar on 24 October 1870). The line was built to broad gauge (1520 mm) and ran from Gatsina (Russia, on the St. Peterburg–Luga–Pskov line) via Narva, Tapa and Tallinn to Paldiski, 314 km of this, from Narva to Paldiski, being in Estonia. The next broad gauge lines were Tapa–Tartu (1876), Tartu–Valga–Petseri (1889), Keila–Haapsalu (1904) and Tartu–Petseri (1931).

Estonia also had a large number of 750 mm gauge railways. For example, all the lines which Edelarauttee owns today are former narrow gauge lines converted to broad gauge in the late 1960s. The last narrow gauge train on a public railway ran on 3 June 1973.

The broad gauge equipment was standard Russian and after World War I, the main types of locomotives were of Russian Types A, N, P^k, T and O. In the 1930s there were also some Estonian-built 2-4-2T and 0-6-2T locomotives. After World War II, Types Su (2-6-2), TE (2-10-0), Sh^a (USATC Type S160) and L (2-10-0) were used. Up until the early 1970s the massive Type P36 4-8-4 locomotives were used on Tallinn–Leningrad express trains.

The earliest types of narrow gauge locomotives were small Belgian 0-6-0T and standard Russian 0-8-0 types. Before World War II, the biggest types were 0-10-0 of German origin and 2-8-0 of French and Estonian construction. After World War II, before dieselisation, various 0-8-0 types dominated.

In 1963, Estonian railways became part of the Pribaltiiskaya Railway, with its headquarters in Riga, one of 15 zones of Soviet Railways (RZD), together with Latvian and Lithuanian railways. The main diesel locomotive types were VME1 (Ganz-Mávag Bo-Bos) and TEP60 (Kolomna Co-Cos), joined later by Types M62 and

Motive power of Estonian Railways (EVR), October 1991

Diesel-electric locomotives

	Type	Builder	Built	Power	Max. Speed	Number with EVR	Number built*
2M62	Co-Co+Co-Co	Lugansk	1976–87	1470 kW	100 km/h	38	1261
M62	Co-Co	Lugansk	1970–76	2 x 1470 kW	100 km/h	36	735
ChME3	Co-Co	CKD	1965–87	993 kW	95 km/h	40	6027
VME1	Bo-Bo	Ganz-Mavag	1958–66	441 kW	80 km/h	2	325
TGM3	B-B §	Lyudinovo	1956–67	552 kW	70 km/h	5	3774

Steam locomotives (used as movable steam boilers)

L	2-10-0	Various	1945–55	1648 kW	90 km/h	32	4200
Su	2-6-2	Various	1925–31	1177 kW	115 km/h	3	2682
TE	2-10-0	Various †	1942–45	1104 kW	80 km/h	1	6700

DMUs

D1	6-car	RVR	1966–70	2 x 736 kW	120 km/h	12	54
DR1A	6-car	RVR	1976–89	2 x 736 kW	120 km/h	17	180

EMUs

ER1	6-car	RVR	1958–62	2 x 800 kW	130 km/h	10	260
ER2	6-car	RVR	1962–84	2 x 800 kW	130 km/h	4	850
ER12	6-car	RVR	1981–89	2 x 800 kW	130 km/h	3	?

Passenger coaches 315
Freight wagons 6947

* for former Soviet Union

§ Diesel-hydraulic

† Wartime *Kriegslok*



ChME3. Narrow gauge diesel-electrics were of Type TU2. One must not forget that, before World War I, there were also three 14-tonne petrol-driven mechanical-transmission shunting locomotives on broad gauge and two on the narrow gauge. These were all built by Ilmarine works in Tallinn, which today is a very fine hotel!

The electrification of the 11.2 km Tallinn–Pääsküla line at 1500 V DC in 1924 used four electric railcars, M1–M4, converted locally from old coaches into power cars. From 1946 to 1958 former Berlin S-Bahn power cars, equipped with pantographs, were used (full details in Q&A, TR62). Electrification was upgraded to 3000 V DC from 1958 with standard Soviet EMUs.

Estonia regained independence on 20 August 1991 and from the beginning of October 1991, the Pribaltiiskaya Railway was divided into Estonian Railways (EVR), Latvian Railways (LZD), Lithuanian Railways (LG) and the railways of Kaliningrad. The now independent Eesti Raudtee (EVR) started operation on 1 January 1992. The railway joined the OSSHD (the Russian Organisation of Railway Cooperation) and International Union of Railways (UIC) in 1992, with UIC country code 26.

During the initial years, the railways operated basically as before whilst upgrading track and repairing equipment. Adjusting to the requirements of normal commercial operations took some time. The development

of railways in the Soviet Union (referred to by Estonians nowadays as the “era of occupation”) was pre-eminently according to the needs of the Soviet military.

On 25 February 1999, the Estonian parliament (*Riikikogu*) accepted the reorganisation and privatisation of Eesti Raudtee. As reported in TR, the process was not easy and threw up a series of scandals as we describe below.

The present network

The present (late 2002) Estonian railway network includes lines electrified at 3000 V DC overhead Tallinn–Paldiski, Keila–Riisipere, Klooga–Klooga Rand, Tallinn–Aegviidu. Non-electrified lines are Tallinn–Lelle–Pärnu–Mõisaküla, Lelle–Viljandi, Aegviidu–Tapa–Narva, Auvere–Musta, Tapa–Tartu–Valga, Tartu–Orava–Russian border and Valga–Piisa–Russian

border. There are also branches such as Ülemiste/Lagedi–Muuga port line. Infrastructure is generally owned by the operators. Double track exists on the Tallinn–Pääsküla (plus km 89–Valingu, near Keila), Tallinn–Tapa and Oru–Vaivara sections.

Total length of the network is 1024 km of which 115 km double track and 132 km electrified. Maximum speeds for passenger trains are 100 km/h or 120 km/h, whilst freight trains have a 90 km/h speed limit.

The Tallinn–Keila, Tallinn–Tapa–Tartu–Palupera, Ülemiste/Lagedi–Muuga and Valga–Piisa–Latvian border/Petseri lines are equipped with an automatic block system. The Keila–Paldiski, Keila–Riisipere, Tallinn–Pärnu, Lelle–Viljandi, Tartu–Orava–Russian border/ Petseri and Palupera–Valga lines have semiautomatic blocking. The Ülemiste–Tapa–Tartu and

Right: The M62 fleet has been supplemented by 2TE116 double locos in recent years. The photo on page 3 shows an EVR double loco. In addition, Link Oil operates through to Tallinn. Here, 2TE116-448, in Link Oil blue livery, heads a train of oil through Kehra on 3 September 2002. **Philip Wormald**



A potted history of Estonia

Of the Finno-Ugrian tribes the Estonians settled in today's Estonia, while the Finns moved northward across the Gulf of Finland. The Danes conquered northern Estonia including Tallinn in 1219. The Danish influence ended in 1346 when the Danish part of Estonia was sold to the Teutonic Order. The German Hanseatic League dominated trade in area, Tallinn belonging to the League from 1248.

The city of Narva was then founded to compete with Tallinn for the trade with Russia. In 1561, the northern part of Estonia was conquered by Sweden and the rest of the present Estonia from 1629. In 1630 the first university was founded in the city of Tartu (by Gustaph Adolffus).

The Great Northern War began in 1700 and Estonia became part of Russia in 1721. Peter the Great of Russia founded St. Peterburg in 1703.

Estonia remained under Russian rule until 24 February 1918 when independence was declared. There was then a brief German occupation which ended in November 1918 after which the State fought a war and won independence from Soviet Russia in 1920.

The era of independence ended in summer 1940 when the Soviet Union occupied the country. Estonia was overrun successively by German and Soviet forces during World War II, the country becoming part of the Soviet Union.

After the collapse of the USSR, independence was restored on 20 August 1991. Estonia is due to join the EU in May 2004. **IH**

Facts and figures

Republic of Estonia

Area: 45 227 sq. km

Population: 1.4 million

- Estonians 68%
- Russians 28%
- Ukrainians 2%
- Belarussians 1%
- Finns 1%

Largest cities:

- Tallinn (400 000)
- Tartu (101 000)
- Narva (69 000)
- Kohtla-Järve (48 000)
- Pärnu (46 000)

Official language: Estonian

Other languages:

English, Russian, German and Finnish

Climate: humid/temperate

Highest point:

Suur Munamägi (Great Egg Hill) 318 m

Currency:

Estonian Kroon (EEK) = 100 sents

1 Euro = EEK 15.64 (March 2003)

1 GBP = EEK 22.64 (March 2003)

Distances from Tallinn:

- Helsinki 85 km
- Riga 307 km
- St. Peterburg 395 km
- Stockholm 405 km

Valga–Piusa–Russian border/Petseri lines have CTC. There are hopes of building a high speed line from Tallinn via Pärnu to Riga, Vilnius and Warszawa by 2012 which may advance further once these four capitals become part of the EU, in principle in 2004.

The EVR track gauge was 1520 mm, but after independence, technical specifications were received from Finland and the gauge was changed nominally to 1524 mm. The rail type on main lines is either R65 or UIC 60. Pointwork follows German/Austrian technology. Most of the points are made by the VAE "New Point Works" in Riga, Latvia.

In south-eastern Estonia there is a difficult situation because the junction town of Petseri is now in Russia so operation from Latvia to Estonia via Petseri (also known as Pecory) means two border crossings for anyone wishing to travel from Võru to Põlva, for example. At present, customs declarations are taken care of at Orava, Tartu and Valga. A new freight station is planned to Koidula. The new installation must fulfil all the Schengen Treaty requirements as Estonia has been accepted as a future EU member. The new station is planned by a consortium led by Finnish company Oy VR-Track Ltd. and including Vesihydro Oy, Atkins Danmark, Eesti Projekt and ETP-Group of Estonia. There will be ten tracks and a wagon servicing building. Valga–Tartu trains will then be able to avoid the border crossing. The estimated number of trains will be nine to ten daily. The number of trains rises to 35 if Petseri–Valga–Riga (Latvia) oil trains are included.

Raudteeamet

Raudteeamet, the Estonian Railway Administration, was founded on 1 May 1999 to generally oversee and set standards for Estonian railways. However, unlike the case of many recent European reforms, the administration does not own railway infrastructure; it is owned by the operators.

Eesti Raudtee (EVR)

EVR (Estonian Railways), the biggest operator in Estonia, was finally sold off on 31 August 2001 following an aborted attempt during which the highest bidder was found to have some extremely dodgy credentials. The second highest bidder was Baltic Rail Services (BRS). 67% of EVR is now owned by BRS which in turn is owned by Estonian investor group Ganiger Invest, UK infrastructure company Jarvis International, Rail World Estonia (Ed Burkhardt's company) and another US company, Railroad Development Corporation. The other 33% remains State-owned.

Eesti Raudtee owns a total of 691 km of main line, including Tallinn–Keila–Klooga–Paldiski, Keila–Riisipere, Klooga–Klooga Rand, Tallinn–Tapa–Narva, Auvere–Musta, Tapa–Tartu–Valga, Tartu–Orava–Russian border, Valga–Piusa–Russian border, Ülemiste–Muuga–Lagedi and a few other branches. EVR uses only diesel locomotives and runs only freight trains. Passenger traffic on these lines is taken care of by Edelaraudtee, EVR Ekspress and Elektriraudtee (see below).

The EVR headquarters is situated in Tallinn. CTC operations are located in the same building, not far from Tallinn's main railway station. It is planned to move the HQ to a cheaper premises nearer the railway.

EVR employs 3400 staff, down from 2400 on privatisation. Stations are still manned, even on the CTC lines, as CTC operators are not able to set all the points in a station. However, there are plans to eliminate staff at many stations.

Track maintenance is carried out by EVR Koehne. VR-Track has some contracts to clean ballast using Finnish-owned machinery.

The line between Tallinn and Narva has recently been upgraded by building a second track between Oru and Vaivara. During 2003 loops on the Tapa–Narva line will be



Above: GE locos 1557 and 1518 in multiple are uncoupled from a 4700 tonne oil train at Muuga as the snow falls heavily on 8 November 2002. **Sakari Salo**

ESTONIA



KEY:

- Electrified 3000 V DC
- Non-electrified
- Non-electrified planned
- Non-electrified 750 mm gauge
- - - Non-electrified freight only
- - - PR Põlevikivi Raudtee
- Ferry route

Note:
All lines owned by EVR except where named

SCALE (m):

0 20 40 60 80

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lengthened to accommodate longer trains weighing up to 8000 tonnes. Russian Railways (RZD) are at present electrifying to Narva where EVR diesels take over and haul the whole train to Tallinn's port of Muuga. A 1990s plan to electrify from Narva to Tallinn has been dropped.

85% of the traffic hauled by EVR is in transit from Russia, and 50% consists of oil products, other important traffic being fertiliser for export and domestic oil shale movements. Wagonload traffic mainly consists of timber, cement and metals. These are sorted in yards at Tallinn-Tapli (hump), Ülemiste (hump), a new yard at Muuga (hump), Tapa (hump), Narva (flat) and Valga (flat). In 2002, EVR hauled a total of 42 million tonnes, up 14% on the previous year. The other major corridor for oil trains is normally (Pskov-) Petseri-Valga-Riga. EVR and Russian company Link Oil are soon to start a weekly Muuga-Moskva (a run of about 800 km) container train using EVR container wagons. EVR is also planning to buy more hopper and tank wagons.

In addition to EVR, Russian company Link Oil runs its own trains from refineries in the St. Petersburg area to Muuga, hauling about 10 million tonnes per year. Link Oil has a small fleet of Class 2TE116 locos which have been finished in a blue livery and leases more as needed from RZD. These locos operate throughout, with EVR drivers in Estonia. Under the law governing privatisation, EVR is obliged to grant open access up to 20% of its capacity. A new law could change this to full open access. Unsurprisingly, EVR is contesting this.

Although this heavy traffic looked good when BRS decided to buy up EVR and provides a profit for the consortium at present, things may be turning sour. The Russians prefer to see their oil handled by one of their own ports and a new facility is now under construction at Primorsk, near St. Petersburg, although this ices up in winter. Recently, problems started on the route from Russia, via Estonia, to Latvia. The Russian company LUKoil has said it would cease exports via Ventspils, Latvia in 2004, despite this being an ice-free port. At the beginning of 2003, Moskva cut off all oil exports via Ventspils, supposedly because of high costs. However, most observers believe this is a clumsy tactic to try to influence the privatisation of Ventspils' oil handling facility in Russia's favour. Whatever the outcome, this could be worrying for Estonia and EVR as the railway company relies so heavily on Russian oil.

• **Motive power**

Almost as soon as BRS had taken control of EVR, Ed Burkhardt announced that the existing diesel fleet would be replaced by 77 US-built General Electric locomotives – 58 Type C36-7i (ex-Union Pacific) and 19 Type C30-7Ai (ex-Conrail).



Above: Russian Railways (RZD) loco TEP70-0275 stands at Tallinn on 4 September 2002 with train 4, the 16.52 overnight to Moskva which will arrive at 09.25 the next day. The train has sleeping cars and a restaurant car. **Philip Wormald**

Below: Only a few Class D1 DMUs remain with Edelarauttee, all of which are now stored. This one is D1 588-1 which is seen at Pärnu on 4 August 2001 with a train to Tallinn. **Sakari Salo**





At the end of 2000 EVR had a fleet of 132 diesel locos, 69 of them actually formed as 39½ permanently-coupled double units. The fleet is numbered in the following series – the EVR number series does **not** correspond in any way to former Soviet numbering which some locos still carry:

Class	Number series	Number in stock (Jan. 2003)
M62	1100	8
2M62	1200	5
Class ChME3	1300	33
2TE116	1400	15
US locos	1500	77

During 2001, six Class 2M62 were withdrawn, five further Class 2TE116 locomotives were purchased from Ukraine and five Class ChME3 were transferred from Muuga Terminal to EVR. This fleet could not cope with increased traffic in spring 2002 and EVR therefore hired further 2M62 locomotives from Latvian Railways (LZD) for four to five months. However, further Class M62 and 2M62 were withdrawn in 2002 as US-built locos took over.

The US-built locos were built by General Electric in the 1980s and are multiple equipped. The starting tractive effort of the

US loco is 20% higher at 20 km/h than the older locomotives. Fuel consumption is 20% lower than that of a 2M62 double locomotive. However, the axle load of the US-built locos is 31 tonnes – a massive increase on the normal 22.5 tonnes limit on EVR traction until now. The US locos have been tested with a single locomotive hauling a 5500-tonne

train and two locos have taken an 8000-tonne train. A 2M62 is limited to 4000 tonnes and a 2TE116 to 5500 tonnes.

The US loco must run cab end forward and a single loco must therefore be turned at the end of a run. When in multiple, the front locomotive must run cab first. Raudteematt has ruled that visibility is too poor when running backwards.

The first Type C36-7i locomotives arrived in Tallinn at the end of May 2002, the first to be unloaded being 1511. The first Type C30-7Ai arrived in November 2002, the first being 1563. The last shipload arrived on 23 January 2003 but had to dock at Ventspils in Latvia with onward transit to Tallinn by rail due to thick ice in the Baltic. The locos have been regauged, modernised and equipped with Russian-style couplers.

The US locomotives have functioned well so far. However, there was a near miss on 10 August 2002 (TR82) when a driver apparently fell asleep. As the result all locomotives will be equipped with the VEPS computer system under which the driver can see a signal repeater, brake pressure and speed. The system also shows maximum speed, time, date and duration of running time.



Top: The main shunting loco in Estonia is the Czech-built Class ChME3. Here, ChME3-3141, in the recent Edelaraudtee livery, heads an empty stock train at Tallinn station on 4 September 2002.

Philip Wormald

Above right: Some Class DR1 units have been shortened to 3-car thanks to the use of driving trailers. One of these leads DR1B-3710 here, seen at Aegviidu on 9 July 2002 with the 18.38 Tallinn–Narva service.

Right: Former Soviet DMUs have been considerably improved by the Edelaraudtee livery. Here, DR1B-3704+3705 arrive at Mustjõe on 9 July 2002 with the 15.40 Valga–Tallinn.

Ernst van Gulden (2)



Left: ER EMU 2305, one of the older Type ER1 sets, stands at Aegviidu on 9 July 2002 with a train for Tallinn. On the left is M62-1132 which is operated by EVR KOEHNE, the track maintenance section of EVR. **Ernst van Gulden**

Comparison of new and old locos

- 2M62: 2 x 1470 kW
- 2TE116: 2 x 2250 kW
- C36-7i: 2685 kW
- C30-7Ai: 2237 kW

The older locomotives are very expensive to maintain – Class 2TE116 must be serviced every 72 hours, for example, and give 80% availability. In contrast, the US locos have a 92-day service interval! Heavy overhauls are carried out every eight years for Class 2TE116 and should be every 12 years for Type C36-7i and C30-7Ai locos.

The older Type M62 (built 1970–76) and 2M62 (built 1978–87) locos leak oil and are now unacceptable from an environmental point of view. Class 2M62 turn in only 60% availability. Following the arrival of the first US locos, five Class 2TE116 and two Class ChME3 locos were sold at the end of 2002. Most Class M62 and 2M62 will be withdrawn in the near future.

EVR motive power depots and repair facilities are located in Tapa (the biggest facility), Tallinn, Narva, Tartu and Valga. In Tallinn and Tapa there are also wagon repair shops. The reduced need for servicing will make Tapa depot redundant. Instead of this facility, there will be a new servicing hall in Muuga (Tallinn's port area) with bays for six locos and plus an outside standing area for two locos. All normal daily servicing will be carried out in Muuga, whilst classified repairs will be carried out Tallinn Kopli MPD.

A report in early 2003 suggested that the new Estonian government wanted to renationalise EVR and has been putting pressure on the company, accusing the new locos of damaging infrastructure. Whether this is true or not remains unclear.



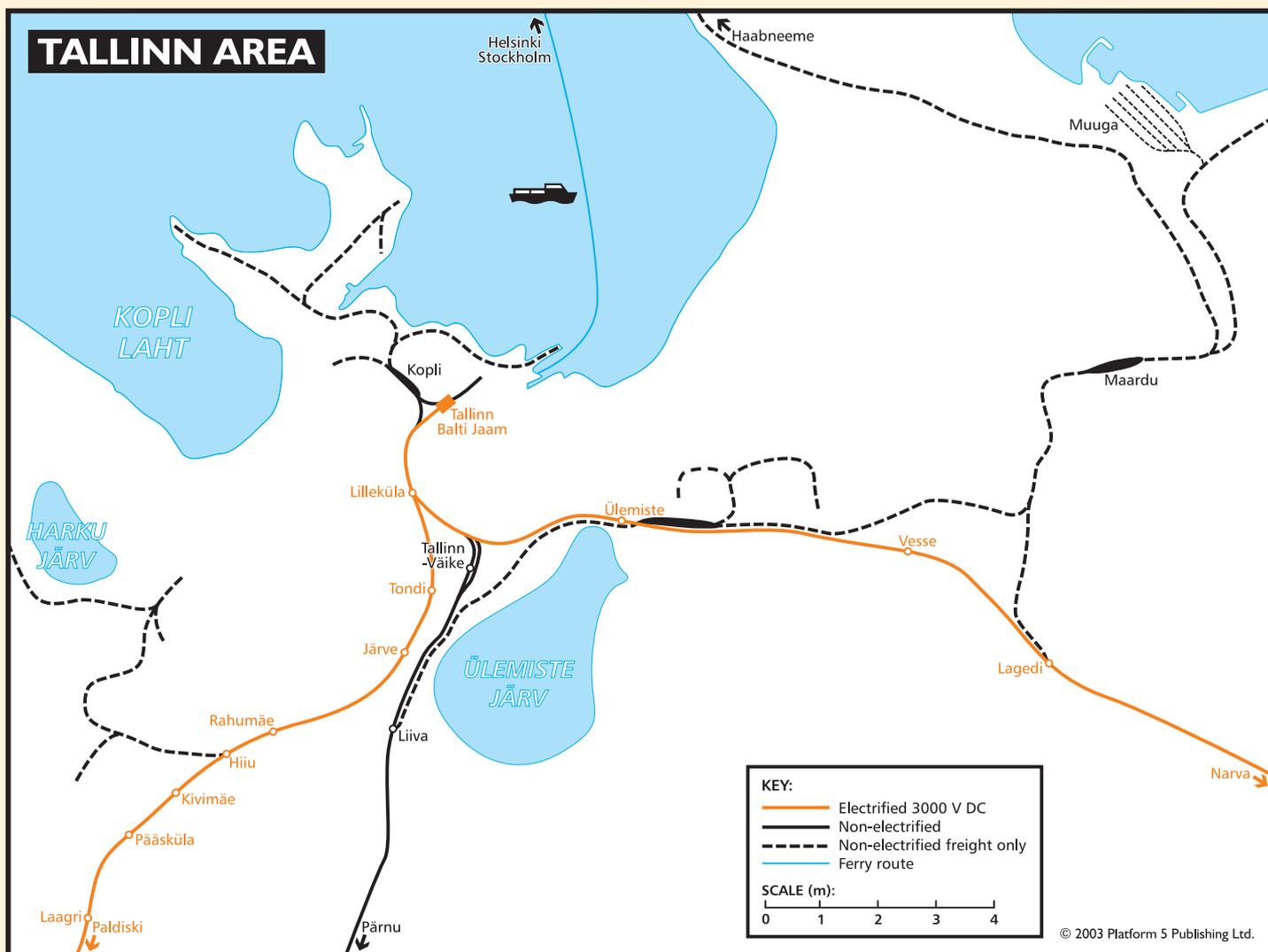
Above: ER EMU 2104 receives a polish at the coastal terminus of Paldiski which has a fine wooden station building of which there are many in Estonia. **Sakari Salo**

Below: The unique shunting "loco" MEV-1 at Pääsküla depot on 9 July 2002. **Ernst van Gulden**



Edelaraudtee

Edelaraudtee AS (South-West Railway) started operation on 3 June 1996. The company was officially founded in 1997 and then privatised in 2000 when the company was purchased by British company GB Railways. The company owns the lines Tallinn–Mõisaküla and Lelle–Viljandi (a total of 300 km) where freight traffic is hauled by diesel locomotives and passengers are carried by diesel multiple units. Indeed, Edelaraudtee runs all local trains in the whole of Estonia, except for electric Tallinn suburban services which are operated by Elektriraudtee. International services run under the brand EVR Ekspress. Edelaraudtee pays track access charges to EVR. Edelaraudtee is divided into *Infa AS* (track maintenance), *Haldus AS* (commercial management), *AS Ühined Depood* (rolling stock maintenance) and *AS EVR Ekspress* (international passenger traffic).



• Difficult beginnings

Soon after the company was privatised, Estonian State subsidies to passenger services were withdrawn in early 2001 and Edelaraudtee was forced to cancel all services from 4 March 2001 on the lines Valga–Veski, Tartu–Orava, Tallinn–Narva and Narva–Musta, the latter service being bought up by a local electricity company. In addition, the number of trains was reduced on the Tallinn–Tartu–Valga line. As a consequence there were no rail passenger services between Estonia and Latvia. Latvian Railways (LZD) cut back its former connecting train from Valga (Estonia) to Lugazi (Latvia) to where the service still runs. Some trains were replaced by buses to the dismay of the local population.

The State then reversed the decision at the beginning of September 2001 and trains started to run again on the Tallinn–Jõhvi and Tartu–Orava lines, some services actually being increased. It was again possible to travel from Tallinn to Valga but the Latvian train was not reinstated across the border. At present (late 2002) there is still an approximately 4 km gap between what were once connecting services! Today, there are four trains daily Tallinn–Tartu, one continuing to Valga. There is a second Tartu–Valga, connecting with the afternoon train from Tallinn, plus two return Tartu–Elva

trains. Just one daily train pair runs Orava–Tartu. The Tallinn–Tartu service was recently boosted from two to four trains a day, the fastest journey taking just over 2½ instead of 3¼ hours. New trains have first class accommodation and run 07.52 (①–⑥) and 16.23 (①–⑦) Tallinn–Tartu, and 07.09 (①–⑥) and 16.45 (①–⑥/⑦) Tartu–Tallinn, each calling only at Tapa and Jõgeva. Sadly, the new trains are not timed to make connections to/from Orava and Valga.

From 2 June 2002, the Tallinn–Jõhvi train was upgraded to a daily service and extended to Narva. This, however, is the only passenger train on the Narva line apart from international services.

The Pärnu services cannot compete with buses, as the train takes three hours while buses take just two. On this line, there are seven daily return trains Tallinn–Rapla and five to Lelle of which one continues to Pärnu (a second runs from Rapla), three to Turi and two to Viljandi. Trains are generally all stations although a Friday–Sunday afternoon extra runs semi-fast Tallinn–Viljandi.

The total number of passengers carried by Edelaraudtee in 2002 was 1.52 million, only about half the traffic carried in 1999.

Most diesel multiple units have only second class accommodation but the company also owns two 6-car DMUs of Type DR1A named “Johanna” and “Susanna” which have a bar coach with TV and “ball sea” for children.

Since 20 December 2002, there has also been a first class coach in the Tallinn–Tartu service. This is a refurbished DR1BJ driving trailer. While standing in the bar, a customer is able to see the track ahead; as a novelty, seats can be reserved in advance.

• EVR Ekspress

International passenger services run under the brand EVR Ekspress, which is 51% owned by Edelaraudtee and 49% by EVR. There is a daily service to Moskva, 965 km away, with sleepers and a restaurant car. This leaves Tallinn just before 17.00 and arrives in Moskva at 09.25 the next morning. Timings are similar in the opposite direction. An overnight train runs every second day (even dates) to St. Peterburg (381 km) leaving at 22.15 and arriving at 08.24. The return service, on odd dates, runs during the daytime, leaving St. Peterburg at 13.35 and arriving in Tallinn at 21.49. These trains are worked throughout by Russian Railways’ (RZD) Class TEP70 locomotives manned by Edelaraudtee drivers. This is less expensive than using its own five TEP70 locos which are stored at Tallinn-Väike.

In summer 2002 a twice-weekly service ran to Minsk in Belarus (via Valga, Lugazi, Riga and Vilnius), with two through coaches to Kiev. It is not yet clear if this service will run in summer 2003. As mentioned above, no regular services run into Latvia at present.

The stock of expresses has recently been refurbished. The Moskva train is soon to receive a blue-liveried coach known as the "Imperial Saloon". The coach has been refurbished internally at Edelaraudtee's Telliskivi wagon works.

Edelaraudtee AS occasionally hires L-class 2-10-0 steam engine L-3297 "KASPAR" (Lugansk, 1953) for charter trains.

• Loco and DMU fleet

AS Ühined Depood has two depots. All locomotives are serviced and repaired at Tallinn Väike depot. The company uses Class ChME3 locomotives for freight trains, one Class M62 acting as spare. One Class TGM4 is used as shunting engine.

Passenger trains are operated by diesel multiple units of Type DR1B – upgraded from DR1 and DR1A classes. These run in the original 6-car formations whilst others have become 3-car by dint of converting the third coach into a driving trailer. Units are now being painted in a pleasant turquoise and white livery whilst most were "army green" and others were in red in the past. Four Type D1 DMUs – D1-588, 654, 692 and 801 – have been out of use since early 2001 and will be sold.

Telliskivi wagon works is in central Tallinn, next to the line connecting Tallinn's main station and Tallinn Kopli depot. Coaches are repaired and repainted at Telliskivi, as are DMUs on occasions.

Edelaraudtee has bought some used equipment from Finland including older Type Mas four-wheel ballast wagons and three Type Tka6 motor trolleys (*dresiin*, like the French *draisine*, in Estonian). These are former VR Tka6-150, 160 and 159, now numbered 04 to 06 and used for permanent way work. Consideration has been given to using them for shunting in sidings where track is in poor condition and heavier locomotives have difficulty staying on the rails.

The first Estonian "Hand Car Rally" was organised by Edelaraudtee on 15/16 June 2002 over the 187 km Liiva-Türi/Pärnu line.



The winner was Edelaraudtee's E-Team, other contestants including "Tuikku" from Finland, Elektriraudtee and VR from Finland.

Elektriraudtee

Elektriraudtee AS (Electric Railway, ER) was founded on 23 December 1998 in order to take over operation of Tallinn electrified suburban services from the beginning of 1999. Shares are all owned by the Estonian government, represented by the Ministry of Transport.

Elektriraudtee runs trains on a 132 km network electrified at 3000 V DC overhead consisting of the Tallinn-Keila-Klooga-Paldiski, Keila-Riisipere, Klooga-Klooga-Rand and Tallinn-Aegviidu lines which are owned by EVR.

The head office and motive power depot are both in Pääsküla. The servicing depot can accommodate two EMUs, which receive a 4-hour check every tenth day and are serviced for eight hours every second month. Heavy repairs are carried out after 150 000 km, 300 000 km and 600 000 km.

The Class ER1 and ER2 EMUs were built by RVR in Riga, now in Latvia. ER has a total fleet of around 60 EMU cars, which are formed into 14 trains in daily operation. Originally the EMUs were 6-car, but nowadays (2002) most have been reduced to 4-car. In 2001, driving trailer 2401 was equipped with traction motors and with coach 2402 formed 2-car unit "Elektra" for use at off-peak periods. The idea was found not to be practical and both coaches are now integrated into normal units.

Class ER1 were built in 1959-60 and are the most numerous, whilst Class ER2, ER2M (M = modernised, this covering body design, plus ventilation and electrical systems) and ER2S units were built in 1974-82. ER2 coaches are rebuilt from Class ER12 units. Earlier units (ER1 and ER2) have rounded front ends, later ones are squarer. The original wooden bench seats have now been replaced with new individual plastic seats in most sets. Units are now finished in a blue and white livery.

The numbering system (RVR EMUs are formed of 2-car pairs, the outer ones being driving trailer + power car, the inner ones intermediate trailer + power car) is:

- 2100 series: ER2 driving trailers.
- 2200 series: ER2S driving trailers.
- 2300 series: ER1 driving trailers.
- 2400 series: ER2M driving power cars.
- 2500 series: ET2R driving power cars bought from Russia in 2002, entering traffic on 10 December that year.
- 3100 series: ER2 power cars.
- 3200 series: ER2S power cars.
- 3300 series: ER1 power cars.
- 4100 series: ER2 intermediate trailers.
- 4200 series: ER2S intermediate trailers.



Left: Haapsalu Raudtee M62 loco "Robert" shunts at Palivere on 28 May 2002. **Sakari Salo**

Right: The museum at Lavassaare is building up a collection of 750 mm gauge locos and stock. VP-1-899 is an 0-8-0 built by Vitlinsk in 1951. **Eddie Barnes**

Left: Many industrial railways use Type TGM4 B-B diesel-hydraulic locos built by Lyudinovo from 1974 to a 15-year-old design. This loco, TGM4A-1134 belongs to Horizon Pulp and Paper (*Tselluloosi Ja Paberi*) and is seen at Kehra on 2 September 2002.

Philip Wormald

Right: The Tootsi peat railway employs 750 mm gauge electric locos for shunting at Tootsi. Here a loco is seen at the peat tippler on 30 April 1999.

Eddie Barnes

The company has one shunting locomotive in the form of rebuilt motor coach ER2-3153 now numbered MEV-1 (*manööverelektrivedur 1 = shunting electric locomotive 1*). This is restricted to running in the Pääsküla depot area.

Services are not very frequent compared with what readers might expect of a capital city. For example, services on the Aegviidu line are about hourly in the peak, employing just three EMUs, and there are gaps of four hours between the morning peak and lunchtime services. To the west of the city, services are about every 20 minutes in the peak and about every 40 minutes off-peak as far as Keila. Some peak trains terminate at Pääsküla. Nine trains a day extend from Keila to Paldiski and another nine to Riisipere. Only four trains a day run to Klooga Rand. ER carried 3.4 million passengers in 2001 and employs about 200 staff.

Timetables can be found (in *Excel* format only) on the ER website under (*kehtiv*) *soiduplaan*. Train tickets are valid only on the trains of the company which issued the ticket. Since 22 September 2002 it has been possible to buy a combined ticket valid for 30 days on all trains, trams, trolleybuses and buses in the Tallinn area.

Haapsalu Raudtee

About five years ago, the 53 km Riisipere–Haapsalu line was put up for sale. There have been no passenger services since 1995 and



the harbour line Haapsalu–Rohukyla has been lifted. A group of businessmen made an offer and formed Oü Haapsalu Raudtee (HR) or the Haapsalu Railway.

The company has two locomotives – Type M62 "Robert" (ex EVR 1125, former SZD M62-1216) and TGM2-189, a two-axle, 185 kW shunter. There are seven employees, all based in Haapsalu.

Trains run as required, taking wagons as far as Riisipere station. In 2001, 400 wagons were transported and in 2002 the number was expected to rise to 600. Only charter passenger trains run on the railway but the company was discussing restarting regular passenger trains in late 2002. Haapsalu is the biggest town on the line but has a population of only 17 000. Other towns on the line are Taebia, Palivere, Risti and Turba.

Industrial railways

• Põlevkivi Raudtee

Of industrial railways in Estonia, the biggest by far is **Põlevkivi Raudtee** (literally the "burning stone railway", meaning oil shale

railway) with a track length of over 200 km of broad gauge, the most recent 11.5 km section opening in 2001. The railway connects to EVR at Püssi, Kohtla-Järve, Jõhvi and Vaivara stations – all on the Tapa–Narva line – but also feeds oil shale into local power stations.

The fleet consists of 21 Type TEM2 locomotives and 610 wagons. The railway has six motor trolleys, the newest one being former VR Tka6-164. The depot and wagon works is in Kohtla-Järve but is situated in an area owned by another company. Thus, in February 2003, construction work was due to begin on a new depot at a cost of EEK 20 million (GBP 880 000). Heavy repairs for locomotives are made at Daugavpils in Latvia whilst some locomotives have been repaired at Balti Laevaremontitehas (Baltic ship repair works) in Tallinn.

The company employs 490 people and carries about 15 million tonnes (1999 figure) annually. The company which owns the railway also owns oil shale mines and power plants.

• Tootsi Turvas

AS Tootsi Turvas runs the 30 km 750 mm gauge Tootsi Peat Railway from Tootsi to Lavassaare, serving a peat bog near Pärnu. The annual output of the site is about 350 000 tonnes of peat which is used for gardening and agriculture. In summer, there are about 400 employees and five or six trains per day.

Otherwise, the railway has a depot and is connected to a museum (see below) at Lavassaare with a remarkable range of locos from all over the former Soviet Union including steam, diesel and electric locos! The electric locos operate only in the factory at Tootsi.

AS Tootsi Turvas was bought by a Finnish company Vapo Oy in 2002. This may mean difficult times for this small railway.

Pictures of stock can be found at: http://mercurio.iet.unipi.it/pix/ee/narrow_gauge/pix.html



Right: Edelaraudtee owns this superb Class L 2-10-0 No. 3297 "KASPAR" and uses it on specials. It is seen at Viljandi on 9 July 2001. **Sakari Salo**

Railway museums

The Estonia Railway Museum was established in 1970 and was later divided into two sections. The narrow gauge equipment is at Lavassaare (with a connection to the Tootsi Peat Railway) and broad gauge exhibits are stored at Haapsalu.

At Lavassaare there are ten narrow gauge steam locomotives, Gr-319, Kch4-332 (locomotive) + PT4-114 (tender), Kunda Factory No. 5, VP1-899 and HF 11017. Motor locomotives are Deutz, TU2-101, TU3-002, TU4-1781 and TU6D-0378. There are also several coaches and wagons. Museum trains run on Saturdays from June to September.

The broad gauge collection at Haapsalu is stored next to the station. Small items are in the museum in one end of the station, whilst at the other end of the station there is the main office of the Ou Haapsalu Raudtee (see above). The collection includes TE-3368 (2-10-0 *Kriegslok*), Su 252-94 (2-6-2), L-1646 (2-10-0), VME1-116 (Bo-Bo) and TEP60-1006 (former SZD 0924, Co-Co). The collection also includes coaches and wagons.

The Haapsalu station building itself is impressive. The Russian Tzar often visited the town and thus the station platform canopy is 216 m long. There is also a railway hotel at the station with showers.

In Estonia, other museum locomotives include the following:

- Tallinn Railway Technical School: Kch4-100 (0-8-0, 750 mm gauge);
- Tapa: L-1361;
- Türi station park: Kch4-110;
- Türi freight yard: L-5049 (plus tender of L-5099);
- Valga station: Su 251-64, restored as 251-98 (note that Su 251-58 is a running RZD museum loco at St. Petersburg)

General

There are many changes taking place on Estonian railways at present, with the once incredible sight of former Soviet and US locos side-by-side now commonplace. Travel to Estonia can be made without a visa. Photography is free but the Falck (security service) agents around depots are likely to actively, but politely, show visitors off the premises. If one wants to visit a depot it is necessary to obtain the permission first. Bigger groups can try via e-mail addresses given on the websites listed below.

Right: Tallinn has an tramway system totalling 39 km of 1067 mm gauge track. Here, Skoda tram 122 has to give way to ChME3 3356 on a local trip freight on 3 August 2001. Coincidentally, both were built in Czechoslovakia.

Sakari Salo



Note that understand the Eastern Bloc influence is still strong – answers may take a lot time to arrive and written information or answers are difficult to obtain. Individual persons can always try the usual method – by presenting themselves at the depot foreman's office.

Train watching

The service level on most lines in Estonia, especially for passenger trains, is very low and most of the network is not conducive to long periods of train watching. On the other hand, the line from Tallinn to Narva is very busy, the section closest to Tallinn being the busiest. Under the wires, west of Aegviidu, there is the local EMU suburban service, infrequent passenger trains: from Tallinn 06.10 to Valga, 14.41 to Tartu, 16.52 to Moskva and 17.52 to Narva; arriving in Tallinn 08.40 from Narva, 09.13 from Moskva and 11.13 from Tartu. The freights, mostly long tank trains are frequent on the Narva–Tallinn line. Philip Wormald, whose photos of Estonian locos can be seen at www.locopage.net, found that 07.00–09.00, plus around midday and early afternoon were very busy at Kehra in late 2002. The best period brought 11 freights in two hours.

Internet data

More information can be found on the Internet as follows:

Raudteeamet: www.rdtamet.ee

Eesti Raudtee: www.evr.ee

Edelaraudtee: www.edel.ee

EVR Ekspress: www.evrekspress.ee

Elektriraudtee: www.elektriraudtee.ee

Railway Museum: www.jaam.ee

Narrow gauge railway museum: www.ee/eesti-mr.

Tallinn City Transport (*Tallinna Trammi ja Trollibussikoondis*): www.tttk.ee

Tallinna buses (*Tallinna Autobussikoondis*): www.tak.ee

Other information

The editor found the book "Soviet Locomotive Types, The Union Legacy" by A J Heywood and I D C Button very useful in the absence of an Estonian fleet list.

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