FRIEDRICH AUGUST NAUCK
(1855–1913) – GRADUATE OF RIGA POLYTECHNICUM, INITIATOR OF CONTROL-TICKET PRINTING IN RIGA

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Summary. A graduate of Riga Polytechnicum (RP) (1878), Friedrich August Nauck (1855–1913) was a son of the first director of RP, Ernst Nauck (1819–1875), an engineer, the initiator of public transport and various entrance control-ticket printing in Riga. The aim of the research is to reflect the activities of F. A. Nauck’s Printing House and the beginnings of control-ticket printing, identifying control-tickets that have survived to the present day in various archives and museum collections. The Printing House established by F. A. Nauck in 1888, in Riga, operated until 1939. The engineer invented various devices for a successful operation of the Printing House. F. A. Nauck was an active member of Riga Technical and Riga Craft Society, he presented reports on various topics and was one of the directors of the Riga Horse Railway Society (1885–1889). In the research, great attention is payed to the family of F. A. Nauck and its descendants to the present day.

Keywords: Riga Polytechnicum, control-ticket printing, the Naucks family Printing House, Friedrich August Nauck.

Introduction

About the most famous representative of the Nauck Family – the first Director of RP E. Nauck – who came to Riga from Prussia in 1862, several studies has undergone. They were performed by Professor of the Riga Polytechnic Institute (RPI) Konstantīns Kreišmanis (1907–1996), historian of sciences Ilgars Grosvalds (1927–2019), as well as one of the
authors of this article – A. Zigmunde, whose scientific monograph on the first director of RP and his family was published in 2019, celebrating E. Nauck’s 200th birthday.

E. Nauck had 10 children in his family, and like their father, the children were closely involved in engineering. F. A. Nauck was the third son of E. Nauck and a graduate of the Department of Mechanical Engineering of RPI, whose contribution to the printing of control-tickets is evaluated in this article.

When F. A. Nauck founded his own Ticket-Printing House (1888), Louis Eugene Dupont (1839–1901) established a tram traffic in Riga [1; p. 84], which was the sixth type of public transport in the city excluding the already existing steamboats, boats, horse-drawn omnibuses, omnibuses and passenger railway traffic. Conductors sold tickets in tram traffic. Tickets were printed in rolls, which were handed out to the conductors in the office against a signature. In order for the passenger and the conductor to verify the validity of the ticket, the conductor had to write on the black board in the tram wagon the number of the wagon (tram lines) and the number of the last ticket sold at each destination [1; p. 87]. It was also necessary for passenger registration. In the middle of the 19th century, there were about five printing houses in Riga; in 1910, there were almost 50 printing companies [2] engaged in the printing of various printed matter. Until 1888, tram control-tickets were printed in St. Petersburg in the Lithography of William von Köhne (?–?). At W. von Köhne’s Printing House, tickets were printed on separate sheets. The sheet was then cut and the tickets attached to a booklet.

![Figure 1. Tickets for the Riga Street Railway printed in William von Köhne Printing House (1886, 1887).](image-url)
After engineer F. A. Nauck founded his own Printing House (1888), public transport and entrance tickets were printed by his company. It existed until 1939, when the family of F. A. Nauck left Latvia and sold the equipment of his company to the Riga City Traffic Board (at present – LTD «Rīgas satiksme»). When leaving Latvia, the family did not legally liquidate the company. On 28 December 1939, it was taken over by the Riga City Traffic Board.

As mentioned above, numbered tickets were already printed in W. von Köhne’s Lithography, but engineer F. A. Nauck, using his engineering knowledge, designed and built a device, the analogue of which was very expensive abroad, and thus he was able to compete in the field of control-ticket printing starting to print tickets on rolls. It is possible that the idea was borrowed by the engineer himself, working as a Technical Director of the Riga Horse Railway Society. At that time, F. A. Nauck’s Printing House was the only one in the territory of present-day Latvia that printed numbered tickets not only for horse and electric trams, buses and steamboats, but also entrance tickets for saunas, zoos, etc., as well as lottery tickets.

**Friedrich August Nauck (1855–1913) and His Family**

Friedrich August Nauck (1855–1913) was the third of ten children of the first director of RP (1862–1875) Professor Ernst Nauck (1819–1875) and Charlotte Wilhelmine Aurora Nauck (b. Schmidt; 1826–1880).

F. A. Nauck was born in Krefeld and later, in 1862, when his father changed the work place, he moved to Riga with his father, mother, brothers and sisters. In Riga the family lived at 40 Elizabetes Street, later at No. 38 [3].

![Friedrich August Nauck (1870s).](image)
In 1882, in Riga, F. A. Nauck married Emma Maria Dettloff (1859–1942). The family had six offsprings. Until 1913, the family resided in different places in Riga – 20 Balozu Street [4], 8 Margarietas Street [5], 123 Dzirnavu Street, 20 Margarietas Street [6], 15 Baldones Street. The family lived in the last place of residence until emigration to Germany in 1939. 15 Baldones Street also housed the family business – a Printing House and a Flour Mill.

Figure 3. Emma Maria Nauck (1920s).

Figure 4. The Family of Friedrich August and Emma Maria Nauck.
Ernst Rudolf Wilhelm Nauck (1887–1893), a son of engineer F. A. Nauck, died at the age of five.

F. A Nauck’s son Friedrich August Nauck (1885–1948), junior, after graduating from the Riga City Real School in 1904, entered the Department of Mechanics of RPI, but due to the revolutionary events of 1905 the university in Riga was closed and he had to interrupt his studies. F. A. Nauck junior went to study at Gdansk University of Technology where a number of former RPI students were studying at the time. He returned to Riga in August 1906 and in 1913 received a Diploma of Engineering Technologist from RPI [7]. After World War I, he lived with his family in Germany.


Robert Heinrich Nauck (1897–1970), a son of engineer F. A. Nauck, studied theology at the University of Latvia [8], as well as at the universities of Tartu, Jena and Eisenach. From 1927 to 1949, he worked as a pastor in Germany [9]. He and his wife Irene Mathilde Nauck known as Rennie (b. Dürst; 1902–1982) had three children.
Robert Friedrich Nauck, a son of R. H. Nauck (1926–2007), married Edith Maria Christen (1926–2007) and had two children: Hans-Werner Klemens Nauck (1945–2017) and Regina Ines Nauck (m. Aujesky). In 2019, R. I Aujesky, on the occasion of the 200th birthday of her great-great-great-grandfather, the first Director of Riga Polytechnicum Ernst Nauck, visited Riga. She also visited E. Nauck’s former workplace at 19 Raiņa (then – Troņmantnieka, in German – Thronfolger) Boulevard, and the grave of the Professor. Later she attended her great-great-grandfather F. A Nauck’s place of residence and work (15 Baldones Street), as well as the Exhibition Hall of RTU Research Centre for Engineering History at 1 Kronvalda Boulevard, Riga, where the authors of this article introduced R. I. Aujesky to the RTU History Museum and testimonies about the first rector of the university.

After the death of F. A. Nauck in 1913 [10, 11], the Printing House founded by the engineer continued its operation run by his wife E. M. Nauck and their children – Charlotte (Lotty) Wilhelmine Burchard (b. Nauck; 1883–1939) and Otto Paul Nauck (1892–1931) with their families.
F. A. Nauck’s daughter Ch. W. Burchard was the author of several books published in the 1920s–1930s. She has written poetry, prose, plays [12] and authored librettos for operettas [13]. She was married to merchant Viktor Wladimir Burchard (1864–1946) and they had two sons. The eldest – Friedrich Alfred Burchard (1914–?) – studied in the Faculty of Mechanics of the University of Latvia (1934–1939) [14], the youngest – Henry Eugen Burchard (1916–1940) had studied theology [15]. The family emigrated to Germany in 1939.

Figure 7. Charlotte Wilhelmine Burchard (early 1930s).

Figure 8. Charlotte Wilhelmine Burchard (from the left) in newspaper «Riga am Sonntag» (1929).

F. A. Nauck’s son O. P. Nauck studied mechanics at RPI during academic year 1913/1914. However, World War I began and the young man took part in the battles against Germany; and after the war in the Latvian War of Independence [16]. O. P. Nauck married Ilse Gross (1895–?). The family had two sons – Gert Nauck (1920–?) and Jürgen Nauck (1926–?). The family emigrated to Germany in 1939.

Figure 9. Otto Paul Nauck (early 1930s).
Professional and Social Activities of Engineer Friedrich August Nauck, Graduate of the Department of Mechanical Engineering of Riga Polytechnicum

F. A. Nauck studied at a Real Gymnasium in Riga. After graduating, he was a student of RP Preparatory School for two years (1872–1874), then followed his studies in the Department of Mechanical Engineering of RP, from which F. A. Nauck graduated in 1878 [17; p. 169].

Figure 10. Ilse Nauck (1920s).

Figure 11. Diploma of Riga Polytechnicum in German and Russian issued to F. A. Nauck (1878).
After studies, being a Prussian national, F. A. Nauck had to serve in the army in Erfurt (Erfurt – now the Federal Republic of Germany) for one year.

In 1880, F. A. Nauck started working for RP as a second assistant in mechanical engineering [18; p. 1]; in 1881 – as an assistant in machine technology. He left this job in August 1881 to focus on practical work [18; p. 27]. After studies at RP, F. A. Nauck worked for some time as a teacher of fine geometry at the Riga City Real School [19]. In 1881, the engineer joined the *Tukums* railway. In 1885, F. A. Nauck became Technical Director of the Riga Horse Railway Society and held the position until 1889.

Figure 12. Signature of F. A. Nauck (1880), starting his job as an assistant at Riga Polytechnicum.

Figure 13. Riga Horse Railway Society personnel record sheet for employee F. A. Nauck (1880s).

Engineer F. A. Nauck was a member of the Riga Craft Society (founded in 1865) – he joined the Society's Training Committee and was also its Chairman. F. A. Nauck was also a member of the First Riga Cycling Society (founded in 1886) [20] and the Riga Technical Society (founded in 1858).
Riga engineer and businessman F. A. Nauck was interested in the latest discoveries in the world and shared his knowledge at societies’ meetings. F. A. Nauck’ versatility is evidenced by the reports prepared by him on various topics, summaries of which could be read in local newspapers.

For example, at the evening of discussions at the Riga Craft Society in November 1879, engineer F. A. Nauck presented a report on an electric train and its equipment, which was exhibited at an industrial exhibition in Berlin. The engineer enriched the report with his drawings. The rapporteur visited the exhibition in 1879, and at the time, it was a sensation that was talked about all over the world. At the exhibition, German engineer Werner von Siemens (1816–1892) demonstrated the first electric locomotive and electric railway in history. The locomotive was designed by company «Siemens und Halske» [21].

In September 1880, at the evening of discussions of the Riga Craft Society engineer F. A. Nauck answered to questions about the difference between bombs and grenades and told about shrapnel [22].

In January 1888, F. A. Nauck told the Riga Technical Society about his own ticket printing machine, also demonstrating it. In the same year he founded his own Printing House [23].

In November 1893, F. A. Nauck reported to the Riga Technical Society about chenille fabric and its peculiarities [24].

In October 1894, regarding his professional activity of installing a steam boiler that operated a mill to produce flour, F. A. Nauck gave a presentation on flour production at a meeting of the Riga Technical Society [25]. In December 1894, at the evening of the discussions of the Riga Craft Society, which was also attended by women, F. A. Nauck explained how baking powder, which replaces yeast, is made [26]. At that time, there were only men in the societies, but as a result of emancipation, women were also invited to certain society’s events.

In 1895, the engineer read several reports on modern printing equipment and its improvements [27]. At the October 1895 meeting of the Riga Technical Society, engineer F. A. Nauck reported on innovations in printing industry (citing «Koenig» high-speed printing and cylindrical printing equipment as an example) [28]. Taking into account the interest of the listeners, the cycle of lectures continued until November. At the meeting of the Riga Technical Society in November of the same year, the engineer spoke about the census data processing machine [29]. He was one of the first engineers to talk about mechanized censuses in present-day Latvia, which began a few years later, in 1897. In his article, mechanical engineer F. A. Nauck described in detail the census machine, the forerunner of a mechanized computer, invented and patented by the American engineer Hermann Hollerith (1860–1929) in order to compile
data from the 1880 US census. In 1924, H. Hollerith’ company became IBM (International Business Machines Corporation).

Figure 14. H. Hollerith’s census machine (1890).

In April 1898, F. A. Nauck gave a presentation on the use of acetylene gas for lighting devices in the Riga Technical Society [30]. Gas for lighting has been used since the second half of the 19th century.

In November 1898, at the evening of discussions at the Riga Craft Society, F. A. Nauck gave a lecture on the importance of machines in human household [31]. The lecture was repeatedly read with demonstrations at the evening of December 1904 discussions of the Riga Craft Society. The event was attended by ladies, together with their spouses, who could not only watch the demonstrations, but also try out the new equipment and ask the spouses to order the equipment of their choice as a Christmas present [32].

In November 1898, at a meeting of the Riga Technical Society, the engineer gave short reports «From Factory Practice» on the importance of practice in factories [33].

In January 1899, an engineer reported to the Riga Technical Society about the loss of power from a steam mill and other equipment due to a damaged transmission. F. A. Nauck emphasized that such a problem has not been studied and that the damage is caused not only by improper maintenance of equipment, but also because of buildings (factories) sinking into the ground [34].

In December 1899, at the evening of discussions at the Riga Technical Society, the engineer reported on the drying equipment. It was a topical issue in damp rooms. Ventilation and solar heat capacity in industrial production was insufficient. At that time, for example, air dryers were used to remove moisture. Moisture removal was also relevant in sugar factories. There were special heated pipes in the lower part of the drying rooms, but ventilation hatches were installed on the roof, through which the moist air was removed from the room. Dry steam heating chambers were also available. Various other methods for removing moisture introduced in industrial production were mentioned in the discussions, such as vacuum devices, which were also used in sugar processing. The
drying process had to be fast and cheap – these were the main principles needed in production [35].

At the November 1903 meeting of the Riga Technical Society, the engineer reported on gas engines, which around 1900 replaced the existing steam engines. Gas engines lasted for a short time and were replaced by diesel engines [36].

In November 1907, F. A. Nauck presented a report «Technique and Comparative Nature Research» at the Riga Technical Society. The engineer told how it is possible to find solutions in strength structures in nature, citing as an example the fact that the thick, large branches of tall tree crown are on the side of the prevailing winds. At the end of the report, the author emphasized that it is necessary to study not only the laws of physics and chemistry, but also to compare them with observations in nature [37].

In March 1908, at the Riga Technical Society, F. A. Nauck presented an extensive report on the history of automobiles over 400 years. Using projector, the engineer exhibited various ancient wood carvings by the famous German painter and graphic artist Albrecht Dürer (1471–1528), as well as engraving «Large Triumphal Carriage» («Der große Triumphwagen») [38]. The engineer explained the evolution of car development and the problems solved by the inventors, such as the uncertainty about stopping the vehicle, how it is possible to drive vehicles in a personalized way (without horses, etc.). Practical studies have provided many answers to previously unclear questions [39].

The engineer did most of his research in order to develop his companies – to establish a printing house, as well as to improve the steam mill equipment for flour production.

The engineer is also well-known for his contributions for religious and cultural purposes. For example, in 1908, F. A. Nauck donated 600 rubles to the Riga Branch of the German Union for the construction of a new school building [40].
The history of modern public transport, as well as control-tickets, is inconceivable without the Printing House founded by Friedrich August Nauck, a graduate of the Department of RP. Engineer F. A. Nauck founded a Printing House in 1888, where he printed tickets for public transport (horse railway, tram, bus, and steamer traffic), various entrance tickets, lottery tickets, etc. [41].

F. A. Nauck invented the printing equipment, which printed the tickets on rolls and numbered them ensuring their control, as well as improved it by increasing the printing speed. He used «Koenig» high-speed printing principles as a basis. Given the cost and capacity of the foreign-made equipment, which was too large for the domestic market, F. A. Nauck manufactured the equipment himself. The first machine was 70 cm high and could produce about 200 tickets per minute [41]. The authors could not find a picture of this device, but the printed tickets had a design that could be used to identify the company.

The Riga engineer improved his printing equipment and gradually expanded his Printing House, he had to look for bigger premises. Rigan F. A. Nauck followed the development of printing technology in the world, including the activities and innovations of the oldest printing and manufacturing company «Koenig & Bauer», founded in 1817. This company operated in St. Petersburg. In the early 1890s, it began manufacturing equipment for making securities.

In 1895, F. A. Nauck mentioned this company in his report at the evening of discussions of the Riga Technical Society, as well as talked about the production and reproduction of photographs [28].

With the development of public transport, control-tickets in numbered rollers also began to be sold for traffic buses, ships, steamboats, saunas, markets, grocery stores, sports associations, and cinemas, thus F. A. Nauck’s Printing House increased its production capacity [42]. It is known that the Printing House also printed lottery tickets.
tickets and entrance tickets to the Riga Zoo. In the 1920s, the workload of the Printing House increased, tickets were ordered from various places in wide Russia – even from the Far East. On all tickets it could be read that they were printed by F. A. Nauck in Riga [43]. In order to find evidence of the Printing House’s activities, the authors have researched various tickets in Latvian museums and private collections, searching for the name of F. A. Nauck’s company on them. During the research, they were found in the Museum of the History of Riga and Navigation, in the archives of the Riga Traffic Museum, Jelgava History and Art Museum of Gedert Elias, RTU History Museum, and private archive of publicist Ilja Dimenšteins. Until now, the ticket manufacturer has not been indicated in the descriptions of museum collection items.

Figure 17. Entrance tickets to the Riga Zoo printed by F. A. Nauck’s Printing House (early 20th century).

Figure 18. Riga street railway ticket printed by F. A. Nauck’s heirs Printing House (1920s).
Figure 19. Tickets for bus route No. 32 printed in F. A. Nauck’s heirs Printing House (1939).

Figure 20. Tickets for tram routes No. 11 and No. 12 printed in F. A. Nauck’s heirs Printing House (1930s).

Figure 21. Ticket for the Rīga–Jelgava car transport printed in F. A. Nauck’s heirs Printing House (1930s).

The exact primary address of F. A. Nauck’s Printing House is not known. In 1892, the engineer worked at 17 Smoļenskas (at present – Puškina) Street, where two hand-held printing machines were located [44]. In 1893, a steam mill was built at 11 Smoļenskas Street to produce flour [45]. In the same year, the engineer moved both the printing house and the steam mill to 124 Lielā Maskavas (at present – Maskavas) Street and ordered an engine for the mill [46]. In 1895, a steam boiler was installed at 124 Lielā Maskavas Street [47]. In May of the same year, a fire broke out in the engineer’s Printing House. The building was burning from noon to seven in the evening, it was
difficult for firefighters to put the fire out – part of the mill, printing house, equipment and facilities, as well as flour and rye burned down. Fortunately, the engineer had insured his property and was soon able to move to new premises [48].

For some time, F. A. Nauck’s Lithography and Printing House was located in villa «Sorgenfrei» (address – Pēterburgas Highway (at present – Brīvības Alley)). In 1899, it was moved to Zasulauks, to factory «Motors» at 2 Šampētera Street [49].

In 1905, the Printing House was moved from the premises of factory «Motors» to 5 Marijas Street [50]. In 1910, it changed its address again, this time to 15 Baldones Street [51], where it operated until 1939.
Table 1

Addresses of F. A. Nauck's place of residence and Printing House in Riga

<table>
<thead>
<tr>
<th>Year</th>
<th>Place of residency</th>
<th>Address of Printing House and workshop of steam mill</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891</td>
<td>20 Baložu Street</td>
<td>Not known</td>
</tr>
<tr>
<td>1892</td>
<td>Not known</td>
<td>17 Smoļenskas Street (there are two hand-held printing machines)</td>
</tr>
<tr>
<td>1893</td>
<td>Not known</td>
<td>11 Smoļenskas Street (steam mills installed), later moved to 124 Lielā Maskavas Street</td>
</tr>
<tr>
<td>1893/1894</td>
<td>Not known</td>
<td>124 Lielā Maskavas Street (steam mills installed)</td>
</tr>
<tr>
<td>1899</td>
<td>Not known</td>
<td>Villa «Sorgenfrei» (later moved to factory «Motors»)</td>
</tr>
<tr>
<td>1900</td>
<td>8 Margaretiš Street</td>
<td>Factory «Motors» Zasulaus, 2 Šampētera Street</td>
</tr>
<tr>
<td>1905</td>
<td>Not known</td>
<td>From 2 Šampētera Street to 5 Marijas Street</td>
</tr>
<tr>
<td>1906</td>
<td>123 Dzirnavu Street</td>
<td>Not known</td>
</tr>
<tr>
<td></td>
<td>Not known</td>
<td>Not known</td>
</tr>
<tr>
<td>1910</td>
<td>20 Margaretiš Street</td>
<td>From 5 Marijas Street to 15 Baldones Street</td>
</tr>
<tr>
<td>1911–1939</td>
<td>15 Baldones Street</td>
<td>15 Baldones Street</td>
</tr>
</tbody>
</table>

After the engineer's death in February 1913, the Printing House continued to operate and was run by his widow E. M. Nauck, son O. P. Nauck and daughter Ch. W. Burchard. The name of the company also changed – «F. Nauk» was renamed «E. un O. Nauk» (presumably E – Emma; O – Otto). This company name existed until 1934.

In 1931, after the death of O. P. Nauck, the Printing House was inherited by his wife I. Nauck and her sons Gert and Jürgen. On 3 December 1934, the widow remarried to Erich Fleischer (1891–?). The family of F. A. Nauck did not want the family business cherished by it for decades to come into the possession of I. Nauck’s second husband. This is evidenced by the request of F. A. Nauck’s widow E. M. Nauck to the Riga City Orphan’s Court to revoke E. Fleischer’s guardianship over their grandchildren Gert and Jürgen [52]. And on 11 December 1935, according to the decision of the judge of the Commercial Register of the Riga Regional Court (register No. 3122), the company was solely managed by E. M. Nauck, therefore the Printing House was renamed «E. Nauk» [53].

Figure 25. Advertisement of Printing House «E. Nauk» in monthly «Audzinātājs» (1935).

Figure 26. Address of Printing House «E. Nauk» in newspaper «Latviete» (1936).

Figure 27. Signature of Emma Maria Nauck (1935).

Figure 28. Advertisement of Ticket Printing House at 15 Baldones Street in newspaper «Sporta Pasaule» (1937).

Apparently, the inheritance litigation continued. For a while, in 1937, the Printing House remained unnamed. In 1936, L. Burchard applied for permission to run the company as a procurator. In 1937, she was given this right, and its name was changed again, this time to «L. Burchards – E. Nauk» [54].
Before the family (E. M. Nauck, I. Fleischer with sons Gert and Jürgen, L. Burchard with her family) left to Germany in 1939, the only trams, buses and steamboats tickets (including entrance and lottery tickets for various events) Printing House in Latvia bought Riga City Traffic Board, which moved the printing house to 171 Brīvibas Street. In the same year, the Board took over the printing house and continued the work started in ticket printing. The municipalities of Jelgava, Liepāja, Daugavpils, Ventspils and other cities also needed various control-tickets in larger quantities, and the administration planned to print these tickets as well. As the number of passengers increased rapidly, more tickets were needed. In 1884, the number of passengers carried by the Riga Street
Railway was 3 million, in 1894 – already 4.3 million passengers. In 1939, the administration sold almost 70 million tickets a year [55].

Table 2

Passengers carried by the Riga Street Railway of the Riga City Traffic Board (1898–1929) [56]

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of carried passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1898</td>
<td>6 572 665</td>
</tr>
<tr>
<td>1899</td>
<td>6 857 845</td>
</tr>
<tr>
<td>1900</td>
<td>6 788 446</td>
</tr>
<tr>
<td>1901</td>
<td>7 514 450</td>
</tr>
<tr>
<td>1902</td>
<td>18 050 865</td>
</tr>
<tr>
<td>1903</td>
<td>19 755 514</td>
</tr>
<tr>
<td>1904</td>
<td>21 721 967</td>
</tr>
<tr>
<td>1905</td>
<td>-</td>
</tr>
<tr>
<td>1906</td>
<td>20 235 297</td>
</tr>
<tr>
<td>1907</td>
<td>27 162 610</td>
</tr>
<tr>
<td>1908</td>
<td>29 404 058</td>
</tr>
<tr>
<td>1909</td>
<td>30 425 954</td>
</tr>
<tr>
<td>1910</td>
<td>34 960 175</td>
</tr>
<tr>
<td>1911</td>
<td>40 700 277</td>
</tr>
<tr>
<td>1912</td>
<td>46 658 784</td>
</tr>
<tr>
<td>1913</td>
<td>52 132 138</td>
</tr>
<tr>
<td>1914</td>
<td>50 794 973</td>
</tr>
<tr>
<td>1915</td>
<td>35 778 410</td>
</tr>
<tr>
<td>1916</td>
<td>18 363 880</td>
</tr>
<tr>
<td>1917</td>
<td>16 525 185</td>
</tr>
<tr>
<td>1918</td>
<td>-</td>
</tr>
<tr>
<td>1919</td>
<td>-</td>
</tr>
<tr>
<td>1920</td>
<td>15 517 859</td>
</tr>
<tr>
<td>1921</td>
<td>18 099 376</td>
</tr>
<tr>
<td>1922</td>
<td>20 878 021</td>
</tr>
<tr>
<td>1923</td>
<td>28 948 368</td>
</tr>
<tr>
<td>1924</td>
<td>34 695 105</td>
</tr>
<tr>
<td>1925</td>
<td>36 761 234</td>
</tr>
<tr>
<td>1926</td>
<td>41 463 640</td>
</tr>
<tr>
<td>1927</td>
<td>45 250 346</td>
</tr>
<tr>
<td>1928</td>
<td>48 219 388</td>
</tr>
<tr>
<td>1929</td>
<td>49 421 386</td>
</tr>
</tbody>
</table>
On 10 November 1939, Riga notary Jānis Krūklands (1878–1941), based on the Law of 4 July 1939, «Par tirdzniecības uzņēmumu pāreju» («On the Transfer of Trading Companies»), announced that Emma Nauck, living at 15 Baldones Street, Riga, had sold the existing printing equipment at 15 Baldones Street, Riga for 28 000 lats [57]:

1) 1 high-speed printing machine «Pautze»;
2) 1 high-speed printing machine, self-constructed, heavier;
3) 1 high-speed printing machine, self-constructed, lighter;
4) 1 rotary machine, self-constructed;
5) 1 rotary cutting machine with a new set of spare knives;
6) 1 block ticket sewing machine;
7) 1 painting apparatus, self-constructed;
8) 1 ticket rewinding machine, self-constructed;
9) 1 check cutting machine;
10) a set of letters, numbers, brass strips and other;
11) spare numerators, spare parts, tools, transmissions and electric motor;
12) approx. 3000 kg of paper;
13) paints, chemicals, alcohol, approx. 2 tons of coke, approx. 6 axles (one axle – 6 x 6 feet with 5 splice long logs) firewood and small inventory [54; p. 41].

All the equipment was taken over by the capital city on 13 November of the same year. On 29 November 1939, the family emigrated to Germany without legally closing the company. By the decision of the judge of the Commercial Register of the Riga Regional Court of 12 December 1939, it was decided to transfer the Control-Ticket Printing House to the capital – Riga City Traffic Board [54; p. 49]. From 28 December of the same year, the Riga City Traffic Board took over the operation of the Printing House. In addition, from now on, public transport tickets were printed at the Capital City Riga Traffic Board Printing House. Officially the «E. Nauk» was deleted from the register of companies on 13 January 1940 [54; p. 57].
Conclusions

The son of the first Director of RP, Friedrich August Nauck, is one of the most prominent representatives of the Nauck family in Riga, who gained recognition first as the Director of the Riga Horse Railway Society, then as the owner of a steam mill and flour producer, and finally with his Printing House and various tickets. The Printing House operated for the longest time, and its products were known not only in Riga. F. A. Nauck got acquainted with the experience of foreign printing houses and invented his own equipment for printing houses, which was cheaper and was able to compete with those produced abroad. The Printing House has existed for more than 50 years, and its activities were closely connected with the development of engineering sciences and industrial design, which spread rapidly in the works of RP graduates from the second half of the 19th century and continued into the 20th century.

The authors of the article have discovered the extensive professional and social activities of engineer F. A. Nauck, described the activities of the Printing House until the beginning of the World War II in 1939, when F. A. Nauck’s widow and family members moved to Germany. The research revealed that F. A. Nauck’s Printing House was the pioneer of control-ticket printing in Riga and provided ticket accounting because they were numbered. The Printing House has been printing various tickets for Riga for 51 years. This is new, more accurate information about the products produced by the Printing House, which has not been identified so far.

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Friedrich August Nauck (1855–1913) – Graduate of Riga Polytechnicum, Initiator of Control-Ticket Printing in Riga


**SOURCES OF ILLUSTRATIONS**

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Figure 2. Nauku ģimenes arhīvs.

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Frīdrihs Augusts Nauks (1855–1913), Rīgas Politehnikuma absolvents, kontrolbiļešu drukas aizsācējs Rīgā


Atslēgas vārdi: Rīgas Politehnikums, kontrolbiļešu druka, Nauku dzimtas tipogrāfija, Frīdrihs Augusts Nauks.