

PRESENT STATE OF THE RAILWAY INDUSTRY IN SERBIA

Dušan STAMENKOVIĆ¹
Miloš MILOŠEVIĆ²
Milan BANIĆ³

Abstract – Serbian industry has experienced great changes in the last few years. The social ownership of factories has transferred to the private ownership, and a great part of the national railway industry does not work any longer after this process. The transformation process of Serbian Railways has been being carried out recently while maintaining of infrastructure and vehicles has been neglected. The purchase of new vehicles has been carried out through international tenders, thus, because of severe commercial conditions, the national industry could not be employed. Serbian Railways, preoccupied with its own reorganization, has neglected the relationship to the national industry. This condition has accelerated the deterioration of national enterprises addressed to the Serbian Railways. Considering the bankruptcy of many national enterprises and real possibility for their closing, this paper reminds us of their significant participation in the development of Serbian Railways.

Keywords – Railway industry, Serbian Railways, transformation process, privatization, RAILCON.

1. INTRODUCTION

The railways and supporting industry had their beginnings in Serbia as early as 1884. In the course of 132 year long history there have been the periods of development and progress as well as those of destruction and decline of the railway industry. In fact, it can be seen a great difference between the level of infrastructure and quality of vehicles nowadays and in the past - from the former steam traction to today's electrical and diesel-electrical traction. Likewise, signalling and transport management have reached a high level of automation. During the two world wars the railways and supporting industry suffered considerable devastation together with the loss of a large number of workers. After the war the destroyed infrastructure was renewed and there was a rapid development with the help of great enthusiasm of people.

However, in the last decade of the twentieth century, Serbian economy experienced a lot of difficulties: there was a break-up of Yugoslavia, economic sanctions, NATO bombing. Since then there has been a period of continuous overall economic decline in the country, which influenced the rail transport as well. In recent years, a particularly difficult period has been appeared. Serbian Railways has been experiencing significant changes during the

process of restructuring with the steady decline in business indicators and the national industry mainly disappears after the unsuccessful privatization.

This paper contains quotations from papers presented at the Scientific-Expert Conferences on the Railways RAILCON in the period between 2002 and 2014 and aims at indicating the events and processes that have led to the present state of the railways and national supporting industry.

2. SERBIAN RAILWAYS IN THE PERIOD BETWEEN 2000 AND 2015

The transformation of European railways began in the early nineties of the last century. The main objective of the transformation was to stop the decline in the share of railways in the transport market and to increase its competitiveness. The state railways was supposed to be transformed into an independent transport company with market orientation [1].

2.1. Restructuring of Serbian Railways

The first concrete activities in restructuring of Serbian Railways were launched after 2000, however, the process of transformation continues today. Brief overview of the restructuring process, from the initial activity to present days is given using the quotes from the papers presented in plenary sessions of RAILCON conferences.

¹ Faculty of Mechanical Engineering, A. Medvedeva 14, Niš, Serbia, dusans@masfak.ni.ac.rs

² Faculty of Mechanical Engineering, A. Medvedeva 14, Niš, Serbia, mmilos@masfak.ni.ac.rs

³ Faculty of Mechanical Engineering, A. Medvedeva 14, Niš, Serbia, milan.banic@outlook.com

At the Conference RAILCON 2002, Rosić announced a radical reform of Serbian Railways both in organizational and essential terms in his paper [2]. "These changes will be reflected not only in a good part of the economy related to the railway program, but also in regional terms in a completely different approach to solving local traffic, and even in the survival of regional railways. For the successful implementation of the restructuring program and finding the optimal solution it is necessary to ensure a broad cooperation, support and coordination with local industry, local government structures, as well as with all professional and other organizations." He also pointed out that "there is no much time, and even more it will be a missed opportunity for recovery of both railways and national industries related to rail program if there is no coordinated activity."

At 2004 RAILCON Conference, Bošković and Lasica [3] pointed out that the key parts of the restructuring of the railways are: the restructuring of railway companies, governmental management and the relations between the state and railway companies. "No restructuring of the railway system is possible without changing the regulations in this area as well as the relationship between the state and the railway company. This is the basis and precondition for the start of any changes." At the same Conference, in his work [4] Bečejac presented the basic assumptions of the restructuring of the company ŽTP Beograd, key strategies and legal and institutional framework. The obligations that were supposed to have been implemented by 2007 by Railways and the State as well as the expected effects of the restructuring process were given in the paper.

Authors Bošković and Pop-Lazić, at the Conference RAILCON 2006, described the experiences of European rail companies privatization and structural organization of infrastructure management and transport. The same year, Lasica [7] made a recollection of activities on the restructuring of the public enterprise Serbian Railways, pointing out that the transformation process started in 2003 and could last for 5-7 years according to the experiences of railway companies from Western Europe. The Law on Railway, passed on March 1st, 2005 regulates the management of infrastructure and transport in the railway traffic. In his paper [7] the author also indicates: "The greatest problems that now threaten the continuation of the restructuring are: insufficient coverage of the costs by their own income, insufficient budget subventions for maintenance of infrastructure, lack of readiness of all management structures for the implementation of necessary reforms, high level of debts arising from international loans, lack of proper railway traction vehicles, poor state of infrastructure which causes a large number of slow driving on certain routes and the like. "

At the Conference RAILCON 2008, the authors Bošković and Janković analyse the dynamics of the process of restructuring of railways in the countries of Southeast Europe in their paper [8]. They indicate that in 2007, apart from Romania and Bulgaria, all other countries in the Balkans are at a low level of restructuring, and that they have a low level of development of railway market.

At the Conference RAILCON 2010, in their paper [10], authors Lasica et al emphasized the urgent need for changes and amendments to the Law on Railways to help Serbia align with the EU. At the same conference, Mandić in his work [11] showed that the restructuring of the railway sector in Serbia was being carried out very slowly and said: "They must promote smaller, technologically rounded, profitable projects rather than megalomaniac. It is very important to define and implement new technology in freight traffic and to leave classic technology with several processing of freight trains in the technical stations on an average transport of goods. The introduction of Obligations of public transport and the resolution (funding) of the organization of passenger traffic between the central and regional governments in passenger traffic will be very important."

At the Conference RAILCON 2012 authors Stamenković and Milošević in their paper [12], in addition to presenting the history of the development of the conferences RAILCON, provided comparative data of the work of Serbian Railways in the business years of 1984 and 2011 which showed a significant decline in the parameters of the transport performed. At the same Conference in his paper [13] Cadet pointed out that the railways can increase their competitiveness only through innovation, and this can be implemented only in the cooperation of the academic community and the railway industry. He describes examples of innovation in the company ALSTOM regarding high-speed trains, vehicles with tilting (Pendolino) system for controlling trains and the like. The same year, Rosić and Mandić, in their paper [14] said: "It is necessary to create a sustainable economic situation in the Serbian Railways as soon as possible. In order to realize this objective, it is necessary to increase the income and decrease the expenditure, and not to increase budget funds. This objective cannot be achieved unless there structuring of the company has been completed. It shall be kept in mind that during economic crisis, it is very difficult to increase the revenues and that the main task will be to reduce the expenditures as much as possible"

In the paper [15], which was exposed in 2014 at the Conference RAILCON authors Tomović and Pejčić-Tarle described the basic lines of strategy and policy options for the improvement of Serbian Railways in the period 2014-2018. They point out: "Unfortunately, the time is passing and differences

between developed railway governments and Serbian railways are becoming more dramatic. The most difficult issue for management is how to find the best way to align with developed railway governments. Such burden is the largest in these complex processes. These processes demand great expert knowledge and capabilities".

Since August 2015 Serbian Railways have been organized into four stock companies: Company "Serbian Railways" JSC, the joint stock company for management of railway infrastructure "Infrastructure Railways of Serbia", the joint stock company for rail transport of goods "Serbia Cargo" and the joint stock company for passenger railway transport "Srbija Voz".

The company "Railway Infrastructure of Serbia" JSC has 9645 employees and the company "Serbian Railways" JSC has 130 employees.

Company "Serbian Voz" JSC has 2873 employees and the rolling stock of 38 electric locomotives, 11 diesel locomotives, 21 electric multiple units Series 413, 38 electric multiple units Series 412/416, 33 diesel multiple units, 22 rail buses and 171 passenger carriages.

The company "Serbia Cargo" JSC has 3963 employees and the available rolling stock of 79 electric locomotives (15 locomotives of 441 Series, 30 locomotives of 444 Series, 34 locomotives of 461 Series), 74 diesel locomotive (12 locomotives of 621 Series, 16 locomotives of 641 Series, 7 locomotives of 642 Series and 7 locomotives of 643 Series, 6 locomotives of Series 644, 25 locomotives of 661 Series and 1 locomotive of 732 Series) and 4666 freight wagons.

The following years present a special challenge because it is necessary for newly formed companies for infrastructure management, for passenger and goods transport to become independent and compatible so as to survive on the transport market.

These quotations from papers presented at the Scientific-Expert Conferences on the Railways RAILCON in the period between 2002 to 2014, prove that the experts have been engaged in research/analyses in the field of transformation of the railways and pointed out priority areas of action. However, the process of restructuring of Serbian Railways has taken place very slowly which caused the decline in operating business results, the deterioration of national supporting industries and the reduction of perspective rail transport in Serbia.

2.2. Performance of Serbian Railways

Although the period from 1980 to 1990 was characterized by stagnation as well as by a slight decline of the gross national product, the period of extremely difficult situation of Serbian society and economy, including the railway and supporting

industry, started in the last decade of the twentieth century. The break-down of Yugoslavia, wrong economic policies with hyperinflation, the absence of necessary reforms, sanctions and NATO bombing made great damage and caused a deep disturbance in trade flows and developments in rail transport.

Passenger transport has performed steady decline since 1990. The range of passenger transport fell from $4,45 \times 10^9$ pkm in 1990 to $1,24 \times 10^9$ pkm in 2000. The unreliability of services, the poor state of carriages and insufficient investment in infrastructure have been the main factors that led to a bad situation. Transportation of goods was declining from 1990 to 1999, but after that there was a certain growth. The scope of freight transport fell from $7,22 \times 10^9$ ntkm in 1990 to $3,64 \times 10^9$ ntkm in 2000. The large decline in the national economy is the biggest reason for the decline in the transport of goods. In this period the number of employees was reduced in Serbian Railways from 43668 in 1990 to 33832 in 2000 [5].

In order to evaluate the business efficiency of Serbian Railways during the period of transformation Fig. 1 provides an overview of the range of passenger transport in pkm, and the scope of freight transport in ntkm in the period 2000-2014.

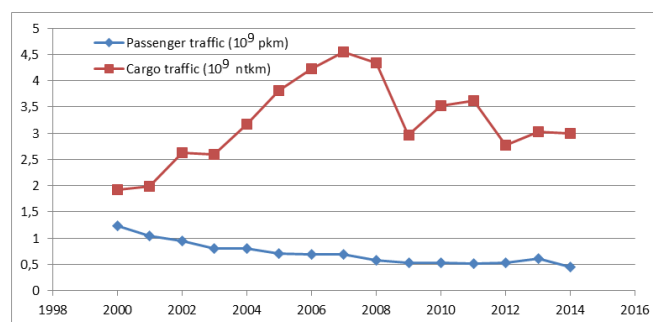


Fig. 1. The scope of passenger and freight transport between 2000-2014

In the period between 2000-2014, passenger transport was in steady decline, while cargo transport had a significant increase from 2000 to 2007, and then it started to oscillate with decreasing intensity.

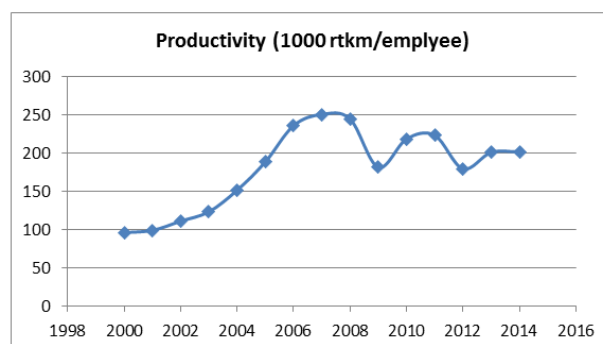


Fig. 2. Productivity in reduced ton kilometres per employee between 2000-2014

Productivity expressed in reduced ton-kilometres (pkm + ntkm) per employee for the same period is shown in Fig. 2. As the number of employees decreased significantly, from 33832 in 2000 to 17078 in 2014, the productivity of transport per employee has risen.

Every year Serbian Railways received subsidies from the state to cover its operations. The subsidy in 2014 was 12.5 billion dinars. Meanwhile, foreign debt increased because of infrastructure investments and the purchase of new rolling stock that had been realized with the help of international loans.

3. SERBIAN RAILWAY INDUSTRY

The railway industry in Serbia has a long tradition of over 130 years. During this period, the companies have experienced success, crisis, progress and war devastation. National railway industry developed its capacity primarily considering the needs of local railways and major mining and metallurgical companies in the country. These include companies engaged in production and servicing of railway traction vehicles MIN Lokomotiva Niš and ŠINVOZ Zrenjanin, then the factories engaged in the manufacture and overhaul of freight wagons Bratstvo Subotica, MIN Vagonka Niš, FVK Kraljevo as well as GOŠA Rolling Stock Company Smederevska Palanka dealing with production and servicing of passenger and freight wagons and ŽELVOZ Smederevo dealing with overhauling of passenger/freight wagons, electric and diesel trains. Beside them, a lot of mechanical, electric, metallurgical enterprises and other industries were producing parts for rolling stock and rail infrastructure. These include MINEL Beograd, EI Nis, Tigar Pirot, PPT Trstenik, Foundry "Požega" Foundry "Kikinda", FIAZ Prokuplje, Krušik Valjevo, Sever Subotica, Novkabel Novi Sad, FASO Vladimirci, MIN Skretnice, MIN Svrljig, ZGOP Novi Sad and other. It was estimated that the companies which had been linked directly or indirectly to railway vehicles in Serbia in the early eighties had about 25,000 employees [9]. The long tradition of successful business is an advantage of the national industry, but it is not enough for survival in today's market.

During the initial construction of the railway network in Serbia, at the end of 19th century and early 20th, qualified professional staff was obtained and the necessary institutions and companies that were able to perform almost all activities in the field of railway infrastructure were formed, while in the mechanical field everything was kept at the level required necessary for the basic maintenance of the stock [9].

In the period between the two world wars the industry of rail vehicles was practically created in Serbia. All factories were private. Railway companies decided to maintain vehicles in their facilities, and to leave new construction and modernization of vehicles

to industry. During 6 years before the Second World War, the national industry produced 32 steam locomotives (independently and by license), 7 diesel multiple units (in cooperation), 20 trams (in cooperation), 33 tram trailers (independently), 112 passenger wagon (independently and by license), 3 lounge and a restaurant car (independently), a large number of freight wagons and other vehicles for railway purposes [9].

Significant capacities of railway industry were developed between 1950 and 1980. So beside the pre-war private factories, "Wagon Factory" in Kraljevo, "Stanko Paunovic (MIN)" in Niš, "Banat (Šinvoz)" in Zrenjanin, "Heraj Srba (Želvoz)" in Smederevo and "MIP" in Čuprija joined the industry of rail vehicles.

3.1. Privatization of national industry of railway vehicles

In the period from 1980 to 1990 there was a great reduction of transport services market and the economic weakening of the railway. There was a great immobilisation of transport capacity due to the lack of maintenance. This state of the economy in the country, especially the situation in the national rail market had an impact on the activity and status of the railway industry. The range of production declines rapidly and unengaged capacity were partially used for overhaul operations, reconstruction and production of spare parts or other activities.

Serbia Railways has been preoccupied by its own reorganization and neglected the relationships with national industries. The purchase of new vehicles, the reconstruction of old ones and investment repairs have been realized through international tenders. During the last four decades world railway have experienced the process of concentration so several large international industrial systems became the leading global service providers in railway infrastructure and transport vehicles. National industry cannot get contracts in the production of new products due to strict commercial conditions except as subcontractor. Because of that, larger investments in railway industry have bypassed Serbian economy.

In such circumstances, the process of privatization has begun and brought new uncertainties and challenges. The state has claimed responsibility and started the implementation of privatization process but it has not taken any incentives in order to facilitate this process as it was the case in other branches of production whose size and prospects are considerably smaller than the industry of railway vehicles [9]. In some cases of privatization the new owners have shown impatience to achieve earnings and thus worsened already deteriorated situation in enterprises. The employees in factories have turned to social demands, not to the initiative of improving the quality of their products and finding new markets. So there

was a significant reduction in production capacity, and some factories have gone bankrupt.

Unsuccessful privatizations was conducted in factories for overhaul and production of rail vehicles.

Tab. 1 shows the number of employees and status of enterprises for overhaul and production of rail vehicles in Serbia in the privatization process.

Tab. 1. Factories for production and overhaul of rail vehicles in Serbia

Firm	Year of foundation	Number of employees			Status
		2008.	2012.	2016.	
MIN Lokomotiva Niš	1884.	430	296	0	Privatized in 2007. Privatization contract cancelled in 2009. In bankruptcy since 2015.
ŠINVOZ Zrenjanin	1887.	600	100	150	Privatized in 2004. Privatization contract cancelled. Conducted bankruptcy and reorganization of the company Active
GOŠA – Rolling Stock Company Smederevska Palanka	1923.	750	445	370	Privatized in 2007 ŽOS Trnava Active
BRATSTO Subotica	1886.	400	246	270	Privatized in 2004 TATRA VAGONKA Active
MIN Vagonka Niš	1884.	440	275	0	Privatized in 2007. Privatization contract cancelled in 2009. In bankruptcy since 2015.
ŽELVOZ Smederevo	1916.	1600	1240	0	Privatized in 2007. Privatization contract cancelled in 2011. In bankruptcy since 2015.
FVK Kraljevo	1936.	850	750	0	Privatized in 2006. Privatization contract cancelled in 2010. In bankruptcy since 2015.

Beside above stated, in present days several smaller enterprises such as MIP Čuprija, Intermehanika Smederevo, Elektroremont Subotica and others deal with maintenance /overhaul of railway vehicles, i.e. their components.

The fact that national enterprises for the production and overhaul of railway vehicles are not engaged in any projects for Serbian Railways is one of the major causes of their deterioration. The remaining three factories Šinnoz, Gosa šinska vozila i Bratstvo still do not do any significant work for Serbian Railways.

Factories MIN Lokomotiva and MIN Vagonka date from the first state railway workshop founded in 1884 in Nis. Further on, the paper gives a brief historical review of operations of the two plants from its beginning until today.

3.2. From State Railway Workshop of 1884 to unsuccessful privatisation in 21st century.

During construction of the railway Belgrade - Niš - Vranje, Ministry of Construction decided to build a workshop for repairing locomotives and wagons built in Niš, in the geographical center of the future railway network of Serbia. Railway Workshop in Niš began operating in the first months of functioning of railway traffic on the Belgrade – Niš railway, in the fourth quarter of 1884. The workshop was employing about 100 workers, craftsmen and officials, mostly French [16].

In 1889 Serbian government took over the exploration of state railways. The number of workers in the workshop increased from year to year following the increase in the number of locomotives and wagons

in the stock of Serbian State Railways (SDŽ). In the period between 1890. and 1912. three new departments were established.

At the beginning of World War One, Railway Workshop was placed under the direct control of the Supreme Command of Serbian army by the Military minister act from October 4th, 1914. In these extraordinary conditions, in 1914 30 locomotives, 59 passenger and 130 freight wagons were overhauled. By the order of the military authorities in the autumn of 1915 the workshop was evacuated. Over 200 most skilled workers, with tools and equipment were evacuated to Greece. This group established a railway workshop in Zejtinlik near Thessaloniki.

Niš was freed on October 12th, 1918. Bringing back to life of Railway Workshop in Niš was of great importance to the revival of Serbian State Railways and therefore Borivoje Djurić, former Assistant Minister of Transport, was awarded to be the director of the Workshop by Directorate of SDŽ. A large number of the workshop facilities was damaged and some were completely destroyed. Despite the difficult conditions and shortages of spare parts and other materials, in the first year after the liberation (1919) Railway Workshop repaired 15 locomotives, 210 passenger carriages and 475 freight wagons [16].

In the eve of the Second World War Railway Workshop in Niš was organisationally and technologically fully completed for the needs of the entire maintenance and repair of all types of locomotives and wagons in the stock of public and private (mining and manufacturing) railways. In 1940

150 steam locomotives, 1136 passenger, service and postal wagons and 3100 cargo wagons were repaired and overhauled. At that time, in 1940 Railway Workshop in Niš employed around 2,240 workers and civil servants, and Railway Craftsmen School had 151 students [16].

Railway Workshop in Niš was completely destroyed in the closing days of World War II. Immediately after the liberation of Niš on October 14th, 1944 all available measures were taken to empower the workshop as soon as possible, in order to restore the railway traffic quickly in the liberated part of the country. By outstanding efforts of workers in very difficult conditions, Railway Workshop in Niš succeeded to repair 53 train steam locomotive in the first half of 1945. There were 169 skilled, 15 semi-skilled and 49 unskilled workers, 7 wardens and 27 students. In the second half of 1945 64 locomotives were completed. The number of workers gradually increased - demobilized workers were returning from the railway brigades and the army.



Fig. 3. Workers going out of Factory Stanko Paunović in 1949

Railway Workshop in Niš was part of the JDŽ (Yugoslav National Railways) until 1952, when it became an independent organization with 2276 employees and clerks. The workers' council of Railway workshop made the decision on November 29th, 1953 that the workshop should be constituted as the Factory of machine and rail vehicles "Stanko Paunović" - Niš. Following organizational units were parts of the factory:

- Factory of switches and rail accessories
- Factory of freight wagons
- Factory of propelled means of transport
- Factory of machines and devices
- Factory of cranes and steel construction
- Factory of casting iron and nonferrous metals
- The overhaul of means of transport
- Engineering organization

The scope of repairs of railway vehicles was growing from year to year. Even the locomotives of narrow-gauge (0.6 to 0.76 m) with a variety of mining and industrial trails were brought for repair. In 1955 168 steam locomotives, 416 passenger carriages and 3173 freight wagons were repaired, and in 1958 the number increased to 268 locomotives, 570 passenger carriages and 4837 freight wagons. In 1955 there were 5098 employees in the factory and in 1957 there were 5353 [16].

In 1962 the factory "Stanko Paunović" formed the Department for the repair of diesel locomotives. A group of mechanical and electrical engineers intensively prepared the organization and technology for overhauling of diesel locomotives. The first diesel locomotive (JŽ 661-111 locomotive produced by General Motors Company - USA) entered the factory "Stanko Paunović" on emergency repair after the accident at Medjurovo in summer of 1962 [16].

In 1963 two biggest enterprises for metal processing in Niš – Factory of Machinery and railway vehicles "Stanko Paunović" and Factory of bridges and switches - were integrated into a new company - Mechanical industry Niš (MIN). Both companies originated from railway workshops. In the new integrated company, the Workshop tradition was followed by the Factory for production of railway freight wagons, the Factory for self-propelled means of transportation (locomotives) and General overhauling of transport means (locomotives and wagons). Independent factories were formed out of some support departments of the former Railway Workshop. Thus, Factory of iron and non-ferrous metals castings was established from the former foundry department, the Factory of castings and forgings was established from forges and pressed parts. Factories for production and overhaul of locomotives and wagons survived various reorganization and transformation, until finally, at the beginning of the seventies of the last century, rail program was concentrated on just two factories i.e. two enterprises MIN Lokomotiva and MIN Vagonka.

From 1963 to 1990 over 9000 wagons were produced for the needs of the national and foreign markets in the factory for freight wagons MIN Vagonka. Some of the major types of railway vehicles which are manufactured in MIN Vagonka for mining and metallurgical plants and railway organizations are:

- wagons for Mining and Metallurgy
- carriages for public rail transport for domestic railway, as well as for various foreign railway managements and companies
- low and high sided open freight wagons
- flat wagons for transport of containers
- flat wagons for transporting heavy loads

- closed freight wagons, and wagons with sliding roof and sides
- kipper wagons with pneumatic-hydraulic installations for kipping on both sides
- wagon tanker for transport of powder and granular materials (cement, calcined soda, coal dust, etc.)
- wagon tankers for various chemical materials (oil, gasoline, fuel oil, bitumen, sulfuric acid, hydrochloric acid, etc.)
- special car carrier wagons
- wagons for the transport of long rails and other.

The highest annual production was achieved in 1984/85 with the production of 845 wagons of type Hais for Iraqi Railways. In the period from 1993 to 2001, about 4000 wagons were repaired for the needs of Serbian Railways and the national industry. Fig. 4 shows the amount of completed repairs of freight cars in the period 1993 to 2001 [17].

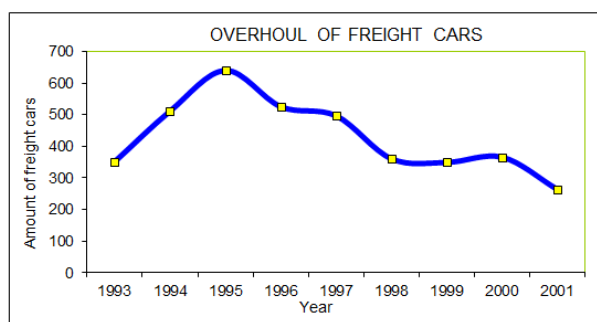


Fig. 4. Maintenance of freight cars between 1993-2001 [17]

The factory MIN Lokomotiva performed the overhaul of diesel-electric locomotives series 661, 645, 664, 666 electric locomotives series 441, 444 and 461, the production of diesel-hydraulic locomotives and track car with powers from 22 kW to 1200 kW, overhauls of trams and trollies, etc. Tab. 2 provides an overview of the vehicles produced at the factory MIN Lokomotiva.



Fig. 5. Locomotives being overhauled in the factory MIN Lokomotiva in 1992

In the period from 1985 to 2005 the factory MIN Lokomotiva performed overhaul of 190 locomotives series 441, 138 locomotives series 461, 263

locomotives series 661, and over 1200 locomotives of those series were repaired (larger or smaller faults). Fig. 5 presents a part of the factory MIN Lokomotiva with locomotives being overhauled in 1992.

Tab. 2. Overview of the vehicles produced at the factory MIN Lokomotiva

Product	Type label	Power [kW]	Amount	Product
Diesel-hydraulic locomotive	DHL-650	442-478	68	1969 -2005
Diesel-hydraulic locomotive	DHL-735	540	2	2005
Diesel-hydraulic locomotive	DHL-200	147-165	20	1977 -2000
Diesel-hydrostatic locomotive	DHSL-30	24	5	1980 -1988
Diesel-hydraulic locomotive	DHL-450	2x165	2	1987
Heavy track car	TMD-22	103	141	1957 -2005
Railcar	TMD-22KM	103	1	1992
Light track car	LMD-9	6,6	42	1977 -1988
Heavy track car	TMD-25	118	18	1980 -1984
Diesel-hydraulic track car	DHD-200	165	17	1984 -2007

Fig. 6 presents the total production, i.e. the total number of vehicles delivered from major/medium repairs, reconstruction and new construction, not taking into account the less emergency repairs in the period 2001-2010.

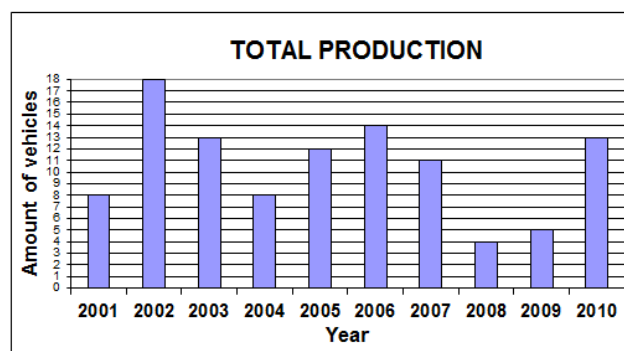


Fig. 6. Overview of the delivered vehicles (new and reconstructed) in the period 2001-2010.

In 2007. these two companies were privatized, and the new owner made huge debts and permanently disabled their recovery. This privatization was terminated in 2009. Because the new owner did not respect contract obligations, and the state declared bankruptcy in 2015. That is how ended turbulent and long history of Niš factories for production and repair of railway vehicles descended from the first Serbian Railway Workshops in 1884.

4. CONCLUSION

The process of transformation of the railways in

Serbia has been carried out very slowly and insufficiently thoroughly resulting in a decrease of transport and business indicators. The decrease in revenue from transport services has been covered by state subsidies. However, in addition to operating losses, the position of Serbian Railway is significantly getting worse in the transport market. The maintenance of infrastructure and rolling stock has been neglected. In addition, supporting industry has not been engaged in the railway program and was forced to develop alternative programs as well as to reduce the workforce that has caused constant deteriorating. The process of transformation of state property into private is being implemented under these difficult circumstances which make the situation in most factories worse.

The main causes of the deterioration of the national rail industry are:

- Unsuccessful privatization
- Lack of support of Serbian Railways in the process of restructuring of national companies
- Failure of national industry to adapt to the new market conditions (globalization and market liberalization)
- Relying on old previously adopted programs without the development of new products and services.

The academic community (university) has the task of indicating the directions for further development. By analysing the papers from previous RAILCON conferences dealing with restructuring of railways and transformation (privatization) of industrial enterprises it can be concluded that the plans and goals were set on time. However, the plans and objectives differ from the results (realization). Politicians who have "no time" for long-term reforms but only for short-term actions and their own promotions mostly contribute to this situation. But the progress requires the change of entrenched habits, the persistence in the realization of the objectives, often opposing opinions, or loss of popularity.

It is difficult to understand the fact that the railway industry has recovered after the massive destruction in two world wars, and that it cannot survive the process of globalization and market liberalization, as well as the process of transformation of the state property into private one.

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