

1.01 Izvirni znanstveni članek

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Jekleni zvonovi jeseniške železarne Kranjske industrijske družbe

IZVLEČEK

Članek prinaša prvi sistematični pregled nastajanja jeklenih zvonov Kranjske industrijske družbe (KID) v domači znanstveni in strokovni literaturi. Najprej predstavi vojni okvir odvzema bronastih zvonov, ki je botroval načrtovanju in tehnološkemu razvoju jeklenih zvonov, ki jih je v letih 1916–1929 ulivala jeseniška železarna KID. Prototipni jekleni zvonovi so zaradi slabih glasovnih lastnosti načrtovalce pabnili v težave. Iznajdljivi livarski mojster Franc Torkar in vodja livarne ing. Karl Bachmann sta se poleti 1918 morala zateči k privzetju uveljavljenega načrta za jeklene zvonove, ki jih je že dalj časa ulivala bochumska jeklo-livarna. Na njegovi podlagi so do konca leta 1922 izpopolnjevali načrte za jeklene zvonove KID, ki so jih ulili okoli 2200.

KLJUČNE BESEDE

jekleni zvonovi, Kranjska industrijska družba, Železarna Jesenice, Franc Torkar

ABSTRACT

CAST STEEL BELLS OF THE JESENICE IRONWORKS OF THE CARNIOLAN INDUSTRIAL COMPANY

The paper provides the first systematic overview of cast steel bell production by the Carniolan Industrial Company in Slovenian scientific and technical literature. It starts by describing the wartime context of copper bell requisitions, which led to the first designs and technological advancements in the production of cast steel bells at the Jesenice Ironworks of the Carniolan Industrial Company during 1916–1929. Baffled by the poor sound quality of steel bell prototypes, the shrewd master founder Franc Torkar and the head of the foundry, engineer Karl Bachmann, saw no other alternative in the summer of 1918 but to adopt the well-established design for steel bells that had been manufactured for some time by the steel foundry of Bochum. Based on said model, they continued to improve the Carniolan Industrial Company's steel bellfounding designs until the end of 1922, producing about 2200 cast steel bells.

KEY WORDS

cast steel bells, Carniolan Industrial Company, Jesenice Ironworks, Franc Torkar

ČASOPISI

Domoljub, 1918.
Slovenec, 1918.

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SUMMARY

Cast steel bells of the Jesenice Ironworks of the Carniolan Industrial Company

This year marks the 100th anniversary of the first requisition of copper bells during the First World War, which led the Jesenice Ironworks of the Carniolan Industrial Company to launch the production of cast steel bells. Eight times cheaper than their copper counterparts, steel bells became a highly sought-after commodity among churches after the war. Master founder Franc Torkar and the ironworks' leadership saw a huge business opportunity and set to work. It took them less than a year to "solve" numerous problems that arose in developing and designing cast steel bells, into which the Carniolan Industrial Company incorporated all its technical, technological and musical knowledge. After nine months of elbow grease and upon realisation that cast bell production required substantial experience and tradition, they ultimately abandoned their own development of cast steel bells and adopted the well-established design of the Bochum steel foundry, which they modified several times for their own purposes.

The first cast steel bell in Jesenice was experimentally produced on 6 June 1916, almost concurrently with the first wave of requisitions, and probably according to the designer's plan, which displayed a markedly insufficient knowledge of bellfounding. The oldest known design for Jesenice's steel-bell Prototype I was drawn up on 9 October 1917 by Torkar's assistant Schwartz. Torkar and Schwarz designed steel-bell Prototype II on 2 October 1917, probably on the basis of an obtained sketch that has been lost. Due to the poor sound quality of the Prototype II series, Torkar and his associates decided in early December 1917 to design steel bells on the basis of the copper bell cross-section. Ultimately, they hit a dead end working on the design for Prototype III. At the end of February 1918 disproportionately large diameters, thicknesses and weights as well as excessively

intense strike tones of Prototype III led Torkar to undertake parallel designs of cast steel bells in thin cross-sections. The development of Prototype IV must have proved a daunting task. After unsuccessful attempts to come up with a satisfactory result, Torkar and his associates had no other option but to resort to a well-tested method of steel bellfounding. The ultimate solution for the Carniolan Industrial Company came in June 1918, with the acquisition of the design devised by the steel foundry Bochumer Verein für Gußstahlfabrikation, which the Jesenice Ironworks partially modified and improved. The second modification of the design for the bell with the strike tone a¹ was made on 21 January 1919. The bell was renamed “Modell neu”. The technical develop-

ment of Jesenice’s cast steel bells came to a completion on 9 December 1922, with engineer Bachmann’s third design for a new bell with the strike tone a¹ weighing 480 kg.

The poor sound quality of steel bells, coupled with the risk of corrosion, left authorities on bells, in particular Dr. Franc Kimovec, with major doubts over their cost-effectiveness. Nonetheless, people and many parish priests embraced them as a satisfactory solution, given that the financial situation at the time did not leave much leeway for the purchase of new copper bells. The Jesenice Ironworks engaged in bellfounding in the period 1916–1929 [1930], during which it produced about 2200 cast steel bells.