

FRANTIŠEK ČUŘÍK (†JUNE 7, 1944) THE FIRST PROFESSOR OF MATHEMATICS AND DESCRIPTIVE GEOMETRY AT MINING UNIVERSITY (VŠB)

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Abstract: In this paper we commemorate the life story of František Čuřík (born on June 23, 1876), from 1919 to 1939 professor of mathematics and descriptive geometry at the Mining University (VŠB) in Příbram, the first one holding the chair. He was originally a mechanical engineer and held a doctorate in probability theory. He was an ardent teacher, skilful organizer, philanthropist and active textbook writer. He took his own life during the time of Nazi rule over the destroyed Czechoslovakia, exactly 70 years ago.

Introduction

The Mining University had its seat in Příbram, a mid-sized county centre lying 50km south-west from Prague, until 1945, and it was then moved to Ostrava, which is, even if a rather large city, 350km from Prague by train. Hence, it has always had a seat in a periphery. Moreover, mathematics was just one of the subjects forming general background, not a subject of study in itself. Thus, there was just one professor with two assistants at the department. These are the main reasons why its history has not been in the focus of historians of mathematics. In any case, there is no literature on the subject written in English.

As this paper is based on our previous papers published in Czech and German, see [2]–[4], we have chosen to reduce citations to the minimum and refer the interested reader to [4], where all sources are properly cited.

Studies and beginning of career

František Čuřík was born in Smíchov, today a part of Prague. His father Josef Čuřík was an official at district authorities (*C. k. okresní hejtmanství*). Sadly, his parents died untimely and František grew up supported by his uncle Karel Havránek, a pastor in the nearby Slivenec, who gave him the opportunity to study at *Realgymnasium* in Příbram. Having graduated from it in 1895, František studied mechanical engineering at Czech Technical University in Prague (*C. k. Česká vysoká škola technická v Praze*). His interest for mathematics and descriptive

geometry had risen noticeably there, mainly under the influence of Augustin Pánek (1843–1908) and Eduard Weyr (1852–1903).

During his studies, František fulfilled his obligatory military service (as a machine operator by the navy in the Austria's main naval base in Pula), then he worked as a volunteer and later technical officer in a company owned by one of the most successful Czech industrialists Emil Kolben. Finally, he chose a scientific occupation, though, and became assistant of Professor Augustin Pánek at his alma mater. From 1907/8 he substituted Augustin Pánek in his lectures in calculus.

Having graduated in mechanical engineering in 1904, František studied further, namely mathematics and descriptive geometry at the Charles-Ferdinand University in Prague and passed examinations allowing him to teach at secondary schools. At Czech Technical University, he defended doctoral thesis on Bernoulli theorem in probability theory and got the degree *doctor rerum technicarum* (a Ph.D. equivalent) in 1910. At the same time, he got a tenured professorship in mathematics and geometry at a public secondary technical school in Prague (*C. k. Státní průmyslová škola v Praze*).

However, František held on the lectures in mathematics at Czech Technical University up to 1919, he wrote in the meantime his first two papers for the local mathematical journal *Časopis pro pěstování matematiky a fyziky* and published first volume of textbook on calculus under the title *Základy vyšší matematiky*. However, he did not try to get *venia legendi*.

Professor at Mining University (VŠB)

After the birth of the first Czechoslovak Republic, VŠB quickly adapted to the new conditions. In 1919/1920, a thorough reorganization of VŠB took place. Six new chairs were established, the free chair in mathematics a descriptive geometry was created by splitting the former chair for mathematics and physics, while its professor Josef Theurer, being a physicist himself, held on the chair for physics.

On September 24, 1919, order of the candidates was decided at the faculty meeting of VŠB. Applications to be considered came from dr. František Čuřík (*1876), dr. Václav Hruška (*1888) and dr. František Nachtikal (*1874). From the today's point of view, Čuřík's chances did not look very promising, both Hruška, later Professor of applied mathematics at Czech Technical University in Prague and Nachtikal, later Professor of physics at technical universities in Brno and Prague, are more eminent names. However, Nachtikal's serious disadvantage was his lack of experience in descriptive geometry, and Hruška, even if scientifically better, was in opinion of the committee, too young for the chair.

Finally, apart from his scientific qualification, Čuřík's great teaching experience was stated as the main reason for choosing him. We note that Čuřík, as a graduate from Příbram Realgymnasium, like some members of the faculty, also knew the local situation well, which could have played some role in the decision process.

On January 25, 1920, František Čuřík was appointed Extraordinary Professor for Mathematics and Descriptive Geometry. On July 18, 1921, he was promoted to Ordinary Professor. He quickly joined the academic life of the University, he worked for many academic associations, he served as the (vice-)chairman of the committee for the first state exams, etc. In 1924/25 he was first elected rector of the University. In this office, he successfully organised celebrations of the 75th anniversary of VŠB. At the event, honorary doctorate was awarded to Tomáš Garrigue Masaryk, first President of Czechoslovakia.

Čuřík tried hard, for the whole four terms of his rector office, to enforce the long-lasting claims of the professorial board of VŠB, namely moving the school to Prague and building a

modern campus in Prague-Dejvice. This ambitious project did not come to being, first mainly due to political obstacles, later also due to economic crisis.



Picture 1. František Čuřík (1876–1944). Příbram, 1920s.

Textbooks on “technical mathematics”

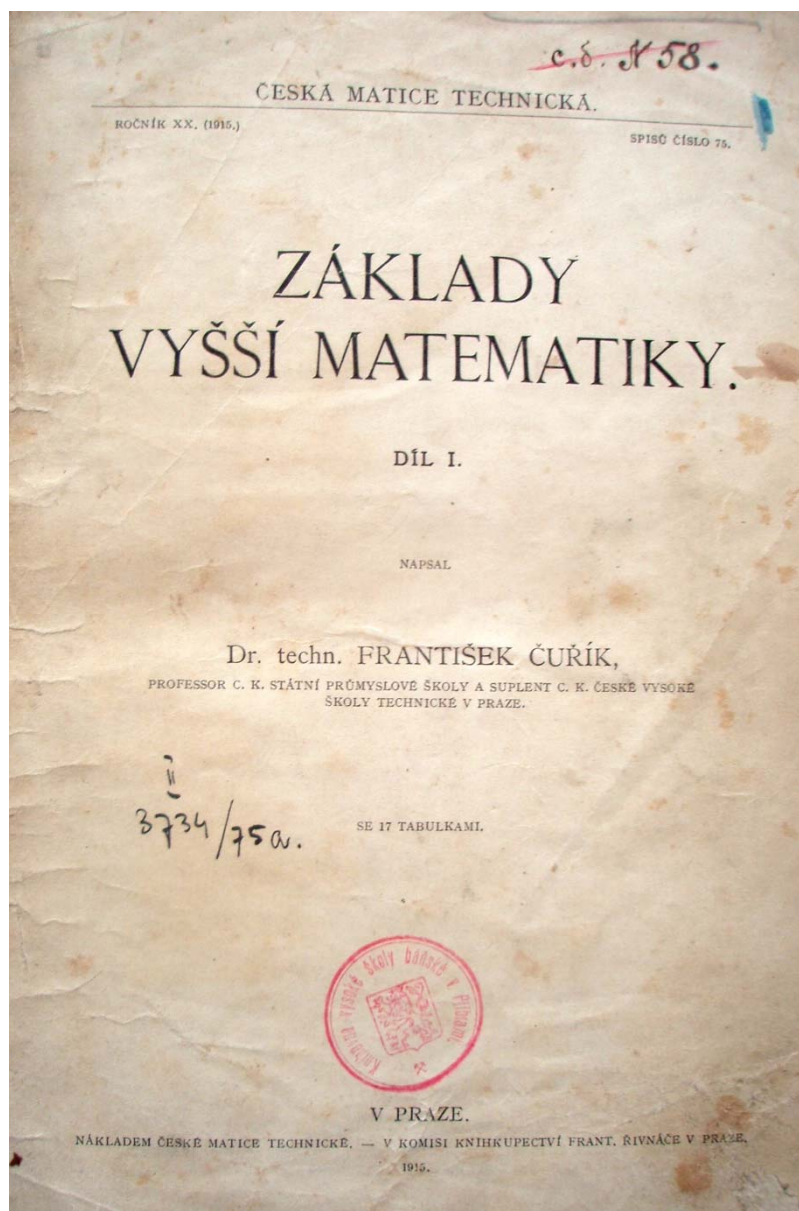
By the notion of technical mathematics I understand calculus for engineers, as well as Čuřík and contemporary engineers as Vladimír List did, see [5]. Thus, it denoted textbooks on calculus written with respect to the needs of engineering practice. The book *Základy vyšší matematiky* by Čuřík [1] was the first textbook on higher mathematics (= calculus) written from this point of view. Nevertheless, it was heavily criticized by some pure mathematicians, mainly Matyáš Lerch, professor of mathematics at (Czech) Technical University in Brno.

Lerch criticized mainly, apart from a couple of evident mistakes, “loose style” of the book that led to imprecise formulations. The book indeed relaxed the over formalized style typical for the contemporary pure mathematics, definitely the positive for an engineering student, but on the other hand sometimes his unfortunate phrasings could have been easily misinterpreted. He gave, e.g., function

$$f: y = \begin{cases} x \cdot \sin \frac{1}{x} & \text{for } x \neq 0, \\ 0 & \text{for } x = 0, \end{cases}$$

as an example of continuous function without derivative at $x = 0$, cf. [4], p. 190. Comparison of the treatment in the first and the second edition (see page 55 of the first edition,

respectively on page 37 of the second edition of [1]) shows that Čuřík took the objections seriously, revised the textbook thoroughly and corrected most of the inaccuracies. Still, I rate the book to be very demanding. Nevertheless, it was profusely used by the whole generation of engineers.



Picture 2. Well-worn title page of the first edition of the textbook on *Foundations of higher mathematics* by František Čuřík (Courtesy of the library of VŠB).

In 1918 Čuřík finished second volume of *Základy vyšší matematiky*, devoted mainly to integral calculus, in 1921 contributed into engineer's guidebook series *Technický průvodce* with the mathematical formula tables (appeared as volume 1), in 1922 published his lectures on the method of least squares, *Počet vyrovnávací* (as a regular textbook, it only appeared in 1936). Later in the 1920s and 1930s, he revised thoroughly all the textbooks. At the end of the 1930s he published mathematical and statical tables (volume 19 of *Technický průvodce*) and he did not break up the work even during the German occupation, cf. below.

Life of a mathematician under German occupation

After the occupation of Czech lands by Nazi troops, an illusion of a normal situation was maintained initially. However, after heavy demonstrations in Prague on the occasion of 21st anniversary of the birth of Czechoslovak Republic on October 28, 1939, the route of oppression was taken. All Czech universities were closed on November 17, 1939 and about a thousand of students were arrested and sent to the Nazi concentration camp for political prisoners located in Sachsenhausen-Oranienburg. Full professors were sent on forced leave, and also their retirement age was gradually decreased. The other teaching staff (extraordinary professors, associate and honorary professors, assistants) had to take jobs at secondary schools or in the industry.

František Čuřík was sent on the forced leave at the end of 1939. He devoted himself, with the help of the professors František Klokner (1872–1960) and Zdeněk Bažant (1879–1954) from Czech Technical University in Prague, to revising his last books from the series *Technický průvodce*. However, he worked in isolation, which meant that he could not even use the library of the institute, because it was locked in the building of the closed Mining University. In this situation, as a member of *Sokol*, with friends and colleagues being arrested, it was definitely not easy to find peace of mind for scientific work.

In October 1940 František Čuřík was sent to permanent retirement. He died tragically on June 7, 1944. Reasons for his suicide remain unclear. From the last period of his life, we do not have any primary sources. Hence, we have to rely on indirect sources and their combination.

Some of his colleagues from VŠB promoted the story that František Čuřík was forced by the Nazis to collaborate in their company Waffen-Union research institute in Příbram (contemporary German name of the town was *Pibrans*) on the ballistic computations of missiles V-2. He resolutely refused it as treason and, because he could not see any other way out of this situation, he took his own life, cf. [7].

However, the story is probably only partially based on the truth. The holding company Waffen-Union Skoda-Brünn worked in weapon industry within the concern Reichswerke Hermann Göring. The top management was exclusively German, but research divisions were under Czech governance, mathematical research division was led by Miloslav Hampl (1897–1974) and physics division by Professor Václav Dolejšek (1895–1945), who handed his responsibilities to dr. Miloslav Tayerle during 1940. Tayerle should have set up the research institute of Waffen-Union in Příbram. He brought his collaborators from Skoda, hired some researchers from *Zbrojovka Brno* (Brünn) and counted also with some professors from the closed VŠB in Příbram. Their names are listed in the report about the visit of the Mining University from October 9 1943: Jirkovský, Šebesta, Čechura, Glazunov and Mitinský. František Čuřík, then already pensioned for three years, was not considered. However, in this period, there was also no rocket research.

The situation changed rapidly in August 1944, when SS-Hauptsturmführer Rolf Engel, head of the *Versuchsanstalt für Strahltriebwerke* in Grossendorf, evacuated his institute from West Prussia to the Protectorate of Bohemia and Moravia and overtook the governance of the research facilities in Příbram. He had already worked intensively in the rocket research for SS and he strictly opposed the German army project of V-2, cf. [6]. When Engel came to Příbram, Čuřík was already dead. But even if Engel had looked for collaborators in the spring 1944, he would not have chosen Čuřík. Ballistics was a key discipline, controlled entirely by the Germans, and Engel had his own mathematicians with expertise in ballistics, namely dr. Uwe Tim Bödewadt (1911–2003), dr. Franz Kalscheuer (1913–2002), Niels W. Larsson or H. Teichmann, see [3].

The role of some professors of VŠB in constructing the story on Čuřík's suicide is not clear either. Did they want to pay tribute to their former colleague? Or did they need a story excusing their own collaboration? Probably both motivations together formed the story. Čuřík was a respected long-time member of the faculty, appreciated for his pedagogical and moral qualities. On the other hand, they knew that certain people did not endorse their decision about collaboration in Waffen-Union. Moreover, some of them stood trial after the war, namely in front of retribution court in Příbram. Hence, we do not know what happened; we know only what did not happen.

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