

# THE CONTRIBUTION OF RIGA POLYTECHNICUM / RIGA POLYTECHNIC INSTITUTE GRADUATES (1875–1916) TO MARITIME AFFAIRS IN THE 19TH AND 20TH CENTURIES

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**Summary.** Some engineers who graduated from Riga Polytechnicum (RP) / Riga Polytechnic Institute (RPI) linked their lives with maritime affairs – they built ships, trained future sailors, and managed the work of the Maritime Department. RP/RPI graduates and students have made significant contributions to maritime affairs in Russia, Latvia, Poland, and Germany. A course in shipbuilding was taught at RPI, which was later taken over by the University of Latvia (UL). RP graduate Professor Charles Clark (1867–1942) was one of the best-known and most prolific designers of ships, including the icebreaker «Krišjānis Valdemārs», until World War II; RPI graduate (1914) Admiral Teodors Spāde (1891–1970), Commander of the Latvian Navy (1931–1940), worked in Latvia in the interwar period. «Polytechnicians» headed the Maritime Department (1927–1939; 1942–1944) and worked as teachers in maritime schools, taught maritime-related courses at the University of Latvia, and wrote about maritime issues in the press.

**Keywords:** Graduates of Riga Polytechnicum, graduates of Riga Polytechnic Institute, teachers in maritime schools, directors of the Maritime Department, Krišjānis Valdemārs.

## Introduction

The year 2025 marks the 200th birthday of economist, publicist, politician, and founder of the Ainaži Maritime School, Krišjānis Valdemārs

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(02.12.1825–07.12.1891), which is also included in the UNESCO calendar of anniversaries. At the RTU International Scientific Conference, which takes place in October, celebrating RTU's birthday, traditionally, since 2017, one day is dedicated to the history of RTU, each year highlighting a historically significant event or fact. RTU History Day is traditionally organized by the RTU Research Centre for Engineering History (RCEH). This year, the second part of RTU History Day was dedicated to K. Valdemārs and maritime education in Latvia. In addition, the Latvian Maritime Academy (LMA) has returned to the RTU ecosystem, and the second part of the RTU History Day was organized by the RTU RCEH in cooperation with the RTU LMA and the project «Enkurs 2025», which is implemented by the Latvian Maritime Union with the financial support of the Society Integration Fund [1].

To popularize the profession of seafarers and maritime education, as well as to commemorate the founder of modern maritime education, K. Valdemārs, on his 200th anniversary, in the spring of 2025, the LMA announced an essay and report competition for secondary school, college, and university students, «Let's multiply Valdemārs!». An essay by Kitija Kampaņa, a pupil at RTU Engineering High School, was recognized as one of the best works in the competition. At the beginning of the second part of RTU History Day, those present had the opportunity to familiarize themselves with the essay in a reading by the author. Next, Anita Freiberga, Editor-in-Chief of the Maritime Administration of Latvia magazine «Jūrnieks», gave an interesting report in the form of an interview «21st Century and Krišjānis Valdemārs»; One of the authors of this article – RTU Professor Alīda Zigmunde – spoke about the contribution of RP / RPI graduates to maritime affairs in the 19th and 20th centuries; librarian Brigita Ālere introduced the maritime industry rarities of the RTU Scientific Library, while RTU LMA Director Edijs Štāls shared his thoughts on maritime education in Latvia in the 21st century [2]. At the conclusion of the ninth RTU History Day, a panel discussion, «The Future of Maritime Education in Latvia,» was held, moderated by A. Freiberga. It was attended by RTU Rector Academician Tālis Juhna, Deputy Vice-Rector for Supervision of Independent Institutes and Agencies Ieva Rācenāja, RTU LMA Director Edijs Štāls, student Adams Aleksandrs Soini and industry professionals – Chairman of the Board of the Latvian Maritime Union Roberts Gailītis (LMA graduate, 2008), Vice-President of the Latvian Shipmasters' Association Captain Normunds Vilkaušs (RTU LMA graduate, 1998), and Member of the Board of the Association of Marine Engineers of Latvia, Senior Ship Engineer Uldis Ozols. At the end of the heated discussion, everyone agreed – as long as Latvia is washed by the sea, maritime education must exist in Latvia!



**Figure 1.** From left: Anita Freiberga, Uldis Ozols, Normunds Vilkaušs, Roberts Gailītis. 14.10.2025.

In preparation for the ninth RTU History Day, the RTU RCEH, in collaboration with the RTU LMA, created an express exhibition, which is also dedicated to the 200th anniversary of K. Valdemārs and maritime education in Latvia, and can be viewed at 6B Ķīpsalas Street 6B, 2nd floor, at the entrance to the RTU LMA. The LMA premises also display the painting «Krišjānis Valdemārs» by the artist Andrejs Šulcs (1910–2006) – a gift to the LMA at its fifth graduation in 1998.



**Figure 2.** Painting «Krišjānis Valdemārs». 1998.

LMA began its activities at RTU in 1990 as a faculty and operated as part of the university until 1993, when, by the decision of the Cabinet of Ministers of the Republic of Latvia of 8 January 1993 «Par Latvijas Jūras akadēmijas dibināšanu» (On the Establishment of the Latvian Maritime Academy), it became an independent higher education institution. In turn, on 6 July 2022, the Cabinet of Ministers of the Republic of Latvia issued Order No. 492 «Par Latvijas Jūras akadēmijas reorganizāciju» (On the Reorganization of the Latvian Maritime Academy) [3]; and, since 1 November 2022, the LMA has been included in the RTU ecosystem, becoming the RTU LMA.

The graduates and lecturers of the RP / RPI (since 1990 – RTU) are not direct students of K. Valdemārs, but thanks to the contribution of this great Latvian spirit to the development of maritime education in Latvia, more than one graduate of the university has contributed to the important sector of the national economy – maritime affairs.

## **Graduates and Students – for Shipbuilding**

Graduates of the RP Department of Machine Engineering / RPI Department of Mechanics found jobs in shipbuilding. In 1870, the Riga Shipbuilding and Machine Engineering Factory was founded, which later acquired the name of JSC «Lange & Sohn». Wilhelm Trompeter (1850–?), a graduate (1875) of the Department of Machine Engineering, worked there as a foreman (1877–1879) [4; 64]. One of the most famous graduates (1894) of the RP Department of Machine Engineering, Charles Clark, immediately after receiving his university diploma, began working as a constructor (1894–1906) at JSC «Lange & Sohn». Graduate (1906) Arvīds Zīle (1878–?) furthered his knowledge of shipbuilding at the technical universities of Berlin and Gdańsk. Since 1907, he worked in the Shipbuilding Department of the Kolomna Machine-Building Factory, located in the Moscow Governorate, Russia [4; 425]. It was one of the largest and most famous factories; its products won awards at Russian and world exhibitions. After the establishment of the Republic of Latvia, A. Zīle continued to live and work in Russia.

The life of Edgar Matzkait (1887–?), an RPI student (1904–1905), was connected with shipbuilding. When RPI was closed due to the events of the 1905 revolution, he went to study shipbuilding and engineering at the Gdańsk Technical University, and after graduating (1909), worked for a year in the Warship Building Department of the Stettin Machine Building JSC «Vulcan» (Stettiner Maschinenbau A. G. «Vulcan»), in Germany. Then he returned to Latvia and, in 1918, became the Director of the Riga Bourse Exchange Committee shipyard and machine factory in Bolderāja [5; 73, 98].

Students from other departments also connected their lives with the sea. Jānis Zēbergs (1871–1927), a graduate (1895) of the RP Department of Trade, worked in the shipping companies: in «Brāļi Seeberg»; before World War I, he worked as a Managing Director in the Russian-Baltic Shipping Company; during World War I, he worked in shipping in Russia (Petrograd, Arkhangelsk); was the Minister of Trade and Industry in the Latvian Provisional Government (1919); was co-owner of the shipping company «Helmsing & Grimm» (1923–1927); and held public positions, being the Chairman of the Latvian Shipowners' Union, the Chairman of the Latvian Water Rescue Society, etc. [5; 51].



Figure 3. Jānis Zēbergs. Early 1920s.

### «Polytechnicians» for Maritime Affairs

The Maritime Department was established in 1920 under the auspices of the Ministry of Finance of the Republic of Latvia, with the primary task of promoting the development of maritime shipping and trade. The Department existed until 1944 and was headed by four directors. Two of them were RPI graduates who headed the department for many years (1927–1939, 1942–1944). One of them – Arturs Ozols (1890–1969), a graduate (1914) of the RPI Department of Mechanics – headed the Department for many years (1927–1939). During World War I, A. Ozols served in the Black Sea Fleet. In 1918, he returned to Latvia and, together with his brothers Markuss Ozols (1895–1942; studied at the RPI Department of Engineering), Oskars Ozols (1889–1975; studied engineering at RPI, UL), and Aleksandrs Ozols (1896–1919; studied at the RPI Department of Agriculture), joined the Latvian Army and served in the

Separate Student Company. Artur's brothers were awarded the highest Latvian military award – the Military Order of Lāčplēsis [6]. At the initiative of A. Ozols, the Provisional Government of the Republic of Latvia confiscated the cargo and passenger ship «Saratov», abandoned during World War I. A. Ozols led the ship's takeover and repair in the workshops of the Liepāja naval port. It was the second ship in the Latvian Navy and is remembered in history as the place where the Provisional Government of the Republic of Latvia was located from 16 April to 26 June 1919. Mechanical engineer A. Ozols worked at the Liepāja Naval Port (1919–1920), participated in the construction of the icebreaker «Krišjānis Valdemārs» in Scotland (1924–1925), was an expert at the ship classification society «Lloyds Register of Shipping» in Riga (1928–1940), and worked at the Latvian Yacht Club [7].



**Figure 4.** Arturs Ozols. 1930s.



**Figure 5.** Fridrihs Šifers. 1930s.

During World War II (1942–1944), the Maritime Department was headed by Fridrihs Šifers (1887–1964), a graduate (1914) of the RPI Department of Engineering [8]. Several other RPI graduates have worked in the Department. One of them – Juris Kalējs (1875–1935), a graduate (1906) of the Department of Engineering – was the Vice-Director of the Department (1921–1935). After studying at the university, he was the Head of the Waterway Department in the Vilnius region (1911–1918), in the North-Western Water Transport Administration (1918–1920) [5; 71]. After returning to Latvia in 1920, he began working as the Head of the Hydrotechnical Department of the Waterways Directorate of the Latvian Roads and Construction Board, and a year later, he began working in the Maritime Department [9]. J. Kalējs' colleague was Kārlis Jansons (1876–?), a graduate (1903) of the RPI Department of Engineering, who also worked in the Waterways Directorate – as an engineer (1920–1921), as well as a senior technician of the Maritime Department (1928–1929) [5; 76].

Admiral Teodors Spāde (1891–1970), commander of the Latvian Navy (1931–1940), graduated with honours from the RPI Department of Mechanics (1914). He also graduated from the Naval Praporshchik School in Petrograd (now St. Petersburg) in Russia and the Naval Academy in France. During World War I, he was drafted into military service and served in various places, holding various positions, in the Caspian and Black Sea Fleets. In 1920, T. Spāde returned to Latvia and was one of the co-founders and a Board member of the shipping company «Ausma» and the Latvian Yacht Club (1924)[10].

Michael von Benislawski (1860–1933), who organized Polish shipping after World War I, studied at the RP Department of Trade for a couple of years [5; 41].

## **Graduates of Riga Polytechnicum / Riga Polytechnic Institute – Maritime School Teachers and University Lecturers in Maritime-Related Subjects**

One of the authors of this article, A. Zigmunde, has researched that at least 15 % of graduates (1864–1919) worked as teachers in various educational institutions. Some have only been teaching for a few months, while others have been teaching for their entire lives. Future merchants at RP / RPI were taught a course in maritime law and maritime regulations. Later, at the beginning of the 20th century, they also received instruction in shipbuilding, and the Chair of Shipbuilding operated at the University of Latvia.

The book on the steam valve spool (1906) compiled by Konstantin Vladimirov (Константин Владимиров; 1860–1926), a graduate (1888) of the RP Department of Machine Engineering, an RP / RPI Assistant Professor (1892–1905), a Professor (1896), and a Dean of the Department of Mechanics (1901–1905), was used for teaching at the naval school of Tsarist Russia in Odessa [11].



**Figure 6.** Title page of the book on the steam valve spool compiled by Konstantin Vladimirov. 1906.

K. Vladimirov's colleague, Scott Charles Clark (1867–1942), a graduate (1894) of the RP Department of Machine Engineering, was associated with the pedagogy of the university for 46 years – he began working at RPI in 1896 and continued to work at the University of Latvia until the end of his life in 1942. In 1902, he was elected Professor and served as Dean of the Department of Mechanics (1906–1918). His courses of study were related to maritime affairs, and he introduced the discipline of shipbuilding. At the beginning of the 20th century, RPI planned to introduce a shipbuilding specialization in the Department of Mechanics; however, due to bureaucratic obstacles, the plan was not implemented [12]. C. Clark had designed several sea tugs for various Latvian ports, Riga city short-distance steamers, icebreakers «Pēteris Lielais» and «Krišjānis Valdemārs» [13], and participated in the ordering and construction of the Lake Lubāna hydrofoil ship. The professor developed about 200 different ship designs.

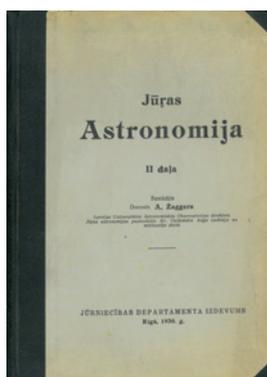
A graduate (1907) of the RPI Department of Commerce, economist Jānis Kārklīņš (1877–1955) led commercial courses in Pskov, Russia (1918), and was a lecturer at the University of Latvia, the University in Riga, and the Baltic University in Germany. He was the Chairman of the Board of the

shipping company «Katvaldis» (1930–1940), studied the development, formation and state of the Latvian shipping industry, its competition in the European market, and published articles. The topic of J. Kārklīņš's doctoral thesis was «Latvian Commercial Shipping Industry» (1936) [14].

A graduate (1913) of the RPI Department of Chemistry, the well-known astronomer Alfrēds Žaggers (1878–1956), worked as a teacher at the Mangaļi Maritime School (1903–1920), was its Director (1914), and during the interwar period taught marine astronomy at the Krišjānis Valdemārs Maritime School in Riga, compiling the textbook «Jūras astronomija» (Marine Astronomy), Part II (1930). He also taught technology at the naval school, setting up a weather station with attached signal clocks and lamps. A. Žaggers was also the Director of the Astronomical Observatory of the University of Latvia (1922–1944) and a lecturer at the University of Latvia [15]. A. Žaggers' colleague at the Mangaļi Maritime School was the teacher of special maritime subjects Ēriks Breikšs (1882–1970), the son of Jānis Breikšs (1850–1915), a long-time teacher and Director of the Mangaļi Maritime School. Ē. Breikšs simultaneously worked and studied at the RPI Department of Mechanics. Combining studies with work, Ē. Breikšs could not regularly attend drawing classes intended for engineering students, so he chose to continue his studies at the Department of Commerce, which he successfully graduated from (1916). During the interwar period, Ē. Breikšs taught maritime and trade subjects at the K. Valdemārs Maritime School [16].

Gustav Bientz (1883–after 1940), a graduate (1906) of the RPI Department of Commerce, worked briefly as a teacher of commercial studies at the Riga Bourse Exchange Committee Maritime School (1906/1907) [17].

At the beginning of the 20th century, Felix Martens (1879–?), an RPI graduate (1904), and Hans Haensel (1881–?), RPI graduate (1905), also worked as teachers at the Riga Bourse Exchange Committee Maritime School.



**Figure 7.** Title page of the book «Jūras astronomija», Part II, compiled by Alfrēds Žaggers. 1930.

## Conclusions

RP / RPI has trained the first engineers in various sectors of the national economy, including shipbuilding and engineering. Graduates have worked in Tsarist Russia, Germany, and Latvia. The name of K. Valdemārs was also familiar to students and lecturers, whose articles were read and discussed, and whose contemporaries were students. The father of Honests Kuzņecovs (1884–1936), a student of the Department of Mechanics, was the lawyer and publicist Jūlijs Kalējs-Kuzņecovs (1843–1905), an associate of K. Valdemārs [19]. H. Kuzņecovs studied at RPI for only one semester, because after his father's death, finances dwindled, and the RPI was temporarily closed, but the story of K. Valdemārs and his contribution to maritime affairs lived on in the family.

The connection between RP / RPI graduates and the maritime industry remains largely unexplored; the future may lie in studying their biographies in archives and libraries. The history of the university also enriches the history of Latvian maritime affairs, constantly supplementing it – the activities of RTU LMA are part of this history.

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## SOURCES OF ILLUSTRATIONS

**Figure 1.** RTU IVPC.

**Figure 2.** RTU LJA.

**Figure 3.** LNA LVVA 3234. f., 32. apr., 74020. l., 3. lp.

**Figure 4.** LNA LVVA 2996. f., 14. apr., 8896. l., 1. lp.

**Figure 5.** LNA LVVA 2996. f., 17. apr., 14026. l., 1. lp.

**Figure 6.** 1906. RTU IVPC.

**Figure 7.** LNB.



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The Contribution of Riga Polytechnicum / Riga Polytechnic Institute Graduates (1875–1916) to Maritime Affairs in the 19th and 20th Centuries

### **Rīgas Politehnikuma / Rīgas Politehniskā institūta absolventu (1875–1916) devums jūrniecībai 19. un 20. gadsimtā**

Daļa Rīgas Politehnikuma (RP) / Rīgas Politehniskā institūta (RPI) izglītību ieguvušo inženieru saistīja savu dzīvi ar jūrniecību – būvēja kuģus, skoloja nākamos jūrniekus, vadīja Jūrniecības departamenta darbu. RP / RPI absolventi un studenti devuši ieguldījumu jūrniecībai cariskajā Krievijā, Latvijā, Polijā, Vācijā. RPI tika lasīts kurss kuģu būvē, kas vēlāk tika pārņemts arī Latvijas Universitātē (LU). RP absolvents profesors Čarlzs Klarks (*Charles Clark*; 1867–1942) līdz Otrajam pasaules karam bija viens no pazīstamākajiem un ražīgākajiem kuģu, tostarp ledlauža «Krišjānis Valdemārs» projektētājiem; RPI absolvents (1914) admirālis, Latvijas Jūras kara flotes komandieris (1931–1940) Teodors Spāde (1891–1970) darbojās Latvijā starpkaru periodā. «Politehniķi» vadījuši Jūrniecības departamentu (1927–1939; 1942–1944) un strādājuši par skolotājiem jūrskolās, docējuši ar jūrniecību saistītus kursus LU, rakstījuši par jūrniecības jautājumiem presē.

**Atslēgvārdi:** Rīgas Politehnikuma absolventi, Rīgas Politehniskā institūta absolventi, jūrskolu skolotāji, Jūrniecības departamenta direktori, Krišjānis Valdemārs.