

**KARL HARTMANN OPTIK UND FEINMECHANIK
WETZLAR, GERMANY(1921-1992)**

Small company, high quality

A short history

by

Dr. Gijs van Ginkel

The story of Karl Hartmann Optik in Wetzlar starts with the birth of Karl Hartmann I on June 25, 1888 as the son of a widely respected innkeeper in the small village of Steindorf near Wetzlar. Karl Hartmann decided for a career in optics and in 1903 at the age of 15 he started as an optics student to make prisms and lenses in the optical workshop of Moritz Hensoldt in Wetzlar. In that time Moritz Hensoldt and his two sons had already acquired a great international reputation for the quality of their optical instruments and prism designs. Karl Hartmann developed himself at Hensoldt as a specialist in the making of prisms. Around 1906 Hartmann got acquainted with Dr. Ernst Leitz II (1871-1956), who asked him to join the Leitz company in order to start the production of Leitz Porro prism binoculars, which Leitz intended to introduce on the market. Hartmann agreed and he became responsible for the prism production at Leitz, where worked from 1906- 1921. However in 1915, one month after the birth of his daughter, Hartmann had to join the German military because of Germany's involvement in World War 1. Three years later, in 1918, his daughter saw her father for the first time when he returned from the battlefields. Immediately upon his return he started again at the Leitz company, but he wanted to have his own optical workshop. On November 17, 1921 his plan was realised: on that date he started his own optical workshop in an annex to the house of his parents in law in Wetzlar. In the beginning the Hartmann optical workshop produced eyepieces and objective lenses for microscopes made by Steindorf & Co in Berlin, but he also produced theatre binoculars, telescopes, lenses and prisms for the optical companies Füllgrabe (Kassel, Germany), Beck (Kassel, Germany) and Keiner (Wetzlar, Germany).

In 1936 Hartmann introduced his first line of Hartmann Porro prism binoculars. The series consisted of the Hartmann Porlerim models 6x30, 7x50, 8x50 and 10x50. The Porlerims have central focussing and the identical Porlerom binoculars have individual eyepiece focussing. The Hartmann Porlerims/Porleroms became quickly very popular because of their excellent quality at a very reasonable price. Therefore the binocular production had to be increased at the expense of the production of microscope optics. On July 27, 1925 son Karl Hartmann-2 was born. He was only 15 years old when World War 2 started. During WW-2 the Hartmann Optik had to change to the production of airplane parts, the binocular production was stopped. In 1943 Karl Hartmann-2 became a prisoner of war of the English army so he stayed in England until his release in 1948. After WW-2 Karl Hartmann-1 tried to restart his optical workshop, but the Allied Forces did not allow the production of binoculars, therefore he started with the production of spectacle lenses, magnifying glasses and small theatre binoculars (so-called Holland type binoculars), the Hartmann Gilda and the Hartmann Martha which had a leather covering. In 1948 the Allied Forces again allowed the production of binoculars, but it was not allowed to print "Made in Germany" on the instruments, so now the binoculars were engraved with the text: "Hartmann-Wetzlar, made in US-zone".

On March 23, 1948 son Karl Hartmann-2 was released as a prisoner of war and already on March 24 he signed a so-called "Lehr-Vertrag", which meant that he would receive training in the making of optics and fine mechanics. He finished this training successfully in 1956 with a so-called "Meister-Prüfung": from then on has was a qualified optician. That was actually not his dream in life, since he wanted to become a surgeon, but he did the optician training as a token of loyalty to his father.

The optical workshop in the annex to the house of the parents in law of Karl Hartmann-1 became too small for all the work that had to be done, so Karl Hartmann-1 bought an empty ball bearing factory, a wooden structure, at the border of Wetzlar. The Hartmann factory was now located in two buildings which were separated quite a distance from each other. In each settlement different binocular parts were produced. That required a lot of transportation, which ended in 1965 when Karl Hartmann-2 built a new optical workshop next to the already existing mechanical workshop in Wetzlar-Steindorf.

In 1948 Hartmann started again with the production of the Hartmann Porlerim and Porlerom binoculars, but now he extended the series with the 8x30 and 7x35 Porlerim/Porlerom models. Especially the Porlerim 7x35 became very popular because of its high user comfort. As a British prisoner of war of Karl Hartmann-2 had learned to speak English and it also had provided him with sufficient skills for easily making contacts with international parties. That proved to be of advantage for his company business and his access to the international market. In 1954 Karl Hartmann-1 died, so his son Karl Hartmann-2 now got the full responsibility for the company. Supported by his very capable and creative co-worker mr. Günther he also started in 1960 with the production of precision measuring microscopes.

Although the Hartmann Porlerims were still very popular, Karl Hartmann-2 started to develop a series of new types of Hartmann binoculars with fully recalculated optics and multilayers of anti-reflection coatings to improve the light transmission of the binoculars and improving their image brightness. The very beautifully designed new Hartmann Bernina series was introduced in 1961 at the occasion of the 40-th birthday of Hartmann Optik.

As new models were produced the Hartmann Bernina's 7x50, 10x50, 8x60, 10x60, 12x60 and 16x60. Also two monocular Bernina's were made: a 25x80 and a 30x80. However, quickly after the introduction of the Bernina's Hartmann decided to produce also a binocular 25x80 Bernina. That was not an easy task, since it was difficult to perfectly align the two 28 cm long 80 mm objectives tubes and to keep the optical axes perfectly parallel also when the hinge was used to adjust both tubes for the distance between the eyes. By designing an optical bench type construction the Hartmann Bernina 25x80 could be very well aligned.

In a test report published in the Dutch journal "Aarde en Kosmos" shortly after the introduction of the Bernina's, the Hartmann Bernina 8x60 performed better than the contemporary Leitz Trinovids 8x40B and 10x40B and the Zeiss Dialyts 8x56B and 10x40B. Moreover, the price of the Hartmann Bernina was considerably lower than the price of these Leitz and Zeiss binoculars. That made it clear how well informed consumers would decide.

Five years after the introduction of the Bernina's Karl Hartmann-2 introduced again a new line of Hartmann binoculars: the Hartmann Compact series consisting of the models 8x30, 6x30, 7x35, 8x40, 7x42 and 10x40. The performances of the Compacts was also very good as shown in a test report, which was published in the German "Waffenjournal" at the end of the 1960-s by Ing. Günther Frères. In this test a panel compared the performances of different binocular brands and the conclusion was that the Hartmann Bernina 10x60 performed better than 7x50 and 8x56 models of Zeiss and Leitz and the 11x80 Tordalk produced by Hertel und Reuss in Kassel. The 7x42 Hartmann Compact binocular was highly appreciated by the panel because of its clear image quality, large field of view and high level of user comfort.

In 1986 Karl Hartmann stopped the production of the Hartmann Porlerim series. In 1990 Karl Hartmann-3, grandson of the founder of Hartmann Optik in Wetzlar, became in charge of the company. It would not be long, since in 1992 the Hartmann factory closed its doors: after 71 years Hartmann Optik in Wetzlar did not exist anymore. The number of sales had dropped dramatically after 1989 upon the fall of the iron curtain, so the company could not generate enough income to stay alive.

We have investigated the optical quality of a number of Hartmann models compared with some contemporary highly regarded binoculars from Hensoldt, Leica, Nikon, Swarovski and

Zeiss. To do so we compared the measured light transmission curves of these binoculars, see the table below. These curves yield in principle information about the quality of the optical glass used and the quality of the coatings applied. In the majority of the investigated cases the Hartmann binoculars scored better than the binoculars of the other brands and in two or three cases they scored equal to the other brands. That led us to the conclusion that Karl Hartmann Optik in Wetzlar, although it was only a small company with about 15-20 employees, delivered top class binoculars, which could compete very well with top brands on the international market.

Binocular type	Light transmission at 500 nm (night vision)	Light transmission at 550 nm (day light vision)
Hartmann Tourist (=Porlerim) 8x30 (1955)	69%	72%
Hensoldt Diarex 8x30 (1955)	69%	69%
Hartmann Bernina 7x50 (1975)	75%	77%
Beck Luchs 7x50 (1975)	68%	71%
Hartmann Compact 8x30 (1971)	77%	82%
Beck Zenith 8x30 (1970)	65%	66%
Nippon Kogaku Nippon 8x30 (1965)	76%	81%
Zeiss West Porro 8x30 (1965)	56%	60%
Hartmann Compact 7x42 (1975)	74%	80%
Swarovski Habicht SL 7x42 (1975)	67%	71%
Hartmann Compact 10x40 (1970)	68%	70%
Leitz Camparit 10x40 Porro (1960)	69%	71%

References.

The information and documentation for his review was given to the author by Karl Hartmann-3 and his brother Werner Hartmann during a number of company visits by the author. The author is grateful for the pleasant help of the Hartmann family.