

PZO: BINOCULARS MADE IN POLAND

November 2020
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INTRODUCTION.

This historical overview of the binocular production in Poland is primarily based on a beautiful review paper by Anna Vacani from June 2010.

-a- The first optical company in Poland dates from 1816, but the first binocular production on Polish soil took place around 1898 in a factory established by Aleksander Ginsberg in Warsaw. In that period in time it was the most dynamic developing optical factory in Warsaw and the main optical factory in the Russian empire. At that time Poland was not a sovereign country, but that picture changed in 1918 when Poland became an independent country. That gave in 1921 Leon Macki, Henryk Kolberg and Kazimierz Karil Mieszcandki the opportunity to establish a new optical factory. Already a year later, in 1922 the first contract was signed for the production of 1000 military binoculars for the Ministry of Defense – Department 111 of Artillery and Armament. The contract required a larger place to produce the greatly increased quantity of instruments and, therefore the company bought in Warsaw a factory building at 35 Grochowska street where the company was situated until 2-11-1995.

The factory produced cameras, objectives, precise and optical instruments for the military, prismatic binoculars and many other instruments, like microscopes, refractometers etc.

-b- The beginning of the binoculars production was based on Russian technical documentation that probably came from M.E.K. Hercyk-Palubinski, a former manager of an optical department in St. Petersburg, where this binocular model had been produced since 1907. The chosen model was a similar type of design as Zeiss Silvamir binoculars. It led to the production of the so-called Kolberg 6x30 binocular, that is considered as being of excellent quality. At that time not many 6x30 models were produced in Europe, whereas the model was perfect for military purposes. Optically the H. Kolberg 6x30 binocular was one of the best built binoculars at that period in time. FOV was 150 m at 1000 m. All the optical parts were produced out of French glass from the Parra Montois Company or the German Schott company. Binocular production started in 1924. In 1924-1927 the binocular production amounted to 500 per month.

The production with the logo H. Kolberg was carried out until May 27, 1931 when the factory changed its name into PZO (Polskie Zaklady Optyczne=Polish Optical Factory). In 1936 PZO produced the following binoculars: 6x30, 8x30 and 8x40. The PZO factory produced all its optical equipment up to September 5, 1939. On September 6, 1939 the factory was evacuated to Lvov. When in 1931 Henryk Kolberg sold his shares in the Kolberg joint stock company he then opened a new company H. Kolberg limited liability company and became a competitor for PZO. The factory produced 6x30 binoculars that were identical to PZO 6x30's.

-c- In Warsaw all machines were left undamaged upon the German invasion by German and Russian armies in 1939. All evacuated workers came back to Warsaw and they worked in the factory during the whole war. From October 1939 the name of the factory was changed by the German authority into 'Optische Präzisions-Werke GmbH' (OPW). The name OPW was changed in May 1941 until the end of WW-2 to the company code 'eug' (during WW-2 all German factories received a three letter code so they could not directly be identified. The German code book has the size of a thick telephone guide). The 'eug' factory was managed as a Carl Zeiss Jena affiliate. In August 1944 the factory was evacuated by the Germans. All machines were moved to the Carl Zeiss Jena factory in Czechoslovakia. Next, in September 1944 the Factory Optische Präzisions-Werke GmbH was blown up by the German Army.

-d- After WW-2 the "Temporary Polish Government" on 23 of July 1945 made the decision that the PZO had to be rebuilt, and had to continue production at the same address 35, Grochowska Street, as a part of the arms industry under PZO name. The binoculars investigated in this paper are all post WW- productions. They are all with individual focus: (1) PZO 6x30, (2) PZO 8X40, (3) PZO 11X40, (4) PZO7X45C (C stands for Civilian, very few civilian versions were made).



Left to right: PZO 6x30, PZO 8x40, PZO 11x40 and PZO 7x45C, all with Porro prisms.

TABLE

| BINOCULAR | PZO 6X30 | PZO 8X40 | PZO 11 X40 | PZO 7X45C |
|----------------------------------|------------------|------------------|-------------------|------------------|
| Weight (g) | 465 g | 652 g | 669 g | 1219 g |
| Objective diameter (mm) | 29,6 mm | 40,0 mm | 40,0 mm | 44,4 mm |
| Exit pupil (mm) | 5,0 mm | 4,85 mm | 3,85 mm | 6 mm |
| Magnification | 5,9x | 8,4x | 10,4x | 7,4x |
| Eyepiece relief | 13 mm | 11 mm | 13 mm | 15 mm |
| Transmission 500 nm 550 nm | 44% 50% | 63,5% 69,6% | 66,2% 74,3% | 63,5% 70,9% |
| Focus mechanism | Individual focus | Individual focus | Individual focus | Individual focus |
| Field of View | 150m/1000m | 110m/1000m | 110m/1000 m | 123m/1000m |
| Close focus (m) | 3 m | 5 m | 7,65 m | 5 m |
| Interpupillary distance | 39-72 mm | 54-72 mm | 55-72 mm | 49-72 mm |

Acknowledgments. I am grateful to Ing. Dave van den Heuvel for his efforts to realize the transmission spectra.



