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## RAILWAY HERITAGE OF BANAT

**Abstract.** The development of the railway in Banat includes two periods. The Austro-Hungarian period lasted until the middle of the First World War. The largest part of the current Banat railway network was built at that time. The second period started after the war, when Yugoslavia was founded. At that time, the existing railway network on the territory of Yugoslavia, and now Serbia, was expanded by the construction of several more railways. The change in traffic trends has greatly reduced the share of railways in public transport. That is why, in the last decades, mostly of Banat railways has been closed, and the railway infrastructure and facilities have been abandoned and remained unprotected. In this article, we present part of the results of our project "Technical and architectural heritage on the railways of Vojvodina - Banat". Following the Banat railways, the goal of the project was to identify and document the existing railway heritage that is sometimes more than 120 years old.

**Key words.** Serbian railways, Banat railway history, railway infrastructure, railway heritage

### Introduction

The history of the Banat railways of today's Serbia starts in 1854. That year, the railway between Anina and Oravița (present-day Romania), through Jasenovo and Bela Crkva in Serbia, and again to Baziaș in Romania, was opened to traffic. From 1880 until the end of the First World War, the former Austro-Hungarian Empire built an extended railway network in Banat. Vršac, Pančevo, Zrenjanin and Kikinda were connected to Novi Sad, Subotica, Oravița and beyond, with other parts of the Austro-Hungarian Empire. Due to the advantages of the railway, compared to other types of traffic, an intensive construction of commercial and industrial facilities in stations and along railway had occurred. The last decades of the 20th and early 21st centuries have tended to switch from rail to road traffic.

After 130 years, most of Banat's railways have been closed. Technical infrastructure and architectural facilities are most often devastated, and significant historical artefacts are rapidly and permanently disappearing.

In this article we present some of the results of our project "Technical and architectural heritage on the railways of Vojvodina". The purpose of the research was to record railway routes, identify, photograph and document the existing technical infrastructure and architectural objects, etc. Some of them exist from the construction period.

Documentary material collected, processed and permanently archived will be made available on the Web and in other media. Also, it could be a useful source of data on the growing and historical importance of the Banat railways, as well as a motif for further research.

### Historical context

The construction of the railway network in Banat, on the present territory of Serbia, consists of two periods. This was the Austro-Hungarian period (1854-1916) and the period of the newly established Yugoslavia, after the First World War (1918-1945). Until the end of the First World War, the territory of Vojvodina, including Banat, was a part of the Austro-Hungarian Empire. The extensive dissemination of railway networks in Europe and Austria-Hungary also includes Banat. These railways were constructed up to 1916. Banat's railway network consisted of 26 sections, 742 km of railroads and more than 100 train stations and stops (Figure 1).

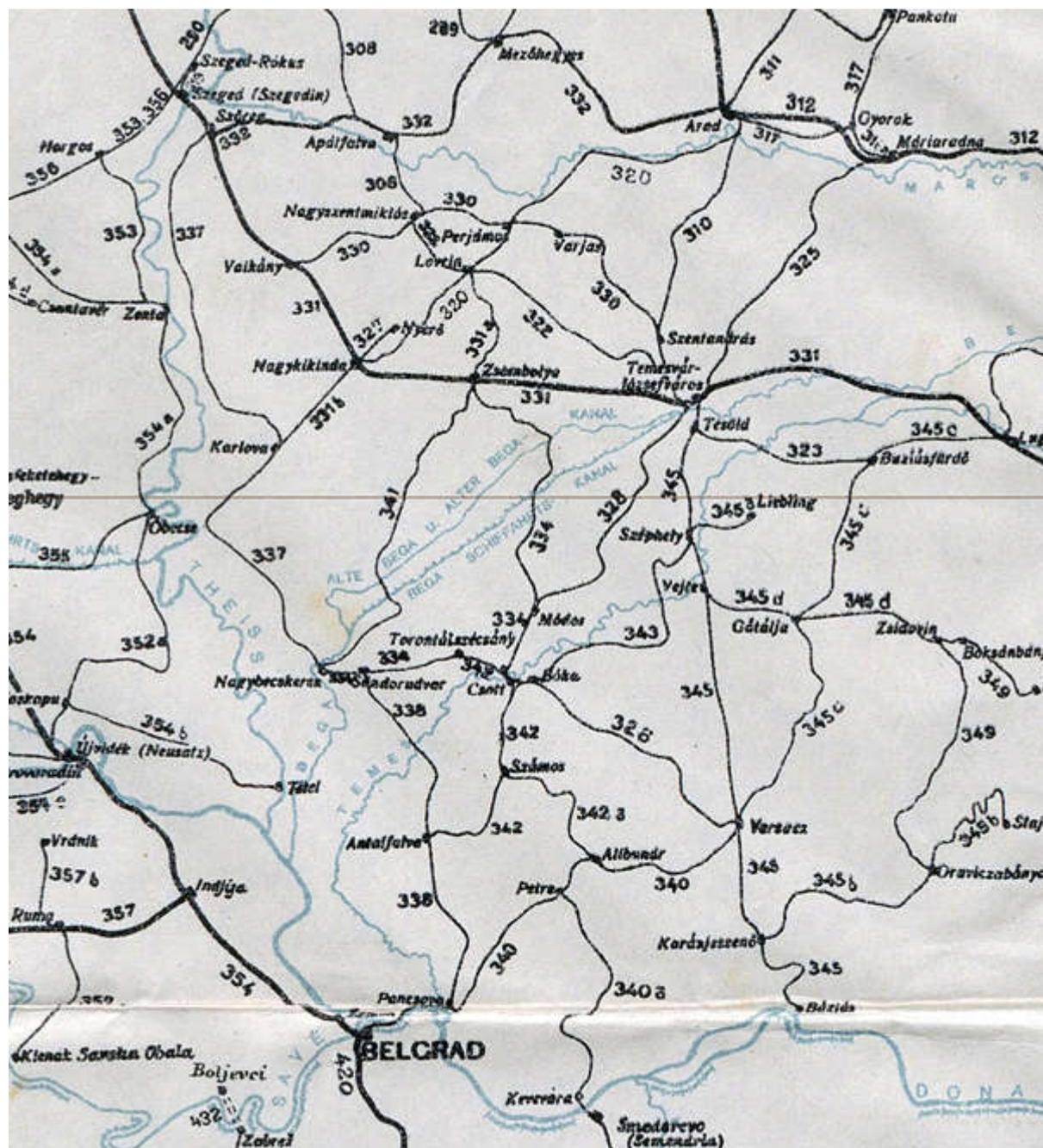


Figure 1. The Austro - Hungarian railway survey until 1916  
(Source: <https://maps.geshergalicia.org/galicia/austro-hungary-rail-1916/>)

The first railway in the present territory of Serbia and Banat was constructed in 1854. It connected Anina and Oravița (now Romania), and through Jasenovo and Bela Crkva (Figure 2) in Serbia (28 km), Baziaș in Romania. The initial purpose was to bring the coal from Anina to Baziaș on the Danube. Because of the advantages of the railway, passenger traffic was also established from Baziaș to other parts of the Empire.

Thanks to the interconnections of the railway networks, the Austrian emperor Franz Joseph went by train to the opening of the Suez Canal (17 November 1869). He had left Vienna and came to Baziaș via Szeged, Oravița, Vršac, Jasenovo and Bela Crkva. From Baziaș, he travelled along the Danube, then through the Black and Mediterranean seas, he arrived in Egypt. [1]



Figure 2. The last building of the rail station of Bela Crkva. The station is abundant since the Vršac - Bela Crkva railway line has been closed.

The Peace of Versailles (1924) formally defined borders of the countries involved in the First World War. Among other things, a partial territorial exchange between Yugoslavia and Romania took place in Banat. A couple of days before the demarcation, Miloš Crnjanski, a Serbian poet and writer, took the train from Kikinda to Oravița. He wrote about his impressions on 9 and 10 December 1923 in the daily Politika. He described the surrounding railway landscapes, comfortable train travel, but also the concerns of residents that had to change countries. [2]

After the demarcation [3], the Anina - Baziaș railway crossed the Nera River and entered Serbia near Dobričevo. It passed through Jasenovo and Bela Crkva, then, by the bridge over the river Nera, it returned to Romania, finishing in the port of Baziaș.

Because of the political situation, following the announcement of the Inform Bureau resolution, the railroad was closed to traffic. Yugoslavia's preparation for a possible invasion in 1948 included, among other things, the demolition of the bridge over the Nera River and the interruption of the railway. After this, the railroad was never reconstructed. Nowadays,

the only indication of one of the major and the first railways in Europe is the railroad embankment by the Nera (Figure 3).



Figure 3. The railway embankment in the border area alongside the Nera River and old anti-tank barriers.

Following the end of the First World War, the Orlovat - Knićanin (1925, 24.9 km) and Titel - Knićanin (1927, 2.7 km) railways were constructed. The last railroad, Dunav stanica (Belgrade) - Pančevo (26.3km), was completed after the construction of the Pančevo Bridge over the Danube. The line was opened for traffic in 1935.

The last decades of the 20th and early 21st centuries are characterized by the tendency to replace the railway with road traffic. After 130 years, most railroads in Banat were closed. Technical infrastructure and architectural structures are often damaged, sometimes devastated, and important historical artefacts may soon be permanently lost. (Figure 4)

Finally, on 3 February 2020, the National Assembly of the Republic of Serbia decided to confiscate most of Banat's railway infrastructure. [4]

Based on all of these facts, our research on railway heritage in Banat covered several subjects: railway routes, facilities, technical devices and signalling.

## RAILROADS

Looking at the map of the Banat railway network, it is obvious that the network has been designed, in the most efficient way possible, to cover the entire territory. Radial rail sections meet at major nodes and major junction are interconnected. Table 1 provides an overview of the present and previous railways in Banat.



Figure 4. The Jasenovo railway complex on the Anina - Jasenovo - Bela Crkva - Baziaş line, built in the middle of the 19th century, has been declared cultural property. [5]

Austro-Hungarian Code	Railway	Length (km)	Year of building
345 a	Anina ---> Dobričevo (345a) - (Jasenovo, 345) - Bela Crkva --->Baziaş	28	1854
345	Vršac - Jasenovno ---> Bela Crkva	52	1857
331	Szeged - Banatsko Arandelovo - Mokrin - Kikinda - Jimbolia	111	1857
345	Vršac - Temišvar	20	1858
331 b	Zrenjanin ---> Novo Miloševo (Karlovo) - Kikinda	19	1883
342	Vršac ---> Boka - Sečanj ---> Zrenjanin	5	1889
326	Vršac - Plandište	51	1891
334	Zrenjanin - Sečanj	32	1889
334	Sečanj - Jaša Tomić - Međa	20	1889, 1895
340	Vršac - Vladimirovac ---> Pančevo	37	1894
340 a	Kovin - Vladimirovac ---> Vršac	42	1894
338	Pančevo - Kovačica - Zrenjanin	73	1894
334	Jimbolia - Međa	33	1895
340	Pančevo - Vladimirovac ---> Vršac	30	1896
337	Zrenjanin ---> Novo Miloševo - Đala - Szeged	56	1897
328	Jaša Tomić - Timișoara, Romania	52	1897
342	Kovačica - Samoš - Boka	36	1898
342 a	Alibunar - Samoš	27	1898
341	Zrenjanin - Jimbolia, Romania (uski kolosek)	69	1898
354 d	Novi Sad - Čoka	98	1899
	Senta - Čoka	8	1915
340	Dunav stanica – Pančevo	22	1935

Table 1. Railways in Banat

While travelling and exploring Banat's railway network, we recorded GPS tracks of railway routes. As some sections are not accessible, we have improved our GPS tracks using Google Maps. This hybrid map of the Banat railway network is shown in Figure 5.

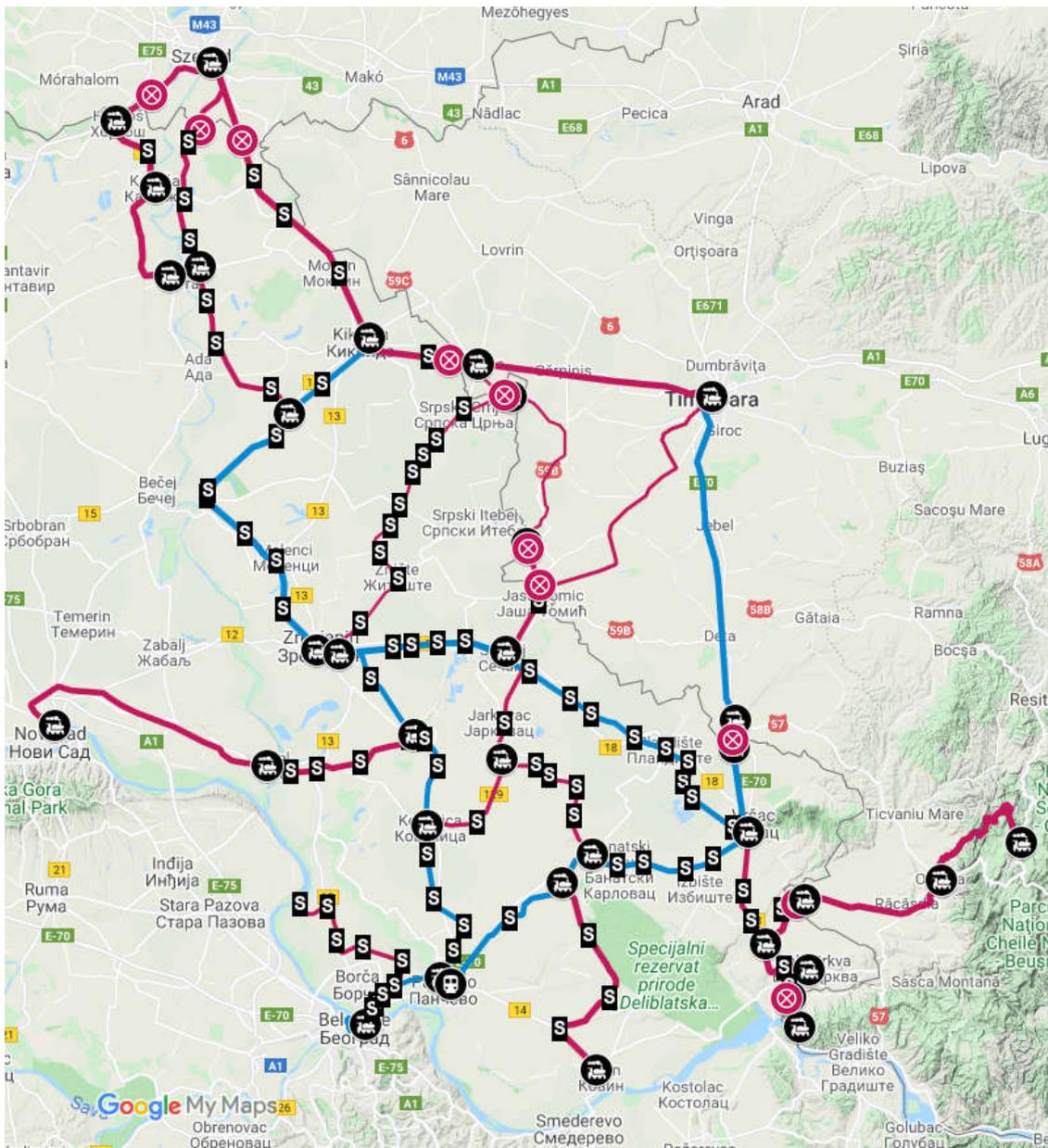


Figure 5. Map of the Banat railway network

(Screenshot: <http://www.srbijaplus.net/zeleznica/zeleznicke-pruge-banat.htm>)

Mostly, Banat's railways cross the plain terrain. In addition, some bridges have been built over several rivers and channels, such as the Tamiš, Begej (Figure 6) and Tisa rivers.



Figure 6. Bridge across the river Tamiš on the railway Zrenjanin - Sečanj

In spite of the time that has passed, some railways use tracks that are more than 100 years old. We found them in Orlovat, Alibunar (Figure 7), Sanad (Figure 8), etc.

Recently, most railroads have been closed. The tracks are damaged and overgrown by vegetation, or the rails are removed. It so happens that the only trace of the old rail line is a solid and intact embankment (Figure 3, Figure 8).

### **Railway facilities**

The architectural complex of the major stations comprises of the standard assembly. There is a station building with a cash register, waiting room and office premises; platforms, fountain and toilet. Furthermore, there were water towers for steam locomotives and water feeders, guard houses, warehouses and station scales, etc.

After over 100 years, examples of representative and preserved stations' buildings can still be found in Vršac (Figure 9), Čoka (Figure 10), Kovačica, etc.

Throughout the plain of Banat, the landmarks on the way to the station are water towers. When steam locomotives were replaced with diesel engines, there was no longer a need for water towers. Some were destroyed, while others were devastated. However, beautiful and preserved examples of water towers (Figure 11) and feeders (Figure 12, Figure 13) still exist in Alibunar, Bela Crkva, Orlovat, Sečanj, etc.



Figure 7. Railway tracks in Alibunar



Figure 8. Railway tracks in Sanad



Figure 9. Railway station in Vršac



Figure 10. Railway station in Čoka



Figure 11. Water tower in Orlovat



Figure 12. Water feeder in Bela Crkva, dated to the mid-19th century



Figure 13. Water feeder in Sečanj

The guard houses (Figure 14) are situated at the entrance and exit of the station and on the bridges. The task of the railway guards was to operate the ramp at the level crossings, to announce the passage and to visually control the technical functionality of a train.

### Technical devices and signaling

Mandatory technical equipments include switches, ramps and winches to lower and raise ramps, entry and exit traffic lights, etc. Over time, mechanical equipment was replaced with electronic equipment. Examples of older still functional mechanical devices can already be found at every Banat railway and station. Among others, a functional switch was manufactured in 1916 in Graz and is located in the Orlovat station (Figure 15).

Old, original winches, for lowering and lifting road level ramps and switches, are still used in Alibunar. They are located in the station's offices (Figure 16), on the platforms and at the railway guards' houses (Figure 14).

The old railway signs and signals have not changed significantly and remain in service. Meanwhile, mechanical traffic lights have been replaced by electric ones. Some of the preserved mechanical traffic lights are located on the Alibunar (Figure 17), on the Orlovat – Tomaševac railway (Figure 18), on the bridge above the Begej, (Figure 19), etc.



Figure 14. Guard house in Alibunar at the entrance of the station and nearby the level crossing. At the front of the guard house, there are switches for controlling the road ramp.



Figure 15. Operating switch in Orlovat. It is made in 1916 in Graz.



Figure 16. Old, original winches, for lowering and lifting road level ramps and switches, are still used in Alibunar.



Figure 17. Mechanical traffic lights at the Alibunar station



Figure 18. Mechanical traffic lights at the Orlovat - Tomaševac railway



Figure 19. Mechanical traffic lights at the Orlovat - Tomaševac railway. These were used to control traffic on the bridge over the Tamiš River.

### Station warehouses and scales

By closing the railways, the former industrial facilities are displaced to the roads. This is why the stations' warehouses are most often deserted and devastated, and the scales are out of service. The example of a typical warehouse is located in the Vršac rail station (Figure 20). Both, the warehouse and the station scale, are in the Vladimirovac station (Figure 21).



Figure 20. Warehouse in the Vršac station



Figure 21. Warehouse and the station scale in the Vladimirovac station

## Conclusion

The construction of the railway network in present-day Serbia began in the middle of the 19th century, during the period of railway expansion in Europe. Most of the railway network in Banat was built until the end of the First World War. Over time, new technologies have evolved. The steam drive was replaced by diesel locomotives, diesel locomotives were replaced by electric locomotives. The railway infrastructure, in addition to occasional reconstruction, has not been changed most often. Thus, these days on certain sections, trains have been using tracks for over 100 years, and the tracks are managed by the original switches. Furthermore, most of the stations' facilities, such as the station buildings, warehouses and guard houses, date back to the construction phase. The latter period, which began in the 1980s, was characterized by a tendency to replace railway freight and passenger traffic by road. The consequence of the reorientation of traffic and transport is the closing of most of the Banat railways.

Considering that the Banat railways, although important industrial and cultural heritage, are exposed to devastation, or complete destruction, we have launched the project "Technical and architectural heritage on the railways of Vojvodina - Banat". The objective of the project was to identify and document railway artefacts in Banat. While travelling, we followed the railway routes, visited the stations, identified and photographed the current architectural facilities, technical devices, signalling, etc.

Our results on the Banat railway network were permanently archived, published on the Web pages of the Magazine for National Geography, Culture and Tradition and made available to the state institutions.

We believe that authentic and new images of the oldest facilities and technical devices are especially important facts because their future is extremely uncertain.

This current project complements our former "Technical, architectural and industrial heritage at the railway Šid - Dimitrovgrad" project, which we completed in 2020 [6].

Finally, the material gathered may be an argument and an appeal to protect the remaining railway historical artefacts in Serbia.

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## Notes

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- The authors' conclusions do not necessarily reflect the attitudes of the Ministry of Culture and Information of the Republic of Serbia and the Serbian Railways Infrastructure.

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