SEMAPHORE

Russian Magazine for Railway Transport Enthusiasts
Published since November 2000

June 2004 Issue 6

ØRESUND LINK

RAILWAYS AT MARIUPOL

ZEBLYAKI AND YAKSHANGA

APSHERONSK–GUAMKA–MEZMAY

AMUR RAILWAY HISTORY

POLISH NOTEBOOKS

OF FLOATING BRIDGES…

THE HEREH TALES

FROM THE EDITOR

Dear readers! You are holding the next, sixth issue of "The Semaphore". Three and a half years ago, overwhelmed by enthusiasm and belief in our own forces, we, the Editors, did not even think, what it a heavy burden it was to publish a periodical. At first, the periodicity of "The Semaphore" has been established once a month, then once in half-year. . . However, insuperable circumstances would overturn all planned terms again and again, and finally the magazine began to appear about once a year, as if it were an almanac. It took us another ten long months to prepare the sixth issue.

Nevertheless, our magazine is alive, to what, in particular, testifies the statistics of visits to the Web site of magazine (up to 400 visits a month). Our correspondents, both "old" and new, from time to time send materials *"for the next issue of the magazine"*. We understand that their expectations cannot and should not be deceived, and we proceed with the publishing. **"The Semaphore" is open!**

Moreover, this is our first attempt to publish an English-language version of the magazine. While the translation may be not perfect, and some materials (like the crossword) cannot be possibly translated into other languages, we still believe that this undertaking is important, and urge native English speakers to help us with translation.

Dmitry Zinóviev
Acting Editor

RUSSIAN MAGAZINE FOR RAILWAY, SUBWAY, AND TRAMWAY ENTHUSIASTS AND MODELERS

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Waiting for the first revenue train at Alūksne, apparently in 1902 (from M. Helme's collection) See page 30.

Front cover — EDD9M-0071 EMU train crossing the Dnieper river on March 7, 2004, Kiev (by A. Porev)

SUMMARY

This is the sixth issue of *The Semaphore*, a Russian-language magazine for railway enthusiasts. The magazine is published by a group of railway fans. Many materials showing up in *The Semaphore* originally appear in the Internet forums and mailing lists, such as 1520mm@yahoogroups.com (Russian language) or 5feet@yahoogroups.com (English language). The magazine is also available for download free of charge as a PDF file or as a collection of PDF files at http://parovoz.com/semaphore/, and can be freely printed and distributed, provided that the integrity of the materials is preserved.

RAILWAYS AT MARIUPOL, by A. Gorchakov — Mariupol (form. Zhdanov) is a Ukrainian industrial city and seaport, the home of "Azovstal" combine and many other enterprises. There is little surprise that the city is stuffed with railways of all kinds. The story invites you for a fan trip along the main line.

INDUSTRIAL RAILWAYS OF SOUTHERN DONBASS, by A. Gorchakov — Yet another story of the industrial lines of Southern Donbass area.

140 YEARS OF ELECTRIC MASS TRANSIT IN RUSSIA, by D. Zinoviev — A statistical review of the development of electric urban transportation in Russia and the USSR.

YAKSHANGA AND ZEBLYAKI NARROW GAUGE RAILWAYS, by A. Fetisov — Yakshanga and Zeblyaki railways in Kostroma region of Russia are two typical logging railways. They meet the wide gauge main line several kilometers apart from each other. They have a connecting narrow gauge line. However, their destiny is very different: one railway is alive, the other is all but dead.

UGNOV FELDBAHN, by W. Wendelin — A very brief overview of the Ugnov–Vladimir-Volynsky military railway in Western Ukraine and Eastern Poland, built by Austrian troops during WWI.

POLISH NOTEBOOKS, by D. Fokin — The author undertook an extensive field study of eastern Polish railways, including the wide-gauge LHS ("Sulfur-Steel Line) and several trans-border lines, some of which have been cut in pieces by the border — seemingly forever.

NARROW GAUGE SITES OF KRASNODAR TERRITORY, by A. Vershinin — The crown jewel of Krasnodar territory is the Apsheronsk narrow gauge railway in the Guamka water gap. The railway used to be the only means of communications for the residents of the remote mountain villages, until it was washed away with a flood. The author takes you to the green mountain world where everything reminds you of the old logging glory.

ØRESUND LINK, by I. Kopaysov — A brief description of the relatively new auto/rail bridge complex between Denmark and Sweden.

CONSTRUCTION HISTORY OF THE AMUR RAILWAY, by V. F. Burkova and S. P. Chuykova — Russian domination of the Far East was impossible without a reliable rail connection to the "mainland", which the Trans-Manchurian railway could not provide. In 1908–14 the new Amur railway was built under the supervision of Eng. A. Liverovsky, that by-passed the Chinese territory.

GULBENE RAILWAY: 80 YEARS IN TIMETABLES, by D. Zinoviev — The Livland access tracks on the border of Estonia and Latvia (also known as Gulbene–Aluksne narrow gauge railway) have a 100 year long history. This collection of train timetables gives the historical perspective of passenger traffic between Gulbene and Valga.

THE WAY THEY CATCH MOLES, by O. Izmerov — V. Rezun (also known as V. Suvorov) is an ex-GRU spy and a dissident writer. A good writer, if it were not for numerous technical and other inconsistencies in his books. For instance, the chapter in "The Aquarium" that describes the erection of a railway bridge across the Dnieper river during military exercises, is packed with technical mistakes.

THE HEREH TALES. HERE AND THERE, by S. Los — This is a fairy tale, the first from a series, that tells the story of two little steam locomotives, Here and There. The locomotives work at a logging narrow gauge railway deep in the Screaming mountains. Good for your kids, but may be fun for you, too.

FLOATING BRIDGES FOR THE "WARSAW PACT", by D. Fokin — In the heartland of Poland, there is a strange railway that would be crossing the Vistula river. If there were a bridge. But there is no one. As it turned out, a floating bridge would be built here in case of "WWIII".

ZOOM IN

RAILWAYS AT MARIUPOL

FOR YOUR INFORMATION

Mariupol is a city in Donetsk region of the Ukraine. Its population exceeds 500 000 residents. The length of the railway main line in the city limits is 27 km. All mileposts are relative to Moscow (measured along Uzlovaya–Valuyki–Debaltsevo line). The main stations are Mariupol-Port (1271 km), Mariupol-Passenger (1267 km), and Sartana (1255 km). There is the main passenger station in the city, as well as three freight stations (excluding industrial branches), 8 platforms, one bride across a river, and about 15 other bridges. There are also 14 tram and 13 trolley bus routes.

Railway Mariupol begins in the container area of the Mariupol commercial seaport, which turns itself into Mariupol-Port station. At the station there are approximately 10–12 tracks, excluding industrial branch lines. There is also the city grain silo here, and an automobile overpass to the seaport. Next to the station, behind a five-meter fence, there is the last stop of trolley buses, and the Directorate of the Azov Sea Ship Company.

Mariupol-Port station

At the other end of the sorting station there is a passenger overpass and Mariupol sea terminus. Here, the railway becomes double-track. At the exit from the sea port there is the ship-repair works (which has its own branch line), and the city beach.

Along the tracks there is Primorsky avenue, where many sanatoriums and recreation centers are located, as well as restaurants and night clubs. The tracks are just 15–20 meters away from the seashore.

Recently several private entertainment spots appeared at the seashore, which are essentially isolated by rail line from Primorsky avenue. One can get over the tracks only through an unofficial grade crossing. The owners made the following deal with the railway: they installed the gates that are always locked, and when someone wants to cross the line, someone makes sure that the tracks are safe, opens the gate, and lets the car go.

The storage yard for passenger cars of Mariupol-Pass. station begins in 2 km. The station building has three stories. On the first floor there is an information booth, a canteen, long-distance ticket offices, storage area, magazines, and the police. On the second floor there is a post office, currency exchange, and a commercial long-distance ticket office (where one can pay extra money and avoid standing in long lines). On the third floor there is a large waiting room, and a hotel. The building and the platform have been recently renovated. Suburban ticket offices are located in a separate building, next to the suburban platform.

Mariupol-Port station

Now, let's talk about the station itself. It has 8–9 tracks. Two intercity passenger platforms adjoin the station building, and the suburban platform is located further away. This station is for passenger trains only. Freight trains never stop here. There is also a maintenance facility for passenger cars here, with an abandoned turntable and car shed. Because of the remoteness of the storage yard and its poor security, all passenger consists stay near the station building. In the yard I found a head car of series SR EMU train set (with a round headlight on the roof) and an old boxcar.

The station square bears the name of Warrant Officer Pavlov. Two trolley bus routes terminate here (N5 and N10), as well as several minibus routes

From the station on, the railway is double-track and electrified. Behind a grade crossing (a road to the fishery), on the left side, on a hill, one can see the old part of Mariupol built in the XVIIIth century.

The next station, Azovstalskaya, is located under a large bridge, which connects the Left Bank with the downtown. The only exit from the platforms is through narrow stairs to the bridge that is 30 meters above the station. (Once local hunters after scrap metal stole all the handrails!) The

bridge itself crosses no only the railway but also Kalmius river. It has two lanes in each direction, divided by a tram way.

Mariupol-Port station

Near the station, under the bridge, to the right, there is more track that further branches. All branches end up as dead ends, since they so not were finished. For approximately five years there stood many unowned new tank cars built by JSC "Azovmash" on these tracks. Then they disappeared. People say that the owner in the tank cars was nevertheless known — the former Mayor of city.

After the bridge to the right, on the Kalmius embankment, one can see a metallurgical giant — the "Azovstal" Combine (Azov Metallurgical Plant, the second largest in Europe). The color of the sky above the combine as well as above the city, is quite appropriate. . .

The railway follows the river for a kilometer or two, and then turns to the left. There is milepost 1261 km over there, former Karasevka (named so after the surrounding settlement). This is the only milepost in the city that does not have a plant nearby.

Immediately after the milepost there is a bridge across Kalchik river. Under the main line bridge there is another bridge for the branch line to "Azovstal" (across the river this line merges into the main line). On the left there are garages and Ilyichevsky farmers market. One more bridge above Ilyich Avenue — and our train approaches Zavodskaya Ploshchadka station. This station is remarkable for the fact that there is a spontaneous morning bazaar here: the farmers that arrived on the first train, sell their goods right at the platforms. An unfinished nine-story building of a hospital can be seen to the right.

After Zavodskaya Ploshchadka, there follows the industrial area of the Ilyich Combine — the city "breadwinner". Then follow the city blocks known to locals as "The CIA" and "The Pentagon", and milepost 1256 km.

We are approaching station Sartana (former Mariupol-Freight.) On the right, there is a double-track line to "Azovstal". The station is of an insular type — to the left there is the main line and 15–20 tracks, to the right — the tracks of the freight line (10–12). The freight line to "Azovstal" is very winding, and one settlement, which it goes around, is called Azov-Koltso (Azov-Loop).

The tracks to Mariupol-Sort. station branch off to the left. The station itself is located at the territory of the sintering plant owned by the Ilyich Combine. In the territory of the combine railway shop a steam locomotive (9P-18412) is mounted as a monument, and in the area of the third gates a diesel locomotive (TGM1-1722) is mounted, too. The sintering plant is located in a remote industrial park, where one can get only by tram or shuttle buses. Because of this, several electric trains take this generally purely freight branch line during the hours of morning and evening change. In summer this route is often extended to Aslanovo.

Railway Mariupol © D. Zinóviev

On the main line, along the factory buildings, there follow, one after another, mileposts 1253 km, 1251 km, and 1249 km. After yet another bridge, the line ventures into the countryside. After several kilometers the tracks diverge because of the complex relief. The left track follows a high mound. Under this track, there enters the track from Mariupol-Sort. All three tracks converge at Aslanovo station. In between the tracks, there are located dachas, and the platforms of milepost 1246 km are located on the opposite sides of the "island". After Aslanovo, to the right, one can see the remnants of the construction of one more station with a lot of projected electrified tracks. The construction was stopped after the disintegration of the USSR. Probably, hence it was planned to construct a branch to Taganrog.

A. Gorchakov (Mariupol). Photo, text

APPENDIX: Locomotives and rolling stock assigned to Mariupol shed

All intercity passenger trains are pulled by series ChS2, ChS7, and VL8 electric locomotives. All commuter trains consist of series ER2T and EPL2T EMU train sets. Shunting is done by series ChME3 and ChME3T diesel shunters.

Freight trains on the main line are pulled by series VL8 electric locomotives, and industrial lines use series M62UP, TEM1, TEM18, TEM1A, TEM2, TEM2UM, TEM6, TEM7, TGM1, TGM2U, TGM4, TGM4A, TGM4B, and TGM6 diesel shunters.

APPENDIX: Timetable of commuter EMU trains at Mariupol-Passenger in 2003–04

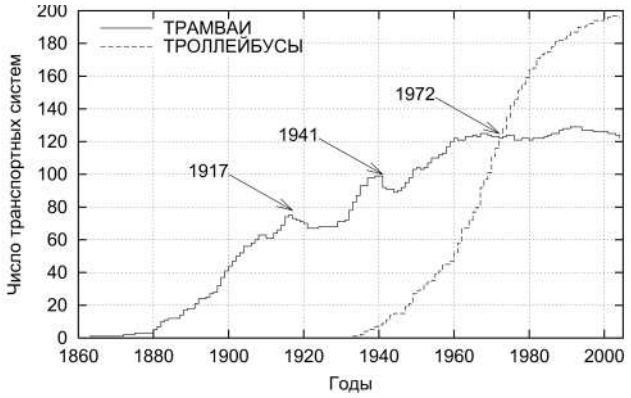
Departure				Arrival			
NN	**Route**	**Dep.**	**Arr.**	**NN**	**Route**	**Dep.**	**Arr.**
6022	Mariupol–Ilovaysk	05:06	10:25	6117	Yasinovataya–Mariupol	03:28	07:20
6142	Mariupol–Mariupol-S.	05:41	07:05	6105	Yasinovataya–Mariupol	05:53	09:47
6116	Mariupol–Yasinovataya	06:54	10:33	6145	Mariupol-S.–Mariupol	08:30	10:02
6118	Mariupol–Yasinovataya	08:13	11:53	6013	Yasinovataya–Mariupol	08:24	11:51
6106	Mariupol–Yasinovataya	12:27	16:10	6107	Yasinovataya–Mariupol	12:56	16:31
6004	Mariupol–Krasny Liman	14:27	21:43	6109	Yasinovataya–Mariupol	15:10	18:43
6108	Mariupol–Yasinovataya	17:33	21:07	6113	Yasinovataya–Mariupol	16:18	19:52
6110	Mariupol–Yasinovataya	20:30	00:05	6027	Yasinovataya–Mariupol	18:29	22:06
6146	Mariupol–Mariupol-S.	18:10	19:27	6149	Mariupol-S.–Mariupol	20:30	21:48

The timetable is kindly provided by "Mariupol. The Transport Directory" (http://mariupol.smtp.ru).

TECHNICAL

140 YEARS OF ELECTRIC TRANSIT IN RUSSIA

In 2003 we celebrated 140 years of the history of urban electric transit (UET) in Russia. The period of 140 years is big enough, allowing analysis and generalizations. On the graph given below, I charted the dynamics of the quantity of urban above-ground electric transit systems (trolley buses and trams) in Russia, the USSR and the former Soviet republics.



The dynamics of the development of the UET in Russia is the dynamics of increase. A natural increase in the number of tram systems was retarded only three time: in 1917, in 1941, and at the end of the 1960s. The first two dates are naturally associated with the destructive events, which occurred in Russia. The third date stands by house. This is the saturation. Year 1972 is the year of "the Great Change", when trolley buses choked trams and became the prevailing UET mode. The trams have never set right and will hardly ever be set right from this blow. Unfortunately, i do not have sufficient data related to the number and extent of separate routes, but I suspect that the dynamics of their change do not differ from that given by the graph.

The natural increase in the number of trolley bus systems is characterized by straight-away mathematical smoothness. Unfortunately, I do not know accurately what to anticipate in the future: the same saturation, as in the case of trams, or a sharp decrease. Based on the analysis of the current events, I assume that the scenario of saturation is more probable.

It is interesting to note that the third destructive wave that covered Russia in 1985–98, did not affect the development of the UET in the same ruinous way as the previous two. As can be seen from the graph, both the UET modes slowed down the rates of increase or reached the saturation before the Perestroyka.

Related Links

- http://parovoz.com/electro/ "Electric Transit in Russia" (The most complete statistics.)
- http://tram.ruz.net "Moscow Tramway" (The best site about trams in Russia and elsewhere.)

D. Zinóviev (Boston)

ZOOM IN

INDUSTRIAL RAILWAYS OF SOUTHERN DONBASS

After completing a motor run along the route Mariupol–Novoazovsk–Telmanovo, I drove up to the beginning of the railway part of my journey of — to the village of Granitnoe, Volnovakha district of Donetsk region. At the exit from the village, there is a monument: an old "polutorka" truck.

The railway itself begins in 5 km from Granitnoe, where a stone-crushing combine is located. The railway itself approaches the combine from from Karan station. Judging by the appearance of the combine, it does not work: large unfinished building in the steppe, and evidently not one person around. . .

Volnovakha station (Northern entrance)

The quarry itself is located in several kilometers from the combine, and the raw material is brought here by motor transport, and after processing dispatched by railway. In the outskirts of the combine I see three railway lines with two series TGM6V diesel locomotives: N0162 and N0155. In order to examine numbers, I had to approach the engines closely and to talk to the guard. The guard reported that the combine stalled because of the access tracks were under repair.

TGM6V-0162 seemed to be in a more decent state than rusty TGM6V-0155, although both engines were built in 1990. Finally, I learned, that the guard's responsibility was to keep an eye on the locomotives. Two weeks later I attempted to photograph these diesel locomotives, but the guards did not let me: the combine was already working.

I went further to Karan, along and to the left of the railway. After several kilometers, I noticed ChME3-1272 diesel shunter on the track that was pulling a flatcar (the track repair was under way).

From the combine the railway line goes on a high mound, and in the area of town Mirny passes on an bridge to the left side of the roadway. At the exit from the town the station of Urzuf is located with three access tracks.

I turned to the right and drove along the siding tracks. On the map there is Yanisol station show there, but all three tracks, immediately after grade crossing, go into a well guarded territory (continuous three-meter fence and barbed wire). I continued to drive along the fence. Soon, an abandoned area began, large buildings in a very lamentable state appeared, — the Zone from the "Stalker"! I drove to the end of the fence, but found neither the continuation of the railway, nor the branch line shown in the map. I did not quite understand what was behind the fence. It resembled a military base: barrack-type large buildings, and the fence was decorated with very typical slogans: "Complete the Five-Year Plan in one year!", and one more calling to vigilance while guarding strategic objects.

So, I had to return to the grade crossing near the station (by the way, that was the worst road I had ever seen in my life!) The signaling at the crossing continued to buzz, even though there was no rolling stock on the tracks. I turned to Karan and drove across farmlands along the railway on a low mound.

I passes town Kamenka (or, rather, a turn to Kamenka). After several kilometers the industrial branch approaches the main railway line Mariupol–Volnovakha. My map said there was milepost 3 km here on the Granitnoe branch. However, there were no traces of a platform or anything similar. Instead, I found another station at that place, Staraya Karan, but not on the side branch, but on the main line. Next to the platform there stand old abandoned barracks (apparently, from the tsarist times), and the plate with the station name hangs on the barracks.

Yelenovka station

The branch line went along the main line to the station of Karan (about 3 km), located in town Andreyevka. The station has about seven tracks. On one of them at the time of my arrival there worked two halves of 2TE116-584 diesel locomotive. Section "A" was noticed going with a consist of gondola cars to Granitnoe, and the other section idled at the station.

I drove to the Northern neck of the station, where several yard tracks were located — apparently for Karan–Granitnoe branch. In the northern neck I met VL8M-795 electric locomotive with a freight consist, and VL8M-977

with three empty passenger cars going northbound. Both locomotives belonged to Volnovakha shed.

After visiting Karan I went back along the route Mariupol–Donetsk and drove up to the town of Yelenovka, 15 km from Donetsk. In Yelenovka a very large elevator is located, where almost the entire population of town works. They are being payed their wages. . . in flour! Dozens of Yelenovkites stand along the route with the bags in any weather and sell their "salary".

In Yelenovka I had to make a left turn, towards Stepnoe village, but the grade crossing was under construction. On this occasion the gate was permanently closed; for better security, the maintenance crew bus of stood across the road as an additional barrier. The work was done in a decent rain — apparently, something urgent. I did not want to wait until they finish, and drove elsewhere searching for another crossing. Instead of a crossing, I found the access tracks of the elevator and a pair diesel switchers behind the fence: a TGM23V48 and a TGM23D44.

Judging by the map, the nearest crossing was located to the South, near milepost 1168 km. I drove along the road to Ugledar, following the branch line to the mine "Yuzhnodonbasskaya N1". Approximately in 5 km "my" road crossed the highway Donetsk–Ugledar. I made a turn to Ugledar, crossed the railway, and moved away from it. By the way, the railway branches into two lines: one branch goes to "Yuzhnodonbasskaya N1", the other — to "Yuzhnodonbasskaya N3".

Here it is, one of the largest mines of Donbass, the main employer of Ugledar city!

The mine itself is located in several kilometers from the city. The miners are taken to and from the mine in charter buses. The terminal bus stop and a small park with benches and a water fountain are located in front of the main entrance to the mine. I passed the mine and encountered the end of branch line: a mound with a stub track in the middle of the field.

I entered Ugledar, a city of nine-story apartment buildings, which suddenly appeared from behind a hill. The area of the city of is 5 square kilometers, the population — 17 thousand people. I passed Ugledar and went to the north — for Kurakhovo. Kurakhovo is famous for its power station, located at the Kurakhovo reservoir. I passed this small town in 10 minutes and got at the dam. Unfortunately, the railway bridge of Roya–Tsukurikha line was a bit off my way.

The dam is one-and-a-half kilometer long, with a highway and a protected pedestrian zone on the top; everywhere, where possible,the Stalin elements of design can be seen. At the northern end of the dam there is even a bus shelter. The railway bridge for some reason intersects the reservoir at a sharp angle.

On the northern bank of the reservoir I discovered a nameless station, and went on to Dokuchaevsk.

I began the study of the Dokuchaevsk Industrial Railway at the station of Veliko-Anadol. At the station, there was ChME3-7361 diesel locomotive shunting (assigned to Volnovakha shed.)

To the east of Veliko-Anadol, on the way to Dokuchaevsk, there begin numerous quarries and quarry towns. I returned to the highway Mariupol–Donetsk and went to Yelenovka. Just before Yelenovka the road passes under the railway Yelenovka–Dokuchaevsk. I drove along the railway to Dokuchaevsk. The line is electrified and has two tracks, but the second track in on wooden ties and looks quite neglected (the catenary poles stand on both tracks.) As I drove, I met TEM2U-0349 diesel shunter pulling DGK-4596 crane and flatcars.

Veliko-Anadol station

At a station near the town of Yasnoe they decouple boxcars from OPE1A and OPE1AM tractive units and couple them to series TEM and TGM diesel shunters, that pull the cars further to Yelenovka, to the main line.

At the station I noticed unit OPE1AM-053 and an unidentifiable locomotive: very small, yellow, and with a single-person cab. Further I encountered units OPE1AM-037 and 130.

After passing Dokuchaevsk, I went to the East, along the branch to the town of Styla and further to the city of Komsomolsk. Based on the fact that there were people standing on the platforms, I concluded that there was passenger traffic on the branch Kuteynikovo–Karabulak (which is double-track and electrified).

Rebrikovo station (Kuteynikovo–Karakuba branch)

At the end of my journey I visited the Komsomolsk mine authority. The branch to the authority had been dismantled, only some ferroconcrete ties remained.

A. Gorchakov (Mariupol). Photo, text

BACKROADS AND BACKCOUNTRIES

YAKSHANGA AND ZEBLYAKI NARROW GAUGE RAILWAYS

On 11 April, 2004, I visited logging railways in Zeblyaki and Yakshanga, looked around the local sheds, and met with the old workers.

Yakshanga

The branched narrow-gauge system that begins in the town of Yakshánga (Ponazyrevo district, Kostroma region), as it turned out, has a rich history.

It began in the late 1930s, when a horse-driven wooden log railway was built from the town of Severny for timber removal. The need for timber greatly increased in the years of WWII, and, beginning of 1943, "600mm lattices with German iron ties" were delivered to Yakshanga — apparently, the rail-tie lattices of German military field railways. Naturally, the rolling stock (locomotives and trolleys) was also of German origin.

The volume of earthwork during the construction was minimal; in the damp weather the track would "fall through" right under a train, and derailments were frequent. Such track existed between Yakshanga and Severny to the end of the 1940, when, in order to fix the problem, the line was regauged to the "traditional" 750mm. The locals say that one can still find some "German" rails and ties in the most boggy places along the line.

At the same time, at the end of the 1940s, the main logging area shifts further to the South of Severny, and the line gets extended to Malaya Yakshanga. To the middle of the 1950s, the main line reaches Panino, where it hits the Neya river. Panino becomes the main logging town.

In the beginning of the 1950s the construction of the "Northern Line" begins towards Sosnovka. Since the wide gauge main line (Buy–Sharya–Kirov, the Transsib) had to be crossed in this case, an uncommon solution was suggested: to use one of the existing Transsib bridges across small rivers. The Vostochnaya Yakshanga bridge near town, was insufficiently high, and the branch had to follow the left tributary of the river, in 2 km to the East from the broad-gauge station of Yakshanga.

The section from the log mill to the bridge was built to 1952, and then its gradual lengthening began. To 1960 the rails reached Sosnovka, and in the following decade — the town of Shayma (Shaymensky) at the Vetluga river. This river appeared as a natural boundary for all extensive railways of that region: Zeblyaki (Oktyabrsky), Yakshanga (Shayma), and Ponazyrevo (the latter, however, did not reach the Vetluga.)

In the middle of the 1960s the Yakshanga railway switched to diesel traction. The traffic was very intensive: up to 15–20 trains with "whips" or logs would come to Yakshanga on workdays. The passenger traffic in the best years consisted of five pairs of trains: three to Panino (in the morning, in the daytime, and in the evening) and two to Sosnovka (in the morning and in the evening).

The Yakshanga railway was the first in the neighborhood to start carrying passengers in specialized coaches, still when the town of Panino did not exist. A consist of empty log cars that also carried some workers, got derailed, and as a result six people were dead. Then the railroaders converted a flatcar into a covered coach, and after a certain time acquired some Pafawags and Demikhovo coaches.

Narrow gauge railways in Eastern Kostroma region © D. Zinóviev

The Yakshanga and Zeblyaki railways were indeed con-

nected, as were the Yakshanga and Ponazyrevo railways; moreover, only the further connection was actively used: Zeblyaki lumbering enterprise was operating around Sosnovka and Shayma, too, and sometimes it would "hire" Yakshanga crews together with their locomotives. In the 1980s Zeblyaki folks for some purpose frequently rode to Panino.

In the Perestroika times the operations of the log mill declined, also due to the fact that the commodity forests within the reach of the railway were greatly depleted. The passenger traffic grew sickly: in the middle of the 1990s the trains to Panino and Sosnovka circulated only a day, and not even daily. Toward the end of the 1990s the inhabitants of Sosnovka were relocated to Yakshanga, and the demolition of the "Northern Line" leisurely began. To Spring 2004, the rails remained only in 2–3km to the North from the Transsib bridge. It is planned to finally dismantle the "Northern Line" in Summer 2004.

The town of Panino continues to exist (April 2004) due to a roadway from Ponazyrevo. The last section of Yakshanga–Panino railway is mainly used by "Pionerka" ("Female Young Pioneer") trolleys, and only in the warm season. The management of the half-dead log mill has no plans so far for its dismantling. . .

The railway station located in the Southern outskirts of Yakshanga, looks gloomy. Scrap metal of every kind, coach and car pieces are everywhere. Some track maintenance car (apparently, a crane) was literally torn apart: pieces of it are scattered in the radius of 30m. In the shed there is snow, and wind blows, and the two-story control tower has been destroyed. Only one working locomotive remains (TU8-0209).

Zeblyaki

In contrast to Yakshanga, things are going quite well in Zeblyaki. Of course, this is not the Maradykovsky railways with its five daily pairs of passenger trains, but nevertheless the timber "goes", and the railroaders optimistically look into the future.

The construction of the Zeblyaki railway began in the post-WWII years; to the middle of the 1950s there arose the logging town of Vasenevo. The extent of the main rail line reached 65 km (to the town of Oktyabrsky at the Vetluga river.) Steam locomotives were used to the middle of the 1960s, then diesel (even **TU2**) and gasoline locomotives started to arrive.

Passenger traffic existed to Vasenevo (one-two pairs of daily trains) and Oktyabrsky (one pair). It became too expensive to haul timber from the distant plots in the time of Perestroika, and the resources were quite exhausted, so the habitants of Oktyabrsky slowly began to resettle. In the middle of the 1990s a working train went to Oktyabrsky only once or twice a week.

In April 2004 the railway works. One–two log consists arrive to Zeblyaki daily on workdays. The working train of three passenger coaches leaves for Vasenevo on workdays at 06.30, stays there to evening and comes back between 19.00 and 20.00.

Rails are lifted off on the last 5km near Oktyabrsky. It is planned to dismantle this section, up to the Nyuryug village "whisker" (branch) junction, in 2004–05. This is one of the main logging areas.

The grade crossing at the intersection with the road Kostroma–Kirov is taken care of and has gates; a TU7 cab is used as a booth. Not far from it, in the northern outskirts of the town, there is a stub track with a covered concrete platform, which was used by the passenger trains. The NG track goes around the town from the North and the East; the station, shed, and log mill are located in its southeastern outskirts.

The volume of track repair work is substantial: at the station, there are piles of new ties, some of them are loaded onto flatcars. Yet, the second track that leads to the "gas station", practically sinks in the subgrade. That, however, does not prevent the engineers from using it.

There are two separate sheds in Zeblyaki.

Rolling Stock at Yakshanga

TU6	0369, 0780 (0789?), 3046, ????
TU7	2473 (cab only) 2770, 2877, 7058, ????
TU8	0209 (works)
PV40	one half (cab only), 1693, 2852, 6017, 6821, plus 4 whole and 4 halves.
VPR300u	track maintenance machine

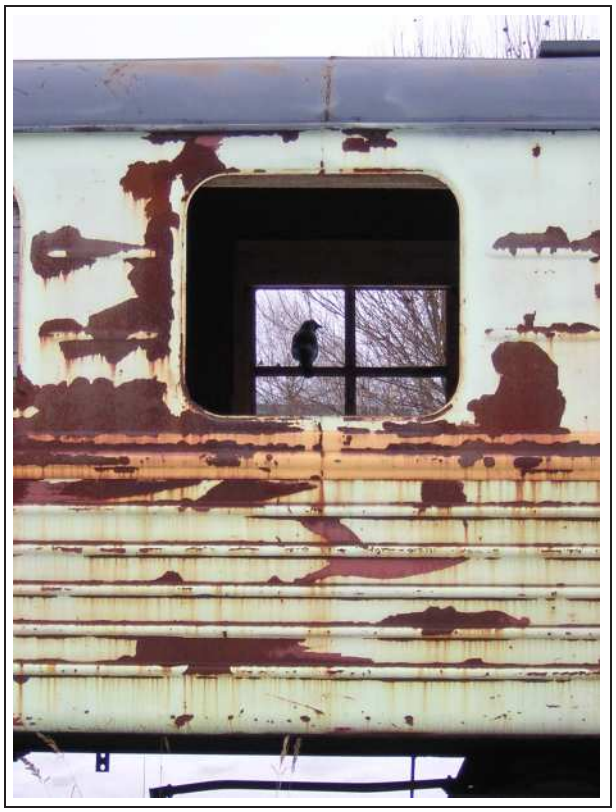
Judging by the dates of production, the last large party of rolling stock arrived to Yakshanga in 1987–90.

Rolling Stock at Zeblyaki

TU6ST	2037
TU6	3 locos (two cabs)
TU7	3 locos
PV40	030, 2106, 5022, 5442, 5988, 6411, 6723, 6822, and 3 more wholes and 2 halves

In the Zeblyaki shed, according to the railroaders, there are **12** working diesel locomotives. Both railways have a plenty of log cars, flatcars, tank cars, boxcars, and also Björke snow plows (two in Yakshanga and one in Zeblyaki.)

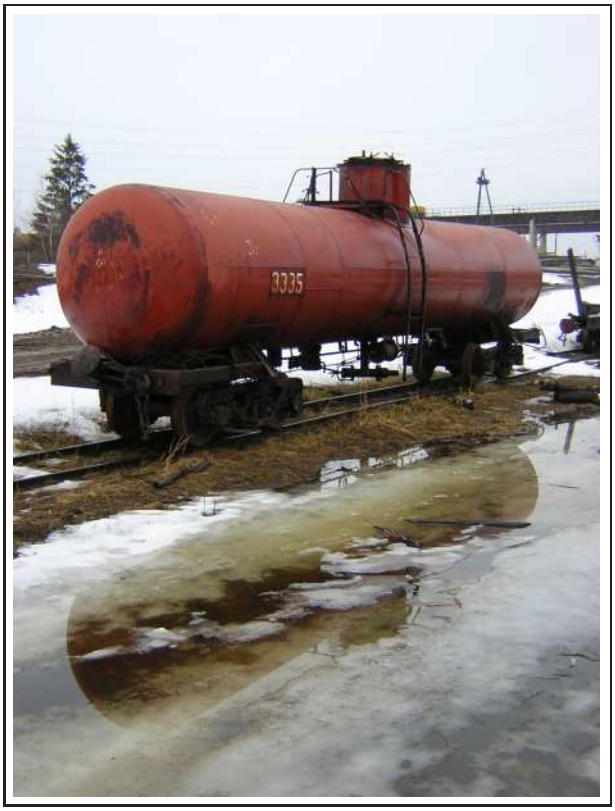
TU8-0209 is the only working locomotive at Yakshanga



Yakshanga: "The spirit of desolation soars above these places"

Zeblyaki station — vista from the log mill

Yakshanga station



Yakshanga. A tank car

FOR YOUR REFERENCE

In years of the V five-year plan, the number of narrow gauge steam locomotives in Kostroma region increased by factor of 1,7, and the number of gasoline locomotives — by factor of 2,7. In 1960 in the region there were 24 NG railways with the overall length of 700km. The maximum extent of all of thirty five NG railways that have ever existed in the region it 1516 km.
To year 2004, there were no more than 8 NG railway in the region, with the total length of no more than 380km. — *Ed.*

Former passenger station at Zeblyaki

Zeblyaki shed

Zeblyaki. The track to the gas station

A. Fetisov (Moscow). Text, photo

UGNOV–VLADIMIR-VOLYNSKY FELDBAHN

Narrow gauge (600mm) military field railway Ugnov (Uhnow)–Laszczów–Werbkowice–Gozdów–Hrubieszów–Stryżów–Vladimir-Volynsky (Władimierz-Wołyński) already existed in 1916.

In 1916 it was transferred to the Austrian army (kkHB) and regauged to 760mm. The length of the main line was 104km (the major part of the line was located at the territory of contemporary Poland). The total system length exceeded 200km.

The railway utilized a variety of steam locomotives. For example, locomotives NN1–4 had been "borrowed" from narrow gauge railway Mori–Arco–Riva in Italy. In 1916–17 the railway had three Russian steam locomotives numbered 515, 941, and 1402 (the latter one was later rebuilt by the Austrians.)

After WWI the line was again transferred, this time to PKP — the Polish railway company. In 1945 the Ugnov and Vladimir-Volynsky branches were abandoned, as they crossed the new state border (by the way, it is not known for sure if the line indeed had reached Vladimir.) The remaining part of the line was regauged to 750mm and was in service until the 1980s. Several kilometers of track near Werbkowice have been reportedly survived (see also page 13), and may be used in the future as a railway museum.

W. Wendelin (Mautern, Austria)

NEWS FROM ABROAD

POLISH NOTEBOOKS

Normally we do not publish more than one material related to foreign railways in one issue of the magazine. But for D. Fokin's report we decided to make an exception. The territory described in the report has been repeatedly transferred from Russia/the USSR to Poland and back, and at present is connected to the adjacent C.I.S. countries by numerous cultural, commercial and, of course, railway links. Think of this report as of a view on our railways from across the border. — Ed.

It happened so that I spent a pair of my vacation weeks in August 2003 in East Poland, having dedicated significant time to studying the railway peculiarities of the region.

Two small towns became my headquarters: Krasnobród and Kazimierz Dolny, and if the latter one is already well known both in the country and abroad, and it draws tourists not only from Poland, but also from other countries and is famous by its literary and artistic traditions, then in the other town, the tourist boom is yet to come. It is necessary to say that the possibilities of Krasnobród as an ecological and tourist center are widely advertised and actively promoted at the local and state levels through different development programs of the European Union.

Day One. Hrubieszów–Zamość

After spending several days in Lublin and dedicating almost all of my time to cultural self-perfection (with the exception of one day that was reserved for a trip along the

Semaphores at Werchrata

Nałęczów narrow gauge railway), I relocated my headquarters to Krasnobród, in 120 km to the south from Lublin.

It is necessary to say that a distinguishing feature of Polish roads is not their quality (which is nevertheless improving from year to year), and not the presence or the absence of road signs, and not the traffic code, but. . . their width! Or, rather, "narrowness". The majority of Polish roads, even highways, is that they have only one lane in each direction; moreover, only major highways have wide curbs. One additional peculiarity is numerous road signs limiting the speed: thus, for instance, the permitted speed en route from Lublin to Zamość (90km) is not more than 60 km/h practically everywhere (this is due to many villages and towns adjacent to the road; and the traffic penalties in Poland are not small: hundreds of zlotys!)

2M62U-0161 diesel locomotive between Hrubieszów and Izov

One more special feature of Polish roads (a pleasant rule?) — the politeness of drivers. If a driver in the car in front of you detects that you want to pass him, and there is not enough space, then he will definitely reduce the speed and lean to the right as far as possible. The one who passes will always thank him by blinking the emergency lights.

However, let us return to our sheep. After reaching Krasnobród by the noon and checking into the hotel, I decided that I had positively no desire to eat after the horrible gluttony of the previous days, so I skipped the lunch, and immediately went out to inspect the surrounds. Specifically, I planned to spend several days studying the local wide gauge railway, the so-called Sulfur-Metallurgical Line, or the LHS, 400km long, as well as the line Chełm–Włodawa, and some cross-border lines and stations.

The LHS (Linija Hutnicza Szerokotorowa, ex. Linija Hutniczo-Siarkowa) is the longest wide gauge line ever built from the USSR to the metallurgical plants in the East European countries. There were plans to extend this line further to Prague and Leipzig, and not so long ago, in 2001, a project was discussed about making a wide gauge connection to the Czech city of Bohumín.

At present, after the period of relative decline, the line works quite actively, serving about 5 pairs of freight trains a day. Besides carrying ore and coal westwards, the line is also used to move a sufficiently large quantities of goods eastwards from a number of intermediate terminals (an unquestionable advantage of this mode of transportation is that no transloading is needed at the border).

In the Soviet times, besides ore and cast iron, this railway also carried passengers. There was a train Magnitogorsk–Ołkusz (unfortunately, I could not figure out when exactly it was in circulation). The passenger traffic did not last long after the disintegration of the USSR: up to the middle of 1990s, there were trains Ołkusz–Moscow and Ołkusz–Lviv, carrying "shuttle" traders.

The LHS goes parallel to the standard gauge lines, mostly passing large cities around.

First day, I decided to look around the LHS from the border station of Dorohusk to Zamość, and also visit several small Polish towns.

The LHS begins at border crossing Izov–Hrubieszów, near the border bridge across the Bug. The line crosses the border in solitude, the track is not double-gauged. The transborder trains are taken to the station of Hrubieszów by the UZ locomotives, mostly by 2M62.

Werbkowice station

The passenger station of Hrubieszów is located off the cargo station, in the outskirts of the city. It is interesting that Hrubieszów obtained its city rights back in 1400 from Władysław Yagełło. The station was clearly built to grow, but it did not happen. At present there is only one passenger train consisting of one coach along the route from Zamość to Hrubieszów.

From Hrubieszów to Zamość the LHS goes in parallel to the standard gauge line through the town of Werbkowice; this station is all but abandoned, but it looks quite impressive, and has a variety of semaphores.

The next station is Miączyń; there is a siding here on the LHS, and the standard gauge station is desolated. Near the station there is an elegant abandoned apple-tree garden. The better part of the fruits was already ripe, and the knock of falling apples could be heard every minute or so.

The LHS goes around Zamość by a wide arc from the north and, diverging from and converging to the standard gauge line, at some point crosses it in one grade. Yet another abandoned standard gauge line also goes around Zamość,

and for the safety sake the turnout is switched towards the alternate route. On the bypass arc, the LHS crosses the abandoned standard gauge line on a bridge. The station in the city is located not far from the downtown.

Days Two and Three. Zamość–Sędziszów

Zamość city, placed by the UNESCO to the list of the world cultural heritage, was built in the 1580s to the money of Great Chancellor Jan Zamojski by the project of Italian architect Bernardo Morando. Zamość is an example of an ideal city. It has a fortress that has never been overtaken by anyone, Science Center, and Eastern Trade Center.

Zwierzyniec station. Diamond crossing

To the west from Zamość, on the LHS, there are located stations Zawada, Szczebrzeszyn, and Zwierzyniec. In Zwierzyniec, there is a diamond intersection with the line to Hrebenne. The LHS passes these stations, moving away from them by hundred meters or so. After station Tereszpol Biłgorajsky there is the large station of Biłgoraj with an oil terminal. The city itself was famous in the XVIII–XIX centuries for the local sieve masters: the city was sending to various countries up to 700 thousand sieves a year.

Chmielnik. The narrow gauge railway bridge

The lines (1435mm and 1520mm) diverge right after Huta Deręgowska. The LHS crosses river San on a very imposing bridge. As I was moving further along the LHS, I crossed the partially closed line Tarnobzreg–Rzeszów after town Nowa Dęba. At the line there were surrealistic remains of station Majdan Królewski.

The San river bridge

In Majdan I ran across one more highway contingency: the route, designated as a regional road of average importance with hard-surfaced pavement, suddenly turned into a gravel road, with all the local road attributes, including road signs and kilometer posts.

Approximately in the middle of the LHS there is located one of its largest stations, Wola Baranowska. One more station on the LHS is Staszów. The standard gauge track at Staszów is electrified, but there is no passenger traffic.

After the town of Chmielnik the LHS is picturesquely crossed by an abandoned narrow gauge railway and “my” highway.

The LHS passes city Jedrzejów from the south; the station in the city is very unremarkable; however, here begins partially active Ponidzijska narrow gauge railway (Jedrzejów–Pińczów–Wiślica). Yet another beautiful place is platform Potok, after Jedrzejów.

The last point of my trip was Sędziszów town, with a large LHS station and a bogey changing station. A consist of empty boxcars stood at the station at this time, ready

to depart. having waited for the arrival of a working train going into the opposite direction, the consist left to the east.

Sędziszów station. The LHS track is the rightmost one

Day Three. Chelm–Wlodawa

In the old, pre-WWII times there existed a meridional railway Königsberg (Kaliningrad)–Ełk–Białystok–Brześć (Brest)–Włodawa– Chełm with further connection to Lwow (Lviv). The trains consisted of 1st, 2nd, and 3rt class coaches, pulled by series Ol1 and Ti4 steam locomotives.

Near Włodawa, the line crossed the Bug river. Włodawa station it were located on the right bank of the river, and the town of Włodawa — on the left bank. After the territorial changes the station and town found themselves to be divided by the border line, and a new station was built at the Polish side. Thus, two stations existed in two different states, but with the same name. During World War II the bridge was destroyed and was never restored. As a result, two stub lines were created, which exist until now: in Belorussia (Brest–Vlodava, where Vlodava station is located in the town of Tomashevka) and in Poland (Włodawa–Chełm). The route across the border can be easily traced on the map.

The line from Brest to Tomashevka was altered to the wide gauge; it has substantial suburban passenger traffic (several daily DMU trains), and active dacha construction takes place around the line. In Poland, the line from Włodawa to Chełm was for passenger traffic in 2003; there remains some irregular freight traffic. At the Belorussian side, little reminds of the line behind Tomashevka. At the Polish side, the picture is much more interesting.

So, let us begin from Chełm city. The city was founded in the first half of the XIIIth century, in the times of Vladimir-Galacian prince Daniil. Besides its architectural landmarks, the city is famous for the chalk caves — a complex labyrinth of corridors and cameras, hollowed in the chalk deposits under the Old City.

Chełm station, the origin of the Włodawa branch, is a large railway junction, where, besides the standard gauge tracks, there is the one wide gauge track to Dorohusk–Yagodin border crossing. The station itself was recently reconstructed, the building is exceptionally convenient and functional. Here at the station there stands a completely operational steam locomotive Ol49. The automobile-railway border crossing strikes with its multikilometer line of trailers from Europe to the Ukraine.

Chełm station. Ol49 steam locomotive

Further from Chełm towards Włodawa there are located stations Ruda Opalin (a small siding), Uhrusk (a much larger station with many siding tracks to the local enterprises; in accordance to the timetable for year 2002, the last year of passenger operations on the line, the station saw 3–4 pairs of daily suburban trains to Chełm and one pair of trains between Chełm and Włodawa), and Sobibór (a siding, where there was a Nazi concentration camp during the WWII).

The terminal station, Włodawa, is located quite away from the namesake city, once an important commercial center. At present, a yearly festival of three cultures, Catholic, Orthodox, and Judaic, is conducted in the city.

Włodawa station

However, the railway line does not end at the station, but continues towards the state border. The rails here, of course, have not been used for a long time, and lie rusty, but the track is in a very good condition, and the mound

was built clearly built to suite two tracks. Finally, the stub line ends, although the high mound, perpendicular to the valley of the Bug, goes further to the river.

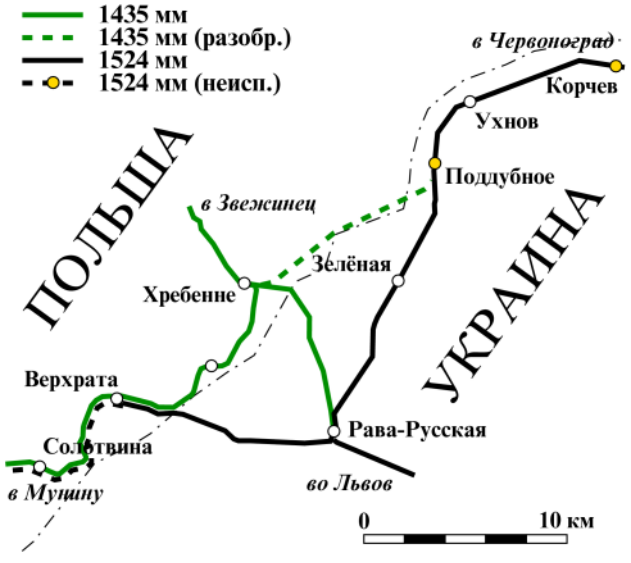
In 300–400 meters, one can see a border post. Near the post, the mound abruptly ends: that was the beginning of the bridge. From the border post to the river, the descent is not very steep, and it is densely overgrown with nut-tree.

After going down to the water line, I see the opposite Belorussian bank and scarce fragments of the bridge in the river. The route of the former railway can be seen at the Belorussian bank through the trees, and one can notice the part of the bank fastened by stone, where, apparently, there used to be the abutments of the bridge.

Days Four and Five. Hrebenne and Przemyśl

The better part of the time during these days was dedicated to leisure, to the enjoyment of the nature of Rostocze (so is called the locality south of Lublin), and to the trip to Przemyśl — one of the most beautiful cities of the south-east of Poland. However, I did not forget about railways. While attending small towns and getting down to the south along the border with the Ukraine, I uncovered several railway sights. After leaving from Krasnobród and passing the resort town of Susiec, where the station looks like those in the Baltic states, and having passed Tomaszów Lubelski with its most beautiful juniper church, I took the road Lublin–Rava-Ruska.

The road environment sharply changes: these are not quiet local roads anymore, but a lively international route with a plenty of trailers and automobiles with the Ukrainian license plates. I note that if the Poles drive according to their own courage (some — according to the rules, and some — against the rules), then the Ukrainians are the most disciplined drivers. They drive close to the curb and demonstratively let other drivers pass.



Hrebenne surrounds © D. Zinóviev

On my way to Hrebenne I stopped at Belżec station on the line Zwierzyniec–Hrebenne–Rava-Ruska. It is the base loading and unloading station for freight trains to and from the Ukraine; there are no large stations closer to the border, but only sidings and passenger platforms.

An interesting incident happened here. Apparently, somewhat earlier there passed a train through the station. Three Ukrainians, a man and two women, went out of the station building. A "Zhiguli" (old Soviet-built car) with Lviv license plates waited for them at the station square. The driver of the "Zhiguli" payed attention to me, when I drove up. I walked around the station and returned to the car. The Ukrainians drove off, me too, in the same direction, towards the border. The "Zhiguli" rode at 50 km/h, close to the curb (and closer to the border the road becomes a four-lane highway with an excellent pavement!) I was driving behind them. . . Then the Ukrainians suddenly turned to a gas station. I passed by and soon came across yet another station, Lubycza Królewska junction, which I naturally wanted to photograph, too. As I drove off from the station, the familiar "Zhiguli" passed me! It came out that, unwillingly, I was "chasing" the Ukrainians again. At this point, I guess, they became quite nervous. They probably thought that they were being followed by the Mafia. The Ukrainians abruptly made a U-turn across the double continuous strip, and drove back on full throttle.

Malhowice station

A usual line of trailers showed up soon closer to the border crossing. The day has been already leaning toward the evening, and many drivers burned their field stoves to prepare food. I felt, that they have been waiting here for several days. Border station Hrebenne consists of a platform and a small building. In summer it sees two pairs of trains Rava-Ruska–Lublin and one one train Wrocław–Zamość. As a matter of fact, there are two lines from Rava-Ruska to the Polish border: one goes north to Hrebenne (standard gauge), the other — south to Werchrata (wide gauge). It looks like two sides of an equilateral triangle, and third side is the standard gauge line Hrebenne–Werchrata on the Polish territory, right along the border. The train Wrocław uses this third line (both ways — at night.) One can drive along this line up to a certain point. There is a nice view at

the crossing from a hillock there.

In 1941, a standard gauge connecting branch was built from Hrebenne to the northeast to abandoned station Poddubcze (village Poddubnoye). We do not know precisely when this branch was dismantled. — Ed.

Werchrata station is located 5–6 kilometers southwest of Hrebenne; however, one cannot drive along the boundary all the way to it, other than on a train. The wide gauge line does not terminate after the transloading facility, but goes further in parallel to the unused standard gauge track. In several kilometers after the station Of Horyniec Zdroj the wide gauge track turns back to the border and, judging by the map, vanishes in the woods.

In Werchrata there is an expanse for the amateurs of **semaphores**, which are here abundant.

Przemyśl surrounds © D. Zinóviev

Finally, I came to Przemyśl, one of the most beautiful cities of the southeast of Poland, picturesquely located on the high hills on both banks of river San. The city is approximately in 10 km from the Ukrainian border; the largest "Soviet" (and even, perhaps, modern) railway crossing is here located: Mostiska–Medyka. In the old good times they would process up to 11 million tons of cargo per year here. against 6 million tons in Brest.

Approximately in 20 kilometers to the south of Przemyśl, on a high hill, almost on a mountain, there is a sacred place that is very respected by Poles — Kalwaria Pacławska (Kalwaria is the Latin name of Golgotha.)

As I was running out of time, I only managed to inspect the closed line Przemyśl–Malchowice-Khyriv. Look at a map: the line Przemyśl–Khyriv–Sanok dives into the Ukrainian territory and then reemerges in Poland. The locals say that earlier (in the 1950s) there was even direct passenger traffic from Przemyśl to Sanok through the Soviet territory (the standard gauge track exists for the entire length of the line.) Now, there are no trains at all to Khyriv, but there is a passenger one from Khyriv to Sanok.

The line begins somewhat east of the main station, then immediately turns to the south, and is open for freight operations to the station of Pikulice (in the city limits.) This section is electrified, and once there even circulated an EMU train. Now, the line is used to store freight cars.

Closer to the border there was a station or a siding of Stanisławczyk; everything is overgrown here, even the tracks are hard to find.

In three more kilometers, the road becomes completely desert; here is the border line in front! There is no crossing here, but the locals say that, if necessary, the authorities organize the passage of the residents across the border. I did not want to drive up to the gates, but instead made a turn to the town of Malhowice, in order to find the former border station. The station was surprisingly easy to locate. The view here was unusually picturesque, everything was overgrown with partially neglected apple-tree gardens.

The trip to Przemyśl completed the first part of my Polish vacations; I moved in Kazimierz Dolny, where my stay was more measured off and culture-oriented. Nevertheless, I was able to visit all stations of the Nałęczów narrow gauge railway mentioned above, which deserves which a separate report.

Relevant Links

- http://lhs.pl (Unofficial site of the LHS)
- http://www.parovoz.com/stories/poland (Web version of this report)

D. Fokin (Moscow). Text, photo

APPENDIX:
Timetable of train N1351/1352 Brześć–Chelm (yr. 1930)

	09:20	Brześć-Centralny		22:00
09:51	09:54	Stradecz	21:27	21:29
10:15	10:20	Dubica	21:01	21:06
10:35	10:37	Domaczewo Miasto	20:46	20:48
10:42	10:47	Domaczewo	20:36	20:38
11:04	11:04	Przyborowo	20:19	20:20
11:17	11:32	Włodawa	19:53	20:08
11:55	11:55	Sobibór	19:28	19:29
12:16	12:20	Uhrusk	18:59	19:08
12:34	12:37	Ruda Opalin	18:41	18:44
13:00		Chełm	18:20	

PHOTO HUNT

IF THEY OIL RAILS. . .

VL11M-321 electric locomotive with a rail oiler, May 2, 2004, Ozherelye (O. Kotov)

. . . Then Someone Needs It!

A rail oiler is a self-propelled mechanism (typically a locomotive or a series RSM rail oiling draisine), intended for oiling the edges of rails at curves to reduce rail and wheel wearing.

Most commonly, rail oilers are built using seria VL10U, VL11M, VL60, and VL80T electric locomotives, as well as seria ChME3 and M62 diesel locomotives.

In Krasnoufimsk, a rail oiler has been built by inserting a TsMV type passenger car with the oiling equipment in between the sections of 2VL60-001 electric locomotive. — *Ed.*

VL10U-040 electric locomotive with a rail oiler, May 2001, Obninskoe–Maloyaroslavets stretch, Kaluga region (D. Sutyagin)

PHOTO HUNT

KRASNAYA PRESNYA AT NIGHT

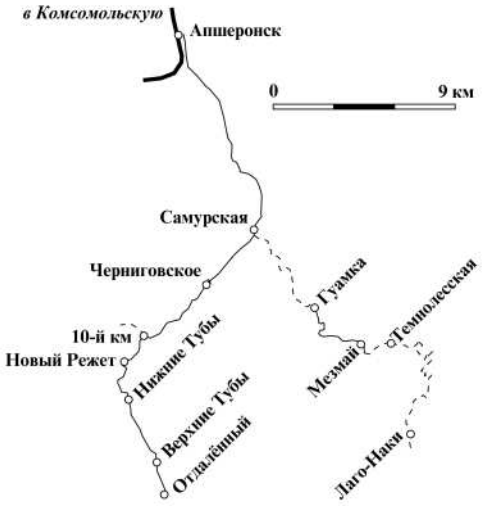
N. Kalashnikov (Moscow) tells a story of the night life of “Krasnopresnenskoe” subway shed. All pictures taken on May 7, 2004.

BACKROADS AND BACKCOUNTRIES

NARROW GAUGE SITES OF KRASNODAR TERRITORY APSHERONSK–GUAMKA–MEZMAY

I used my four vacation days at the beginning of May to finally carry out my old idea — to visit the narrow gauge railway in Apsheronsk and the unique natural monument of the Krasnodar territory — Guamka gorge. From the trip I brought back unforgettable recollections and a plenty of impressions, which I am going to describe to the reader of my story.

Apsheronsk forestry narrow gauge railway used to be a single system Apsheronsk–Samurskaya–Siding 10 km–Otdalennoe (Shpalorez) with two offshoots: a small branch from Siding 10 km to Kushinka and the eastern mountain section, which penetrated the Guam gorge (Samurskaya–Guamka–Mezmay–Temnolesskaya–tourist center "Lago-Naki").



Apsheronsk Railway © D. Zinóviev

So, what does the road look like today? The track from Temnolessky to the tourist center "Lago-Naki" was dismantled in the 1960–70s. The section from junction station Samurskaya to Guamka in the 1980s was badly destroyed by floods, its restoration was too expensive, and then it was finally dismantled, too. As a result, the Apsheronsk system was torn into two autonomous parts. And this is how it is now.

In 2002 the 8-kilometer mountain section Guamka–Mezmay was also badly damaged by a flood, and as a result Mezmay settlement was literally cut off from the "mainland." It is amazing, but in 2003 they undertook its restoration. "*Small company "Apsheronsk" is conducting reparative works on narrow gauge railway in Guamka gorge*" (03.12.2002), "*destroyed bridge restored in Mezmay*" (25.03.2003), "*construction of the new railway is coming to end in Guamka gorge*" (15.05.2003). At the end of 2003, judging by Kuban news, "the Road of Life" from Guamka to Mezmay was completely restored after the flood.

Narrow Gauge Railroad of Apsheronsk Lumbering Enterprise ("Apsheronsklesprom")

Away from the main roads, in the bottom of the Caucasian mountains, somewhere between Maykop and Tuapse, there is a small town of Apsheronsk. In the early Saturday morning on May 1, 2004, I get on a from Rostov-on-Don to Apsheronsk, and after an 8 hour journey I begin the study of the local narrow-gauge peculiarities.

My acquaintance with the narrow gauge railway in Apsheronsk began at its northern point, located in the territory of the log mill. The imposing dimensions of the now almost empty mill suggest, that earlier there were a plenty of tracks here. Now two narrow-gauge tracks go just a little into the territory of the mill. Half-rotten ties and fissures in the earth remind of the extension of the railway that used to be here long ago. Several rusty passenger coaches (PV) without bogies can be also seen here.

This is how the log mill looks from the station

I walk along the tracks southwards. Immediately after the log mill the the railway intersects street Kommunistichеskaya, and there begins the territory of station Apsheronsk-Narrow Gauge.

Station type old buildings are located on both sides of the northern neck: one (to the left) is re-equipped into a stomatological office, the another (to the right) is half-wrecked and abandoned. There is also an original monument in the honor of the 50s anniversary of railway with numbers "1927–1977." The gray stone monument stands on two narrow-gauge bogies. It occurs that the railway was

constructed in 1927 by the Gulag prisoners, and the corpses were buried directly in the mound. . .

The northern neck of Apsheronsk station

The territory of station impresses: considerable number of tracks, manual switches with striped plates, a wye; on the station track there stands a lumber consists that recently arrived from the mountains; near the shed there are a TU8P diesel locomotive with a luggage car, a fire train, a tank car, wooden freight cars. It is beautiful!

The main track of Apsheronsk station

Besides lumber transportation, there is also regular passenger traffic: on weekends a passenger train (a TU8P with a luggage car) departs from here to the southern endpoint of the main line — to the town of Otdalenny.

In the southern part of the station the transloading facility is located. Beyond the southern neck there is a grade crossing (Sport street) and an unusual tall entry traffic signal on a semaphore mast. Then the narrow track goes around the town along Partizanskaya street, near "Lesselmash" plant, and further to the south towards the mountains.

Guamka Gorge Narrow Gauge Railway

The main purpose of my trip was a visit to the unique narrow gauge railway in the Guamka gorge. So, early in a stimulating morning on May 2, I was met by the picturesque town of Guamka (50 km southern from Apsheronsk). Morning freshness, thin fog, and the light of the raising sun, gilding the peaks of the Caucasian mountains. . . It felt like gates into an unknown, wonderful world, which was thrown open before the eyes of a resident of a megapolis. Not a sound in nature, nor a breeze! The town captivated me with some special cosiness, calmness of narrow by-streets; even in spite of the abundance of tourists, it lived its quiet, unhurried life. A campground with accurate wooden cabins was adding to the picture. Practically everything here bore a clear imprint of remote Russian countryside.

One cannot fail to note the building of the former railway station: it is located in the town center. The station has three tracks and a wye. There are some remnants of rolling stock: a hand-made biaxial trolley for moving tourists through the gorge, and several rusty flatcars, forgotten in the cut-off section back in the logging times.

Guamka station: three tracks at the Caucasus

The rails are taken off before Guamka. Once the narrow gauge railway went from here westwards through the forest thicket and the file of creeks to Samurskaya main line station. Now one can hardly see only the remnants of the existed track: a narrow trampled path vanishing in the woods, with old ties grown into the dirt — that's all that is left of the railway. After the wash-out, section Samurskaya - Guamka has never been restored: it could not compete with cars and buses and was soon dismantled as totally useless.

Now I had to overcome the distance of 8 km eastwards along the narrow gauge railway: first get through the Guamka gorge, and then climb to the town of Mezmay. This is the most exotic way for tourists — and standard for local residents of Mezmay.

Guamka: here began the track to Samurskaya

In front of me there is Guamka gorge — a unique creation of Nature, one of the most beautiful and majestic places of Krasnodar territory. It is a narrow canyon, pierced during millenia by the mountain river of Kurdzhips. The gorge is located between towns Mezmay and Guamka, its extent is 3 km, its depth — up to 400 m.

Guamka Gorge railway

I follow my way to where two high ridges tightly get together: to the left — the ridge of Guamka, to the right — the higher spurs of the Lago-Naki ridge, and between them there swiftly flows the Kurdzhips river. To enter the Guamka gorge, one has to pay 100 roubles per person. The gorge begins immediately and unnoticeably: just a moment ago all around there were wooded slopes and bright sun, and then, all of a sudden, perpendicular cliffs hang overhead, and the Kurdzhips goes far downward and makes noise somewhere below, squeezed in the narrow canyon several meters wide. The railway barely fits on a narrow shelf, cut in the left slope of the gorge by the prisoners of Gulag in the 1930s.

Water worked on the Guamka for thousands years. After the glacial period in the place of modern Mezmay town there was a mountain lake. The water from the lake escaped into the plain between the Lago-Naki and Guamka ridges, gradually washing out rocks and dirt. Later, in thousands years, people hollowed this long ledge in the cliff, on which they laid steel rails and ran trains. Other millenia will pass, the rails will vanish for good, but this artificial shelf will forever remain a mute monument to its creators.

I go along the track: somewhere straight on ties, somewhere next to the railbed. The state of the track is perfect: new flat rails, and the fresh ties still smell of creosote! Very unusual for a narrow gauge railway. Old dismantled rails and obsolete wooden ties lay piled along the line after the recent track repair.

Shining in rare solar rays, the steel track constantly winds, going around steep cliffs. The beauty of the vistas is truly astonishing. Not in vain the Guamka gorge is called an open-air museum. On the opposite slope of the gorge there are many-colored inclined layers of rocks (white, pink, brown, green, yellow, red; each color is explained by their geological structure), which were split by the rapid river in millenia. Deeply below seethes and laps the Kurdzhips. Above the almost perpendicular slopes, which hang overhead, and above the trees, one can see a narrow strip of clean dark-blue sky sandwiched between two gigantic rock walls. The springs break through at a high altitude, protrusions of the cliffs ooze with the flows of moisture and with brooks, and sometimes burst open with cascades of waterfalls. The trees, covered with shaggy overhanging strands of moss, are scattered across high cliffs. The flora is very diverse: oak, beech, yew-tree, fir tree, pine tree, and many other interesting and rare plants.

Old track in the gorge after the bridge across the Sukhaya Balka creek

Mountains, waterfalls, amazing nature, majestic natural decorations and the road itself, cut in a cliff, strike with the constantly changing views. The views are simply magical, and the beauty can not be described in words! Unique microclimate, the noise of the mountain river, and the clean air strengthen the impression.

In the gorge there are many tourists and other pedestri-

ans: some are going to Mezmay, like me, some — towards Guamka. Local residents can be clearly told from the others: indeed, this is almost the only easy path between the towns. In some places the road goes almost level with the river, but usually the river makes noise far below. And here in the waters of the seething flow there lies a sad monument — a diesel locomotive that fell down into the gorge several years ago. Impressive picture. . .

Approximately in the middle gorge there is located cafe "House for the visitors in the Guamka gorge," where it is possible have a snack and restore the energy spent while climbing the hill. By the way, those who want can hire the trolley to get into the gorge, gaily honking at the numerous turnings. However, the majority of people nevertheless prefer the pedestrian mode of transportation.

To my surprise, in spite of the media reports about the complete restoration of the railway to Mezmay, it turned out that railway was repaired only to the bridge across the Sukhaya Balka (less than half way between Guamka and Mezmay.) This is the place, where two gorges are get together: to the right, from a narrow and high gorge, there comes inflow Sukhaya Balka, that joins the Kurdzhips. From the narrow and high bridge it is interesting to observe the confluence of pure water of the Sukhaya Balka with brown clayish water of the Kurdzhips. After the bridge I see rails produced in 1937; the trolley does not go any further because of the poor track condition. The pedestrian path continues to go along the old boggy ties. The spikes in some places popped out, the ties fairly rotted and sagged. . .

Road to Mezmay

Wash-out near Mezmay

After the bridge across the Sukhaya Balka the gorge goes to the side, the mountains make room, the noise of the river calms down, and only reddish high cliffs raise to the left far on the other side of the Kurdzhips. Mud flows over the railway, and now and then the narrow track completely sinks in the dirt, so that the rails could not be seen. It's less then funny to walk along the mound on the boggy clay without special boots. After passing several hundred more meters, I discovered with horror that in several places the mound is strongly washed away, and the railway is completely unfit for rail traffic, although it is completely passable on foot. It is even possible to sit down to rest on ties.

Abandoned track near Mezmay

Soon the impenetrable section ends, and the dirt under the feet becomes harder. I brush off the heavy pieces of clay pulp against the rails and go further, towards the approaching forest. I find myself in private with the green surrounding world. Snags, sticks, twigs fill the forest and make it saturated and impassable. The only indicative of the human civilization is the old abandoned railway. But nevertheless it's cool to go along the ties! When I walk along an old railway, I get some special feeling, which gives hope; it seems that the road treats the wounds of soul. Nevertheless, this railway is a remarkable place, which harmoniously comes in touch with the miraculous nature; a journey through such places is an exceptional pleasure. It seems that any minute a whistle of a locomotive could be heard. . . And indeed once in these amazing places the whistles of locomotives were not rare, they were an ordinary phenomenon, and they were percepted as a part of the surrounding world.

Both the railway and the small towns served by it keep the half-forgotten spirit of the old times. After several more kilometers, right after the recently restored bridge across the Kurdzhips, there begins Mezmay town. In two places near the bridge the line is torn — the sections of track several meters long are either specially lifted off, or simply stolen by the locals for their needs.

Mezmay town was settled in the 1830s as a settlement of lumberjacks in a narrow valley in the confluence of the Kurdzhips and its inflow of Mezmay. The picturesquely located small houses populate both slopes of the valley, and around them are mountains and boundless forests. A working camp for prisoners was here before, and a narrow gauge railway was built timber removal. An almost universal "woodenness" strikes: there are virtually no brick structures here. Wooden houses, triangular roofs, brick pipes, barking dogs, good-natured cows and dirty-faced pigs, which fell asleep in dirty puddles. . . I found myself in an entirely

different world, which has nothing in common with our ordinary urban life. It seems that the time here flows slowly, or even does not flow at all, in spite of all the laws of nature. Indeed, it's worth getting here, glancing at the remote Russian countryside, and perceiving one's complete isolation from the customary civilization. In the past, this old abandoned narrow gauge railway was the only connection with that civilization; I can use these rails to go back. . . to return into the future: to "our" world, to "our" time. . .

Repaired bridge in Mezmay

Mezmay belongs to the geo-anomalous zone of Lago-Naki upland. They say that this amazing place possesses large attractive and energetic force. For a long time it was hidden from people by mountain slopes and three impenetrable gorges: Mezmay, Verkhny Kurdzhips, and Guamka.

The railway makes a right turn, and I can see the territory of Mezmay station. The picture is depressing: rusty rails and switches, old boxcars, the spirit of disintegration and abandonment. To the left the brick station building survived with the plate "Station Mezmay." On the tracks there stay retired remainders of the rolling stock: flatcars and a PV passenger coach. After the station there is a wye and a bridge across the creek of Mezmay. Among the tracks there walk cows and peacefully chew grass.

Mezmay station

A very special feeling appears, when one stays next to a neglected railway. One can imagine that it was once constructed in accelerated tempos, then worked, and there were people here who had their business. Now all it rusts, gets plundered and scrapped, needed by nobody, and forgotten. . . Far behind a fence, I see the remains of TU7 or TU8 diesel locomotive, and the dead, useless track runs away and vanishes behind a cliff. . .

A hope remains that perhaps the common sense will prevail, and the narrow gauge railway will be fully restored. And again, as in the old good times, a small diesel locomotive with green small coaches will whistle and leave Mezmay station along the gorge, along this amazing tracks, making it possible for its passengers to get impressed by the mountain views, creeks, and waterfalls. . . Possibly. . . Who knows. . .

A. Vershinin (Rostov-na-Donu). Text, photo

Life is good, for as long as the wheels knock!

The railway mailing list "1520mm" finally got its own logo, and not one, but several! In June 2003, the subsribers to the mailing list participated in a rating vote, and as a result, the first place was given to the design developed by V. Shulgin from Tula (to the left).

Mailing list "1520mm" — socializing with colleagues in trade and hobby; answers to any questions; news.

http://groups.yahoo.com/group/1520mm

NEWS FROM ABROAD

ØRESUND LINK

I confess to Their Majesties the Queen of Denmark Margrete II and the King of Sweden Karl XVI Gustav. I confess that I illegally crossed the border between Swedish and Danish kingdoms on the bridge across Øresund strait twice. And this crime was worth committing it — the complex is truth remarkable!

Øresund Link (photo by R. Plungė)
©"Kompiuterija–PC World" http://kompiuterija.lt

In reality it is not even a bridge, but the entire complex called "Øresund Fixed Link". The complex consists of coastal access automobile and railway lines (including highway interchanges and toll stations), a tunnel, a man-made island, two access gantry bridges, and a cable-stayed bridge. The bridge has two levels; the upper level is a four-lane highway (two lanes in each direction), the lower level — an electrified double-track railway.

The agreement about the construction of the Link was signed by the governments of the two countries in 1991, and the construction itself began in September 1993. Both monarchs participated in the solemn ceremony of the opening of "Øresund Link" on July 1, 2000. As a result, both countries obtained a new land neighbor — one another! Next day, at 6 A.M., the normal traffic of automobiles and trains from coast to coast became possible. Together with the "Stor Belt Link" across the strait of Store Baelt between the islands of Zealand (Sjælland, where Copenhagen is located) and Fyn (the island where Odense city is located), and with the bridge across the strait of Little Baelt (Lille Belt, between the island of Fyn and the Jutland — Jylland — peninsula), it was formed a continuous automobile-railway corridor from Central Europe to Scandinavia.

The first of the existed crossings was opened quite recently, in 1998. It is similar in layout to the Øresund Link (tunnel — island — bridge, if we go from Zealand to Fyn), but the autoroute and the railway coexist at the same level). Before the erection of this complex, Zealand and Fyn were connected only with ferry boats. The second crossing, across the Little Baelt, is much smaller and older.

The construction of the entire corridor was financed by the European Union and the bank of Europe. The Øresund Link was built by a consortium, headed by the Swedish concern SKANSKA, the one that constructed the Ice Palace in Saint Petersburg. The Danes did not really need this transit connection. Now they, as true Scandinavians, are worried about the air pollution in Denmark, and speak in favor of the limitation of trucking, and of the transfer of freight traffic to electrified railways.

Judging by everything, Denmark was nevertheless interested in the construction of the bridge precisely where it was built. Indeed, it would be more logical to construct the crossing further to the North — between Helsingor (Denmark, also known as Elsinore — the city of Hamlet, Prince of Denmark) and Helsingborg (Sweden). Here, the distance between the coasts is three times smaller. However, in that case, the route from Copenhagen (but not from the Continental Europe!) to Stockholm would not be a straight line, and the Copenhagen international airport of Kastrup would be irrelevant (now, it serves all the Southern Sweden).

The Complex

I will begin my description of the complex from the fact that a double-track railway line was laid from the center of Copenhagen into the airport. Now trains from the center section of Copenhagen, from the station of Østerport ("Eastern Gate") go through Nørreport ("Northern gate" — an underground station, future subway transfer), København H ("Central Station"), new bridge to island Amager (the airport) and two more intermediate stations (Tarnby and Ørestad) to station Københavns Lufthaven, Kastrup. The interval between trains is 10 minutes in the daytime and 30 minutes at night. It takes 14 minutes to go from København H to Kastrup. In use are series ER-IR4 three-coach EMU trains built by ABB. Furthermore, Regionaltog (local trains) from the airport to different ends of Zealand also use this line.

Trains from Copenhagen go thought the airport and the bridge to Malmö (Sweden) every 20 minutes in the daytime and every 60 minutes at night. It takes 35 minutes to go from København H to Malmö C, and 21 minutes from the airport to Malmö C. Danish series ER-IR4 and Swedish X2000 (also known as X2K) EMU trains are in use. In year 2004 it is planned to switch to new Øresundstog three-coach EMU trains, 27 of which have been built exclusively for the Link. Long distance trains (InterRail, EuroCity) from Central Europe to Scandinavia also go through the bridge and the airport.

The central station of Copenhagen — København Hovedbanegarden — has 13 passenger tracks and 7 platforms. Four of the platforms (8 tracks) are reserved for InterCity, X2K, InterCityLyn ("Lightning"), Regionaltog, and long distance trains; 2 platforms (4 ways) — for S-tog trains. There is a dedicated platform, Øresundsperron, for the Øresund trains, Øresundstog (they are designated with the hybrid of Danish "Ø" and Swedish "Ö": "Ö"). The station has the main waiting room above the tracks. A door leads

down to the escalators and the stairs to the platform. The station was built in 1911.

Station Københavns Lufthaven, Kastrup (literally "Copenhagen airport, Kastrup") is located underground, or rather in a groove with a glass roof. The center section of the station is exactly under the new international terminal N3 of the airport. The station is in a curve; before the arrival of a trains the lamps built into the edge of the platform smoothly turn on and off with the interval of three second. A bypass tunnel and a cargo terminal is built for freight trains. In several years one of the two new lines of the Copenhagen metro will come to the airport.

After the airport, the train travels in a groove, and then dives into the tunnel. The 430 m long part of the coast, where the tunnel portal is located, has been artificially built. The automobile tunnel is at the same level with the railway, side by side. The length of the tunnel is 3510 m.

From the tunnel, we emerge into a man-made island of Peberholm. The length of the railway across the island is 4055 m. At the eastern end of the island the highway climbs onto a mound.

The Western access bridge begins (3014 m), which gradually climbs upward. Approximately on 2/3 way along the bridge there is the state border between the two kingdoms passes; thus far, Denmark and Sweden had no land borders. We are entering the High bridge. This is a cable-stayed bridge, the navigation clearance is 57 m, and from the top a tug boat looks like a little yacht. The length of the bridge is 1092 m. Then we are passing the Eastern access bridge (3739 m). In principle a situation is possible, when th complex is completely closed for traffic. There were already cases in Denmark when automobiles were literally blown away by high crosswinds, therefore on the home page `www.oresundskonsortiet.com` they post a notice of whether the bridge is closed today, or not.

The overall length of the Link (without the access roads) is 15 840 m, including the tunnel (3510 m), the bridge (7845 m), and the washed sections (4485 m.)

Smoothly we descend down to the Swedish shore. The highway diverges to the right. Almost immediately the train stops at the new station Malmö Syd (Malmö-Southern), then goes around the city at the south goes, and then merges into the pre-existing railway. We go again around Malmö at the east, and finally arrive to station Malmö C.

The station building of Malmö Central was erected in 1858. The station has 12 stub tracks, 6 platforms. Track 5 is for the Øresundstog. This assignment is temporary, because the construction of the complex still continues.

In 2005 they plan to open the Malmö City Tunnel, which will considerably reduce the way from the Øresund Link (Malmö S) to Malmö C, and, moreover, convert Malmö C into a through station. Altogether, they plan to build 11 km of tracks, of them 6,2 km in the tunnel. The tunnel will pass directly under the city castle, which is surrounded by a preserved single-track museum streetcar line of (biaxial trolleys with two cabs, built in 1906). Three new stations will emerge: the underground Malmö C, the underground Triangeln, and above-ground Hyllie.

To conclude, let me say something about the economy of the Link. Before the construction of the Øresund Link, the connection between Sweden and Denmark was supported by ferry boats (auto and rail), and by high-speed Flygbatarna catamarans. I do not know, how much did the ferry cost, but here are the Flygbatarna fares (economy class): 35 DKK (about 110 RUR). A train ticket for Øresundstog from Norreport to Malmö C (2nd class) costs 60 DKK (190 RUR). The Øresund Link is the only toll highway in Denmark. The toll is 230 DKK (740 RUR) for a passenger car, 850 DKK (2720 RUR) for trailers longer than 16,5 m, and 1000 DKK (3200 RUR) for buses. Voilà!

Relevant Links

- http://www.broboken.com "The Book About The Bridge" (Book about Øresund Link)
- http://www.sundlink.se "The Bridge" (Sundlink Contractors — the consortium that built the Link)
- http://www.citytunnel.malmo.se "Citytunneln & Øresundsbroanslutningarna"
- http://www.oresundskonsortiet.se "Øresundsbron" (The company that exploits the Link.)
- http://www.malmo.se "Malmö stad" (Malmö city site)

I. Kopaysov (Saint Petersburg)

YOU WOULD NOT BELIEVE. . .

In 2001 at Lyublino station in Moscow an empty boxcar rolled away from the hump. It rolled straight towards a commuter train, but the turnout miraculously switched, and the boxcar was struck into a tank car. The tank fractured, and a liquid began to pour from the crack, and this liquid was none other but. . . alcohol. All station workers, armed with buckets and other vessels, came to "rescue" the contents of the tank, and the local residents also came to the smell. Despite the fact that some of the "resquers" were driven away in ambulances with severe alcoholic poisoning, some quantity of the Product nevertheless was spilled.

The owner of the alcohol sued the railway. The railway found the switchman (both literally and figuratively), who worked that day on that hump. And the switchman would pay for the alcohol and for the tank to the end of his days, if not for the clever attorney, who said that an **empty** boxcar could not ram a **full** tank car! And he dug up the norms and technical specifications, and he insisted on a detailed examination.

And it was discovered that the tank had been built in the Austro-Hungarian empire in 1907. This rarity, judging by the tracks from the splinters on the sides, went through the World War I, the Civil War, the World War II, and two Chechen wars (since it had been assigned to Daghestan). The boxcar just put the final period in its impressive biography. And the alcohol proved to be a contraband. As a result, the switchman was acquitted, and the alcohol case was transferred to Police of Economics Crimes. — *Ed.*

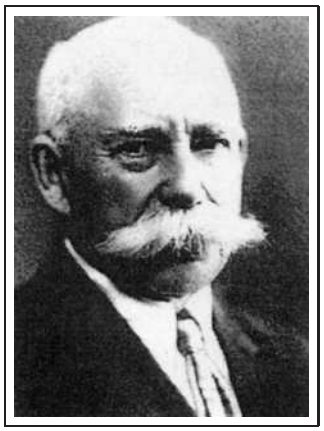
FROM THE ARCHIVES

CONSTRUCTION HISTORY OF THE AMUR RAILWAY

The Chinese-Eastern railway, built in the deviation from the original plan of the Transsib construction, instead of the line of Sretensk–Khabarovsk, did not protect the interests of Russia, which became especially obvious after the Russo-Japanese war.

In 1906 in Irkutsk there took place a special conference, at which the problems of communications in Siberia were examined. The participants supported the construction of the Amur railway as the matter of the ultimate priority. Local merchants, entrepreneurs, many interested persons supported this idea. The conclusion was: the road must be constructed in the Russian territory. Therefore, they reverted to the original plan, approved back in 1892. In 1908, the State Duma approved the construction of the Amur railway of the total length of 2041 versts (2178 km) from Sretensk to Khabarovsk with branches to Nerchinsk, Reynovo, and Blagoveshchenk.

The origin of the construction was at station Kuenga of the Transbaikal railway. From there to station Uryum there stretched the head section. The rest of the future railway was divided into three parts: western — from station Uryum to the Kerak river; middle — from the Kerak to the Diya river; eastern — from the Diya to Khabarovsk with the Amur bridge.



A. V. Liverovsky

In 1908 they started the works at the head section, in 1909 — on on the west, into 1911 — in the middle (with a 108 km branch to Blagoveshchenk). The construction of the last section from Malinovka at the Bureya river to Khabarovsk began in February 1912 and was headed by engineer M. S. Navrotsky, later — by D. P. Birsonov. But the most of the work was carried out by talented experienced engineer **A. V. Liverovsky**, the head of the eastern section of the Amur railway. It was he who began the construction of the Great Siberian Railway from Chelyabinsk in 1891, and it was he who completed the construction of the last section of the Transsib. He was greatly proud of his achievements. Considerably later, at the end of his life (Aleksandr Vasilyevich died in 1951, at the age of 85), he wrote: *"What can be gladder than to see that somewhere in the virgin taiga, in the desert, uninhabited, roadless place every day there grow the mounds, grooves get deepened, mountains step aside, giving place to the railway; turbulent flows are subdued, saddled by beautiful bridges, and water-abundant majestic rivers get subordinated to the human mind... And all around the empty places there appear mines, new plants, factories, towns, settlements, the new life."*

During the construction of the Amur railway the workers faced exceptional technical difficulties, which had not been encountered even in the heaviest sections of the Siberian railway: permafrost, covered with humus and sand, that allows thawing only at negligible depths. Hence, with the unfavorable drainage conditions, there appeared continuous swampiness, almost at the entire depth of thawing. It was very difficult to arrange water supply. Despite the fact that the head section was mostly following river valleys, those rivers could not be used as water supply in winter time because of their deep freezing. Digging artesian wells did not solve the problem, either, since in certain cases the quantity of water proved to be insufficient.

If the geologists happened to reveal nonfreezing springs during the analysis of the freezing conditions in the water-bearing layers under the bottoms of the rivers, adjacent to the railway, then these springs, of course, were used. As a rule, during the entire winter, water for the needs of work trains was taken from bore pits, reaching the underground horizons of river beds. The railway was laid on the extremely swampy terrain, intersected with mountain flows, among rocky ridges.

At the beginning of the construction along the line, for entire its length, there were neither settlements nor roads; mountain gorges, hillocky swamps, and stony hills made communications all but impossible. Substantial portion of the right-of-way was accessible only to pedestrians and equestrians. During snow melting, and also in the period of rains, some localities became completely inaccessible.

The eastern section, from the Bidzhan river to Khabarovsk, consisted of primordial taiga, gradually turning into the swampy hillocky valley of the Tunguska river and its tributaries, with no traces of human dwelling.

When the construction work began in 1912, there were only three settlements on the entire space from the Bureya river to Khabarovsk: In, Vira, and Pashkovo. It is understandable that in such difficult conditions,one of the first concerns was the building of access tracks, both for the movement of construction materials, workers and food, and for maintaining the communication between the line and the Cossack settlements on the Shilka and the Amur. Besides traditional temporary tracks, several branch lines were also built: Chasovinskaya from station Taptugary to the Shilka, Reynovskaya from station Rukhlovo (Skovorodino) to the Amur, as well as some dirt roads.

In spite of all the improbable obstacles to the construction of the Amur railway, the Russian engineering thought demonstrated its superiority in the railway building to the entire world and gained the priority in the solution of complex technical problems of surveying the route and building the railway on the permafrost and swamps.

The exceptional role in the organization of the building of the Amur railway and in the solution of those appearing numerous and most complex technical problems belongs

to Aleksandr Vasilyevich Liverovsky, under whose management the eastern section of the railway was shaped and built.

From Arkhara to Khabarovsk the route passed across the wooded Maly Khingan mountains (station Uril–station Kundur), gradually climbing them, and crossing the ridge in Lagar-Aul (at 378 m above the sea level). Between Lagar-Aul and Birobidzhan the railway went along the Bira river, getting down from the mountainous area, while in between Birobidzhan and Khabarovsk it crossed strongly swampy flat terrain. The construction line was broken into six sections. The administrations of five of them were located in Arkhara (chief engineer A. A. Bagdasaryants), Kundur (I. N. Sungarev), Obluchye (V. G. Kossakovsky), Bira (A. M. Esaulov), and In (N. V. Denisov). The sixth section, headed by engineer Kozhevnikov, was responsible for building the Amur bridge and the line from the bridge to Khabarovsk.

In the territory of the first section there lived cossacks and old believers, who did not justify the hope of A. V. Liverovsky to involve local residents into the construction. The railway required many thousands working hands. For example, in 1913 it employed 54,000 men. The use of "cheap" Chinese workers was stopped as soon as June 1910 a law was passed curtailing hiring the Chinese to execute "government-funded projects at the Far-Eastern outskirts."

Since that time only Russian workers, brought from European Russia and West Siberia, were occupied at the building of the railway. The contract workers were carried by the Transsib and Chinese Eastern railway to Vladivostok, then to Khabarovsk. Here after the inspection of the arrived (recruiters hired everyone without any selection!), the weak and the unhealthy were rejected as unfit to hard physical labor, leaving just some of them for light labor: as grooms, watchmen, etc. The rest of the unfit were sent back to their native lands at the government's expense. From Khabarovsk, it took another one-and-a-half month to get to the place of works (160 versts) because of the impassable roads.

Simultaneously with the construction of the railways there rapidly grew the roadside town of Sololi. The town soon became large station Obluchye. As builder I. Mulin, who worked first as a senior worker, then as a foreman, and finally as a draftsman, recollected, "*At that time everything astonished us: the silence, the untrodden taiga, the large wind-fallen woods, and the permafrost. Sometimes you would slip in a steep slope, tear away the moss by the boot, and see clean ice under it. . . Timber buildings did not appear soon. We lived in tents to the end of Winter 1911. The Nature rendered us furious resistance. In summer time, we suffered from gadflies and tongs. Mosquitoes and other gnats caused big troubles. Neither gloves nor mosquito masks saved our hands and faces. At the tasty place there emerged another kind of blood suckers: spirit traders. They were dubbed "hunchbacks", because these people appeared in the taiga with bags, complete of tin cans with alcohol. In the working teams, alcoholism began. But we did not drink because the life was too sweet. . .*"

Following O. P. Vyazemsky, A. V. Liverovsky gave preference to organize the works in an economic manner, without contractors, who often robbed workers and impeded building by the delivery of poor quality materials. In the eastern section of the Amur railway, 90% of all works were carried out in the economic manner. Being a booster of mechanization, A. V. Liverovsky ordered excavators from the Putilov Works in Saint Petersburg, and ten such machines, including seven multi-scoop tracks track-mounted ones, operated in the eastern section. For the first time in the practice of railway construction they widely adapted concrete and solution mixers and stone breakers. There appeared mechanical repair shops; saw-mill plants provided the construction with ties, beams, boards, and other materials. This all was directed toward lightening the labor and accelerating the progress of the project.

In the section from Arkhara to Bira in 1912–15 there were built bridges across the Arkhara, Mutnaya, Kuldur, Kamenushka, and Kimkan rivers, and **seven tunnels: Rachinskiy, Tarmanchukanskiy, Bolshoy and Maly Kazachinsky, Kasatkinsky, Obluchensky, and Lagar-Aulsky**. All the tunnels were constructed double-tracked, but it was not before the 1930s that the second track was used for regular trains, only for repair work.

The building of tunnels was conducted under the management of engineers V. G. Kossakovsky, I. N. Skugarevsky, E. G. Rozenberg, A. N. Passek, I. I. Borkovsky, S. V. Khlebnikov, A. S. Speransky, and master N. A. Vakulin.

The Lagar-Aulsky tunnel was the most unsuccessful one. Its building began in 1912, and finished in 1914; it became fully operational in 1915. Because of the incorrect conclusion of geologists about the soil composition, the tunnel was built using light type of finishing. Because of that, the tunnel soon began to fall apart. The main defect was in its irrigation. Later, in the 1920s, wooden gates were installed at the tunnel portals to keep it warm. In strong frost the tunnel was heated by bonfires and furnaces. However, in 1926 winch the gates had to be removed because of the inconvenience of works, frequent train delays, and repeated collisions and derailments, and because of the need to hire threes shifts of watchmen, which caused additional expenditures.

On February 12, 1914, the railway was completed: at milepost 180 versts from Khabarovsk, in 8 versts from station Kimkan, the rails were joint. The honor of laying the last meters of the Amur railway was given to the subdivisions led by engineer A. N. Passek and technician Radkevich. On February 17, 1914, the solemn jointing ceremony occurred at station Obluchye. The train, carrying the chief stahlmeister N. L. Gondatti and the chief of the construction engineer A. V. Liverovskiy, for the first time passed the junction. In March 1914 the commission of the State Duma proposed a bill reclassifying the working branches of the Amur railway as operational branches, and authorizing the construction of the road Administration in Alekseyevsk (Svobodny).

On March 10, 1915, the transportation of paid private freight, passengers, and luggage began between stations Vladimirovka and Domikan, and Arkhara and Innokentyevskaya. On April 15, the eastern section construction Administration started reviewing bids for the building of locomotive sheds and workshops at the 3rd class stations: at Arkhara — one shed with nine stalls, at Obluchye — one shed with six stalls and workshops, at Bira — one shed with six stalls, at In — one shed with six stalls and workshops.

In 1916 the main line of the Amur railway from Kuenga to Khabarovsk was divided into 24 versts neighborhoods, for each of which one senior (spare) road master was assigned.

The cost of the newly born railway exceeded a quarter of billion rubles (264 mln.) The cost of the eastern section alone to the Treasury was 73 mln. rub. However, it was not just because of the scale of the expenditures and of the technical difficulties that the construction became one of the most important state enterprises. The Amur railway had a great value for strengthening the position of Russia in the Amur region: it was built with the labor of Russian, civilian and convicts, almost without the participation of foreign workers, with brilliant results. The construction of the road was finished ahead of time, tens of millions of rubles in wages remained in Russia, and at the same time thousand workers, drawn from European Russia to the Amur region, became acquainted with this territory, and many of them settled here.

In 1910 a special expedition was dispatched to the Amur region for exploring the land reserves of regions adjacent to the Amur railway, and methods and means of their successful population and exploitation. The expedition was headed by N. L. Gondatti, later the Amur region governor general. In the expedition there were included representatives of different departments and specialists in soil-botanical, agricultural, statistical, hydrotechnical, forest, road and geological disciplines. As a result of two-year long field works, extensive economic descriptions of the Far-Eastern regions were collected. On the basis of these materials a general plan of the population of the Far-Eastern outskirts, in particular of the region, which directly gravitated towards to the Amur railway, was outlined.

The expedition revealed that these lands had all preconditions for successful population. The first place among its natural riches belonged to ores and minerals (gold, coal, iron, clay, graphite, marble); the Amur was rich in fish reserves. In the railway region there were more than 2 mln. dessiatines of forest suitable for commercial development. At the same time, in spite of the public opinion about the absence of sufficient agricultural land reserves, the inspections demonstrated the possibility of settling not less than 300 000 ploughmen in the railway region to the east of the Zeya river.

When they just started the construction of Siberian railway, the Government disbursed 14 mln. roubles to assist the industrial development of the localities adjacent to the railway, and in 1897 the monetary fund was increased by 9,7 mln. roubles. From 1912, Far Eastern migrants would get relocation loans — up to 400 roubles per household. Under the order of the Siberian Railway Committee, they were provided with tools and household items. This contributed to the fastest development of the Amur land.

B. F. Burkova, S. P. Chuykova (Khabarovsk). Based on the materials from the Far Eastern Railway History Museum

PHOTO HUNT

EM4-004 and EM4-006 "Sputnik" EMU trains are about to open the regular high-speed service between Moscow and Mytishchi, February 14, 2004, Yaroslavsky terminal (photo by V. Lavrov)

FROM THE ARCHIVES

GULBENE–ALUKSNE: 80 YEARS IN TIMETABLES

Gulbene–Alūksne narrow gauge railway is the last surviving "splinter" of a vast narrow-gauge "empire", which once covered a large part of the territory of present Latvia.

The Livland access tracks (this is how this narrow-gauge system was originally called) were built in 1902 and were opened in 1903. Initially the line went from Estonian town of Valga (where it was connected to the Pärnu access tracks), through Ape, Alūksne, and Gulbene (Vecgulbene) to Pļaviņas (also known as Stukmani and Stokmanhof). In 1902 from the East, from Pytalovo (Jaunlatgale), there came a narrow-gauge branch to Sita, which in 1916 was prolonged by the Russian troops through Gulbene to Ieriķi. In the same year the section of Livland tracks from Gulbene to Pļaviņas was altered to the wide gauge (line Pytalovo–Ieriķi followed the case in 1921)

The Livland access tracks were nationalized in 1918. In 1923, a detour line was built from Valga to Koikküla on the Estonian territory (through Kaagjärve), that reduced the distance by 2 km and gave Estonia a direct access to Koikküla. By the way, it was this section that the trains used when Estonia and Latvia joined the USSR. The construction ended, and destruction began. Valka–Ape line and the detour section were closed on 2 June, 1970, Ape–Alūksne line — in 1973. The remained line Gulbene–Alūksne belongs to the joint-stock company "Gulbenes–Alūksnes Banītīs", and works as a tourist railway.

We propose to your attention the train timetables for the Livland access tracks in the different years of their existence.

The timetables have been taken partially from Estonian, and partially from Latvian sources. Unfortunately, these sources do not always adequately reflect the timetables on the other side of the border.

Related Links

- http://www.banitis.lv "Banītīs" (The official site of Gulbene–Alūksne railway)
- http://parovoz.com/narrow/LV75.php "Latvian Narrow Gauge Railways (750 and 1000mm)" ("Younger Brother" Encyclopedia)

Compiled by D. Zinóviev (Boston)

km	↓ Station	1924	1932/33			1937/38			1962		1964	
	Train →	N5	N49	N5	N51	N5	N19	N7	N955	N957	N961	N965
	Latvia											
112	Valga Lat.	14.50	...	17.15	...	...	...	15.30	...	...	...	...
101	Žuldini	15.14	...	—	...	...	...	15.55	...	...	...	...
	Estonia											
110	Valga Est.	...	1.30	...	17.50	...	...	...	12.50	22.10	0.40	11.45
100	Kaagjärve	...	1.57	...	18.20	...	...	...	13.11	22.31	1.01	12.05
?	Lepa	...	—	...	—	...	...	...	13.22	22.42	1.12	12.17
92	Koikküla	15.48	2.26	18.11	18.50	...	...	16.19	13.32	22.52	1.22	12.27
?	Pügeri	—	—	—	—	...	...	—	13.40	23.00	1.30	12.35
86	Laanemetsa	—	2.42	—	19.06	...	...	16.35	13.50	23.10	1.40	12.45
83	Taheva	16.22	3.03	18.34	19.25	...	...	16.44	14.07	23.27	1.57	12.53
78	Hargla	—	3.16	18.42	19.39	...	...	16.57	14.19	23.39	2.13	13.09
74	Saru	—	3.30	—	19.53	...	...	17.10	15.00	0.20	3.07	13.44
70	Mõniste	17.10	3.40	19.07	20.03	...	...	17.21	15.18	0.38	3.27	14.04
?	Mõtuse	—	...	—	...	...	...	—	15.29	0.49	3.38	14.15
	Latvia											
61	Ape (Ope)	18.00	...	20.07	...	3.20	13.44	18.06	15.45	1.05	4.35	14.45
58	Laicene	—	...	—	...	3.27	13.52	18.14	...	...	—	—
51	Vaidava	18.38	...	—	...	3.44	14.14	18.35	...	...	—	—
43	Alsviki	—	...	—	...	4.45	15.41	...	...	...	—	—
34	Alūksne	20.00	...	—	...	4.27	15.17	19.23	...	...	—	—
?	Vejini	—	...	—	...	—	—	...	...	...	—	—
22	Paparde	20.44	...	—	...	4.53	15.45	...	...	...	—	—
?	Dunduri	—	...	—	...	—	—	...	...	...	—	—
15	Kalniena	21.08	...	—	...	5.08	16.15	...	...	...	—	—
11	Stāmer(ien)e	21.25	...	—	...	5.17	16.30	...	...	...	—	—
?	Purini	—	...	—	...	—	—	...	...	...	—	—
5	Birze	—	...	—	...	—	—	...	...	...	—	—
0	(Vec)Gulbene	21.50	...	0.05	...	5.35	16.50	...	...	...	7.15	17.20

km	↓ Station	1981/82				2004		
	Train →	N961	N963	N965	N967	N691	N693	N695
	Latvia							
34	Alūksne	3.10	10.10	15.50	20.00	7.50	15.20	19.50
?	Vejini	—	—	—	—	8.04	15.34	20.04
26	Umernieki	—	—	—	—	8.13	15.43	20.13
22	Paparde	3.37	10.37	16.17	20.27	8.22	15.52	20.22
?	Dunduri	—	—	—	—	8.27	15.57	20.27
15	Kalniena	—	—	—	—	8.40	16.10	20.40
11	Stāmeriene	—	—	—	—	8.52	16.22	20.52
?	Purini	—	—	—	—	9.01	16.31	21.01
6	Birze	—	—	—	—	9.07	16.37	21.07
0	Gulbene	4.25	11.25	16.05	21.15	9.15	16.45	21.15

km	↓ Station	1981/82				2004		
	Train →	N968	N962	N964	N966	N692	N694	N696
	Latvia							
34	Alūksne	0.35	9.10	14.50	19.30	7.30	14.55	19.30
?	Vejini	—	—	—	—	7.15	14.40	19.15
26	Umernieki	—	—	—	—	7.05	14.30	19.05
22	Paparde	0.04	8.39	14.19	18.59	6.55	14.20	18.55
?	Dunduri	—	—	—	—	6.50	14.15	18.50
15	Kalniena	—	—	—	—	6.39	14.04	18.39
11	Stāmeriene	—	—	—	—	6.27	13.52	18.27
?	Purini	—	—	—	—	6.17	13.42	18.17
6	Birze	—	—	—	—	6.10	13.35	18.10
0	Gulbene	23.15	7.50	13.30	23.15	6.00	13.25	18.00

km	↓ Station	1924	1932/33			1937/38			1962		1964	
	Train →	N6	N50	N6	N52	N8	N18	N6	N958	N956	N962	N966
	Latvia											
112	Valga Lat.	8.25	...	8.35	...	7.00	...	...	...	...	...	...
101	Žuldini	7.55	...	—	...	—	...	—	...	...	...	...
	Estonia											
110	Valga Est.	...	6.24	...	23.05	...	...	...	6.36	19.45	7.16	17.39
100	Kaagjärve	...	5.59	...	22.40	...	...	...	6.16	19.25	6.56	17.19
?	Lepa	...	—	...	—	...	...	...	6.04	19.13	6.44	17.07
92	Koikküla	7.33	5.32	7.43	22.10	6.16	...	...	5.54	19.03	6.34	16.57
?	Pügeri	—	—	—	—	—	...	...	5.45	18.54	6.25	16.48
86	Laanemetsa	—	5.09	—	21.42	5.59	...	...	5.35	18.44	6.15	16.38
83	Taheva	7.00	4.58	7.20	21.30	5.50	...	...	5.28	18.37	6.08	16.31
78	Hargla	—	4.35	7.12	21.07	5.37	...	...	5.10	18.16	5.52	16.06
74	Saru	—	4.21	—	20.52	5.24	...	...	4.58	18.04	5.36	15.50
70	Mõniste	6.05	4.10	6.49	20.40	5.14	...	...	4.21	17.17	5.11	15.15
?	Mõtuse	—	...	—	...	—	...	...	4.07	17.02	5.01	14.56
	Latvia											
61	Ape (Ope)	5.18	...	6.20	...	4.47	9.36	23.01	3.50	16.45	4.45	14.40
58	Laicene	—	...	—	...	4.05	9.30	22.55	...	...	—	—
51	Vaidava	4.20	...	—	...	3.48	9.14	22.40	...	...	—	—
43	Alsviki	3.50	...	—	...	3.16	8.53	22.24	...	...	—	—
34	Alūksne	3.24	...	—	...	2.56	8.34	22.08	...	...	—	—
?	Vejini	—	...	—	...	...	—	—	...	...	—	—
26	Umernieki	—	...	—	...	...	7.55	21.42	...	...	—	—
22	Paparde	2.21	...	—	...	...	7.40	21.33	...	...	—	—
?	Dunduri	—	...	—	...	...	—	—	...	...	—	—
15	Kalniena	1.46	...	—	...	...	7.22	21.20	...	...	—	—
11	Stāmer(ien)e	1.31	...	—	...	...	7.06	21.10	...	...	—	—
?	Purini	—	...	—	...	...	—	—	...	...	—	—
6	Birze	—	...	—	...	...	—	—	...	...	—	—
0	(Vec)Gulbene	1.00	...	2.15	...	...	6.40	20.50	...	...	2.00	12.00

HUMOR

THE WAY THEY CATCH MOLES
or Mr. Suvorov's Railway Wonders

— The dead with scythes stand along that road. And silence. . .
From the film "Elusive avengers".

. . . If they declared a competition for the amount of disinformation in books about railways, then the first place, undoubtedly, would be given to the well known writer Victor Suvorov, specifically, to the chapter "Operation Bridge" from his book "Liberator". However, you be the judge. . .

Thus, the chapter "Operation Bridge". Mr. Suvorov tells us about how "in year 1967. . . it was necessary within a record term, for instance, in one hour, to build a railroad bridge across the Dnieper and to use it to pass trains, loaded with military equipment, and tank columns." And, certainly ". . . all engineers involved in the bridge design — independently! — stated that it was impossible to build a floating bridge, even with load capacity of 1500 tons, in such short time." Did they say this?

Information to Think About

"In the Thirties, as a result of the Industrialization of the country, the gradual technical reequipping of the Army Corps of Engineers occurred. For example, the Corps received. . . heavy pontoon equipage N2P (floating bridge with load capacity from 16 to 60 t.), light pontoon equipage NLP (floating bridge with load capacity up to 14 t.), *special pontoon equipage SP-19 (floating bridge for trains)*. . . "

"The rapid technical development of the Corps of Engineers in the postwar years was the result of the comprehension of the experience of the application of the Corps in the course of the war. . . River-crossing means were significantly developed: pneumatic and composite boats, the more advanced pontoon equipage TPP, *railway pontoon equipage PPS*. . . " (my italics — O. I.)

Yu. G. Veremeev, "History of the Russian Army Corps of Engineers," brief overview

Thus, 30 years prior to the described events, floating bridges for the trains already entered into service of the Soviet Army. After the WWII, a new pontoon equipage was designed, because the axle loads increased in the in 1950s! But in the 1960s, the axle loads did not grow anymore, and, respectively, the available park of pontoon equipages could in no way become obsolete by 1967. However, in spite of this. . .

"Of course the Soviet Army did not have a proper bridge!" — declares v. Suvorov, and expert in engineering technique, with the confidence. So, allegedly, ". . . they decided to use only empty railway cars, and send not a tank column next to the train, but track column, empty, too." But this is not yet as ridiculous, as it's going to be further. . .

"Only one major problem remained: how to ship the locomotive, which weighs 300 tons?" 300 tons??? Where did they get a 300 t. loco in 1967? Come on!

What should be the thrust needed to pull Suvorov's consist that weighs 1500 tons? Let us assume the consist was formed of empty universal four-axle boxcars. One boxcar weighs 23,5 t., the axle load is, respectively, $23{,}5/4 = 5{,}875$ t.

The train speed on a floating bridge can be taken from the Russian Railway Troops Web site (http://www.fsgv.ru): 15 km/h. Hence, according to the rules of tractive calculations, the basic resistance of a four-axle boxcar is:

$$0{,}7 + (8 + 0{,}1 \times 15 + 0{,}0025 \times 152)/5{,}875 = 2{,}41$$

plus the incline resistance. Let's consider a typical middle Russian incline: 9 thousandths (well, if it were a model bridge, then they could make a groove in the river bank). What is the answer? $1500 \times (2{,}41 + 9) = 17\,115$ kg, or 17 t. Let's throw in some more thrust and make it 20 t, just to be safe. Depending on the traction power, one will need a machine with the coupling weigh of only. . . 70–100 tons!

Information to Think About

The weights of different locomotives in the USSR in 1967, capable of developing thrust of 20 t. or more:

Locomotive	Thrust	Weigh
2TE10L (1 section)	25,7 t.	129,3 t.
TE3 (1 section)	20,2 t.	126 t.
TEM1	20 t.	124 t.
ChME3	23 t.	123 t.
M62	20 t.	116,5 t.
TGM3 (shunting mode)	20 t.	68 t.

One could find data about the Soviet tractive rolling stock in any provincial library in the USSR. Those from abroad could use Jane reference book. In that greenish jacket, if I'm not mistaken; we had them even in the reading hall of the VNITI library. . .

Moreover, locomotives with tractive weight of 300 tons were not manufactured in the USSR: neither in 1967 nor ever before. But they were manufactured. . . in the United States of America!

Information to Think About

US locomotives with the weight of ca. 300 tons:

Locomotive	Wheel Arrang.	Weight
4000	2-4+4-2	345 t.
H-8	1-3+3-1	329 t.
M3-4	1-4+4-2	317 t.
AC-11	2-4+4-1	299 t.
L-97	2-3+3-2	286 t.
EM-1	1-4+4-2	285 t.

Well, it's like in that anecdote: "Stierlitz, where did you learn to shoot so well?" — asked Müller. — "In the DOSAAF (*All-Union Voluntary Society for Assistance to the Army, Air Force, and Navy*!" — quickly answered Stierlitz and thought, if he did not say something in excess. "How much does a locomotive weigh?" — "300 tons!" — quickly answers V. Suvorov. And, in contrast to Stierlitz, does not even think. . .

OK, let's read further, there it is still something even more interesting:

"Naturally, an idea arose to reduce the weight of the locomotive, as much as possible." Really? An idea? Whose idea? The solution in this situation is simpler than the simple: split the train into several sections and pull each one using a TGK2 — its weight is just 28 tons, lighter than a tank. Why think? But wait!

"Two locomotives, the main and the doubler, were urgently altered." Let's focus our attention on this phrase. No, we don't question the necessity of altering anything. The fact is that if a train is pulled by two locomotives, then no one will calls them "the main" and "the doubler". Even in the cases when it is necessary to add some power to a train (for example, during the full-scale tests), it has a totally different name: "the covering locomotive." Just Suvorov's reference. . .

But this is still nothing compared to what follows:

"Everything possible steel detail was replaced with an aluminum one. The boilers and the fireboxes were replaced. The tenders of the steam locomotives were completely empty, with neither coal nor water, just a very small barrel of the maximally caloric fuel, perhaps the aviation gasoline or kerosene." It turns out that in 1967, according to Victor Suvorov. . . steam locomotives were used for an absolutely critical mission!

Information to Think About

In 1967, diesel and electric locomotives handled 92,4% of the total freight traffic.

I.e., by that time almost all steam locomotives in the USSR were either at the reserve bases or in industry. Something does not tally. . .

And not just does not tally. Let's read this pearl again: "Everything possible steel detail was replaced with an aluminum one. The boilers and the fireboxes were replaced." What locomotive details can be replaced by the aluminum? Handrails? Cab? Perhaps. But what does it meant "to replace the boiler and the firebox?"? First, the fireplace is a part of the boiler, but that's not that important.The main problem is that the boiler defines everything else: the dimensions of the steam engine, suspension, even the wheel arrangement. So, to replace the boiler means, strictly speaking, to design a new locomotive.

However, was there someone in 1967 who could design and build the boiler and the firebox, if all the needed equipment had been dismantled ten years ago?

But Mr. Suvorov is so excited, that he does not see the larger trouble: "The tenders of the steam locomotives were completely empty, with neither coal nor water, just a very small barrel of the maximally caloric fuel, perhaps the aviation gasoline or kerosene." Why did they need a tender, then, if "a very small barrel: could be suspended at the sides of the boiler? This is called "tank locomotive." Huh? And again: before writing these lines, the author of "Liberator" might have glanced into one more absolutely not secret booklet. . .

Information to Think About

Specific combustion heat of different substances (kcal/kg):

Gasoline	10 500–11 200
Kerosene	10 500–11 000
Jet fuel TS-1	10 250
Crude oil	10 400–11 000
Burning locomotive oil	9500

A. S. Ekhnovich. "Physics and Technology Reference Book." A handbook for students.
"Machine building." Encyclopedic reference book.

So that "keg" was definitely not enough, since the jet fuel produces just a little more heat, than the usual locomotive oil.

To summarize: "Hitherto, no one of the foreign guests turned his attention to the strange fact that there was no smoke from the locomotive pipe." Sure, where would the smoke come from, if there was no locomotive?

Information to Think About

Floating bridge — a bridge on floating supports (pontoons, rafts, barges). It is built across wide and deep rivers, where permanent support bridges are technically complicated or unprofitable.

"Large Railway Dictionary".

Somewhat earlier Suvorov writes: ". . . whatever the construction of the bridge is, everyone who will work on it, must work as acrobats under a circus cupola." Uh-huh. . . ! A floating bridge in principle cannot be high above the water, or otherwise it will be unstable. The folks just need to be strong. And know how to swim.

In general, Victor Suvorov knows as much about bridge as he knows about "aluminum" locomotives with a keg of kerosene. Nevertheless Mr. Author continues to describe events, reporting totally prodigious details:

"The leaders of the Party and the Government, and numerous foreign guests, who observed the construction of the gigantic bridge, simply did not expect that it was built for railway communication, and when a locomotive entered the bridge, they harmoniously began applauding."

In order to pass a train across the bridge, one had to at least lay a railway branch to the bridge, to lay railway tracks on other bank of the river, and to lay the track on the bridge. And yet the Party leaders and the numerous foreign guests did not surmise, that the bridge is a railway one! Probably, they were all looking at the piles. . .

". . . From the sagging of the bridge heavy slow waves

went to both banks of the river and, after being reflected, they came back to the bridge, and smoothly shook it from side to side." Well, this is discovery in the wave theory! The waves from a long bridge, built **across** the river, must go **along** the river! And look: first, the waves went from the bridge to the bank, then they were reflected, then came back. . . and only then the bridge began shaking! But it did not shake when the train entered the bridge. Well, Suvorov did not read a physics reference book. . .

"Three frightened figures of the engineers instantly appeared on the roof of the locomotive." Thus, according to Suvorov, there are three engineers at a locomotive – but no firemen. But this is not so important. It's important that in the case of a danger the locomotive crew will jerk anywhere, but not to the roof. Did they abandoned the controls and climbed the roof? This can be done only in one case: if they solidly decided to go to the bottom of the river together with the locomotive. "The locomotive meanwhile, slowly swinging, with the engineers on the roof, continued its difficult way." Respected railroaders, reading these lines! Would anyone of you earnestly think that in a moment of danger it is safer to sit on the roof, but not in the cab, ready to stop the train? No? That's what I thought.

"Subsequently, those frightened engineers were skillfully removed from all photographs and films about the famous operation." Well, it is understandable. The Reader, do not search for the engineers, fearlessly climbing the roof, instead of holding the controls. There is an explanation of why they will not be there.

Well, why do I keep comparing Suvorov to Stierlitz? Mr. Suvorov in no way manifests the professional qualities of the heroic Standartenführer in his opus about the bridge. That one suffered, risked, verified the information: were there the negotiations in Bern and Lozanne, or was it all gossips. But here, the ardent exposer of the Soviet expansion did not even glance into a school reference book on physics. He resembles the other character of the same series: agent Klaus, listening, to all gossips and stupidities. Someone talks about pontoon piles, someone else — about aluminum locomotives, someone — about the engineers on the roof. And Suvorov would put it all in his report, without evaluating the content: *they* will be figure out, who talked what and was its permissible or not.

Victor Suvorov also wrote about railway greasers in the rear of the enemy. . . However, about this next time.

O. Izmerov (Bryansk)

PHOTO HUNT

341 km milepost at Yaganovo–Malino stretch of the Big Moscow Loop Railway, April 24, 2004 (picture by I. Grotov)

RELAX

THE HEREH TALES
Here and There

Far, far away, in the Screaming mountains, there flowed the river of Sitting. On the bank of the river, there was a small town of Hen. People also called it Sitting Hen, to tell it from all other hens.

In the town, there scurried about the harbor little steamships, big dirty barges, and fishing boats. They carried fish, salt, flour, oil, and other useful goods. But the main cargo in the harbor was timber.

Far, far away, high in the Screaming mountains, bearded lumberjacks fell giant trees with axes and with saws. Then they cleaned branches of these trees and sent them to the harbor of Hen by railway. So, our story is about that railway.

The railway had been built very, very long ago, when they hed been neither steam locomotives nor gasoline locomotives. Sad tired horsies clicked on the ties and pulled trolleys with timber. But one day everything changed: a big dirty steamship brought two shiny little black steam engines to the town of Hen!

— Neigh! — Said the horsies. — At last we will have some rest!

— Hurray! — Yelled the bearded lumberjacks. — At last we will chop even the largest trees!

— Bravo! — Yelled bearded Mr. Piston-Fireboxman, the Chief of the Road. — At last I became a Real Chief!

And only the little engines were not happy. They knew that the hard work awaited them.

They unloaded the little engines from the dirty but warm hold of steamship to the bank of the river, and put them on the rails. It was raining and drizzling out there. The little engines were cold, and wet, and sad. Then a bearded man with a bucket of white paint came and drew numbers on the booths of the little engines: “One” and “Two”. That’s how the little engines got their first names.

Next day four more bearded men came to the station of Hen. These were the Engineers and the Firemen of the little engines. The Engineers and the Firemen climbed up into the booths. The stokers made fire in the fireboxes. The Chief of the Road, Mr. Piston-Fireboxman, said: “Well, good luck!” The Engineers let the brakes go and pulled the levers. The little engines whistled, and went into the mountains to pick up trolleys with timber: first number “One”, and then number “Two”.

I need to mention that halfway from the station of Hen to the camp of the lumberjacks there was a siding, a simple siding, without a name. At this siding the train that was going upward, would wait for the train that was going downward. At the siding there lived an old Switchman, who was for his entire life was switching two turnouts: one before the siding, and one after the siding. The Switchman lived in a cabin right in the middle of the siding, in between the track that went up into the mountains, and the track that went down to the station of Hen.

That morning the Switchman, as always, was switching the turnouts. Mr. Piston-Fireboxman, the Chief of the Road, gave the Switchman a call and told him about the new little engines. The Switchman had never seen any steam engines, and he was greatly surprised when he saw the little engine number “One”, creeping upward and pulling a consist of empty trolleys. The little engine whistled to the Switchman as if he were his old good friend. The Engineer waved to the Switchman, and the train crawled into the mountains.

Not even half and hour passed, as the second train crept up from the town of Hen — this time, pulled by the little engine number “Two”. The Switchman forgot to put on his glasses, and he did not note that there was another number drawn on the little engine! He decided that the number “One” had unnoticeably gone down and was now climbing back into the mountains. The little engine number “Two” also whistled to the Switchman as if he were his old good friend. The Engineer waved to the

Switchman. . . And then down came the little engine number "One"! It pulled a long train with timber.

The little engines stood next to each other, and the Switchman found himself in the middle. He looked first to the left, then to the right. To the right, to the left. To the left, to the right. To the right, to the left. So he was turning his head, until the telephone rang. That was the Chief of the Road asking why hadn't the Switchman switch the turnouts, and where were the engines?

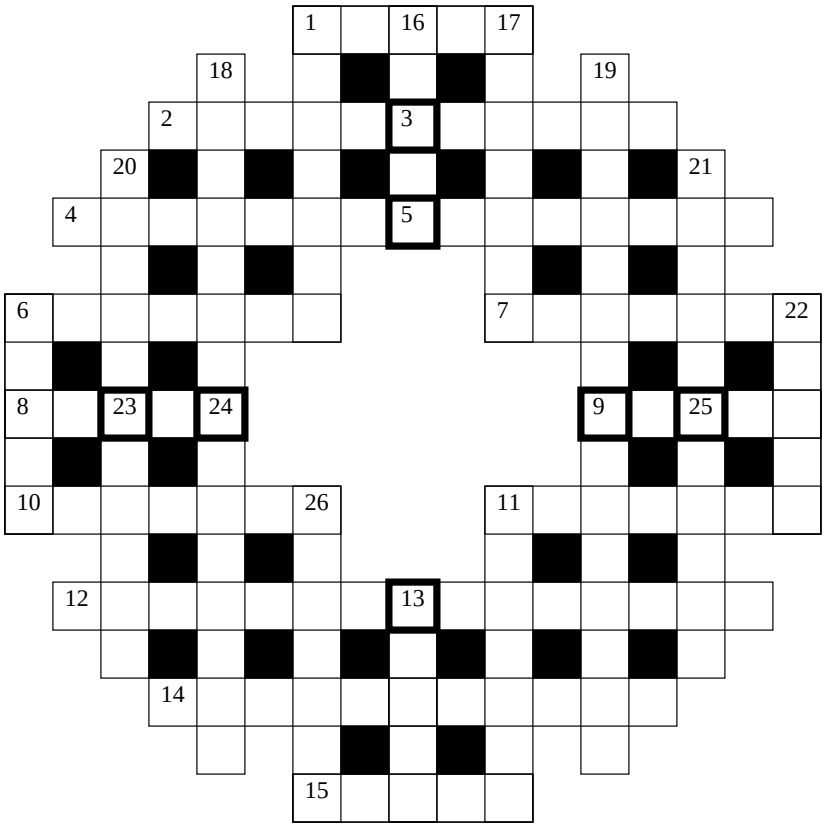
— It's here, Chief! No, there! No, here! It's here, and there, and here, and there. . . I am lost! — Yelled the Switchman.

— Wonderful! — said the Chief of the Road. — Amazing names for our little engines!

And the Chief of the Road commanded the bearded man with a bucket with white paint to write the new names of the engines on their booths: "Here" and "There". And then he gave a cookie to the Switchman. So that he would not be upset.

S. Los' (Moscow)

DIAMOND CROSSING



Horizontally:

1. Вид пассажирского транспорта. 2. "Поезд-призрак". 3. Мастер по ремонту, настройке различного электрического оборудования. 4. Профессия, не будь которой, существование современных железных дорог было бы затруднительным. 5. Крупная станция Октябрьской ж. д. и Санкт-Петербургского метрополитена. 6. Именной поезд сообщения Москва–Варшава. 7. Узловая станция в Тверской области. 8. Автор фундаментального труда о советских локомотивах. 9. Багаж пассажира. 10. Устройство, применяемое, в частности, при смене вагонных тележек. 11. Коллектив железнодорожников. 12. Работник железнодорожного транспорта. 13. Прибор, применяемый при прокладке новых железных дорог. 14. Устройство для накопления энергии с целью её последующего использования. 15. Станция на Карельском перешейке.

Vertically:

1. Карликовый локомотив. 6. То, что у локомотива не сзади. 9. Машинист, Герой соцтруда, один из инициаторов стахановского движения. 11. Один из основных персонажей американских "железнодорожных" песенок. 13. Деталь паровоза. 16. Первая часть перевода словосочетания "железная дорога" на казахский язык. 17. Предшественник железной дороги. 18. Один из руководителей партизанского движения в Великую Отечественную войну в Белоруссии, руководитель подпольной группы на оршанском ж. д. узле. 19. Сумма, за которую в 1990-е гг. продавались на лом рельсы разобранных УЖД. 20. Неотъемлимая деталь интерьера купе пассажирского вагона. 21. Полоса земли, предназначенная для передвижения. 22. Станция в Воронежской области. 23. Навигационный прибор, абсолютно бесполезный на железной дороге. 24. Станция в Московской области. 25. Одно из основных минеральных богатств Кольского полуострова, вывозимое по ж. д. 26. Тупиковая станция в Грузии.

Compiled by D. Zinóviev (Boston)

OUR COVER PAGE

FLOATING BRIDGES FOR THE WARSAW PACT

If one attentively looks at a map of Poland, then he can find two bridges across the Vistula and Wieprz rivers in the area of Dęblin, a large railroad hub located at the intersection of Warsaw–Lublin and Łuków–Radom lines. The bridges, especially the Vistula bridge, used to be important strategic objects in the times of the Warsaw Pact when our relations with the West were not quite warm.

To back up the bridge and enable rapid restoration of communication in the case of its destruction, there was built an interesting object in the of of the town of Puławy, in between Dęblin and Lublin.

One can see well on a topographic map of this region that a railroad line branches off the Łuków–Radom line between the stations of Dęblin and Pionki in the southeastern direction and turns to the Vistula near Puławy. On the opposite side of river, the line continues and gets connected to the line from Warsaw to Lublin in Puławy. It is tempting to asserts that once there was a bridge here.

But there was. . . no bridge! The tracks were layed down to the very waterline of the Vistula on both sides. In the case of necessity a pontoon bridge was erected across the Vistula; the pontoons lay in immediate proximity to the river. Such a bridge was built at least once, during military maneuvers, and a consist of loaded gondola cars successfully crossed the river. Right on the banks of the river there stand two supports that were used for fastening the bridge. (*This is how they build floating bridges, Mr. Suvorov! See pp. 32–34. — Ed.*)

The times have changed, and there is no Warsaw Pact anymore, and Poland is in the NATO; the bridge pontoons were taken away, but the access roads to the Vistula remained, although partially dismantled. The left bank of the Vistula is relatively high and, besides the main river bed, there is one more creek, which the railway crossed on a dam (there was a pipe in the dam).

In 2002, the notorious flood happened in Europe. The unprecedented tide of water washed away the dam and the tracks. . . The results of the flood are depicted in the entirety of their tragic splendor on our last cover page.

D. Fokin (Moscow)

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THE SEMAPHORE

COVER PAGE