



**National and International Considerations in the Building of
the Greek Railroads.**

Irene Anastasiadou

Working document no. 2

October 2003

Transnational Infrastructures
of Europe

National and International Considerations in the Building of the Greek Railroads. (Draft)

Irene Anastasiadou

Table of Contents

1. Introduction.....	1
2. Periods of Railway History.....	2
a. The context.....	2
b. Periodization.....	3
3. The emergence of a National Railroad Network:.....	4
a. Proposals for a connection to Europe: how did engineers and politicians envisage the role of the Greek railroad network in respect to the Europe? (1835-1869).	5
b. Towards a Railroad Network: Discussions in the Parliament 1881-2 and the emergence of a "hybrid" network.....	7
4. Towards a connection.....	9
5. Changes in the Railroad Network after the connection to the European railroads..	10
6. The line from Athens to the Northern Borders: making the line to the Northern Borders "European"-international.....	13
7. Epilogue: Historiographical Observations.....	15
References.....	15

1. Introduction

In this paper I am looking at the way in which the prospective of a connection to Europe influenced the development of the Greek railroad network. I am looking at the years from the formulation of the first proposals for the building of a railroad network to the middle of the 20th century. By looking at the case of Greece, I will make some observations on the study of the emergence of a European Railroad Network. I will focus on three different stages of its history: a) at the pre-construction stage (period prior to 1869): I will look at the proposals that were published in the press and submitted in the Greek parliament. b) At the stage of its "conception": these are the years 1881-82 when, after extensive discussions, the first decisions on the shape of the railroad network were taken. c) At the stage of its maturation: these are the years after 1920, a period of intensive development of the network.¹

When looking at the history of the Greek railroad network, the reader should have an idea about the context. As I will describe below, factors that influenced the

¹ The existing literature on the history of the Greek railroad network is canonically focused on the period from the establishment of the Greek state till the second decade of the 20th century, when the map of the railroad network of Greece seems to have been completed (because it presents the image that presents today). According to an interpretation of the development of technological networks with a focus on extensive change, no important changes happened to the network in the following years. By adapting a broader perspective, in accordance with the latest historiographical trends of the field of history of technology, I am arguing on the great importance of the years after 1920 because of the changes in the technical structure of the network. Having the European perspective as my focus I am looking at the way in which the achievement of a connection to Europe influenced these changes in the network.

development of the Greek railroad network were: a. the political situation in the area of the Balkans; b. the changes in the territory of Greece during the 19th and the first half of the 20th century. c. The peculiar geography of Greece: composed by a mountainous mainland and many islands, the geography of Greece put particular challenges in the process of network formation.

My narrative is based on my findings in Greek engineering journals, and secondary literature.

2. Periods of Railway History

a. The context

The Greek state was established as an independent state in 1829 (treaty of Adrianopolis)² Going back to the first years of the Greek War of Independence (which started in 1821 and lasted until 1827) the pursuit of ‘Major Greece’ - meaning a Greece that would expand so as to include under its territory all the parts of the Balkans and of Minor Asia where Greek speaking populations happened to live - became the defining ideology of the Greek ruling class, that was formed by ship owners and merchant capitalists. The ideology of ‘Major Greece’ defined the political and economic endeavors of the new state for no less than a century (1821-1922). During this turbulent century, the Greek borders changed constantly, stabilizing only after 1922, which is when the Greek army was defeated in Minor Asia.³

In order to introduce to the context of the construction of railroads, I may briefly outline the conditions of transportation in Greece before the construction of railroads. For the most part of the nineteenth century, inland transportation in Greece was limited. Before the construction of the first railroad line in 1869, the only way of transport in land was by pack animals and carriages.⁴ To a great extent, the transportation needs were satisfied by the naval transportation network.⁵ It was not before the 1890s that an elementary network of roads was built. Funded by the state, work on the construction of roads started in the early 1880s and lasted until 1892. By

² Motivated by an intellectual movement that is known as the ‘Greek Enlightenment’, the Greek War for Independence started in 1821 and lasted until 1827. With the treaty of Adrianopolis, signed by Turkey and Russia in 1829 (following Turkey’s defeat in the war between these two countries), Greece was recognized as an independent state. The Modern Greek State was firmly established in 1930, when a protocol recognizing it as such was signed by the three major powers of the time - France, England, and Russia - in London.

³ For overviews of the history of Modern Greece that are sensitive to economic phenomena, see Nikos G. Svoronos, *Review of Modern Greek History* (in Greek), translated from the French by Aikaterini Asdraha, it includes a bibliographic guide by Spyros Asdrahas, Themelio, Athens, 1999 edition, and John Milios, *The Greek Social Formation: From expansionism to capitalistic growth*, (in Greek), Kritiki, Athens, 2000. As these and other authors have shown, the record of industrialization after the ‘Minor Asia Catastrophe’ is impressive. Between 1921 and 1931, the industrial production was increased by 80%. Between 1920 and 1929 the number of industrial firms grew by 82%; between 1920 and 1940 by 25%. Between 1928 and 1938, the industrial production was increased by 68%. Noticeably, during this period the Greek economy was the fastest growing after only those of the Soviet Union (87%) and Japan (73%).

⁴ See N. S. Kteniadis, *The First Greek Railroads*, (in Greek), Printed by G.H. Kalergis, Athens, 1936. p. 4.

⁵ Maria Sinarelli, *Roads and Ports in Greece, 1830-1880*, (in Greek), Cultural Foundation of the Greek Bank of Industrial Development, Athens, 1989, pp.19-112.

1893 the Greek State went bankrupt, and the work was limited to the maintenance of the network built up to that date.⁶ By then, the territory of the Greek State had already changed substantially.⁷ Transportation by sea was the dominant mode of transportation since the second half of the 18th century. During the first half of the nineteenth century, Greek vessels were used for most of the communication between the different parts of Greece and between Greece and the rest of the world. The geography of the country, with natural ports available in many islands and other key coastal points of the rest of Greece, favored the spontaneous development of a network of natural ports. In the early 1850s, some municipalities undertook some work on the artificial improvement and enlargement of their ports. According to Maria Sinarelli, the port network became especially important after the 1880s, which is when there was a noticeable increase in the internal trade.⁸

In this context the first proposals for the construction of railroad lines in Greece appeared, fifteen years after the establishment of the Greek state.⁹

b. Periodization

I divide the history of the Greek railroad network on the of the years 1835-1950 into three periods:

A. The first period covers the years 1835-1920:

The Emergence of a National Railroad Network. This period can be divided into three sub periods:

- a. 1835-1869: covers what I earlier named the "pre-construction" stage: it is the period of the submission of the first proposals for the construction of a railroad network and of the first discussions on the subject. During this period a railroad consciousness was cultivated; towards the end of the period almost nobody contested the "necessity" for the construction of railroad lines in Greece, neither proposed the development of an alternative transportation system. However, until the end of this period (half a century after the establishment of the Greek state) Greece had only 9 km of railroad line.¹⁰
- b. 1869-1910: these are the years of a quantitative development of the Greek railroad network; the main characteristic of this period is the expansion of the Greek railroad network. During these years we have the construction of most of the lines inside the limited still Greek nation (years of "internal" expansion).

⁶ Ibid., p.93.

⁷ In the year 1864, the Ionian islands were added to Greece. Thessaly was also added to Greece in 1881.

⁸ Ibid., pp. 113-201.

⁹ The discussions on the introduction of a railroad technology in the newly created Greek state started in the 1835 when Franchiskos Feraldis proposed to the Greek government the construction of a railroad line that would connect Athens to Piraeus. See Leuteris Papagianakis, *The Greek Railroads (1822-1910): geopolitical, economic and social dimensions*, MIET, Athens 1990, p. 47-52.

¹⁰ Ibid. p. 60.

Greece, however, ended up with a railroad network of local character as its communication with other countries was conducted exclusively by sea. This was due to the fact that the railroad line that connected Athens to the northern borders of the country (until the Balkan wars, and since 1881, the northern borders of Greece were those of northern Thessaly), was not connected to the Macedonian railroads of the Ottoman Empire. The two countries, Greece and Turkey, couldn't come to an agreement about the point of the connection of their railroad networks. As a result, the integration of the Greek network to the railroads crossing Macedonia was constantly postponed.¹¹

- c. 1910-1920: The expansion of the network during these years was a result of political events (two Balkan Wars and World War I) that resulted in the annexation of new territories in Greece (Thrace and Macedonia) (years of "external" network expansion). Thus, Greece inherited three railroad lines from the Ottoman Empire that was in a process of disintegration, lines that were already connected to the European network. The construction of railroads was limited to the part connecting the railroad network of "old" Greece to the newly acquired network (1918). However, with the connection of the lines of "old Greece" and the "new territories" (lines of Thrace and Macedonia which were connected to the European railroads) Greece was connected for first time with the European railroads.¹²

- B. The second period covers the years 1920 to the present. These are the years of intensive development of the Greek railroad network. Almost no new lines were added to the network; it is a period of change in its technical characteristics.

3.The emergence of a National Railroad Network:

In this paragraph I will try to show how the prospect of a connection to the European railroad network influenced the shape of the Greek railroad network during the two periods, before the connection to Europe was established. I will try to do this first by looking what I named the pre-construction stage (1835-1869) and second by looking what I named the stage of the "conception" of the railroad network (1869-1910).

¹¹ See Prodromos Matzaridis, *A Brief History of the Greek Railroads*, (in Greek), Second Edition, Greek Railroad Organization (GRO), Athens, 1996, p. 102.

¹² At the end of the two Balkan Wars and World War I, the three Macedonian railroad lines, which were built in the last quarter of the nineteenth century, became part of the Greek railroad network. In 1915, the Greek state took over the three lines that connected Thessaloniki to the European railroad network through Serbia and Bulgaria. Three years later (1818), it built a connection between the lines of 'Old Greece' the lines of the new territories. The unification of the two networks made a railroad connection between Greece and Europe possible, see Kteniadis, *The First Greek Railroads*, op.cit., pp.158-160.

a. Proposals for a connection to Europe: how did engineers and politicians envisage the role of the Greek railroad network in respect to the Europe? (1835-1869).

Fifteen years after the establishment of the Greek state, different scenarios on the construction of a railroad network were formulated. A main consideration was the achievement of a connection of the Greek railroad network to Europe.¹³ In order to understand the logic behind these scenarios, the reader should keep in mind the territorial changes in the area of Greece during the 19th and the first half of the 20th century¹⁴, the particular political situation in the area of the Balkans, and lastly, the political context in the whole Europe; this was an era of great competition of the European powers (England, France, Austria-Hungary). One of their main concerns was to control the international roads to the East. In this context the first proposals for the connection to the European railroad network were formulated in Greece: two important events that influenced these developments were a) the opening of the Suez Canal (1869); Greece's geographical position allowed to engineers and Greek politicians to envisage an important role in the commercial routes to the East. B) the annexation of Thessaly (1881) that brought Greece closer to the area of Balkans and thus to Europe. Thus, the proposals for the construction of a railroad network that were formulated in the first period, were strongly influenced by the desire to utilize the favorable international developments by securing, through the building of a railroad network, an important role in the international political and economic stage for Greece.

The scenarios for the connection to the European railroads were mainly two:¹⁵

(i). The achievement of a connection to the "European" railroad network through Italy. The greatest challenge was geography because such a railroad network should traverse the mountainous chain of Pindos that is stretching along the Greek mainland, and also ensure a connection through the Adriatic sea. 2. A connection of the Greek railroad network to the European railroads through the Balkans.¹⁶ In this case the connection should be achieved through the Ottoman Empire. In this case the major difficulties were political: the relationship between the two countries were tensed for the major part of the period under investigation; this political tension between Greece and Turkey is reflected in their difficulty to come to an agreement on the point of the connection (see below).

¹³ See Papagianakis pp. 52-60, Kteniadis pp. 49- 58. The idea of a Greek railroad network that would connect Greece to Europe was expressed for the first time in the year 1859, when the English company Liders proposed the construction of a line that would connect Athens (starting from Piraeus) to the Northern borders of Greece and through the Ottoman Empire to the European railroad network (point of connection: Sofia). See Papagianakis, *ibid.* p. 53.

¹⁴ In the year 1864, the Ionian islands were added to Greece. Thessaly was also added to Greece in 1881. Until 1910 the Greek territory included only the Peloponese, Central Greece, Thessaly, the Cyclades and the Ionian islands. In the decade of the 1910s, the territory of Modern Greece nearly tripled, after the Greek victory in two Balkan Wars and in World War I. Following the 'Minor Asia Catastrophe', the size of Greece was reduced to the double of that of 1912. As a result of these radical territorial changes, the map of the railroad network of Greece changed considerably.

¹⁵ The two scenarios are combined in the railroad network that proposes the baron Louis De Normand in the year 1868 as a representative of an ευρύ όμιλο κεφαλαίουχων: 1. a line from Athens (Sounio) to the Northern Borders. See Papagianakis, *ibid.*, p. 53-54.

¹⁶ Kteniadis, *ibid.*, p.116-124.

i) Proposals for connecting Greece to the European Railroad Network through Italy

A prominent Greek engineer, Vitalis, officially formulated the idea of a connection to Europe through Italy in a proposal that he submitted to the Greek parliament. In this proposal, which was discussed in the Parliament and received favorable comments in the press, Vitalis proposed the building of a national railroad network that would connect Athens to Europe through Italy.¹⁷ The logic behind this project was that through the faster traveling of the railroad in contrast to the naval transportation, international commerce from Western European countries to their colonies and the post from England to India would now be directed through Greece to the Suez Canal, instead of taking the marine route to Suez from a port of Italy.¹⁸ This project, despite of its importance recognized by both politicians and the press, wasn't realized. Because of the geographical barriers (see above), the construction of such a line demanded very expensive technical works such as tunnels, which the Greek state was unable to afford. However, the idea of such a connection was not abandoned. A similar proposal for a connection of Greece to Europe through Italy was published in a Greek journal (*Erga*) half a century later, when the connection of the Greek railroads to Europe through Belgrade had already been established (see below). In his article the Greek engineer Agapitos refers to the importance of building a connection to Europe through Italy. He envisaged the revival of the ancient Egnatia Road (that he named an "Iron Egnatia Road") that would connect Western Europe to Constantinople (Istanbul nowadays) through Greece. The proposal attracted the interest of the now formulated Greek engineering community as its publication in the engineering journal and the supporting essay of the Greek member of the Parliament Kogebinas reveals.¹⁹ Later on, during the discussions on the importance of the construction of a railroad line in Western Macedonia (line Kalabaka-Kozani-Berroia)²⁰ the issue popped up again. In an article that was published in the same engineering journal, Xanthopoulos (administrator of the state control of the line) argued on the importance of the construction of this line: according to Xanthopoulos, not only would such a line contribute to the improvement of local transportation and the advancement of economic growth in Western Macedonia (an area with a poor transportation infrastructure) but it would also constitute a part of a railroad artery that would connect Greece to Italy; it would become a part of the *Iron Egnatia Road*.²¹

Later on, another Greek engineer Eustratiadis considers the possibility of a connection to the European railroads through Italy. In his study on the construction of a national railroad network (1954), Eustratiadis anticipates the construction of a

¹⁷ According to the proposal of Vitalis (it was submitted to the Greek Parliament on the 13th of August 1869) Greece could be connected to Europe with the building of a line that would traverse the country from East to West, with a starting point Athens (the capital of Greece) and through a short marine passage of the Adriatic sea would connect Greece to the rest of Europe through Italy. (Vitalis, 1869).

¹⁸ N. Kteniadis, *Οι Πρώτοι Σιδηρόδρομοι εν Ελλάδι, Σιδηροδρομική Επιθεώρηση*, 928-930, and Kteniadis, *The First Greek Railroads*, pp. 10-15.

¹⁹ Agapitos Sp. *Η Σιδηροδρομική Σύνδεση Ελλάδας Ευρώπης, Η Σιδηρά Εγνατία Οδός και η Σύνδεσις Αθηνών-Ρώμης, Έργα*, 1928-29 (Etos IV) , pp. 337-342.

²⁰ See Ioanna Pepelasi Minoglou, *Fantoms Rails and Roads*, in *Journal of Transport History*.

²¹ The construction of the line was never completed due to political and economic reasons. Xanthopoulos, *Σκέψεις περί της Εξελίξεως του Σιδηροδρομικού Δικτύου Δ. Μακεδονίας εν Σχέση με τον υπο κατασκευή Σιδηρόδρομο Καλαμπάκας- Κοζάνης- Βέρροιας*, in *Σιδηροδρομική Επιθεώρηση*, n. 4, April 1934, pp. 1224-1227.

railroad line in the north-west of the country from which traffic would be directed through a port in the Adriatic sea to Italy.²²

Despite the importance that the engineers attributed to the construction of this line, such a connection was never achieved.

(ii) A connection through the Balkans.

Greek politicians judged the second as a more feasible solution.²³ The construction of the line that would connect Athens to Europe through the Ottoman Empire (a line to the Northern Borders) started on 1889.²⁴ However, both the construction of this line and the achievement of a connection to Europe ran into serious difficulties. Almost 20 years passed before the construction of the line Athens to the Northern borders was completed,²⁵ the achievement of a connection to the European railroad network was established when the political situation in the territory of Balkans changed after the Balkan wars (see below). Before that, Greece and the Ottoman Empire couldn't come to an agreement on the point of the connection.

The appearance of proposals for an achievement of a connection to Europe in the period before the construction of most of the railroad lines in Greece is a first indication of the European orientation of the Greek railroads.

b. Towards a Railroad Network: Discussions in the Parliament 1881-2 and the emergence of a "hybrid" network.

Despite of the submission of proposals for the construction of railroad lines from the 1850s and the lack of inland transportation²⁶ the period of intense railroad building started in the year 1881, when decisions for the construction of railroad lines throughout Greece were taken inside the Greek Parliament. As I mentioned above, the opening of the Suez canal (1869) and the annexation of Thessaly to Greece (1881) which brought Greece closer to the area of Balkans, encouraged a major part of the

²² Eustratiadis Dim. G., Γενικό Σχέδιο Εθνικού Σιδηροδρομικού Δικτύου, Part 1st, Athens 1957, p.23.

²² In another study Eustratiadis mentions the importance of the straight Rio-Antirio as a potential route of the international railroad that would connect Greece to Italy. Eustratiadis D., Η Σύνδεση Ρίου-Αντιρίου Γεωσυγκοινωνιακά Εξεταζόμενα, in Συγκοινωνία, n.7, 1953, pp.241-48.

²³ The development of railroads in Greece was a major technological project, which was undertaken and supported by the state. The defining discussions and debates, even those on the technical characteristics of the railroad network, took place in the Greek parliament. Engineers never became very influential in the context of debates on railroad issues. For example, in one key debate, concerning the width of the line to be constructed (see below) the two major political parties offered different answers. Engineer's opinions were not important in choosing between an expensive but more compatible with international practice line-width (1,44m) and an inexpensive but incompatible alternative (1m).²³

²⁴ Kteniadis, p. 124.

²⁵ The first part of the line was inaugurated in the year 1904, while the construction of the line was completed in the year 1909 See Padelopoulos, 1935, 340-41. Details for the chronologies of the construction of the different parts of the line see Kteniadis, Sidirodromiki epithewrisi, pp.1200).

²⁶ The construction of the first railroad line in Greece starts at the year 1867; however a remarkable activity towards the goal of the construction of a railroad network throughout the country starts only in the year 1881 and last to the year 1892.)

Greek politicians to believe that, with the building of a railroad network Greece could claim a part of the international traffic to the East and thus provided the stimulus for the opening of the era of railroad construction in Greece.²⁷

In this paragraph I am looking at the discussions in the Greek Parliament at the years 1881-82, in order to see how international considerations (the prospect of a connection to the "European" railroad network) influenced the shape of the Greek railroad network.

The two major parties of the period disagreed on the way in which railroads would contribute to the economic growth of Greece. Their different political programs (which represented their different ideas on how the economic growth of Greece could be achieved) were expressed in their disagreement on the technical characteristics of the network; the discussions and debates were focused on the issue of the gauge. The political party of Trikoupis, the prime minister during these years of the discussions, favoured a network of narrow gauge (1m). Trikoupis argued that a network like this – for the same cost, one that would cover much more of the Greek territory- could serve the economic growth of Greece by accommodating a slow but controlled transition towards the European exemplar of an industrial capitalism. His opponents were in favour of a wide gauge network (1,44m), which would be immediately compatible with what was perceived to be the European standard; they expected that rapid economic growth of Greece would be the spontaneous result of the extension of the European network to the Greek territory.²⁸

Thus, the beliefs of the Greek politicians on the connection what they conceived as a European network influenced their perspective on the shape of Greek railroad network. The disagreement on the gauge of the line Athens - Patras gives us a deeper insight into their different expectations on which lines could become railroad arteries to Europe. The opposition party preferred the construction of a wide gauge line: as Koumoundouros said during a discussion in the Parliament on the issue (24 may 1882) the same reasons that lead to the choice of wide gauge in the line Athens to Northern Borders (prospective connection to Thessalonica and from there to the European network) dictated he construction of a wide gauge line from Athens to Patras (prospective connection through its extension to Arta, to the port of Aulwna and from there through a marine conveyance, connection to the railroad network of Italy).²⁹ Trikoupis contested the international character of the railroad line Athens to Piraeus for two reasons: a) the construction of a railroad line that would reach the port of Aulwnas was improbable for the near future. b). the two marine passages from Aulwnas to Italy (probably Brindisi) and from Rio to Antirio would cancel the international character of this line.³⁰

²⁷ Padelopoulos Ath., Τεχνική Επιτερίης 1935, ed. TEE, pp. 133, and Korwnis Sp., Historical Notes on the Greek Railroad Policy, August 1934, pp. 9-11.

²⁸ Papagianakis, *ibid*, p. 78-93.

²⁹ Kteniadis, *ibid*, p. 52-56. At the year 1881 Koumoundouros signed a contract with L. Perdoux for the construction of the line Pireaus-Patras of international gauge. However after a while ο *ανάδοχος* declares incapability of completing his obligations. See Matzaridis, A Brief History of the Greek Railroads, 2nd edition, ΟΣΕ, pp. 55.

³⁰ Kteniadis, pp. 54-56.

Greek politicians (especially the party of Koumoundouros) believed that a choice of the gauge of the railroad network would determine the character of the railway network and through it, its profitability and more generally the course of the Greek economy. A network compatible to the "European" network would attract international traffic. Trikoupis was more conservative thinking that the international traffic wouldn't necessarily follow the construction of a railroad network compatible to the European one.³¹

As we show above both parties agreed on the international character of the line Athens to the Northern Borders. Thus, the choice of wide gauge in the line Athens to the Northern borders was influenced by the prospect of an international connection. It was the only line with gauge of 1,44m while the rest of the network was of 1 m gauge (prevalence of the opinion of Trikoupis). As a result, a hybrid network emerged. Interesting is the fact that the prospect of a European connection weighted against the compatibility of a network in a national level.

4. Towards a connection

As we mentioned Greece, because of its geographical position in respect to Europe, could achieve a connection to Europe only through the North. This fact in addition to the bad political situation of Greece during the 19th century and the first decade of the 20th century (in respect to the turbulent and for the major period hostile relations with its northern neighbours, the Ottoman Empire) and its bad economic situation deprived Greece from a connection to the European network until the Balkan Wars (1912-13). This difficulty of the achievement of the connection to the rest of Europe in the case of Greece, reveals the importance of external factors in the emergence of a European railroad network. Also indicates the inability of the actors to decide on the shape of networks as far as it concerns international connections.

The role of geography as an important factor that influenced the shape of the Greek railroad network is obvious in the case of the discussions for the construction of a line that would connect Greece to Italy. As I mentioned above the proposal of a connection with the Italian railroad network (officially formulated for first time by Vitalis) was not realized because of geographical and economic reasons: due to the peculiar geography of the country, the construction of such a line demanded expensive technical works such as tunnels, which the Greek state was unable to afford. The choice of technology (in this case not to built the line) was strongly influenced by external factors: geographical and economic.

³¹ The different opinions of the political parties on the gauge of certain lines were also based on their different views on the potential role of certain ports of the Greek mainland in the international route of commerce (when connected to the European railroad network) and, consequently, their different beliefs on the route that the international mail and commerce would follow (e.g during the discussions in the Parliament: Petimezas says that the line Athens –Patras must be of wide gauge: he believed that the port of Thoriko would become a node from which the fast mail and the commerce would be directed from Europe to India and vice versa. This railroad line would follow the line from Laurio to Patras, to the port of Rio and hence to Aulwn: therefore it should be international. (Kteniadis, p. 49-50).)

Political factors hampered the achievement of an international connection of Greece for almost two decades: Greek politicians judged as a more feasible solution for the economically weak Greek state the connection to Europe through Balkans. However, a prerequisite for this, at least during the construction period, was the achievement of an agreement with the only northern neighbor of Greece, the Ottoman Empire. Extensive debates took place in the Greek Parliament on whether the construction of a line to the northern borders, that would eventually connect Greece to Europe should start before an agreement with the Ottoman government on the point of the interconnection of their independently developing networks have been achieved. The construction of the line started and was completed³² without such an agreement. For almost two decades the two countries seemed “unable” (if not unwilling) to agree on the most “appropriate” point of connection.

Until external situation changed the Greek state proved unable, if not unwilling, to surpass the geographical, economic and political difficulties through technological means and, thus, remained unconnected to the European railroad network until the Balkan Wars. External factors (political events) lead the way through the problem: with the annexation of Macedonia and Thrace after the Balkan Wars and WW I and the acquisition by the Greek state of the already connected to the European network railroad lines, the “national” railroad network of Greece was lastly connected to Europe.

5. Changes in the Railroad Network after the connection to the European railroads.

In this paragraph I will look at the changes in the Greek railroad network in the period that starts in the 1920s. As I mentioned above this is a period of intensive development of the network. During this period the connection to Europe has been achieved. I will look at the impact of the European connection to the shape of the network while I will stress two important, in my opinion, historiographical observations.

As I mentioned above, the political events of the second decade of the 20th century (two Balkan Wars and WW I) resulted in the expansion of the Greek territory which made the connection to a European network feasible. The connection was achieved in the year 1918 when the line that would connect the two previously separated networks was constructed.³³

The bad situation of the railroads because of their extensive use during the period of the wars, but also the incompatibility of the different lines of Greece (including the new lines of Macedonia-heavier constitution of the rest of the network) demanded the renovation of the network. Interestingly the effort for the restructuring of different lines so as to make them compatible, and to increase their capacity so as to carry heavier (international) traffic was much faster and more systematic to the part

³²1906: a law that if the connection could not be achieved the company should built a line eastwards to the port of Platamon were they will be responsible for the transport through steamboats to the port of Thessalonica. Ottomans and Greek government never came to an agreement.

³³ See Padelopoulos, *ibid.*, pp. 342-3.

Athens to Thessaloniki, a node from which traffic could be directed in different destinations in Europe (almost no important changes took place in the rest of the network—at least for the rest 20 years³⁴). The result was a heavy constitution on this line (increased traffic capacity) which together with the three lines of Macedonia would have the heavier constitution in the Greek railroad network, while the lines of the rest of Greece remained of less capacity and thus incompatible: (amplification of the hybrid character of the network).

Indicative is the comparison in the technical characteristics of the lines Athens - Demerli- old borders and the network of Peloponnisos during the second half of the 1920s.

(i) line from Athens to the old borders

Despite of the same width, the railroad lines of Macedonia had different technical characteristics from the line of Athens-Demerli-old Borders (tracks, ties, boxing). In order to increase the capacity of this line so as to be able to accommodate international traffic the state undertook its systematic restructuring.³⁵ In the engineering journals of the period I found a lot of references in these changes. Some engineers mention that due to the important technical changes, the character of the line changed: the line became international. According to Padelopoulos “the line Athens to the northern borders was entirely transformed after its unification with the lines of Macedonia”.³⁶ Padelopoulos mentions that from the year 1926 a systematic activity of cobbled-stone, pavement of the line, the substitution of tracks and ties was undertaken. The line was renovated, the bridges were amplified, the stations were improved, the tracks were substituted by new ones of 12 meters length and of 44 k/m (apart from the part Pireaus-Athens because of the reduced speed of this part of the line). The wooden ties were substituted from iron ones of 85 kilos each while the boxing became filled. As a consequence the speed in the line was increased to 70 - 75 km.³⁷

(ii) A comparison with the technical characteristics of the line Athens to Patra.

In the rest of the lines (Peloponnisos, Thessaly and Western Greece)³⁸ minor changes occurred. The capacity of these lines, having been determined smaller since the period of their construction because of their local character remained such: in the report of Albert Regnoul (technical director of the French railroads) we read about the technical characteristics of this line in the year 1932: according to this report the

³⁴ From the changes in the rest of the network of great importance is the substitution of the narrow gauge of the network in Thessaly to a wide one at the 1960s (na koitaxw Matzaridi gia akribi imerominia)- hypothesis: however this change was influenced a lot by the prospective of the line to become a part of another international artery (that was never built) the line from Kalampaka-Kozani-Beroia (the plan was that would provided a new opening (route) to Europe).

³⁵ For the changes in the technical characteristics of the lines of Σ.Ε.Κ. (Πειραιώς-Παπαπουλίου-Πλατέως, Θεσσαλονικης-Γευγελής, Θεσσαλονικης Αλεξανδρουπόλεως, since 1920 also Σαρακλή-Σταυρού) see G.P. Bougiouka, Μία Επταετία των Σιδηροδρόμων του Ελληνικού Κράτους, in Έργα, 30 March 1930, pp. 537-545.

³⁶ Padelopoulos, 1935,341.

³⁷ Padelopoulos, Ibid, p. 341, 343. For the changes in the lines that connected Athens to Europe (S.E.K.) see Bougiouka G.P., Μία Επταετία των Σιδηροδρόμων του Ελληνικού Κράτους, in Έργα, issue 116, 30 Martiou 1930, pp. 537-545.

³⁸ We treat the railroad of Athens to Piraeus as an exception because of its local character- service of the transportation needs of Athens.

railroad line Piraeus – Athens – Peloponnisos (1m gauge)³⁹ has wooden ties, tracks of 20 to 27,5 kilos; furthermore, according to Regnoul, the line is in a bad condition, sufficient for the sparse traffic and the light material of the network. (Maximum speed on the line 45 km/hour).⁴⁰ Later on, in his study for the necessary changes for the improvement of the lines of Peloponnisos, Eustratiadis (director of the line) speaks about the bad situation of the network (that have been deteriorated due to the damages of the WWII) and mentions that the tracks have not been renewed for 40-60 years, while the works on the boxing have been insufficient. However he mentions that works in the renovation of the lines have started at the year that he writes his study.⁴¹ (The changes in the lines Athens to Northern borders advanced a lot faster.)

Thus, during this period the incompatibility of the lines in a national level increased due to different choices on the technical characteristics of different lines and the increase priority that, as it seems, was given to the lines that connected Athens to the rest of Europe. (A map of the network (see Eustratiadis) shows the difference in the constitution of lines).

By looking at the use of the network half a century later we are presented with an interesting result: the 25% of the Greek railroad network the line from Athens to Thessalonica (a node from which trade could go the different international destinations) absorbed the 50 % of the passenger's and commercial traffic. (A map in Profilidis shows the density of the use of the network/ Profilidis, p.35). According to Profilidis the traffic in the lines Athens-Patra and Korinthos-Argos is not of great importance. In his opinion this is due to their different gauge which makes necessary the transshipment in Athens. Interesting to compare it with the information that Regnoul in his report gives us: (when Regnoul writes his report (1932) the traffic in the network of Peloponissos is proportional to the traffic in the lines of the network of Central and Northern Greece (S.E.K.).⁴² Profilidis also mentions that this is not a result of external factors such as decrease of population or productive activity in the area. In contrast, he mentions that the important concentration of population and productive activity along the lines in combination to the distance that they cover (100-200 km which is generally regarded ideal for railroad transportation) open very good prospective for modernization and improvement of this network.⁴³ Following the estimation of Profilidis we could argue that the decrease in the use of the network is a result of previous technical choices.

³⁹ Exception : the cog railway of Diakoftos-Kalabrita of gauge 0, 75m. and length 22 klm.

⁴⁰See Albert Regnoul, *Οι Ελληνικοί Σιδηρόδρομοι και Αι Δυνατά Βελτιώσεις Αυτών*, *Τεχνικά Χρονικά*, 1932, 751 and Padelopoulos, *Τεχνική Επετηρίς*, 1935, 330, according to the Padelopoulos there are thought and plans for the renovation of the lines of Peloponnisos.

⁴¹ Korwnis, 1934, 38. In the journal *Railroad Review* it is mentioned that it has been decided the concession to the railroads of Peloponnisos (ΣΠΑΠ) a loan of 100 million drachmas (with the guarantee of the state for the renovation of the network). See *Σιδηροδρομικά Ειδήσεις: Το Δάνειον των Σ.Π.Α.Π.*, in *Σιδηροδρομική Επιθεώρησης*, αρ. 7, Ιούλιος 1934, σ. 1273. However in a study of Eustratiadis (director of the line) that was written in the year 1944 (and it was published in the year 1953) he presents a proposal for the necessary changes in the network of Peloponissos which include: substitution of tracks, (20 kilos). He mentions that the substitution is doesn't aim only at the amplification of the line but also in the removal of the old tracks which are 40-60 years old. See Eustratiadis, D., *Από την Ιστορίαν της Αποκαταστάσεως των Σιδηροδρόμων μας*, in *Συγκοινωνία*, αρ. 12, 1953, σσ. 443-446.

⁴² Albert Regnoul, *ibid.* 1932, 752.

⁴³ Profilidis, 1993,33-35.

This observation allows us to argue against the historiographical point of a linear evolution from lines to net: by incorporating in our definition of a network and a line the “use” we can speak for a transition from a net to a line. (After the connection to Europe has been actually achieved the Greek railroad network transforms to a line connecting the capital of Greece (Athens) to Thessalonica and from there to the European network. The rest of the network withers away.)

6. The line from Athens to the Northern Borders: making the line to the Northern Borders European.

“Immediately after its connection with the line Thessalonica-Belgrad (in the year 1916 with the construction of the line Papapouli-Plati) it was transformed to a railroad artery that lead from Northern Europe to the Mediteranean”⁴⁴

(Korwnis)

The above observations introduce us to another important issue: as the choice of gauge suggests (1,44) and the discussions in the Parliament reveal (1881-2), Greek politicians at the years when the decision for the construction of the line Athens-Demerli-northern Borders was made, attributed an international character to the line. They conceived the character of the line as threefold: local, international and transitive (for the mail and the commerce from Europe to Africa).⁴⁵ However, the other technical characteristics of the line do not plead for its international character.

Padelopoulos, gives us information about the technical characteristics of the line before its renovation: according to him military, economic and local reasons weighted more than international and technical reasons during the construction of the line “Thus, it was constructed a line of local interest passing through unsound ground, with a lot and serious deficiencies, with traffic material very weak and rolling stock deficient, as became apparent during the Balkan Wars”. For this reason when the moment for the connection to the European railroads came, there was the need for the substitution of both the material of the line and the rolling-material, the amplification of the bridges and of its entire technical works. He describes the technical characteristics of the line before its renovation: the tracks had been placed directly into the ground; the boxing was very thin, inclination of high degree.⁴⁶ These characteristics are in contrast to the international character of the line, in which the

⁴⁴ Korwnis, 1934, 38. In the journal *Railroad Review* it is mentioned that it has been decided the concession to the railroads of Peloponnisos (ΣΠΑΠ) a loan of 100 million drachmas (with the guarantee of the state for the renovation of the network). See *Σιδηροδρομικά Ειδήσεις: Το Δάνειον των Σ.Π.Α.Π.*, in *Σιδηροδρομική Επιθεώρησης*, αρ. 7, Ιούλιος 1934, σ. 1273. However in a study of Eustratiadis (director of the line) that was written in the year 1944 (and it was published in the year 1953) he presents a proposal for the necessary changes in the network of SPAP which include: substitution of tracks, (20 kilos). He mentions that the substitution is doesn't aim only at the amplification of the line but also in the removal of the old tracks which are 40-60 years old! See Eustratiadis, D., *Από την Ιστορίαν της Αποκαταστάσεως των Σιδηροδρόμων μας*, in *Συγκοινωνία*, αρ. 12, 1953, σσ. 443-446.

⁴⁵ Kteniadis, *ibid*, p.51.

⁴⁶ Padelopoulos, 1935, 341.

Greek politicians were aiming when they decided for its construction (and on the basis of which took the decision on its gauge).

In the journal *Archimidis* is published a debate of two other engineers on the most appropriate route-lining of the line Piraeus-Larissa. Their different opinions on the most appropriate route of the line (lining) pertains to their different beliefs on its character. Thus, D. Diamantidis believed that the line followed the most appropriate route in accordance to its local character. He recognized that economic and local reasons weighed against international during the choice of the route that the line would follow.⁴⁷ He contested the international character of the line: the importance of this line, as recognized in previous periods, was derived from two prospectives a) the belief that this line would be connected to the lines of Macedonia and thus would connect the Greek railroads with the railroads of the rest of Europe and b) the hope that, with its connection to the European railroad network, it would be transformed to a transitive line, through which the traffic from Western and Northern Europe would be directed to Egypt. These two possibilities were open in the past; Greek politicians and its designers were hopping to them. However, in the period that he writes (1911), after the latest decision of the Ottoman government to “concede” the connection of the two networks through a route (Τύρναβος-Ελασσόνος-Δεμενίτσης-Γιδά-Θεσσαλονίκης) longer than the one that the Greek government expected (and which would make the distance from Gida to Thessaloniki 485 km) this advantage was lost. But even if the decision of the Ottoman government had not been unfavorable in respect to the Greek expectations, technological change had reduced the importance of the line: according to the argumentation of Diamantidis, before 25 years and more, when the speed of the boats was 10 miles per hour the hope that the line from Piraeus to Larissa would compete the line from Brindisi (for the mail to India and the travelers from London and Paris to Egypt) was realistic. Because of the longer distance from Brindisi to Port- Said (600kkm) in comparison to Piraeus the travelers from Piraeus would avoid 33 hours of marine - travel; however in the 1910s when the speed of the steamboats had reached the 18 miles per hour, the travelers would gain only 19 hours of marine travel which could not compensate for the longer distance (approximately 23 hours) of the route Belgrade-Thessalonica-Piraeus in comparison to the route from Brindisi. Therefore, the importance of the line had been reduced to the connection of Greece to the rest of Europe.

Xidis K., on the other hand criticizes the Greek governments of the years 1894-1901 (during these years the works of the construction of the line had stopped) for not ordering the transaction of the appropriate studies and therefore not selecting the most appropriate route(lining), and, thus damaging the public interest. He published a study in which he indicated another route, more advantageous in comparison to the existing one in servicing international traffic. According to Xidis the international character of the line was from the start the purpose of the people who engaged to its construction, so any argument on local considerations could not stand as an excuse to the wrong choice of lining: as an international line, it ought to follow the shorter route and with the less inclinations.⁴⁸

⁴⁷ Diamantidis D., Ο Σιδηρόδρομος Πειραιώς – Λαρίσσης, η Επίκρισις της Χαράξεως, in Αρχιμήδης, n. 1, May 1911, pp. 7-8.

⁴⁸ Xidis K., Ο Σιδηρόδρομος Πειραιώς-Λαρίσσης: Υποδεικνύμενα σφάλματα κατά την χάραξιν της γραμμής, in Αρχιμήδης, n. n. 4, 1911, pp. 37, and n. 11, March 1911, pp. 123.

The necessity to restructure the line after the connection to the European railroads confirms the fact that the technical choices at the period of the construction of the line were not clearly influenced by international considerations only. This allows us a historiographical observation: the study of more than one technical characteristic when we look at the history of a network allows us to understand better the complexity of the society that constructed it.

As a conclusion, local and interlocal factors were mixed during the construction of this line, a process that extended in almost 20 years. Looking at the different technical characteristics of the line allows us to understand better the complexity of the factors that influenced its construction, and thus to look from another angle the history of Greek society and state in the period of the 20 years of its construction.

7. Epilogue: Historiographical Observations

Historiographically, I argue in favour of questioning the evolutionism of assuming that there was a technical logic of a scale increase from local to national, and, eventually, international railway network formation. As the case of Greece suggests, European interconnection may have started in parallel to the process of building national networks—a process contested, from many angles, yet so far victorious.

References

I. Historiographical

- Bijker Wiebe E., *Of Bicycles, Bakelites, and Bulbs: Toward A Theory of Sociotechnical Change (Inside Technology)*, MIT Press 1997.
- Downey Greg, “Virtual Webs, Physical Technologies, and Hidden Workers: The Spaces of Labor in Information Internetworks” in *Technology and Culture*, Vol. 42, Number 2, April 2001 pp. 209-235.
- David Edgerton, “From Innovation to Use: Ten Eclectic Theses on the Historiography of Technology” in *History and Technology*, V. 16, 1999, pp. 111-136.
- Hughes, *Networks of Power. Electrification in Western Society 1880-1930* (Baltimore 1983).
- Kirsch David A., *The electric car and the burden of history: Studies in automotive systems rivalry in America, 1890-1996*, in: Dissertation Abstracts International 1997.
- MacKenzie Donald A., *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance*, Cambridge, Mass., MIT Press, 1990.
- Tympas Aristotle, “Tensions Between, Tensions Within, The European and the Balkan in the Formation of Greek Communication Networks”, Paper presented at the first Networking Europe meeting (Lisbon, November 2001).
- Erik Van Der Vleuten, “Towards an Extended LTS Approach? A “Tool” Chapter”, Paper presented at the first Networking Europe meeting, (Lisbon, November 2001)

II.1. History of Greek Railroads: Secondary Sources

- Αμπακούμκιν Κώστας Γ., *Σιδηροδρομική ΙΙ, Σημειώσεις κατά τις Παραδόσεις*,

- Ανώτατη Σχολή Πολιτικών Μηχανικών, Εθνικό Μετσόβιο Πολυτεχνείο, 1979.*
- Αμπακούμιν Κ. , *Σιδηρόδρομοι*, Ε.Μ. Πολυτεχνείο, Τομέας Μεταφορών και Συγκοινωνιακής Υποδομής, 1986.
 - Ανωγιάτης-Πελέ Δ., *Δρόμοι και Διακίνηση στον Ελλαδικό Χώρο κατά τον 18ο αιώνα*, Αθήνα 1993.
 - Βάσεις Υπολογισμού Σιδηρών Σιδηροδρομικών Γεφυρών, Κανονισμοί των Γερμανικών Κρατικών Σιδηροδρόμων*, της 1^{ης} Οκτωβρίου 1951, μετάφρασις Αντ. Δ. Κωστέα, Αθήνα, 1952.
 - Γιώτη Απόστολου, *Σιδηροδρομική*, Αθήνα 1981, Έκδοση Ε.Μ.Π.
 - Γιουργιώτη Λένα, Κυρίτση Σταυρούλα, Στοιχεία για Επικοινωνίες -Τόπους Συνάντησης. Θεσσαλία, 19ος-ά μισό 20ού αιώνα, στο *Επικοινωνίες και Μεταφορές στην Προβιομηχανική Περίοδο*, ΙΑ΄ Συμπόσιο Ιστορίας και Τέχνης Κάστρο Μονεμβασιάς, 23-26 Ιουλίου 1998, Μονεμβασιώτικος Όμιλος Πολιτιστικό Τεχνολογικό Ίδρυμα ΕΤΒΑ, Αθήνα 2001, σσ. 233-252.
 - Gounaris Basil C., *Steam over Macedonia, 1870 - 1912: Socio - Economic Change and the Railway Factor*, Columbia University Press, New York, 1993.
 - Δεληγιάννης Ανδρέας, Παπαδημητρίου Δ., *Η Ιστορία των Σιδηροδρόμων στη Βόρεια Ελλάδα*, στο *Ιστορία της Νεοελληνικής Τεχνολογίας, Α΄ Τριήμερο Εργασίας*, Πάτρα, 21-23 Οκτωβρίου 1988, Κοινοφελές Ίδρυμα ΕΤΒΑ- Νομαρχία Αχαΐας, Πολιτιστικό Τεχνολογικό Ίδρυμα ΕΤΒΑ, Αθήνα 1991, σσ. 157-164.
 - Επικοινωνίες και Μεταφορές στην Προβιομηχανική Περίοδο, ΙΑ΄ Συμπόσιο Ιστορίας και Τέχνης Κάστρο Μονεμβασιάς, 23-26 Ιουλίου 1998, Μονεμβασιώτικος Όμιλος Πολιτιστικό Τεχνολογικό Ίδρυμα ΕΤΒΑ, Αθήνα 2001.
 - Ευστρατιάδου Δημ. Γ., *Γενικόν Σχέδιον Εθνικού Σιδηροδρομικού Δικτύου*, Μέρος 1ο, (Ανατύπωσις εκ του περιοδικού "Συγκοινωνία", Μάρτ-Δεκεμβρ.1956), Αθήνα 1957.
 - Ζουμπούλιου Αναστάσιου, *Στοιχεία Σιδηροδρομικής*, Μέρος Α΄, Κατά τας παραδόσεις του κ. Αναστάσιου Ζουμπούλη, Καθηγητού των Σχολών, Εθνικό Μετσόβιο Πολυτεχνείο, Σχολαί Υπομηχανικών, Λιθογραφείον Εθνικού Μετσόβιου Πολυτεχνείου, Κληροδότημα Θωμαΐδου, Αθήνα 1954 (Εθν. Μετ. Πολ).
 - Ιστορία της Νεοελληνικής Τεχνολογίας, Α΄ Τριήμερο Εργασίας, Πάτρα, 21-23 Οκτωβρίου 1988, Κοινοφελές Ίδρυμα ΕΤΒΑ- Νομαρχία Αχαΐας, Πολιτιστικό Τεχνολογικό Ίδρυμα ΕΤΒΑ, Αθήνα 1991.
 - Καλτσούνης Αντώνης, *Σιδηροδρομική, Σημειώσεις*, Ε.Μ.Π., Τμήμα Αγρονόμων-Τοπογράφων Μηχανικών, Εργαστήριο Συγκοινωνιακής Τεχνικής, Αθήνα 2000.
 - Καρανάτσης Κωνσταντίνος, *Παρόδιοι Σταθμοί και Χερσαίες Επικοινωνίες στον Ορεινό Χώρο. Ταξιδεύοντας το 19ο αιώνα, στο Επικοινωνίες και Μεταφορές στην Προβιομηχανική Περίοδο*, ΙΑ΄ Συμπόσιο Ιστορίας και Τέχνης Κάστρο Μονεμβασιάς, 23-26 Ιουλίου 1998, Μονεμβασιώτικος Όμιλος Πολιτιστικό Τεχνολογικό Ίδρυμα ΕΤΒΑ, Αθήνα 2001, σσ. 207-215.
 - Κτενιάδη Ν.Σ., *Οι Πρώτοι Ελληνικοί Σιδηρόδρομοι*, Πρωτότυπος Ιστορική Μελέτη, Αθήνα, τυπογραφείο Γ.Η. Καλέργη & ΣΙΑ, 1936.
 - Λέσχη Σιδηροδρομικών Κεντροδυτικής Μακεδονίας, *100 Χρόνια Σιδηροδρομική Σύνδεση Θεσσαλονίκη - Έδεσσα - Μοναστήρι*, 80 Χρόνια Ελεύθερη Έδεσσα, Έκδοση Δήμος Έδεσσας, 1992).
 - Μακρής Γιώργος Α., Παπαγεωργίου Στέφανος Π., *Το Χερσαίο Δίκτυο Επικοινωνίας στο Κράτος του Αλή Πασά Τεπελενλή: Ενίσχυση της Κεντρικής Εξουσίας και Απόπειρα Δημιουργίας Ενιαίας Αγοράς*, εκδ. Παπαζήση, Αθήνα 1990.
 - Ματζαρίδης Πρόδρομος, *Συνοπτικό Ιστορικό των Ελληνικών Σιδηροδρόμων*, Έκδοση δεύτερη, Οργανισμός Σιδηροδρόμων Ελλάδος, 1996.

- Μελισσηνού Κίμωνος Σπυρ., *Εγκαταστάσεις Ασφαλείας Σιδηροδρόμων*, Τόμος Ι, Αθήνα 1954.
- Οι Ελληνικοί Σιδηρόδρομοι, *Η Διαδρομή τους από το 1869 έως Σήμερα*, Σύλλογος Φίλων του Σιδηροδρόμου, εκδόσεις Μίλητος.
- Παπαγιαννάκη Λευτέρη, *Οι Ελληνικοί Σιδηρόδρομοι (1822-1910), Γεωπολιτικές, Οικονομικές και Κοινωνικές Διαστάσεις*, Β΄ έκδοση, ΜΙΕΤ, Αθήνα 1990.
- Πεπελάση Μινόγλου Ι., *Phantom Rails and Roads. Land Transport Public Works in Greece during the 1920s* στο *The Journal of Transport History*, Third series, Volume 19, Number I, March 1998.
- Πετρονώτης Αργύρης Π., *Αρχαίοι Οδοί και Παλαιοί Δρόμοι: Διαχρονικές διαβάσεις (παράδειγματα από την Αρκαδία)*, στο *Επικοινωνίες και Μεταφορές στην Προβιομηχανική Περίοδο*, ΙΑ΄ Συμπόσιο Ιστορίας και Τέχνης Κάστρο Μονεμβασιάς, 23-26 Ιουλίου 1998, Μονεμβασιώτικος Όμιλος Πολιτιστικό Τεχνολογικό Ίδρυμα ΕΤΒΑ, Αθήνα 2001, σσ.49-50.
- Προφυλλίδης Β., *Σιδηροδρομική*, Τόμος Α΄, 1993, σσ. 29-40.
- Πρωτοπαπάς Ζήσης, *Ιστορία Λέσχης Ελλήνων Σιδηροδρομικών - Πολιτιστικού Μορφωτικού Κέντρου Σιδηροδρομικών*, Αφιέρωμα στα 70 Χρόνια από την Ίδρυση του Πολιτιστικού Φορέα των Σιδηροδρομικών 1924-1994, έκδοση Πολιτιστικού Μορφωτικού Κέντρου Σιδηροδρομικών, Αθήνα 1994,
- Σιδηροτροχιά*, Περιοδική Έκδοση Σ.Φ.Σ., Τεύχος 17, Δεκέμβριος 1998.
- Σιδηροτροχιά*, Περιοδική Έκδοση Σ.Φ.Σ., Τεύχος 18, Ιούνιος 1999.
- Σιδηροτροχιά*, Περιοδική Έκδοση Σ.Φ.Σ., Τεύχος 20, Ιούνιος 2000.
- Σιδηροτροχιά*, Περιοδική Έκδοση Σ.Φ.Σ., Τεύχος 21, Ιανουάριος 2001.
- Σημειώσεις κατά τις παραδόσεις του Επίκουρου Καθηγητού Απόστολου Γιώτη, *Σιδηροδρομική Ι*, ΙΙ Αθήνα 1977.
- Σιδηροδρομική Μέρος Ι, Παραδόσεις Γ. Κορωναίου, Καθηγητού Ε.Μ.Π., Αθήνα 1954, Τύποις Ν. Ποταμίτη.
- Συναρέλλη Μαρία, *Δρόμοι και Λιμάνια στην Ελλάδα (1830-1880)*, Π.Τ.Ι. ΕΤΒΑ, Αθήνα 1988.
- Τραγανού-Δελιγιάννη Όλγα, *Οι Σιδηρόδρομοι και η Ιστορία τους. Έρευνες και Προσπάθειες Διάσωσης και Προστασίας*, στο *Ιστορία της Νεοελληνικής Τεχνολογίας, Α΄ Τριήμερο Εργασίας*, Πάτρα, 21-23 Οκτωβρίου 1988, Κοινοφελές Ίδρυμα ΕΤΒΑ-Νομαρχία Αχαΐας, Πολιτιστικό Τεχνολογικό Ίδρυμα ΕΤΒΑ, Αθήνα 1991, σσ. 153-156.
- Τρένα και Άνθρωποι, Ευρώπη-Θεσσαλονίκη 1888-1988, *100 Χρόνια Σιδηροδρομική Σύνδεση*, Έκτακτη Αφιερωματική Έκδοση, Θεσσαλονίκη, Μάιος 1988.
- Ψαριανός Β., *Σημειώσεις Χάραξης Σιδηροδρομικής Γραμμής*, Ε.Μ.Π., Τμήμα Αγρονόμων-Τοπογράφων Μηχανικών, Εργαστήριο Συγκοινωνιακής Τεχνικής, Αθήνα 1999.

II.2. History of Greek Railroads: Primary Sources

- Αγαπητός Σπηλ., Εισήγησις εις την επί των Συγκοινωνιών Επιτροπήν της Β΄ Βαλκανικής Διασκέψεως επί του Θέματος της Σιδηροδρομικής Σύνδεσης των Πρωτευουσών των Βαλκανικών Κρατών, σσ. 704-706.
- Αγαπητός Σπ., Η σιδηροδρομική σύνδεση Ελλάδας - Ευρώπης, η σιδηρά Εγνατία οδός και η σύνδεσις Αθηνών - Ρώμης, Έργα, (τόμ. 1928 - 1929), σσ. 337 - 341.
- Αγαπητός Σπηλ., Το εσωτερικόν συγκοινωνιακόν πρόβλημα κατά την διάρκειαν της κρίσεως, *Τεχνικά Χρονικά*, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της

- Ελλάδας, Έτος Α, Τόμ. 1, 1932, σσ. 289 - 294.
- Αι Αμερικανικά Ατμάμαξαι των Ελληνικών Σιδηροδρόμων, Δελτίον Υπουργείου Συγκοινωνίας, Α 1916 1, 69-71.
 - Αι Μεταφοραί και Αι Επικοινωνίαι της Ελλάδος: Ευνοϊκή Σύγκρισις εν Σχέσει με την Προπολεμικήν Δυναμικότητα, Συγκοινωνία, Έτος ΚΓ΄, Ιούλιος 1956, αρ. 6, σ. 521.
 - Ανάγκη Συνεργασίας των Τεσσάρων Συγκοινωνικών Μέσων της Ελλάδος, Σιδηροδρομική Επιθεώρησις, Έτος Ζ΄, Ιούλιος 1934, αρ. 7, σ.1273.
 - Αννίνου Γ, Το Ζήτημα των Σιδηροδρόμων και Ο Στρατός, στο Σιδηροδρομική Επιθεώρησις, Έτος Ε΄, αρ. 7, Ιούλιος 1932, σσ.833-834.
 - Από Πειραιά εις Ελευσίνα με τους Σ.Π.Α.Π.: Μια Περιγραφή του Αλησμονήτου Καμπούρογλου προ 70 ετών, Συγκοινωνία, Έτος ΚΓ΄, Οκτώβριος 1956, αρ. 10, σ. 595.
 - Αργυρόπουλου Ι., *Μαθήματα Σιδηροδρομικής υπό Ι. Αργυρόπουλου*, Καθηγητή εν τη Σχολή των Πολιτικών Μηχανικών, Μετσόβιον Πολυτεχνείον, Μέρος Α΄, εν Αθήναις, 1890-91 και Μέρος Γ΄, Κινητόν Υλικόν- Έλασις, εν Αθήναις 1890-91.
 - Αργυρόπουλου Ι., *Σιδηροδρομική υπό Ι Αργυρόπουλου*, Καθηγητού εν τη Σχολή των Πολιτικών Μηχανικών, Τόμος Β΄, Αθήναι 1897-98.
 - Αρχιμήδη, Νόμοι 1906, εν Αθήναις, 1908, σσ. 14-15.
 - Αρχιμήδης, Νόμοι 1906, εν Αθήναις 1908, σσ. 6-8
 - Αρχιμήδης, Νόμοι 1909, σσ. 12-14.
 - Ασημάκη Κ., Είναι Αναγκαία η Αλλαγή Διασταυρώσεως; στο Σιδηροδρομική Επιθεώρησις, αρ. 12, Δεκέμβριος 1929, σσ. 8-10.
 - Βιομηχανική και Βιοτεχνική Επιθεώρησις, Η ενιαία διοίκησις των σιδηροδρόμων σσ. 123 - 125.
 - Βλύσμα Β. Γρηγ., Το Δίκτυον των Σ.Β.Δ.Ε.: Μερικά Ζητήματά του που Είναι Δυνατόν να Επιλυθούν, στο Συγκοινωνία, Έτος Κ΄, Οκτώβριος 1953, αρ. 10, σ. 373.
 - Βουγιούκα Γ.Π., Μία Επταετία των Σιδηροδρόμων του Ελληνικού Κράτους, Έτος V- Τεύχος 116, 30 Μαρτίου 1930, σσ. 537-345.
 - Βουγιούκα Γεωργίου, Η θέσις και η οικονομική κρίσις των σιδηροδρόμων της Ελλάδας, στο Έργα, Έτος VII-Τεύχος 155, 15 Νοεμβρίου 1931, σσ. 289-299.
 - Βουγιούκας Γ.Π., Οι σιδηρόδρομοι της Παλαιάς Ελλάδας κατά τον Πόλεμον, στο Αρχιμήδης, Μηνιαίον Περιοδικόν Σύγγραμμα του Ελληνικού Πολυτεχνικού Συλλόγου, Έτος ΚΑ΄, Αθήναι, Μάρτιος-Απρίλιος 1920, Αρ. 3-4, σσ. 17-34.
 - Γεωργόπουλος Ηλ., Έργα οδοποιίας και έργα σιδηροδρομικά σκοπιμότης και παραγωγικότης των έργων τούτων, ο μηχανικός, Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, τόμ. 1, 1932, σσ. 552 - 565.
 - Γεωργόπουλος Ηλ., Πώς δύναται να αντιμετωπισθή η συμπλήρωσις της γραμμής Καλαμπάκας - Κοζάνης , Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, τόμ. 3, 1933, σσ.123 - 129.
 - Γκοτλάν Α., Σιδηρόδρομος Πειραιώς-Αθηνών-Πελοποννήσου, στο Μηχανική Επιθεώρησις, 2ο έτος, Ιανουάριος-Φεβρουάριος, Ιούλιος- Αύγουστος 1888, Αρ. 7, 10, Σύγγραμμα περιοδικόν Εκδιδόμενον Εξάκις του Έτους τη Ευμενεί Συνεργασίαι Πολλών Μηχανικών υπό Ηλία Ι. Αγγελόπουλου, Μηχανικού Διπλωματούχου της εν Παρισίοις Σχολής των Γεφυροδοποιών, σσ. 60-69, 81-88.
 - Γ.Π.Β., Όργανον ακριβείας προς καθορισμόν της τομής των σιδηροδρομικών ράβδων, 10, (τόμ. 1906 - 1910), 1910, σσ. 132 -133.
 - Γ.Π.Β., Όργανον ακριβείας προς καθορισμόν της τομής των σιδηροδρομικών ράβδων, 10, (τόμ. 1906 - 1910), 1910, σσ. 132 -133.
 - Γ.Π.Β., Ατμάμαξαι της “Matheran Railway”, Αρχιμήδης, 6, (τόμ. 1906 - 1910),

1907, σ. 80.

-Debaune A., Σχολείον των Τεχνών, Μαθήματα Σιδηροδρομικής, Παραδιδόμενα κατά το Σχολικόν έτος 1883-84 υπό Ι. Ζωχίου, Λιθογραφηθέντα δια του προς έκδοσιν συγγραμμάτων οριζομένου ποσού εν τη διαθήκη του αιδιίμου Δ. Θωμαΐδου, εν Αθήναις 1888.

-Dieckman, Η Εταιρεία Εκμεταλλεύσεως των Ανατολικών Σιδηροδρόμων, στο Σιδηροδρομική Επιθεώρησις, αρ. 7, 10, Ιούλιος, Οκτώβριος 1931 Έτος Δ΄, σσ. 619-652, 694-696, και αρ. 1, 4, Ιανουάριος, Απρίλιος 1932 (Έτος Ε΄, σσ. 742-743, 783-785).

-Διαμαντίδης Δ., Ο Σιδηρόδρομος Πειραιώς - Λαρίσης: Η επίκρισις της χαράξεως, Αρχιμήδης, 1, (τόμ. 1911 - 1912), 1912, σσ. 1-8.

-Εναέριο Τραίνο εις την Πάρνηθα: Η Αξιοποίησις του Ωραίου Βουνού, Συγκοινωνία, Έτος ΚΓ΄, Ιούλιος 1956, αρ. 6, σ. 498.

-Ευστρατιάδου Δ., Από την Ιστορίαν της Αποκαταστάσεως των Σιδηροδρόμων Μας (Σκέψεις-Δυνατότητες-Πραγματοποιήσεις), στο Συγκοινωνία, αρ 12, Δεκέμβριος 1953 (Έτος Κ΄), σσ. 443- 446.

-Ευστρατιάδου Δημ., Γενικό Σχέδιο Εθνικού Σιδηροδρομικού Δικτύου, Μέρος Πρώτον, Αθήναι 1957 (Ανατύπωσις εκ του Περιοδικού Συγκοινωνία, Μάρτ.- Δεκέμβρ. 1956).

-Ευστρατιάδου Δημ: Η Αντιμετωπισθείσα Μελέτη προς Κατασκευή Σιδηροδρομικής Γραμμής Αγρινίου-Αμφιλοχίας, στο Συγκοινωνία, αρ. 3, Μάρτιος 1953 (Έτος Κ΄), σσ. 49-57.

-Ευστρατιάδου Δ., Η Σύνδεσις Ρίου-Αντιρρίου Γεωσυγκοινωνιακώς Εξεταζόμενη, στη Συγκοινωνία, αρ.7, Ιούλιος 1953 (Έτος Κ΄), σσ. 241-248.

-Ευστρατιάδου Δημ., Σιδηροδρομικαί Συμπληρώσεις Γύρω από την Πρωτεύουσα, στο Συγκοινωνία, αρ.8, Αύγουστος 1955 (Έτος ΚΒ΄), σσ. 177-180.

-Ζάππα Τάσου, Μετά την Υπαγωγήν των εις τους Σ.Ε.Κ.: Οι Σιδηρόδρομοι της Θεσσαλίας και τα Πρώτα Χρόνια της Λειτουργίας τους, στο Συγκοινωνία, Έτος Κ΄, Ιανουάριος 1953, αρ.1, σσ. 6-7.

-Ζάππα Τάσου, Η Γραμμή Αμύνταιου-Πτολεμαΐδας-Κοζάνης, στο Συγκοινωνία, αρ.2, Φεβρουάριος 1955 (Έτος ΚΒ΄), σσ. 925-926.

-Ζάππα Τάσου, Η Οργάνωσις των Χερσαίων Υπεραστικών Συγκοινωνιών:, Μία Δημόσια Συνεδρίαση της Ελληνικής Επιστημονικής Εταιρείας Οργανώσεως της Εργασίας, στο Συγκοινωνία, αρ.1-2, Φεβρουάριος 1956 (Έτος ΚΓ΄) σσ. 295-297.

Ζάππα Τάσου, Ο Μικροσκοπικός Σιδηρόδρομος Βόλου-Μηλεών, Συγκοινωνία, Έτος ΚΓ΄, αρ. 6, Ιούλιος 1976, σσ. 457-458.

-Ζησιμάτος Γερ., Η ατμάμαξα εις το δίκτυον Σ.Π.Α.Π, Έργα, (τόμ. 1926 - 1927), Έτος ΙΙ, σσ. 379 - 388.

-Ζουμπούλη Αν, Η Διαπλάτυνσις της Γραμμής Βόλου-Λαρίσης, στο Συγκοινωνία, αρ.6, Ιούνιος 1953 (Έτος Κ΄), σσ. 209-210.

-Ζώτου Χρήστου, Οι Πιλότοι των Σιδηροδρόμων, στο Συγκοινωνία, αρ. 8, Αύγουστος 1955 (Έτος ΚΒ΄), σ. 193-197.

-Η επέκτασις των γραμμών του σιδηροδρόμου Αθηνών-Πειραιώς -Πελοποννήσου, Έργα, Τεύχος 14, 30 Δεκεμβρίου 1925, σσ. 343-344.

-Η Τροχοπέδησις των Συρμών, στο Σιδηροδρομική Επιθεώρησις, αρ.4, Απρίλιος 1931, σ. 604 και πίνακες 2 και 3 σσ. 605-606.

-Ι.Β., Η σιδηροδρομική Συγκοινωνία εν Ελλάδι, στο Βιομηχανική και Βιοτεχνική Επιθεώρησις, 1916-1918, Έτος 3^ο, Αριθμός 1, Μάιος 1916, Εκδιδόμενη υπό του Συνδέσμου των Ελλήνων Βιομηχάνων και Βιοτεχνών, σσ. 547-552.

-Ι.Β., Η σιδηροδρομική συγκοινωνία εν Ελλάδι, Βιομηχανική και Βιοτεχνική

- Επιθεώρηση, 1, (τόμ. 1916 - 1918), Μάιος 1916, σσ. 547 - 552.
- Ιούλιος 1948-Ιανουάριος 1953: Η κατάσταση του Ελληνικού Σιδηροδρομικού Δικτύου κατά την Απελευθέρωσι. Πλήρης Καταστροφή του Δικτύου και του Τροχαίου Υλικού, στο Συγκοινωνία, Έτος Κ', Αρ. 1/ Ιανουάριος 1953, σσ. 17-18.
 - Κανελλόπουλος Χ.Ι., Σιδηρόδρομοι και Τουρισμός, στο Συγκοινωνία, Έτος ΚΒ', Απρίλιος 1955, αρ. 4, σσ. 1-8.
 - Κανελλόπουλος Χρ., Ο συναγωνισμός αυτοκινήτου και σιδηροδρόμου από απόψεως πολιτικής οικονομίας, Έργα, (τόμ. 1928 - 1929), σσ. 33 - 42.
 - Καντάς Α.Η., Σιδηρόδρομος Ζαγοράς, Προμελέτη, στο Αρχιμήδης, (τόμ. 1899-1903, έτη Α-Δ, ΤΕΕ), 2^ο έτος, Ιανουάριος- Φεβρουάριος 1900, αρ. 1, σσ. 1-10.
 - Κανελλόπουλος Χρ., Επί του σιδηροδρομικού ζητήματος και της εκθέσεως Regnoul, στο Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, Έτος Β', 1933, Τόμ. 3, σσ. 121-129.
 - Κανελλόπουλου Χρ., Ο συναγωνισμός αυτοκινήτου και σιδηροδρόμου από απόψεως πολιτικής οικονομίας, στο Έργα,, Έτος IV- Τεύχος 74, 30 Ιουνίου 1928, σσ. 33-42.
 - Κανονισμός Ελέγχου των Σιδηροδρόμων του Ελληνικού Κράτους, στο Έργα, Έτος IV, 1928-1929, σσ. 220- 224.
 - Καντάς Α. Η., Σιδηρόδρομος Ζαγοράς στο Αρχιμήδης, 1 (τομ. 1899 - 1903), ΤΕΕ, 1900, σσ. 1 -10.
 - Κατσουλίδης Σπ., Η Βελγική σύμβασις κατασκευής σιδηροδρομικής γραμμής Καλαμπάκας - Βέρροιας, Έργα, (τόμ. 1928 - 1929), Έτος IV, σσ. 277 - 289.
 - Κατσουλίδου Σπ., Ο Σιδηρόδρομος Καλαμπάκας-Βέρροιας: μία σημαντική εθνική ζημιά, στο Έργα, Έτος VI- Τεύχος 144, 30 Μαΐου 1931, σσ. 629-633.
 - Κογεβίνας Ν., Ενίσχυσις της προτάσεως του κ. Σπ. Αγαπητού, Έργα, (τόμ. 1928 - 1929), σσ. 341 - 342.
 - Κορομηλά Α.Γ., Η Συγκοινωνιακή Αναρχία, Συγκοινωνία, Χριστούγεννα 1956, σσ. 627.
 - Κορωνάιος Γ., Μεταφοραί και τεχνική εκμετάλλευσις ως βάσις για τη μελέτη του οδικού και σιδηροδρομικού ζητήματος, Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, τόμ. 1, 1932, σσ. 355 - 366.
 - Κορώνης Σπ. Β., Διατί Επιβάλλεται η Δημόσια Σιδηροδρομική Επιχειρήσις, στο Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, Έτος Α', Τόμος 1, Ιανουάριος- Ιούνιος 1932, σσ. 482-485.
 - Κορώνη Σ. Π., Ανάγκη «Προγραμματικής Οικονομίας» δια τας Συγκοινωνίας μας, στο Σιδηροδρομική Επιθεώρησις, αρ. 11, Νοέμβριος 1931, Έτος Δ', σσ. 703-704).
 - Κορώνη Σπ. Β., Νέαι Σιδηροδρομικαί Γραμμαί; Σιδηροδρομική Επιθεώρησις, Ιούνιος 1929, αρ. 18, σσ. 13-14.
 - Κορώνη Σπ., Β., Ελληνικοί Σιδηρόδρομοι και Σιδηροδρομική Πολιτική (Απόσπασμα εκ του Δελτίου του Υπουργείου της Εθνικής Οικονομίας, εν Αθήναις, Εκ των Τυπογραφικών Καταστημάτων Μ. Μαντζεβελάκη, 1914.
 - Κορώνη Σπ., Β., *Η Δημόσια επιχείρησις εις την Ελλάδα: Τα πρώτα 25 Έτη των Σιδηροδρόμων του Ελληνικού Κράτους*, Αθήναι, Ανατύπωσις εκ του «Αρχείου Οικονομικών και Κοινωνικών Επιστημών», Τόμοι 20 και 21(1940-41), 1941.
 - Κορώνη Σπ., *Ιστορικαί Σημειώσεις επί της Ελληνικής Σιδηροδρομικής Πολιτικής*, Τύποις: Γ.Π. Ξένου, Αθήναι 1934.
 - Σπ. Β., Οι Σιδηρόδρομοι εντός του πλαισίου του Ελληνικού συγκοινωνιακού δικτύου, η ανάγκη νέου προσανατολισμού της συγκοινωνιακής πολιτικής και ο εν τω μέλλοντι ρόλος του κράτους ως ρυθμιστού των συγκοινωνιών, Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, Έτος Α', τόμ. 1, 1932, σσ. 169 - 180.

- Κτενιάδου Ν., Από την Ιστορίαν του Ελληνικού Σιδηροδρόμου: Ο Σιδηρόδρομος Αθηνών-Πειραιώς, στο Σιδηροδρομική Επιθεώρησις, αρ.12, δεκέμβριος 1934 (Έτος Ζ΄) σσ. 1346-1349.
- Κτενιάδου Ν., Οι Πρώτοι Ελλην. Σιδηρόδρομοι, Σιδηροδρομική Επιθεώρησις, Έτος Ε΄, Νοέμβριος 1932, αρ.11, σσ. 909-911.
- Κτενιάδου Ν., Οι Πρώτοι Σιδηρόδρομοι εν Ελλάδι, Έτος Ε΄, Αρ. 10, Οκτώβριος 1932, σσ. 928-930.
- Κτενιάδου Ν., Ο Λαρισαϊκός Σιδηρόδρομος, στο Σιδηροδρομική Επιθεώρησις, 1934, αρ. 3, Μάρτιος 1934 (Έτος Ζ΄), σσ. 1199-1201.
- Κτενιάδου Ν., Ο Σιδηρόδρομος Πειραιώς-Δεμερλή-Συνόρων, στο Σιδηροδρομική Επιθεώρησις, Έτος Ζ΄, αρ.1, Ιανουάριος 1934, σσ. 1160-1163.
- Λελούδα Στυλ., Το σιδηροδρομικόν δίκτυον της περιοχής Αθηνών, στο Έργα, Έτος ΙΙ, 1926-1927, σσ. 150-155.
- Μαρκινά Κλαύδιου, Τα «Ιπποκίνητα» των Αθηνών και το «Θηρίο» της Κηφισιάς, Συγκοινωνία, Έτος Κ΄, Φεβρουάριος 1953, αρ. 2, σσ. 71-72.
- Martin M., Villot M., (μτφρ. Ι. Μαρκόπουλος) Οι Ελληνικοί Σιδηρόδρομοι και το Μέλλον Αυτών, Αρχιμήδης, 3, (τομ. 1899 - 1903), 1899, σσ. 46 - 87.
- Ματθαίοπουλος Δ., Το Ανώτατον Συγκοινωνιακόν Συμβούλιον, στο Σιδηροδρομική Επιθεώρησις, αρ. 2, Φεβρουάριος 1934 (Έτος Ζ΄), σσ.1175- 1176.
- Ματσάς Αντ., Η κατάστασις των σιδηροδρόμων εν Ελλάδι, τα ληπτέα μέτρα, στο Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, Έτος Α΄, Τόμος 2, σσ. 800-818.
- Ματσάς Α., Το πρόβλημα της συνδέσεως της σιδηροδρομικής γραμμής Καλαμπάκας- Κοζάνης, στο Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, Έτος Α΄, Τόμ. 1, Ιανουάριος- Ιούνιος 1932, σσ. 405-....
- Ματθαίοπουλος Δημ., Η εκμετάλλευσις των σιδηροδρόμων και αι αυτοκινητάμαξαι, Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, τόμ. 3, 1932, σσ. 80 - 82.
- Μεταξάς, Ι. Η σιδηροδρομική πολιτική του κράτους, Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, τόμ. 1, 1932, σσ.420 - 428.
- Μπαλτιμά Νίκου, Τα Αγαθά Αποτελέσματα εκ της Ολοκληρώσεως του Σιδηροδρομικού Δικτύου, Συγκοινωνία, Χριστούγεννα 1956, σ. 634.
- Μπαλτιμάς Νίκος, Μερικαί Σκέψεις επί της Ζωής και του Μέλλοντος των Σ.Π.Α.Π., στο Συγκοινωνία, αρ. 5, Μάιος 1953 (Έτος Κ΄), σσ. 183-184.
- Μουρατόγλου Αρ. Θ., Η γεωργία και οι Σιδηρόδρομοι της Θεσσαλίας, Αρχιμήδης, Μηνιαίον Περιοδικόν Σύγγραμμα του Ελληνικού Πολυτεχνικού Συλλόγου, αρ. 3, (τόμ. 1906-1910), 1906, σσ. 25 - 18.
- Μουρατόγλου Αρ. Θ., Οι Σιδηρόδρομοι της Μικράς Ασίας, Αρχιμήδης, Μηνιαίον Περιοδικόν Σύγγραμμα του Ελληνικού Πολυτεχνικού Συλλόγου, 1906-1910, Αθήναι, Έτος Η΄, Σεπτέμβριος 1907, Αρ. 5, σσ. 56-58, Οκτώβριος 1907, Αρ.6, σσ. 61-67, Φεβρουάριος 1908, Αρ. 10, σσ. 105-109, Απρίλιος 1908, Αρ. 12, σσ. 129-138.
- Ν. Ο Σιδηρόδρομος Από Στρατιωτικής Απόψεως, στο Σιδηροδρομική Επιθεώρησις, Έτος Ε΄, αρ. 2, Φεβρουάριος 1932, σσ. 755-757.
- Ν.Χ., Τουρισμός και Σιδηρόδρομος, στο Σιδηροδρομική Επιθεώρησις, Έτος Ε΄, Ιούνιος 1932, αρ.6, σ.823.
- Ο Αυτοματισμός Βοηθεί τους Σιδηροδρόμους, Συγκοινωνία, Έτος ΚΒ΄, Σεπτέμβριος- Οκτώβτιος 1955, αρ. 9-10, σσ. 212-214.
- Εύδης Κ., Ο Σιδηρόδρομος Πειραιώς Λαρίσης : υποδεικνύόμενα σφάλματα κατά την χάραξιν της γραμμής», Αρχιμήδης, 10, (τόμ. 1906 - 1910), 1910, σσ. 113 - 119· 11, (τομ. 1910 - 1914), 1911, σσ. 121 - 123, και 4, (τόμ. 1911 - 1912), 1911, σσ. 37 - 40.

- Οι νέοι σιδηρόδρομοι Μακεδονίας, στο Έργα, τεύχος 11, 15 Νοεμβρίου 1925, σσ. 270-272.
- Παδελόπουλος Αθ., Η Εξέλιξις των Σ.Ε.Κ.- Η Εξυπηρέτησις η Μη του Σιδ/κου Χρέους Παρ' Αυτών -Συναγωνισμός Αυτοκινήτου, Τα Ληπτέα Μέτρα στο Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, τόμος 1, Έτος Α (Ιανουάριος -Ιούνιος 1932), σσ. 344- 366.
- Παδελόπουλος Αθ., Οι σιδηρόδρομοι της Ελλάδος, στο Τεχνική Επετηρίς: Τα Δημόσια Έργα και Αι Δημόσια Τεχνικά Υπηρεσία, Μέρος Β': Αι Τεχνικά Υπηρεσία του Υπουργείου Συγκοινωνίας, Κεφ. Β': Η Γενική Διεύθυνσις Δημοσίων Έργων – Η Τεχνική Δράσις Αυτής, Τα Εκτελεσθέντα Έργα, σσ. Έκδοσις ΤΕΕ, έκ. ΤΕΕ, 1935, σσ. 313 - 354.
- Παδελόπουλος Αθ., Το σιδηροδρομικόν πρόβλημα και οι εκθέσεις των κ.κ. Regnoul και Ματσά, Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, Έτος Α', τόμ. 2, 1932, σσ. 841 - 853.
- Παπαλεξάνδρου Γεώργ., Οι Σιδηρόδρομοι Βορειοδυτικής Ελλάδος, στο Συγκοινωνία, Έτος Κ', αρ. 1, Ιανουάριος 1953, σ. 3-5.
- Περί Αυτοκινήτων Οχημάτων (Automotrices), Σιδηροδρομική Επιθεώρησις, Έτος Ε', Μάρτιος 1932, αρ.3, σσ. 767-776.
- Πόγγη Γεωργ. Βολ., Η Πλουτοπαραγωγική Σημασία μίας Ελληνοβουλγαρικής Σιδηροδρομικής Συνδέσεως, στο Σιδηροδρομική Επιθεώρησις, αρ.9, Σεπτέμβριος 1929, σσ. 8-9.
- Πογγή Β., Η Πρώτη Συγκοινωνιακή Σύμβασις της Ελλάδος, στο Σιδηροδρομική Επιθεώρησις, αρ.8, Ιούνιος 1929, σσ.13-14.
- Ποιά τα Αίτια των Ατυχημάτων τα οποία Σημειούνται κατά την Σύνδεσιν των Σιδηροδρομικών Οχημάτων και των Συναφών Εργασιών και Μέτρα Αποσοβήσεως Αυτών, Συγκοινωνία, Έτος ΚΒ', Σεπτέμβριος-Οκτώβριος 1955, σσ. 205-208.
- Regnoul Α., Οι Ελληνικοί σιδηρόδρομοι και αι δυνατά βελτιώσεις αυτών, Τεχνικά Χρονικά, Επίσημον Όργανον του Τεχνικού Επιμελητηρίου της Ελλάδας, τόμ. 2, 1932, σσ. 737 - 767.
- Σβέριγκ Λουδοβίκου και Αγγελόπουλου Ηλία Ι., Η Διαιτητική Απόφασις επί των Εγερθεισών Διαφορών κατά την Κατασκευήν του Σιδηροδρόμου Αθηνών-Λαρίσσης-Συνόρων Μεταξύ της Κυβερνήσεως και της Εταιρίας των Ελληνικών Σιδηροδρόμων, στο Αρχιμήδης, Μηνιαίον Περιοδικόν Σύγγραμμα του Ελληνικού Πολυτεχνικού Συλλόγου, Έτος ΙΓ', Ιανουάριος 1912, Αρ.9, σσ. 91-99, Φεβρουάριος 1912, Αρ. 10, σσ. 106-113, Νοέμβριος 1912, Αρ. 7, σσ. 67-75, Δεκέμβριος 1912, Αρ. 8, Αθήναι. σσ. 79-88, Μάρτιος 1913. Αρ. 11, Αθήναι. σσ. 115-119.
- Σιδερίδου Ν., Υπόμνημα περί Σιδηροδρομικής Διακλαδώσεως Ιτέας και Αμφίσσης, Αρχιμήδης, 10 (τομ. 1905 - 1908), 1906, σσ. 85 - 92.
- Σιδηροδρομικά Ειδήσεις: Το Δάνειον των Σ.Π.Α.Π., στο Σιδηροδρομική Επιθεώρησις, αρ. 7, Ιούλιος 1934 (Έτος Ζ'), σ. 1273.
- Σταϊκού Ηρ, Η Ηλεκτροκίνησις της Γραμμής Διακοφτού-Καλαβρύτων, στο Συγκοινωνία, αρ. 6, Ιούνιος 1953 (αρ. 6), σσ. 203-204.
- Συγκοινωνιακή Πολιτική: Δύο Ομιλίας εις την Σχολήν Εθνικής Αμύνης των κ.κ. Χρ. Λιάκου, Γεν. Γραμματέως και Αναστ. Λεμπέση, Δ/ντού του Υπουργείου Συγκοινωνιών και Δημοσίων Έργων, στο Συγκοινωνία, Έτος ΚΒ', Αύγουστος 1955, αρ. 8, σσ. 163-172.
- Το Ανώτατον Συγκοινωνιακόν Συμβούλιον, Σιδηροδρομική Επιθεώρησις, Έτος Ε', Ιούνιος 1932, αρ.6, σσ. 816-817.
- Το Δικαίωμα της Απεργίας των Εργατών της Συγκοινωνίας, στο Βιομηχανική και Βιοτεχνική Επιθεώρησις, 1914-1916, Έτος 1, Μάιος 1914, Αριθμός 1, Εκδιδόμενη

υπό του Συνδέσμου των Ελλήνων Βιομηχάνων και Βιοτεχνών, Εν Αθήναις, σσ. 179-180.

-Τρικεριώτη Κ., Ηλεκτρικός Σιδηρόδρομος Αθηνών-Κηφισιάς: Ιστορικών. Εκτελεσθέντα Έργα Μέχρι Ν. Ιωνίας. Προτάσεις δια την Συνέχισιν των Έργων μέχρι Κηφισιάς, στο Συγκοινωνία, αρ. 4, Απρίλιος 1956 (Έτος ΚΓ'), σσ. 371-374.

-Τσαλίκη Αρ., Μία εσφαλμένη ιδέα περί σιδηροδρόμων, στο Έργα,

-Τριανταφυλλίδης Ν., Η ανακαίνισις της γραμμής του Σιδηροδρόμου Αθηνών - Πειραιώς, Αρχιμήδης, (τόμ. 1899 - 1903, Έτη Α-Δ, ΤΕΕ), Έτος 1^ο, αρ.2, Φεβρουάριος 1899, σσ. 19 - 21.

-Ξανθόπουλος Αλ., Σκέψεις περί της Εξελίξεως του Σιδ/κού Δικτύου Δ. Μακεδονίας εν Σχέσει με τον υπό Κατασκευήν Σιδ/μον Καλαμπάκας-Κοζπάνης-Βέρροιας (Κ.Κ.Β), στο Σιδηροδομική Επιθεώρησις, αρ. 4, Απρίλιος 1934 (Έτος Ζ'), σσ.1224-1227.

-Φιλαδέλφεως Αλ., Από τας Αθήνας εις το Φάληρον, Συγκοινωνία, Χριστούγεννα 1956, σσ. 635.

-Χαριτάκης Θ., Βιβλιογραφία: Το κράτος και οι σιδηρόδρομοι εν Ελλάδι, υπό Αντ. Κ. Ματσά, Μηχανικού, 8^ον Αθήναι 1922 και Μιχ. Χρ. Αιλιανού 16 Απριλίου 1922, στο Αρχιμήδης, Μηνιαίον Περιοδικόν Σύγγραμμα του Ελληνικού Πολυτεχνικού Συλλόγου, Έτος ΚΓ', Απρίλιος 1922, Αρ. 4, σσ. 27-32.