

# **HISTORY AND MEMORY IN INTELLIGENCE**

## SECURITY, POLITICS, AND THE CIRCULAR ECONOMY: A HISTORICAL STUDY OF ROMANIA'S RAILWAY EVOLUTION (1846-2007)

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### Abstract:

*The modernization and technological advancements in railway systems have proven essential in enhancing both the safety and security of rail transport. Given the important role it plays in the movement of people and goods, Romania's rail infrastructure has an essential role as it is considered as European critical infrastructure, which also indicates the increased role of rail transport security.*

*This research analyses the evolution and development of Romania's railway infrastructure, focusing on security and resilience aspects, while examining the role of the Romanian state through the lens of political and economic factors. The article provides a synthesis of the main specialized studies that explore the relationship between railway development and factors such as political regime, political motivation, socio-economic investments, population growth, and times of crisis. Additionally, it addresses the relationship between security, technological development, and the related political legislative framework.*

*The article examines from a political science perspective the historical evolution and impact of the determining factors on railway development, as well as the dynamics of security factors, emphasizing that citizen safety remains at the core of the state's actions. Thus, this study has two main research questions: (1) What factors contributed to railway development in Romania between 1846 and 2007? and (2) What factors influenced citizen safety during the same period?*

**Keywords:** *railway infrastructure, security, resilience, political factors, socio-economic investments.*

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## Introduction

The history of the Romanian Railways (C.F.R.) has been shaped by precise events, with several key moments standing out. Among these are 1880, when the Romanian state, through radical measures, took over foreign concessions<sup>1</sup>; 1918, when following the unification of the state, Romania had to restructure its railway network and services in line with the new unified traffic directions and the development needs of society; the period under socialist patronage; and later, the privatization.

The development of Romania's railway system between 1845 and 2007 reflects a complex evolution across multiple levels, with moments of adaptation and transformation within the geopolitical contexts of the Balkans. The political context played a significant role in this gradual transformation (Mahoney & Thelen, 2010), and the history of C.F.R. shows that this influence has been crucial over time. Almost all countries have traditionally viewed railways as a "service of general economic interest" (Windhoff-Héritier, 2001; Van de Walle, 2008), ensuring transportation across the country for workers to reach their workplaces. To achieve this goal, legislative procedures were adopted to guide policy transformations (Dyrhaug, 2022) for stronger railway development. Railway construction was a crucial element for the new state to strengthen territorial and social unity, as well as to promote economic and technological growth. Over time, the facilitation of access to a single market and the freedom of movement identified transportation as the foundation for a common development policy (Degli Abbatì, 1987; Erdmenger, 1983).

Considering the national importance of a good railway system, the aim of this article is to address railway development in Romania and how it became the main driver of the country's transformation into a modern state. Through implemented policies and attention to safety – both for citizens and railway infrastructure –, the railway network significantly contributed to territorial integration, economic growth, and population mobility. We will use the term "safety" in reference to citizens and the railways, as the concepts of "security" and "resilience" emerged much later.

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<sup>1</sup> Due to the lack of financial means and technological know-how, the new Romanian state was prevented from having any initiative to build railroads and forced Romanian decision-makers to turn to foreign capital and specialists for the construction of the first railroads on Romanian territory.

**Additionally, observing the rules and regulations adopted for railway safety, it becomes clear that these align with the definitions used for railway security and resilience.** To sustain our arguments, we will present the theoretical foundation of our research on railway development models, both from Europe and other continents, to show that despite cultural differences or economic progress/ regression, the ideas of development are similar, the desires were common and constant, and the models of inspiration were drawn from everywhere.

We chose to present the evolution of Romania's railway network following a historical chronology, as the events over time played an essential role in influencing the country's economy, defence, and social structures. The lessons from past experiences can be a valuable support for the present and future, while also providing logic and coherence to the entire text.

### **Main stages in railway structure development in Romania**

The appearance of the first railroads in Europe and the economic advantages of faster transportation of Romanian cereals attracted the interest of Romanian authorities. The road from ideas to facts was extremely difficult due to many internal and external obstacles. Thus, the lack of specialists, combined with the ignorance or hidden interests of some Romanian politicians were strong internal obstacles, and the Romanian economic potential unknown to Western financial circles was an external obstacle. With extremely high financial costs, the first railway lines built by the foreign consortiums Barkley – Staniforth (Bucharest – Giurgiu line), Victor von Ofenheim (Burdujeni/ Suceava – Roman line with branches to Iași and Botoșani), Strussberg (Bucharest – Pitesti – Slatina – Craiova – Vîrciorova) showed that financial sacrifices had to be made for the welfare and development of the new Romanian state.

**Trail periods (1846-1869):** To better understand the conditions under which the first railways were built on national territory, as well as their subsequent development, it is necessary to refer to the historical circumstances of the era. Wallachia and Moldavia were, until the mid-19th century, separate provinces politically, administratively, and economically, and were under the suzerainty of the Ottoman Empire,

with relative autonomy. Transylvania and Banat were an integral part of the Habsburg Empire (Nahaiciuc, 2020).

The era of Alexandru I. Cuza and Carol I was one of profound changes in Romanian history. Romanian society was shaken out of a historical lethargy and thrown into the whirlwind of modernity. The reforms initiated by Alexandru I. Cuza in the administrative, institutional, economic, educational, cultural, and health sectors had a significant impact on a very young Romanian state, and this was also reflected in the initiative to build railways to modernize the Romanian Principalities. The first political debates regarding railway construction took place between representatives of the bourgeoisie, the entrepreneurs, who later became the Liberals, while the opponents were the landowners represented by the Conservative Party (Nahaiciuc, 2020). Due to financial problems, distrust in concessionaires' offers, and disagreements between representatives of the two factions, all offers received were rejected, leading to failure.

**The major developments (1869-1919):** After Cuza's abdication, Prince Carol I, who was brought to lead Romania, continued the modernization process, including the construction of railways, even during the War of Independence (1877). Along with the emergence of railways, the country's legislature also adopted laws concerning the safety of passengers, goods, and railway employees. Thus, by Decree 516 of March 26, 1870, published in the Official Gazette on March 26, 1870, the "Law on the Police and Operation of Railways in Romania" was enacted. In line with ensuring the safety of citizens, special commissioners with responsibilities related to the railways were established, and the "Regulation on the Duties of Special Police Commissioners at Railway Stations" was promoted through Decree 502 of March 23, 1876, published in the Official Gazette on March 23, 1876.

The interest in creating and expanding railway networks was common both to the Romanian Principalities and their neighbours, who sought to create an interconnected railway network that would ensure the circulation of goods and passengers to the Danube and the Black Sea. The high costs of land transport, mountainous terrain, poor roads, and lack of security made the railway network vital for modernization

(Lampe, 1975). The first railway lines were financed by European powers that wanted to connect Europe with the Ottoman Empire and the Middle East, and the main construction directions followed this vision (Stanev et al., 2017).

After gaining the independence (1878) and declaring Romania a kingdom (1881), there was already a railway network operated by concessionaires (Nahaiciuc, 2020). The Romanian Railways was a new institution, obliged to organize itself as it progressed. Thus, vocational schools were established to provide proper professional training for staff (Dorobanțu et al., 2018). *At the same time, the first repair workshops and wagon factories appeared.* In the mentioned period above, the first repair workshops and wagon factories appeared too.

The constant concern of the railway administration's leadership was in two main areas: eliminating technical defects that posed accident risks and maintaining a high level of specific knowledge. Technological improvements aimed to increase the safety of rolling stock movement on the railway, while professionalizing staff sought to improve traffic safety. Another measure taken to increase railway safety was the doubling of traffic lines, necessary because transport capacity was limited (Iordănescu & Georgescu, 1986).

**Safety in the period 1869-1918:** The first steam locomotives underwent improvements in design and efficiency, including more powerful engines and better weight distribution to reduce track wear and increase stability. Safety systems were introduced in locomotives, such as safety valves to prevent boiler explosions, and the braking system began transitioning to the air brake system, invented in 1869 by George Westinghouse (Westinghouse, 1910). The initial structure began to change, with more robust structures and materials resistant to impact being used to protect passengers in case of accidents. The same modifications were applied to freight wagons to reduce the risk of losing cargo.

The development of steel rails allowed for faster and heavier trains, reducing the risk of track deformation and derailment. For railway staff, locomotive cabs were designed with better comfort, providing protection against bad weather and improved safety.

**The interwar period (1919-1945).** The end of World War I brought about the unification of all Romanian provinces, forming Greater Romania. The main positive aspect was the consolidation of political, institutional, and administrative unity under a single leadership. However, the war left deep scars across Europe, significantly affecting Romania as well. The railway infrastructure also experienced setbacks due to the war. The pre-war organization was lost, some services had been replaced by military organizations, several departments were dissolved, and many engineers had been transferred to the army (Dorobanțu et al., 2018). The unification came with a new territorial reality, where many railway lines, those in Transylvania, Bukovina, Banat, and Dobruja, had been built to meet the economic needs of other countries – Hungary, Austria, Russia, and Turkey – and were diametrically opposed to the economic and strategic interests of the new Romanian state. Additionally, the new structures serving the railway lines had different forms and organizational principles – the Hungarian, Austrian, and Russian railway administrations –, where many employees did not speak Romanian, and the equipment and rolling stock were highly complex and difficult to manage. All these problems needed to be resolved swiftly to maintain traffic safety and ensure a similar technological process across all regions. Thus, the first step taken by the government, based on proposals from within C.F.R., was implemented through *Decree-Law 589* of February 7, 1919, which divided the entire railway network (11,678 km at the time) into four regional branches: București, Iași, Cluj, Arad (Nahaiciuc, 2020).

Although the aim was better and more efficient organization, the results were the opposite: there was no communication between the regional branches, and the necessary exchange of resources (wagons, locomotives, coal, personnel) did not occur. This policy of decentralization favoured local and regional preferences, led to administrative disorder, and allowed politicians to infiltrate the activities of the regional branches, thus undermining the authority of the General Directorate, which was forced to adopt a political leadership (Iordănescu & Georgescu, 1986).

During this period, the Romanian language was imposed in work relations – a challenge for employees in Transylvania, as all staff was

required to read the instructions in the *Official CFR Bulletin*<sup>2</sup>, which primarily addressed safety issues.

The increase in railway-related crimes led to the adoption of *Law No. 163* in 1924, “regarding certain non-international crimes committed by employees of state or private railways.” Later, in 1929, the *Law on the Organization of the State General Police* was introduced, with subsequent amendments in 1930, 1931, 1936, and 1940, which included articles dedicated to railway transportation and the responsibilities of state representatives for combating crime and ensuring citizen safety (*Poliția Română - Scurt Istoric, n.d.*).

In August 1927, the liberal government succeeded in passing a law that guaranteed the non-involvement of politics in C.F.R. decisions, thereby securing the much-desired autonomy for the railway institution. Thus, although a global crisis occurred between 1929 and 1933, with repercussions in Romania, the C.F.R. Directorate’s situation stabilized with the help of the “Leverve” loan<sup>3</sup>, which enabled the reconstruction and development of Romanian railways (*La Roumanie Face Aux Rivalites Politiques et Financieres Internationales 1922-1935, n.d.*). New carriages with enhanced safety features were introduced, ensuring safer and higher-quality transportation.

From the Directorate’s level, safety regulations were constantly disseminated through the *Official CFR Bulletin* to protect railway personnel, rolling stock, and passengers. It became mandatory for all staff to have completed their studies and later undergo professional training at the workplace to raise professional standards. Manuals were created containing a summary of current norms, regulations, and instructions to ensure that safety regulations were understood by all employees (Altmann, 1900; *Foia Oficială C.F.R. nr. 512, 1930*).

In 1937, *Law 118* was issued, regulating C.F.R. operations, police activity, and penalizing damage to railway materials and lines, punishable

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<sup>2</sup> Decree No 84 of March 4, 1949, established that the main publication of the Romanian Railways is the Official CFR Bulletin, which publishes the orders issued by the Minister of Transport, the orders of the CFR Director, other normative acts relating to railway activity and safety, as well as service depositions.

<sup>3</sup> In 1929, The Romanian railways benefited from a stability loan, which was called the “Leverve Program”, after the name of the Secretary General of the International Union of Railways.



under the “*King Carol II*” Penal Code (Loredana, 2015; Parliament, 1937). These regulations were the first to increase the security of the railway infrastructure, criminalizing a series of acts aimed at affecting the integrity of the railway and referring to the damage to lines, railway material and railway accidents.

The achievements of C.F.R. during the interwar period are noteworthy: technical transport conditions were improved, passenger comfort and safety were enhanced, placing the network among the most well-organized, equipped, and efficiently operated railway networks in Europe.

**Safety in Interwar period 1918-1945:** Technological progress did not bypass Romania, and the new Pacific-type steam locomotives ensured higher speeds, essential for freight transport, and increased safety for mechanics and passengers, as the air brake system improved safety standards (Compton, 1949). Passenger cars were equipped with heating systems, and specialized freight wagons appeared, designed for different types of cargo, ensuring safer transport. Impact damping systems began to be implemented, protecting passengers and goods in case of sudden braking or collisions.

Automatic coupling systems between locomotives and wagons were widely adopted, reducing accidents among railway personnel and ensuring more efficient train operation. The strengthening of tracks and the use of more durable materials for constructing or modernizing bridges and tunnels raised the level of railway safety.

The military needs imposed by World War II led to more advanced technical solutions for the rapid and safe transport of troops and military supplies.

**The period after World War II (1945-1965).** Railway transport was seen as a vital component of the national economy. In response to the immediate need for increasing workforce specialization and establishing responsibilities, especially for future planning, the Railway Design Institute was established on November 11, 1947 (Nahaiciuc, 2020). It was the first departmental institute in the country, providing the technical documentation necessary for the reconstruction, development, and modernization of railway transport. Numerous projects designed by

the Institute, through their complexity and the originality of the adopted solutions, played an essential role in the development of railway transport and, implicitly, in the development of the country.

In 1948, the new communist regime nationalized the main enterprises, which also led to the loss of C.F.R.'s autonomy, an autonomy that had previously provided the institution with economic balance. The change in regime resulted in a series of reorganizations, with the General Directorate of C.F.R. being transferred between various ministries. In 1953, the Ministry of Railways was established, only to be dissolved in 1958, reappearing in 1966. On September 15, 1969, by the *Decision of the Council of Ministers no. 1815*, it was subordinated to the Ministry of Transport (Nahaiciuc, 2020).

Nevertheless, examining this period reveals several technological achievements and a significant emphasis on safety, both for citizens and transported goods. A dedicated sector for traffic safety was created, aiming to transition from manually operated devices and installations to centralized command systems to enhance safety measures. By 1960, the number of centralized electrodynamic switches had reached 725, compared to the 122 electromechanical ones existing in 1944 (Botez et al., 1977).

At the same time, many railway consolidation works were carried out, and in 1961, projects began on railway sections aimed at their electrification to modernize them. This period also saw the evolution of rolling stock. To improve locomotive performance, manufacturing licenses were purchased, and Romanian factories began producing high-quality equipment, comparable to or even better than those in Western Europe. Additionally, other sectors of the railway industry developed, which, through the implementation of new technologies, provided increased safety for passengers, transported goods, and railway employees. The wagons and locomotives built in Romania were constructed according to international safety standards and complied with U.I.C.<sup>4</sup> norms (Dorobanțu et al., 2018).

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<sup>4</sup> Union Internationale des Chemins de Fer or International Union of Railways is an international non-governmental organisation of rail transport. The idea of creating an international organisation, bringing together the railway companies, was developed in the wake of the international conference of Portorosa, in Italy on 23 November 1921, followed by the international conference of Geneva on May 3rd, 1922.

Of note is the establishment of the Bucharest Railway Institute in 1950. The official C.F.R. bulletins referred to the mandatory participation in courses to specialize and obtain the necessary certifications for safely conducting activities related to Romanian railways.

**Safety in the period 1945-1965, during Gheorghe Gheorghiu Dej's communist regime:** Despite limitations imposed by low funding and a centralized communist policy, Romania's railway transport transitioned to more advanced technology and implemented modern solutions focused on increasing safety and operational efficiency. Diesel locomotives were introduced, with significant advantages compared to steam locomotives. They offered greater reliability, easier maintenance, and lower risks of explosions or fires than steam engines.

Toward the end of this period, with the beginning of railway electrification, electric locomotives appeared, offering greater energy efficiency and having a positive impact on railway safety due to more advanced control systems (Tîrpe, 2015). For passenger wagons, metal wagons replaced wooden ones, offering better protection in case of impact or fire. Freight wagons also saw material changes, with designs becoming more robust, reducing the risk of damage and accidents.

The modernization of air brake systems continued, along with automatic coupling, becoming a standard feature for all types of trains. The invention of new steel processing techniques ensured better rail construction, capable of supporting increased weight and speed, adapting to the economic and technological demands of the time (*Locomotiva Electrică Cu Motoare de Curent Alternativ*, n.d.).

**The period 1965-1989.** The Romanian Railways continued to serve as an image vector for the Communist Party, which, with the support of the state budget, continued to modernize and develop. Due to competition with other communist states, in 1969, the General Secretary of the Romanian Communist Party decided that in the following five-year plan there should be an increase in double railway lines, as Romania had only 6% of total railways, compared to Czechoslovakia 20%, Poland 24%, and France and West Germany 41% (Botez et al., 1977). This political decision led to the modernization of tracks, locomotives, and wagons,

while several other technical measures were adopted to place Romania in a leading position in Europe regarding railways. By the end of 1975, nearly all locomotives were diesel and electric, a unique aspect compared to other rail networks similar to Romania's.

The operational principle of Romanian Railways during these years was in line with the Communist Party's directives, with economic principles subordinate to political ones. Despite this, the period was marked by technical modernization, discipline, and a focus on passenger safety as a primary goal. Even though professional leadership was doubled by political leadership, the decisions of the former always prevailed (Nahaiciuc, 2020).

In 1980, the Collaboration of Railway Police and Security Services (COLPOFER) was established, when a group of railway companies and railway police – a public-private partnership – decided to join forces and form a European association whose mission was to improve railway safety, adopt a common railway security strategy, develop recommendations for enhancing safety in the railway environment, and increase public perception of railway safety (*COLPOFER - Collaboration of Railway Police and Security Services*, n.d.).

In 1989, The Southeast Europe Railway Group (SERG) was founded as a component of International Union of Railways (UIC), with member countries including Romania, Albania, Bulgaria, Macedonia, Greece, Turkey, Serbia, and Montenegro. Among its priorities was improving railway security, and for the participating countries, it was a significant responsibility to ensure traffic security in the Balkans (Djaleva, 2008).

**Safety in the period 1965-1989, under Nicolae Ceaușescu's communist regime:** This period saw intensive modernization of rolling stock in Romania, with the goal of ensuring safe and efficient transport. The focus was on the near-complete electrification of the railway network and the widespread introduction of diesel and electric locomotives. For the few non-electrified lines, diesel locomotives with the latest technology were used, providing increased reliability, greater safety, and better manoeuvring power, contributing to operational efficiency and minimizing the risk of accidents (Matei-Stefan, 2022).

Romania became a producer of electric locomotives, with their quality and safety being recognized by the UIC. Passenger wagons were better compartmentalized to reduce the risk of injury to passengers in case of collisions, and the materials used were fireproof to reduce the risk of fire. Similarly, the same materials were used for freight wagons. These also saw specialized design, with wagons designed for specific types of cargo, such as tank wagons for flammable liquids and refrigerated wagons for perishable goods, meeting UIC safety standards (Balogh, 2011).

Braking systems improved with the introduction of regenerative electric brakes for electric locomotives, which also provided increased energy efficiency (Liudvinavičius & Lingaitis, 2009). The emergence of new steel manufacturing technologies and the use of concrete sleeper technologies contributed to the safety and durability of embankments, bridges, and tunnels.

**Post-communist period 1990-2007.** Following the changes brought by the 1989 Revolution, the Romanian Railways collapsed, along with most industrial activities, whose drastic reduction was quickly felt. For this reason, CFR's freight transportation was no longer in demand. Unfortunately, shortly after, the unused and unguarded rolling stock became a prime target for scrap metal thieves, reducing it in a relatively short period. There were also many layoffs, which led to a decrease in passenger traffic (Nahaiciuc, 2020).

In 1991, the National Society of Romanian Railways was established, starting a reform and restructuring process the following year. In the same year, changes were made through *Law 61/1991 on sanctioning acts of violating social coexistence norms, public order, and tranquillity*, and Article 2 specifically addressed railways to ensure citizens' safety.

The process of reforming the railway sector began in 1998, based on *Emergency Government Ordinance no. 12/1998* (Guvernul României, 1998) regarding the transport on Romanian railways and the reorganization of the National Society of Romanian Railways.

Through *Government Decision 626/1998*, the Romanian Railway Authority (AFER) was established, which includes the Romanian Railway

Safety Authority (ASFR), the Romanian Notified Body for Railways (ONFR), and the Romanian Railway Licensing Body (OLFR). AFER is responsible for, among other duties, authorizing railway infrastructure managers in matters of safety, licensing and certifying railway transport operators in terms of safety, and monitoring, promoting, and developing the regulatory framework in the field of railway safety. In 2003, AFER joined COLPOFER, and since 2004, it has participated in the working group on "Security in Freight Railway Traffic."

The issue of railway safety became one of the most urgent after the terrorist attacks in Madrid on March 11, 2004, and in London in 2005. Every new threat to the sector increases the responsibility of government bodies and transport companies for the lives of people traveling by train and/or waiting in stations.

The new realities require new, much more efficient decisions. The old regulations, developed under the conditions of the 20th century, did not take into account either the new risks or the use of modern technologies (DJaleva, 2008). Romania aligns with international railway safety standards and adopts *Law no. 55* of March 16, 2006, regarding railway safety (Parlamentul României, 2006). During this period, autonomy is no longer a concept associated with the railways, as they continue to be supported by the state budget. However, the institution was led by politicians who were indifferent and unfamiliar with the railway sector, and the results of this leadership are still evident today. As politicians in the rest of Europe understood the environmental, safety, and economic efficiency advantages of railway transport, countries began to direct their resources toward the development of railway infrastructure. Thus, in 2007, with Romania's entry into the EU, the country also began familiarizing itself with these concepts, which were to be applied.

**Safety in Post-communist period (1990-2007):** The significant transformations that Romania underwent also impacted railway infrastructure. Railway financing decreased, and the modernization process continued at a very slow pace. Modern diesel-electric locomotives appeared, contributing to reducing pollution and saving fuel. Advanced

new models of electric locomotives were brought to Romania, providing better economic performance and increased railway safety factors. New passenger wagons appeared, equipped with air conditioning, comfortable seats, and modern amenities for passengers.

However, the lack of budget allocations for line maintenance and modernization led to the aging of materials used and an increased risk of accidents. Special attention was paid to aligning the Romanian railway system with European Union standards and regulations, implementing safety, environmental protection, and interoperability norms to facilitate integration into the European railway network.

### **Conclusions**

The aim of this article was to emphasize that the modernization of rolling stock, technological developments, and innovations have contributed to improving railway security, offering a high level of safety in the operation of rail transport. Based on our analysis we can conclude that innovations and modernizations have been essential for reducing accidents, protecting passengers and goods, providing a safer working environment for railway personnel, and ensuring infrastructure protection and durability. The transition from rudimentary technologies to more advanced and reliable systems happened gradually, with safety playing a key role in ensuring the development of the railway industry. Furthermore, the impact of modernizing materials used has been positive for railway security. The more than 155-year history of Romanian railways shows the driving force this sector has had on the country's progress, starting from the economic and technical areas. After prolonged efforts, the country's politicians succeeded in finding the necessary financial resources to establish the first railways.

A fascinating finding of our research is the fact that the need to take care of passengers and cargo has existed since the inception of railway transport. This concerned not only the engineering aspect of security, which today is commonly referred to as "safety," but also issues related to protecting people from theft, fraud, violence, and goods from damage and theft. Although some experts believe that the understanding of the dual nature of security has emerged only recently, national

regulations and international agreements from the second half of the 19th century contained ample evidence of efforts to mitigate criminal acts on trains and in stations (DJaleva, 2008).

The issue of railway security is an area that connects almost all stakeholders in the industry, while also involving traffic participants who affect railway infrastructure. Among the issues that arise in the area of railway safety are those related to railway transport technology and techniques, procedures and regulations used, as well as due to inadequate procedures and regulations, and improper handling of issues by employees, stemming from a lack of necessary knowledge, attitudes, and bad habits (Burdzik et al., 2017). The railway infrastructure has been an attraction for the leaders of the new Romanian state from the very beginning, as they understood that the state's economic development could not happen without the development of the railways. Through the measures adopted by the authorities, the aim was to develop railway transport to achieve economic and social growth corresponding to each period mentioned above.

The initial railway legislation, adopted and enacted by the parliament of that time, was modelled after the French system, and lawmakers adapted it to the needs of the new Romanian state, so much so that no further changes or amendments were needed for approximately 50 years. Romania's railway development took place because the politicians of the time saw the impact of railways abroad and understood that it could have the same or even greater importance in the United Principalities. Several goals were pursued, starting with the economic one, followed by the military and national goals, as the railways physically connected the two Romanian Principalities, and after World War I, the other provinces as well. The tourism and social goals aimed at the development of all localities, leading to unified development.

In this context, our article also emphasizes that railway development cannot be separated from the concept of security for citizens, employees, and infrastructure. As we can observe, lawmakers, in addition to legislation for the creation and development of infrastructure, also approved laws regarding the proper operation of activities under increased security conditions. At the same time, emphasis was placed



on protecting passengers, employees, and infrastructure by adopting rules and regulations addressing possible security incidents: accidents, vandalism, theft, etc.

The interwar period is characterized by autonomy. This aspect favoured the implementation of internal rules and regulations regarding the staff structure of the Romanian Railways Directorate, where only the best specialists were promoted to leadership positions. This also reflected in the development of the railway structure, with a significant number of kilometres of railway being constructed.

After World War II, nationalization occurred, along with the political plan (the five-year plan) of the Romanian Communist Party, which focused on technological development, ensuring increased safety in freight and passenger traffic.

After 1989, the railway industry declined due to the reorientation of transport policies toward the road sector. Starting in 2005, following the terrorist attacks on railway infrastructure in the capitals of Madrid and London, the security paradigm shifted, and European states became aware of the need to implement new measures in railway security and resilience.

In conclusion, the modernization and technological advancements in railway systems have proven essential in enhancing both the safety and security of rail transport. From the early efforts of Romanian lawmakers and engineers to the recent focus on countering modern threats like terrorism, the railway sector has continuously evolved to address emerging security challenges. These improvements have not only reduced accidents and protected infrastructure but have also played a significant role in fostering economic and social development. The historical and ongoing commitment to ensuring a secure and efficient railway system underscores its vital importance to national progress and resilience.

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