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The Zeiss Historica Society of America is an educational, non-profit organization dedicated to the exchange of information on the history of the Carl Zeiss optical company and its affiliates, people and products from 1846 to the present.

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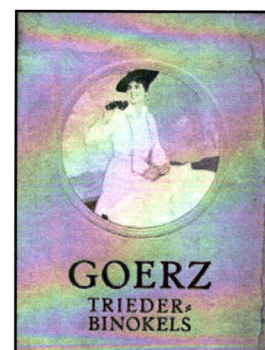
Front cover: Bernd Otto, in his article starting on page 2, explores the history and development of the Zeiss Ikon Contessa, "the elegant camera." This example, serial number B 63496, is one of the last series from about 1954. The 45 mm f/2.8 Tessar has serial number 959406.

(Photo: John T. Scott)



Back cover: This advertisement for Goerz "Trieder" prism binoculars dates from the very early 20th century. The back cover also shows a selection of early "Reklamermarken" or advertising stamps issued by Goerz.

Thomas Mix, in his article starting on page 8, charts the rise and fall of the company. (From the collection of Larry Gubas)



President's Letter

As we come to the end of 2010, I am happy to report that the society is in good financial shape. Our Treasurer and Editor, Terry Scott, has constantly made small changes to our publishing methods that have ended up with significant cost savings to our treasury. Now, the financial health of the organization has been enhanced by a very generous contribution from the estate of our former President, Charlie Barringer. As a result, we will be able to continue to publish our journal for many years to come even as father time ages and reduces our active membership.

You will also find enclosed with this mailing a significant high-quality reproduction of an early Zeiss Ikon catalog to add to your library of our society's publications. It is also reviewed in a text inside this issue. Items of this sort will continue to be possible thanks to our financial health, but these items have come mostly from the personal collection of the officers of the society. We would be happy to consider contributions from the membership both in possible items that you might wish to be published or an offering from a member with something unique to share. Reproduction of such items has become technically safe in the past decade and can be accomplished with little if any damage to an original.

I was able to go to the Labor Day weekend meeting of the Binocular History Society in Vancouver,

Washington and gave my first PowerPoint creation in a talk there. It was a wonderful meeting with plenty of Zeiss Historica representation and the next meeting has already been scheduled to occur next October in Jena under the sponsorship of Zeiss. I hope to participate and I recommend the event, which will be in the cradle of Zeiss history with a wonderful museum and landmarks. I am sure that a tour of the facilities there will be made available. The event will be under the leadership of Jack Kelly and Jürgen Laucher and anyone seeking information should contact me at my email address for a reference for information. My email address remains Lngubas@zeisshistorica.org. Please feel free to contact me at any time about any subject.

Just as this issue is going to press, I have received an advance copy of the new book by Hans Seeger with regard to Zeiss binoculars. There is not time enough to place a review of it in this issue. Suffice it to say that it is a work of immense scholarship by the acknowledged expert in the field of historical binoculars. It is 837 pages in length in a large format weighing nearly 7 pounds and is available only in German. The title is *Zeiss Feldstecher: Modelle – Merkmale – Mythos. Handferngläser von 1894-1919* (Zeiss Fieldglasses: Models, Features, Myths. Hand Binoculars from 1894 to 1919).

The pictures are spectacular and he has discovered so many unique and formerly unknown items that it is clearly a masterpiece. A full review can be expected in the next issue of this journal.

This issue does include a wonderful article by Thomas Mix with regard to the Goerz and Zeiss rivalry and the development of binoculars during the changing art of warfare at the turn of the twentieth century. I was a witness to the presentation of this subject in Vancouver and Tom has graciously agreed to condense his presentation with the help of our editor.

I was asked by Zeiss to contribute to a 120th anniversary remembrance of the creation of Zeiss Photo lenses this year and the results can be found at the Zeiss website at the address at the end of this letter. I also advised the BBC on a special radio program about Zeiss at the point of German reunification. This is also available on the internet as an audio feed.

I must also mention the loss of Fritz Jakobsmeier at age 88. We documented his amazing Zeiss career some years ago. Dr Walter Besenmatter has also passed away. I have been attempting to condense his documentation of the history of Hensoldt, but his work is so large and detailed that it is very difficult to make it fit into our Journal.

Enjoy the issue, we are happy to receive comments.



Links —

120 Years: [http://www.zeiss.com/C12567A8003B8B6F/ContainerTitel/120Years/\\$File/interviews2.html](http://www.zeiss.com/C12567A8003B8B6F/ContainerTitel/120Years/$File/interviews2.html)

BBC: http://www.bbc.co.uk/iplayer/episode/p004v8xg/Discovery_Carl_Zeiss_A_State_Within_a_State/

Contessa — the jewel from Zeiss Ikon

Bernd K. Otto, Frankfurt am Main, Germany

Early in the postwar period the marketing department advertised this new miniature camera as “Your sketchbook” and then as “the thinking camera,” and always referred to it as “the elegant one.”

This interesting miniature camera was presented to the public together with the Contax IIA and the new Ikonflex II at the Cologne professional exhibition, the first Photokina, in March 1950. Its name conjured up various thoughts. On one hand, it reminds one of the “Contessa” works, the new company headquarters of the photo group after its relocation from Dresden to Stuttgart. On the other hand, you could also think of a elegant noble countess when you heard the name Contessa (figure 1). There is no doubt that you can call this delicate construction extremely elegant, be it open or closed.

Two to three years before the end of World War II, Zeiss Ikon had already begun developing a new miniature camera. The well known “roll-film Ikontas,” which had been sold in the 6×9 cm version since the middle of 1929, were soon extended by a 24×36 mm miniature version. The first users’ manuals date from December 1946 and August 1947. We have no exact data relating to the duration of production and the number of cameras produced, but the print codes found on the back of those manuals allow us to estimate that several thousand cameras had been produced by that time. Naturally, these very early “minia-

ture Ikontas” were only produced for the American, British and French occupational forces. The German population could not buy luxury articles such as cameras until after 1948, and then only when they could afford them. Before the currency reform, the real beneficiaries of this newly developed camera, the occu-

This article was first published in the II/2010 issue of *PhotoDeal*, in German. Leo Uebelacker made the English-language translation from which this version was prepared, and it appears here by permission of the author.

pational forces, usually did not even pay with real money but in exchange for necessities that were hard to come by during those hard postwar times.

It is easy to explain why I here make a comparison between the elegant Contessa and the miniature Ikonta (figure 2). They both had a bellows, which was unusual with miniature cameras, and so were somewhat related to the well known roll-film Ikonta family. The bellows and die-cast body of the Contessa were almost completely taken

over from that first postwar camera, the miniature Ikonta.

When you first pick up the compact, 530 gram Contessa camera, you will notice that you have to open it before you can take a photograph (figure 3).. This was rather unusual for a miniature camera and is reminiscent of the Ikonta 24×36 or of the Super Nettel from 1934. However, in the Contessa the hinged cover, which protects the built-in Opton Tessar from dust, was not used as a base-board to guide the extending bellows after the camera was opened. Rather, a set of linked struts automatically pushed the lens into its shooting position after the cover had been opened. To close the camera one pushes together two small grooved plates, actually extensions of the cover door, which then allows the lens to retreat and the door to be closed. A mechanism of this kind had already been used by, among others, the “Sonnet,” a camera produced by the Zeiss Ikon predecessor Nettel Camerawerk around 1909.

For placing the camera on a level surface, a slide built into the back of the body had to be pulled out. If this was not done, the camera was tilted slightly backward.

Film transport and rewinding knobs



Zeiss Ikon marketed the **Contessa** by emphasizing its good looks. The mid-1953 brochure cover above echoes the model name with a picture of a fashionable woman who could indeed be a Countess. The early-1954 brochure on the right refers to the Contessa as “the elegant one.” Figure 1

were on the bottom of the camera, along with the frame counter (figure 4). Film transport and shutter cocking could even be done while the camera was still in its ever-ready case. This was possible because there were two holes in the film-winding knob that engaged with pins in a knob affixed to the case. An accessory shoe could be used to attach such things as the Contameter or the Ikoblitz, and the serial number was engraved in the shoe. For better appearance, the threaded hole in the door for the tripod could be closed with a screw when it was not in use.

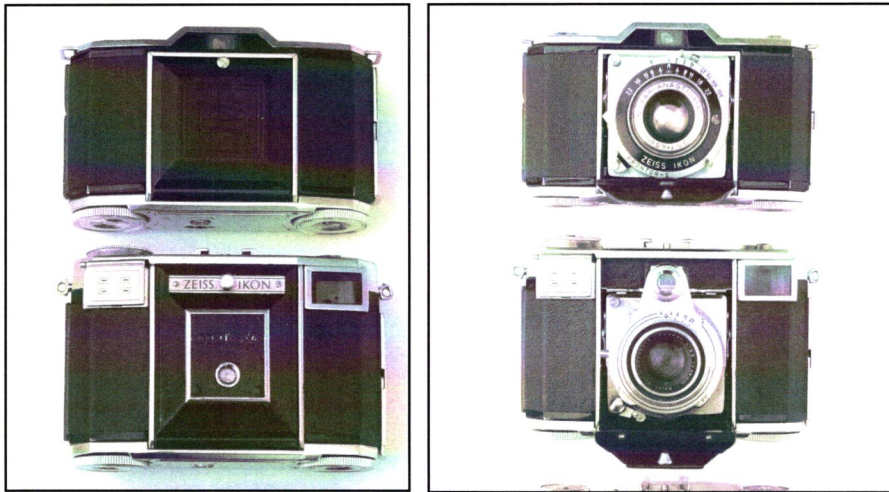
The miniature Ikonta 24×36 had no rangefinder, but the elegant Contessa was generously equipped by Zeiss Ikon with a rangefinder based on the rotating-wedge principle that was familiar from the Super Nettel, the Nettax and the Tenax II. With just a slight turn of the knurled ring around the “eagle’s eye” Tessar, the focusing distance could be adjusted very quickly. In order to move from infinity to 80cm, this lens ring only had to be moved by 90 degrees. The rangefinder image was integrated with that from the viewfinder by means of a glass prism stick (figure 5). One could see the



correctly framed view and adjust the focusing distance at the same time. The bright combined view and rangefinder allowed exact settings even in poor lighting conditions and thus the camera could be used at full lens opening.

Focal length, depth of field

The camera was equipped with an f/2.8 45mm coated Opton Tessar, which guaranteed brilliant pictures. Zeiss Ikon had



The miniature Ikonta 24x36 was Zeiss Ikon's first postwar camera, and the Contessa shares many of its features. The two cameras are shown here both open and closed, with the Ikonta above and the Contessa below in both views. Figure 2



The Contessa seen both open (right) and closed. The lens, shutter, and rangefinder optics are well protected when the camera is closed. Figure 3

It was a true masterpiece by the designers of those days that they were able to make the exposure meter in such a way that only the scale you had to read was visible. The rest of the instrument was safely protected inside the camera body. It was a dual-range meter, and the selenium cell was equipped with a cover to switch from one scale to the other (figure 6). For photography in bright sunlight or a brightly lit snow-covered landscape, light passing through the four small slits in the metal cover was enough to yield a reading on the green-colored part of the inner scale (bearing the f-stop numbers). If you wanted to take a picture in dim lighting, the photographer had to open the cover and take a reading via the black part of the scale. The camera's exposure meter was especially designed for the Contessa, in that the light-acceptance angle and direction of the meter agreed with those of the camera, which was ensured by means of prisms attached in front of the cell (figure 5). The film speeds that could be set ranged 9 to 27 DIN, or from 5 to 320 ASA.

The first ten thousand cameras were produced by Zeiss Ikon from December 1949 to October 1950. They were equipped with the central shutter that was designated for the high-value cameras of those times, the Compur Rapid.

opted for the 45mm focal length and not for the 50mm that was then usual with miniature cameras. This choice resulted in extra depth of field, and the user thus won almost a complete f stop. When focusing on 2 meters, with an aperture of f/2.8 and 45mm focal length, there was a depth of field of between 1.75m and 2.30m. With the same distance and a focal length of 50mm, you would need an aperture of f/4 to get about the same range. For snapshots you could use the well known Zeiss Ikon red-dot setting.

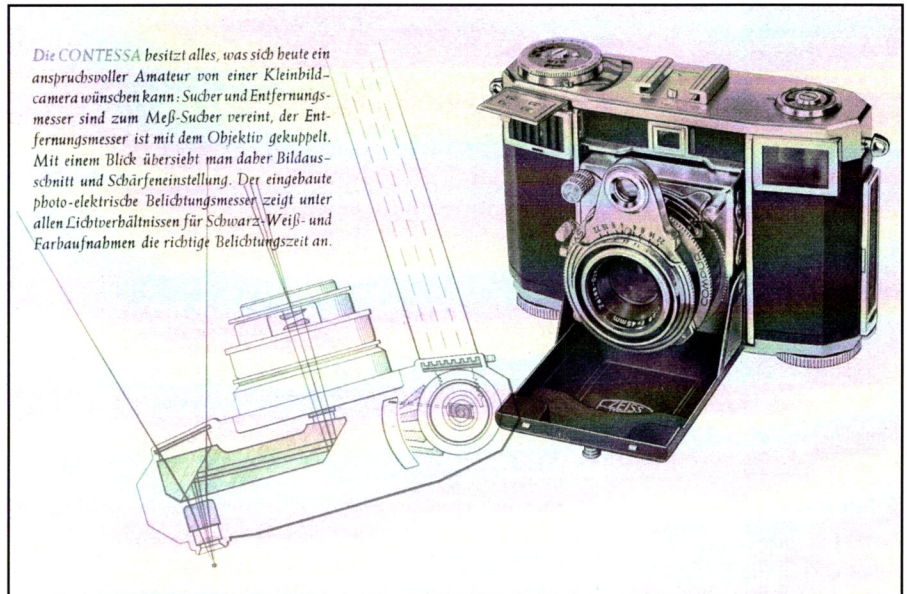
The baseplate of the Contessa reveals the rewinding knob (on the left in this view) and the film-advance knob on the right. The frame-counter dial lies between them. Note the two holes in the film-advance knob, which engage with two pins in a similar knob fixed to the ever-ready case. Figure 4



Shutter speeds went from the long-term setting “B” and then 1s up to 1/500s. The cameras were also equipped with a cable-release connector. This first type of Contessa received the internal code name “533/24 Pcr.” The sales price for the Contessa at the initial presentation at the 1950 Photokina was set at DM 395.-

A rather inelegant solution

In September 1950 Zeiss Ikon started a new production series of the Contessa with another 15,000 units (serial numbers S 1 – 15,000). In the handwritten production book, which is in my possession, those cameras were called 533/24 Pcsr, because a self timer was supposed to be available. In the price lists, however, the “Pcsr” version is not listed. From a technical point of view, adding a Compur Rapid shutter with a self timer into the Contessa would only have been possible with the knob at the tip of the shutter-cocking lever pointing backwards. That is how Zeiss Ikon solved the same problem with the Super Ikontas 532/16 and 533/16, which also have a rotating-wedge rangefinder, positioned in front of the shutter. With the Contessa, a backward-facing knob on the cocking lever would then have brought it underneath the shutter release lever, which would have made it diffi-

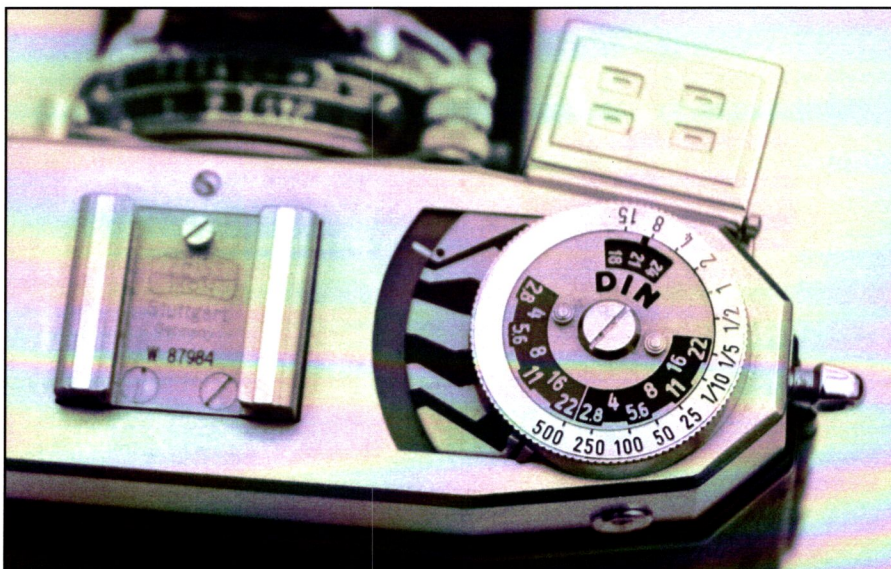


This diagram from a brochure advertising the Contessa 533/24 shows the layout of the rangefinder with its rotating wedge mounted on top of the lens mount and a prism within the camera body to combine its light path with that of the viewfinder. Also shown is the series of prisms placed in front of the light meter to ensure that its acceptance angle matches that of the camera lens. Figure 5

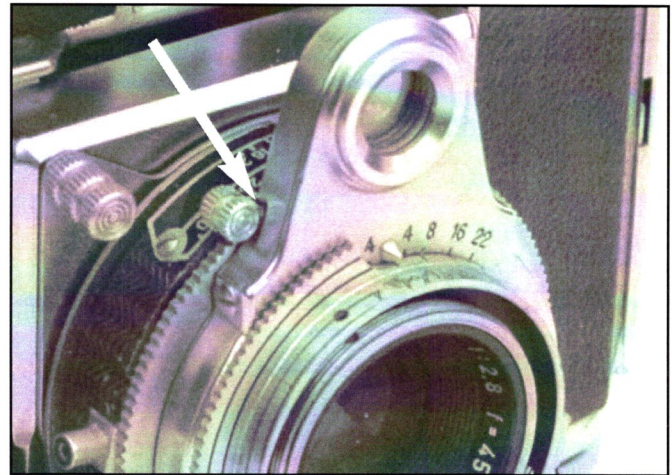
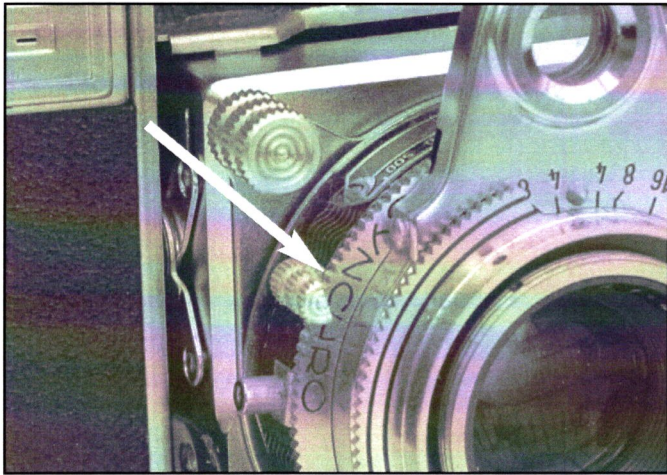
cult — if not impossible — to operate. With the normal Pcr version it was therefore turned towards the front. Even in this arrangement, the housing of the rangefinder’s rotating wedges was a little in the way when the shutter was cocked completely. The small space milled out of that housing, where the

knob would otherwise hit it, suggests that it was a rather tight fit during the assembly of the camera and that every millimeter was needed. There would not have been any room at all for fitting a self timer. On top of that, only the Compur Rapid with size O (1 – 1/400s) had been developed with a self timer. The Compur Rapid version 00 (1 – 1/500s) was delivered without a self timer. Perhaps the entry “Pcsr” in the production book is simply faulty. My Contessa with the serial number S 6900 only has a regular Compur Rapid. Maybe there is a reader of this Journal who owns a Contessa with this self timer and can show us in one of the next issues how the Zeiss Ikon designers managed to solve this problem of integrating all parts of the shutter cocking system.

In April 1951 Zeiss Ikon presented the second (or third, if the Pcsr version ever existed) version of the Contessa. In addition to the old Compur Rapid, the newly developed Synchro Compur central shutter was now offered. For the 533/24 Pcm version, the cable-release connector was moved to a spot 180 degrees from its earlier location. At the old spot, the designers now installed the selection lever for X and M synchro-



The dual-range exposure meter has a hinged cover (shown open in this view) that is closed in bright light, opened in dull conditions. The f-stop numbers in the 7 o'clock to 10 o'clock part of the dial are on a green background and used when the cover is closed; the others are on a black background, for use with an open cover. Figure 6



The shutter-cocking lever shown in the un-cocked position (left) and fully cocked (right). The arrow in the left-hand view shows that the small knob on the end of the lever has had much of its width milled away. When fully cocked, even with this modification the knob can only fit properly against the rangefinder-prism housing when a small slot (arrow) is cut into it. Figure 7

nization. The old time ranges were kept, but the release lever was enlarged and the shutter cocking lever was slightly modified; it had been made longer but also half of its thickness was milled away — all in all a very unsatisfactory solution to the conflict with the rangefinder-prism housing (figure 7). I should also mention here that the shutter could not be released unless a film was inserted and wound forward.

Zeiss Ikon did not remove the Per version from the market right away, but offered it together with the new Pcm

version, which was available as of September 1951 until April 1952. In April 1951 the prices were set at DM 440.- with the Compur Rapid and DM 455.- with the Synchro Compur. I am sure that there was never a “Pcms” version of the Contessa with an integrated self timer. The two existing versions can, by the way, be easily distinguished by different imprints to the leather cover on the back of the camera.

A mysterious luxury version

The last series of Contessas (B 40 001 –

72 000) from September 1953 to June 1955, includes another version. Approximately 100 cameras in the range B 53 400 – 53 500 were made in what appears to be a luxury edition (figure 8). For this purpose Zeiss Ikon changed the usual black leather for gray, and those parts of the body usually enamelled black became gray. In addition, the usual brushed chrome finish of the top and bottom plates was replaced with a high quality “silver finish.” This version cannot be found in any of the price lists and their intended purpose is unknown. Perhaps those luxury Contessas were given to Zeiss Ikon employees for employment anniversaries.

The information for dealers concerning the 1955 camera program reports on the newly restricted program under the topic of “The art of Selling – Sales Practices.” The elegant Contessa had been given up and replaced by the new Continas Ia/IIa, with sheet-metal bodies.

In the November 1949–June 1955 period, Zeiss Ikon Stuttgart produced a total of



This “luxury” edition of the Contessa was made in only about 100 units, for an unknown purpose. The usual black leather is here gray, as are the metal parts usually enamelled black. This model was never listed in any catalogue. One suggestion is that they were awarded to long-service employees on their anniversaries. Figure 8

137,000 Contessa cameras in eight production runs (Q,S,T,V,W,Y,A, and B). It is not possible to list Pcr and Pcm types separately because the orders with serial numbers beginning with T,V,W and A contained both versions. The final sales price of the Contessa was DM 350.-

At the 1952 Photokina, Zeiss Ikon offered yet another miniature camera that was also largely based on the miniature Ikonta. This new Contina's measurements were similar to the Contessa's but the camera had more simple equipment (figure 9). The expensive rotating-wedge system was replaced by a cheaper mirror-based rangefinder that was not linked to the lens. The telescopic viewfinder was not combined with the rangefinder window as in the Contessa. However, the struts supporting the lens and shutter, the bellows, the film-transport knobs mounted to the base and the frame counter were taken over from the Ikonta/Contessa camera type. Also, the f/2.8 45mm Tessar in the Synchro Compur was retained (in the 524/24). There was also an inexpensive version with an f/3.5 45mm Novar in a Prontor SV shutter (called the 524/24 Fpms), this time with an integrated self timer.

The new Contina 524/24 was supposed to be an inexpensive link between the Ikonta 522/24 and the Contessa 533/24. The Novar model was priced at DM 220.- ; for the old reliable Tessar version, the price was DM 310.-. From July 1952 onwards, Zeiss Ikon offered a new special case (1217/14) for the Contessa and Contina, which could house the camera itself plus two filters or supplementary lenses as well as the lens hood.

In May 1953, the sales department renamed the former Ikonta 522/24 as the Contina 522/24. At the same time, the Contina 524/24, which had been first presented in March 1952, was now called the Contina II 524/24. The name "Ikonta" was from then on reserved for roll-film cameras. Internally, this camera was at times also called the Mess-Ikonta 24x36. The Contina (II) was produced in 62 480 units. None of these three miniature cameras were produced by Zeiss Ikon Stuttgart from the middle of 1955 onward. □



The Contina, introduced in 1952, was another camera based on the miniature Ikonta/Contessa body type. Less expensive than the Contessa, it had a cheaper rangefinder and was available with either Tessar or Novar lenses. Later renamed the Contina II (with the Contina I name used for the original Ikonta 522/24), construction ceased in mid-1955, after 62,480 had been made. Figure 9

Serial-number ranges for the Contessa 533/24

	Serial range	Number of units (thousands)	Dates	Model
Q	45,001 - 55,000	10	12/49 - 10/50	533/24 Pcr
S	1 - 15,000	15	09/50 - 05/51	533/24 Pcsr (?)
T	90,001 - 100,000	10	05/51 - 01/52	533/24 Pcr/Pcm
V	5,001 - 15,000	10	10/51 - 03/52	533/24 Pcr/Pcm
W	77,001 - 82,000	5	01/52 - 04/52	533/24 Pcr/Pcm
W	82,000 - 100,000	15	03/52 - 09/52	533/24 Pcm
Y	39,001 - 49,000	10	08/52 - 11/52	533/24 Pcr
A	3001 - 13,000	10	11/52 - 06/53	533/25 Pcm
A	13,001 - 23,000	10	11/52 - 06/53	533/24 Pcr/Pcm
A	23,001 - 33,000	10	06/53 - 12/53	533/24 Pcm
B	40,001 - 72,000	32	09/53 - 06/55	533/24 Pcm

The rise and fall of the C. P. Goerz Company

Thomas Mix, Würzburg, Germany

The economic, political and historic context of the early twentieth century reveals reasons for the early success and later failure of this once-powerful optical-equipment manufacturer.

The C. P. Goerz company was founded in 1886 in Berlin and rose with incredible speed to become the second largest optical company in the world, always competing with its rival, Zeiss, to be the largest in worldwide production. Goerz reached its production peak shortly before World War I, about 25 years after the establishment of the company, and vanished as an independent company during the time of the great depression. The company was bankrupt in 1926 and subsequently taken over by its unbeaten rival, Zeiss.

The beginnings

Carl Paul Goerz (figure 1), born on 21 July 1854, started his career as a salesman apprentice with the Busch Optical Company in Rathenow. After leaving Busch he worked as a trade agent for different precision-engineering and optical companies. Between 1883 and 1886 he lived in Paris, where he was part owner of the well known optical company E. Krauss. We do not know much more about these early years until late 1886, when he founded a small mail-order business in Berlin that supplied mathematical instruments such as compasses, dividers, protractors and calculators mostly for school needs.

Unlike most of the other well known optical companies of the time (Zeiss,



Carl Paul Goetz, 1854–1923 Figure 1
(courtesy Larry Gubas)

Busch, Hensoldt, Leitz and others), Goerz did not have its roots in optical technology but was founded as a commercial enterprise. These other companies came into existence during a time of industrial production when optical shops worked to fill the demand of universities and where the skill of the master of the shop was the most important factor. Examples of these “old masters” include Fraunhofer in Munich, Zeiss in Jena and Hensoldt in Wetzlar who satisfied

the demand for telescopes, microscopes and other scientific instruments related to scientific studies. But how could a newcomer, with no experience in manufacturing optical instruments, challenge these established companies?

Goerz was a businessman and his skill was the ability to see the market and understand the trends of the time. In 1887 he turned his interest to the emerging market for photographic apparatus. As early as 1888 he acquired a mechanical workshop (formerly belonging to F.A. Hintze) in order to produce his own cameras, and he hired his first optician, Karl Hertel, to grind lenses for the cameras. The market boomed, and two years later, in 1890, the “Optical Institution C.P. Goerz” employed 25 workers, growing to 40 in 1891, 400 in 1898 and 2500 in 1911. There are no records available to me, but as far as I know the number of Goerz employees rose to 3,300 in 1914 (compared to 5,000 at Zeiss) and maybe up to 10,000 during the war (11,000 at Zeiss).

Developments in the early 1890s

Let us look at the political and economic situation in 1890 and 1891 to get some clues.

The political situation: In 1888 Wilhelm II became the new emperor of Prussian Germany, and after he had dis-

missed chancellor Bismarck in March 1890, German foreign policy changed from a moderate and self-regulating balancing of powers in Europe (Bismarck stood for this political attitude) to a more and more aggressive foreign policy that drove confrontation with Great Britain and France. Germany under Wilhelm II sought to become the dominant power in Europe and therefore made great efforts to become the leading military power as well as on the way to becoming the leading industrial power. The plan began by starting to build a big navy to challenge Great Britain on the seas and to have the most modern armed forces on the ground. The more Germany gained military strength, the more aggressive it became towards its neighbors, leading to the horrors of World War I.

Goerz, even more than the other optical companies, repeated the political phrases of that time, relied much on military contracts and became one of the leading armament industries in Germany. In several ways the early success and the inevitable fall of Goerz is closely related to the fate of the German Wilhelminian empire.

The economic situation: Looking back at 1890 we can see the German optical industry overtake the then still leading French optical industry. The market at that time was still flooded with French products, and the French Company E. Krauss was one of the suppliers of German official army binoculars (the model C 86). With the fast rise of German economic power after 1890, the French optical industry was surpassed by the emerging German optical industry, which then became a worldwide leader for many years.

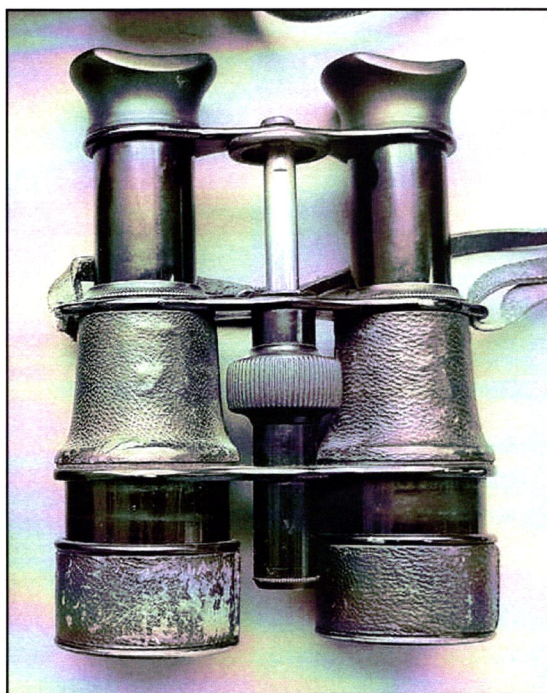
A new market

A new stage of industrialization in the late 1880s led to the industrial production of goods for everyday life, characterized by the use of scientific findings in production and the turn to mass production.

The ensuing boom reached its peak before World War I; at that time the downturn of production could already be

felt, and German business leaders then supported the idea of the preventive war favored by the generals, in order to keep up production.

The market now addressed the needs of everyday life. The use of electricity and chemistry opened a wide field of new products and new companies such as Siemens, AEG, and BASF. England, the former leading industrial power, is economically threatened by the booming productivity of Germany in the new areas of production. Within a few years the label "Made in Germany," which was originally introduced to identify inferior goods, became a label denoting outstand-



The first Goerz binocular: the 5×33 "C91." Produced in 1891, it was intended for military use.

Figure 2

ing quality. Binoculars are one of the products that illustrate this development.

All areas of work were revolutionized. Science was now able to define the principal laws of nature, so for the first time allowing a product to be designed by calculation and then produced in quantity to uniform quality. Optical instruments are no longer built by trial and error, but with specifications calculated before they go into production now that it was possible to control glass manufacturing scientifically to

get the desired optical qualities. The two individuals illustrating this development are Ernst Abbe and Otto Schott. The old skilled craftsman had to give way to the scientist, the engineer and the worker in the factory.

Now you can start production in whatever area you wish; once you have an idea for a new market or product, you hire scientists to design your products and you set up a factory to produce them. You make products to serve the needs of the market. And that's exactly what Goerz did.

We know that Goerz first concentrated on camera production, but by 1891 he produced his first binocular, the C 91, a 5× Galilean binocular (figure 2) for the military. In the company records it is mentioned with just a few lines. The binocular was most likely developed by Emil Busch, but Goerz was able to get an order for them from the Prussian army; it was the beginning of their cooperation with the military.

In 1893 a new product was introduced, the Zeiss "Prismen Feldstecher" (figure 3). Without realizing it at first, Abbe had developed what became a key product when he turned his attention to the use of prisms within the binocular only after he tried to improve the Galilean type. He probably only had the civilian market in mind when he estimated a sales volume of 50 Feldstechers per year when it was introduced in 1893. It was incredibly expensive (about two months' salary for a worker, equal today to US \$3,000–\$4,000). But

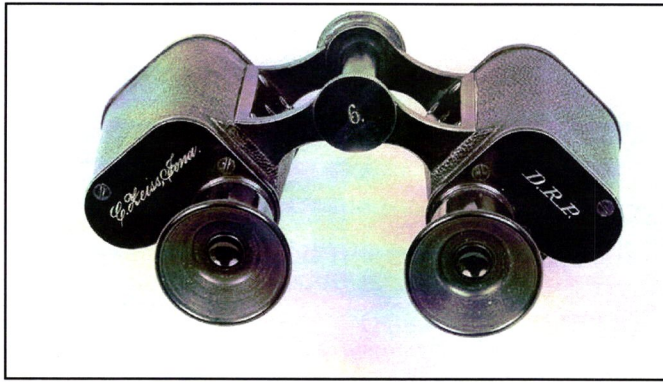
the military immediately recognized the importance of the invention, which proved to be the key to all the other military instruments that came later, including rangefinders, artillery aiming devices, periscopes and more, all of which could only be developed by using prisms.

The military market

I always wondered why the prism binocular, after its invention in 1854 and its first military use by the French army,

The first prism binocular: the Zeiss Feldstecher of 1893, patented in that year (patent no. 77086).
Figure 3

(Courtesy Jack Kelly)



disappeared again until Abbe reinvented it. And, why was it rediscovered in 1893 and not in 1875 or 1908? There is the common explanation that the quality of optical glass was not good enough to grind quality prisms before the 1890's, but I would expand on that point. Before 1890 there was not really a sufficient demand for high quality binoculars. Quoting William Reid (in his *Binoculars in the Army*):

"The double glasses are useless toys!" was the opinion of a high ranking British officer in 1856.

So I tried to search out what happened in the 1890s that paved the way for the success of these new binoculars. In my opinion it was an entirely independent invention, smokeless powder. It was introduced in 1886 and spread quickly to all industrialized countries. (I later found out that Reid expressed this thought first, so I want to give credit to him).

The French introduced smokeless powder in their Lebel rifle in 1886, the Germans in the Mauser rifle in 1888, and by 1891 all European nations had it for their guns and cannons. Smokeless powder set entirely new standards for military warfare and tactics and the military leaders were worried. With black powder in a rifle you had a bullet range of about 300 m. With smokeless powder the range increased to about 2000 m. No one could distinguish friend from foe at that distance without a good binocular. But the critical issue was the lack of smoke. With black powder, soldiers and officers in a battle did not need binoculars, because the combatants shot from a short distance and when the battlefield

was filled with smoke they engaged in bayonet attacks.

I will quote some sentences from an 1891 military article that describes the situation well:

"When using smokeless powder you lose the most important and often only hint to spot the enemy in the open country; you are no longer able to detect his position. On the other hand our own troops lose the cover of their movements previously concealed by the smoke....."

The worst obstacle to exact aiming and observation of the effects of your fire now is gone.

Observation and reconnoitering tasks will be impossible since the good easily visible cavalry will be shot at from great distances without them being able to detect the positions of their enemy. So the cavalry as well as the infantry will have to use their spades to a great extent, since a good shooter will have all of the advantage nowadays with his long range rifle and the good visibility on the battle field.

The best advantage of the new [smokeless] powder will be granted to the field artillery, whose effectiveness is extremely dependent on clear observation and fast correction of aiming.

(Translated from the German article: "Smokeless powder," Meyers *Konversationslexikon*, Vol.18, 1891)

The German military reacted and in 1891 issued an armament specification for optical equipment, but still with only slightly improved Galilean binoculars. The Voigtländer C 91 was adopted for the artillery, while infantry and cavalry were supplied with the smaller C 91 built by Busch and Goerz.

The newly developed prism binoculars (figure 3) proved to be much more effective for the needs of the troops. As early as 1894, Zeiss Feldstechers were tested by the army, and the artillery was

the first to adopt a prismatic binocular, the well known Zeiss 8×20, the DF 95.

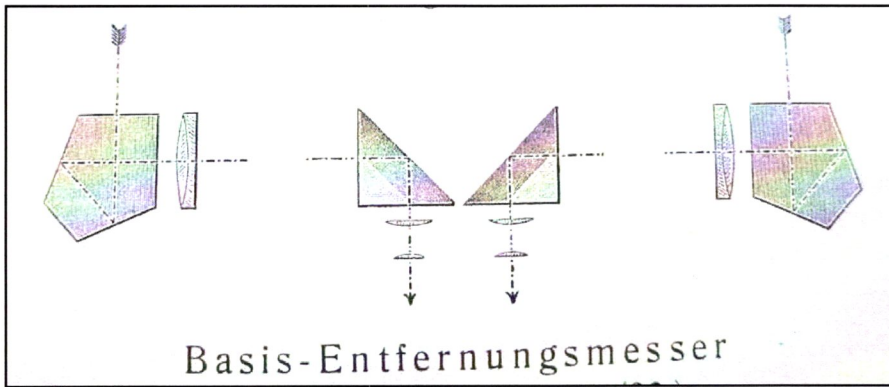
Since all countries had introduced smokeless powder, a worldwide market opened for optical equipment, allowing Zeiss and Goerz to become world companies in a relatively short time.

Realizing the importance of the military market, Goerz saw that the prism binocular, despite its huge costs, would push aside the Galilean type, and he immediately started production of his own prism binocular (earlier than all the other optical companies except Zeiss) because he feared the loss of his military contracts with the Prussian army.

It proved to be a stroke of luck for Goerz that Zeiss could not get a patent on the prism binocular as a whole, but only on the extended objective distance and the stereoscopic view. It was also fortunate for Zeiss and Abbe that Abbe could get this patent at all. Hensoldt, back in 1892, neglected to claim their priority for the invention and later lost legal suits concerning violations of the Zeiss patent. Moritz Hensoldt and A. & R. Hahn had patented a prismatic rangefinder in 1891 (figure 4) that used pentaprisms with objectives spaced 1 to 2 m, thus clearly having the stereoscopic view in a prism instrument earlier than Zeiss. But they did not pay attention, thus leaving a fortune to Zeiss.

The first Goerz prism binoculars

In 1895 Goerz hired a mechanic to set up the fabrication of binocular bodies and instructed the mathematician Emil von Hoegh to calculate the lenses with the aim of exceeding the optical performance of the Zeiss Feldstecher. On 15 October 1896 the first ten prototypes were produced and then Goerz could start mass production. In spring 1897, a good two years after Zeiss, Goerz presented his assortment of the 3×, 6×, 9×, and 12× powered Trieder Binocles (figure 5). Goerz was very successful with these rather antique-looking glasses (compared to the modern design of the Zeiss Feldstechers). The Trieders were exported in large numbers to the whole world and met approval with their compact design and reliable mechanism, despite the lack of the stereoscopic



The Hensoldt-Hahn prismatic rangefinder of 1891 (patent no. 71739). The instrument consists essentially of a prismatic binocular with an extended interocular distance, which would give it an excellent stereoscopic effect. Figure 4

effect. They proudly pointed out that they were able to realize a slightly wider field of view (40°) than the Zeiss competitor (36°). In 1897, 1,734 Trieders were produced with 3,192 more in 1898, and production continued until 1912/13.

Also around this time a new marketing technique emerged: advertising. Goetz made wide use of advertisements for its binoculars (figure 6). In the 1911 Festschrift they refer to the fact that Emperor Wilhelm II and his spouse “were pleased to use the Goetz Trieder Binocles on their trip to Asia Minor in 1898.” We would call this product placement today! I doubt that Wilhelm II really used his Goetz binocular, because he had a crippled left arm

and was always trying hard to hide this handicap.

Beginning with his camera business in 1893, Goetz set up a sales agency in Paris, followed by an agency in New York in 1895 and one in London in 1899, just in time for the start of the conflict in South Africa.

Lessons from the Boer War

All the advantages discussed earlier concerning the use of smokeless powder on the battlefield came into play during the Boer war, 1899 to 1902. The Boers used the new powder, but the British were not prepared for the tactics required under these new circumstances.

One consequence of this war was that

the appreciation of good binoculars increased. Binoculars now proved to be the “most useful weapon an officer can have” according to General R. Buller, quoted by Reid in his *Binoculars in the Army*.

Many of the British soldiers were equipped with Goetz Trierders. Again quoting Reid:

There was a plea for the Zeiss prismatic binocular that a surprising number of Boer farmers had been able to bring into the field.

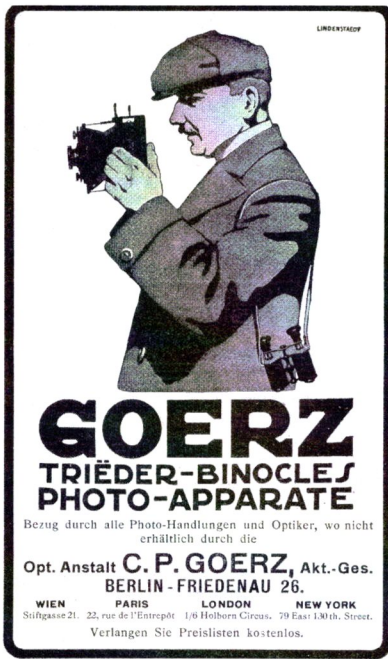
How could farmers spend about a quarter of their year’s income on a luxury instrument? A Zeiss Feldstecher, priced at about 150 Marks, would have equaled about 30 to 50 head of cattle at the time. We have to go back to politics. Germany supported the Boers not only morally (despite the fact that they were still a slave-holding society twenty years after the worldwide abolition of slavery), but furnished them with brand-new Mauser rifles and, I would suggest, with Zeiss binoculars too. Germany considered England to be their number one enemy, and anyone who fought against Britain was their friend.

Opinion formed during the Boer war was that the old Galilean binocular was obsolete in modern warfare. The superiority of the Boer’s optical equipment over that of the British was seen as the cause for “many of the innumerable cases of our scouts and larger bodies being surprised and shot down” (General Kitchener, referenced by Reid in *Binoculars in the Army*). When comparing Zeiss and Goetz, the Zeiss glasses were evaluated to be (optically) the best, but “the glasses get out of order, the pieces becoming unscrewed and getting lost.” (Zeiss Feldstechers at that time frequently got out of alignment. Up to 30 % of the production went back to the factory for repair). The Goetz Trierders were considered best if they were to be used by several men because of the wheel-operated interocular adjustment.

On the other hand the Goetz binoculars suffered most from dust penetration. There was a demand for binoculars that were either dustproof or could easily be dismantled for cleaning. Thus, binocu-



The first Goetz prism binoculars, dating from 1897. These are the 3, 6, 9 and 12-powered Trieder Binocles. Note the center-wheel focusing. Figure 5



An advertisement for Goerz products. This one is by Hans Lindenstädt, 1874–1928, a prominent commercial artist of the time. Figure 6
(Courtesy Larry Gubas)

lars that could be disassembled in the field were designed and produced between 1902 and 1905 (figure 7). Goerz immediately constructed the so-called “Mantelglas” and offered it mostly on the British market (the “Army Trieder”). The construction is rather complicated, and the models were soon discontinued because there were more disadvantages than good solutions to the problem. At the same time Goerz came out with the 6×30 Pernox, in my opinion the first dustproof model among the binoculars of the time (figure 8). The Pernox had a cast-on hinge (much better than the Zeiss Feldstechers with the screwed-on hinge), a sealed prism body, a high light transmission with the 30 mm objectives and a sturdy, compact design.

Becoming a global player

After the Boer war the world-wide market for optical equipment boomed. Goerz sent binoculars to the army administrations in China, Italy, Russia and Austria beginning in 1899.

Production increased year by year. On 5 May 1906 Goerz produced its 100,000th binocular. By August 1907 the number reached 130,000. At that time

Goerz had at least drawn equal to Zeiss, and was possibly a little bit ahead, in terms of number of binoculars produced (Zeiss: 90,000 in Fall 1905, 107,000 by September 1906, 124,000 by September 1907).

New factories and sales offices were needed to cope with this increased trade (figure 9):

- * 1889: First relocation in Berlin, from Zimmerstraße 23 I to Schöneberg, Hauptstraße 7a. (The whole move was done with a single dogcart!)
- * 1893: Sales agency in Paris
- * 1895: Sales agency in New York
- * 1898: The company moves into the newly built factory in Berlin Friedenau, Rheinstraße 45/46
- * 1899: Sales agency in London
- * 1899: It becomes necessary to enlarge the main factory and a new factory is established in Winterstein (Thürigen)
- * 1902: Branch factory in New York (for camera lenses)
- * 1905: Factory for military optics in Vienna (followed by a branch for civilian products in 1909)
- * 1905: Sales agency in St. Petersburg, Russia
- * 1908: Factory in Pressburg/ Pozsony, Bratislava

- * 1912(?): Factory in Riga/ Russia
- * 1914: Big new production complex in Berlin-Zehlendorf including the Sendlinger Glaswerke.

The armaments industry

German army officials did not like the center-focusing Goerz Trieders for military use, so Goerz immediately began construction of a sturdy individual-focus model. In May 1899 the new prismatic binoculars, the well known “DF 99” (7×20) were tested by the Prussian Army and introduced in August 1900 for the artillery. Soon after, Goerz obtained big army orders for the DF 03, which was built in different model variations starting from 1902. The DF 03 (6×20, later 6×24) was introduced on 20 July 1905. Until 1910 Zeiss had a hard time getting back into the German military business. The 1911 service regulations listing the optical instruments of the infantry, machine gunners, cavalry and “pioneers” shows six different binoculars: Fernglas 91, Fernglas 08, and four different types of DF 03 binoculars. All of these were from Goerz, with not one Zeiss instrument.

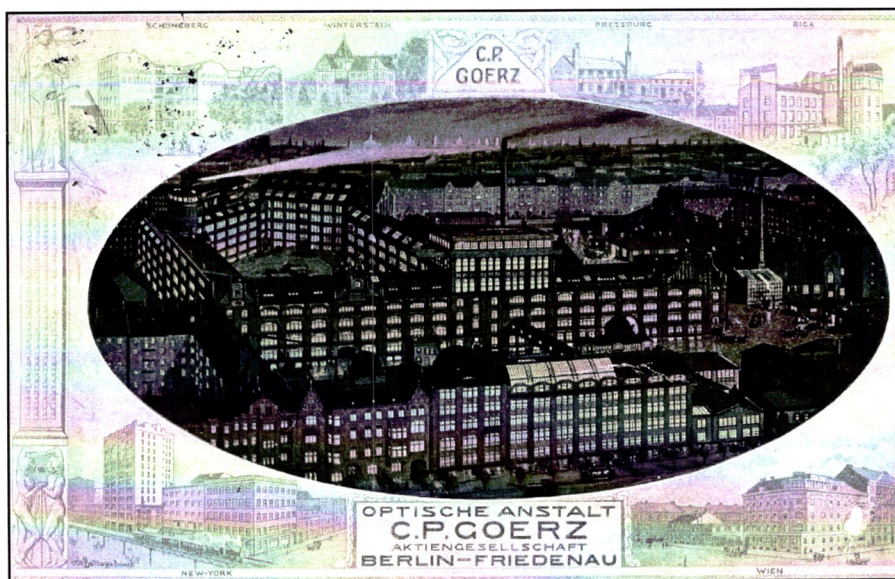
Goerz invested heavily in the development of military optics and in 1902 presented an artillery gunsight that allowed non-direct aiming – the “Panorama” or Rundblickfernrohr (figure 10). It proved to be the solution to the needs of the (field-) artillery batter-



C.P. Goerz “dismantling” binocular from 1902. This 9×20 civilian version (serial no. 36621) was easily disassembled in the field for cleaning. Figure 7



The Goerz 6×30 Pernox, a dustproof model that did not need to be cleaned in the field. The one shown here is serial number 59769 from 1904. Figure 8



A 1913 postcard, showing all the C. P. Goerz branch factories at that time in Schöneberg, Winterstein, Pressburg, Riga, Vienna, and New York surrounding the main factory in Berlin Friedenau.

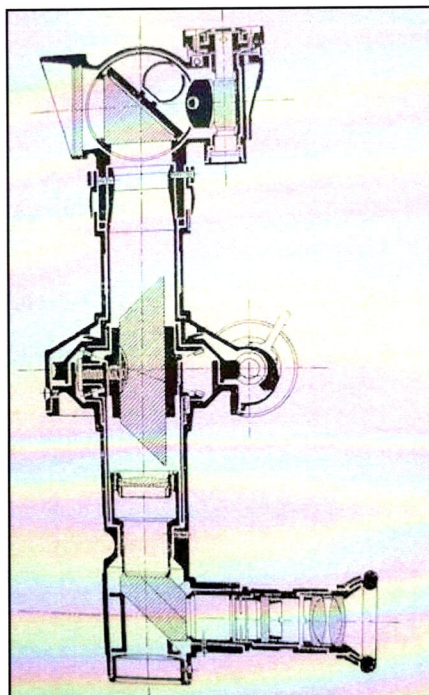
Figure 9
(Courtesy Larry Gubas)

ies under the new conditions of smokeless powder. On one hand the new gunsight was incredibly expensive and on the other hand the military often tended to be conservative in their acceptance of military improvements. Goerz was disappointed that no attention was paid at first to his new revolutionary gunsight, but in 1904 the USA was the first to order it for their troops. In 1907 it was introduced in eight countries and Krupp mounted it on its cannons thereafter. By 1911 it was in use by 25 countries all over the world – except Germany! It was not until 1912 that it was finally adopted by the German artillery but only after a series of bribes (and resulting scandals) in the obscure relations between the Goerz military department and the War Ministry.

In 1911 Goerz offered the Panorama-Fernrohr to the military at a price of 675 Marks each (this would be about \$15,000 today). A former Goerz director told Zeiss about the planned deal between Goerz and the War Ministry, and revealed to Zeiss that production costs were only about 225 Marks. Zeiss immediately offered their own artillery gunsight at a lower price, so preventing the whole order from going to Goerz alone. When the news became public the war ministry had to consider other companies

also and the purchase price was set at 475 Marks for the gunsight. 63% of the order of 12,000 gunsights went to Goerz, 30% to Zeiss, 7% to Hensoldt (Schumann, pp.185/186).

In 1903 The Goerz Company “went public” and in 1904 and 1905 paid a 15% dividend to the stockholders. After



The Panorama of 1902, an artillery gunsight developed by Goerz that was eventually used by the armies of 25 countries by 1911.

this boom time, the climax was reached in 1913 and from then on we entered an economic downturn.

Often in booming times, with big profits, companies share some of the profits with the workers. It is interesting that, although Zeiss is always given credit as an employee-friendly company, Goerz did even better in the early years. Working hours were reduced in 1893, from ten to nine hours daily (Zeiss reduced it to nine hours in 1896). Hours were again reduced, to eight hours daily, in 1894, while Zeiss did not reach eight hours a day until 1900. As a federal law the eight-hour working day was mandated as late as 1918, but the daily working time rose back up to ten hours in the 1920s during the long economic crisis. In 1897, Goerz introduced a paid vacation for the employees — a rarity in these times.

At war

The year 1913/1914 marks the turning point in Goerz history.

In 1913, Germany again expanded its armed forces and the other European countries followed. It was clear that Germany’s antagonists (Russia, France, and England) could increase their forces

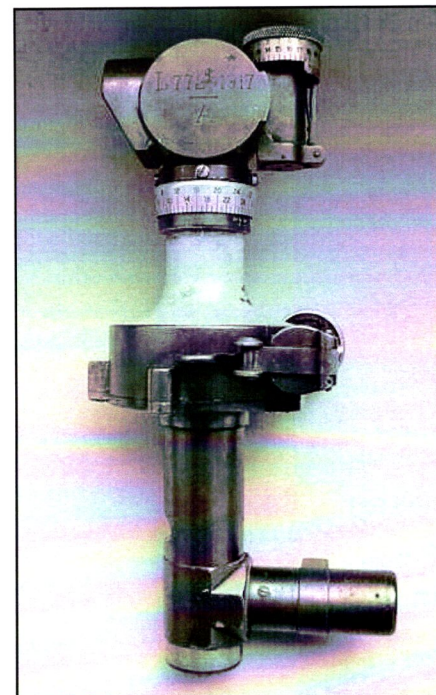


Figure 10



Four models of the Goerz "Fernglas 08." Top row, left to right: the 5x35 model for Switzerland, serial no.145393 (1908), and the Armeegalilei 6x, serial no.162891, also 1908. Bottom row, two Fernglas 08 — the short model 6x40, no. 10402 of 1908, serial no.157153, and the long model 6x38, no. 64045 of 1916, serial no. 407040. Figure 11

within the coming years more than Germany would be able to and that Germany would lose the armament race in the long term. If Germany wanted to seek military confrontation to expand its power, it had to be done soon. The situation was waiting for a spark to set the world on fire..

At about this time Goerz expanded once more. It augmented the company buildings with a big addition in front of the old factory in Friedenau. Next, they acquired the Sendlinger Optische Glaswerke to supply their optical glass. Goerz first modernized the Munich factory, but at the beginning of World War I they moved the whole factory to Berlin-Zehlendorf and added a huge new production complex there as well. A Goerz-owned railroad was used to transport employees and materials.

During the war, demand for military optics increased and Goerz expanded again. The number of Zeiss employees rose from 5,000 to 11,000 during the war years. Goerz did not concentrate so

much on binoculars, building only about 170,000 handheld binoculars between 1914 and 1918 – compared to the approximately 600,000 binoculars that left the Zeiss factories during that same time.

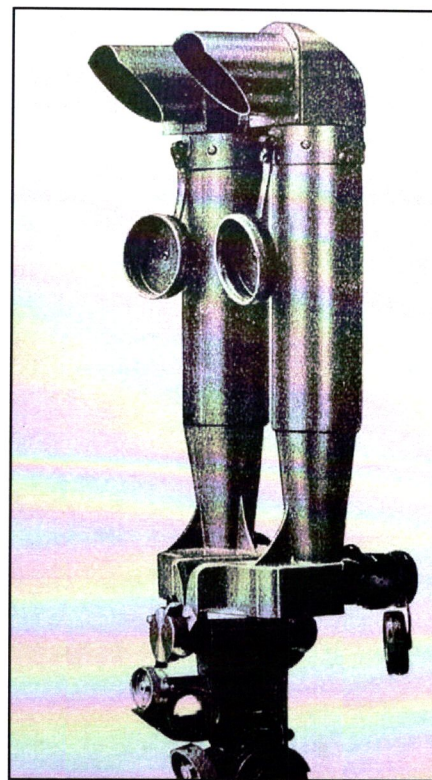
Goerz seemed to have other priorities: artillery gunsights, battery commander binoculars, big searchlights, U-boat periscopes as well as other military instruments.

After the Zeiss patent had expired in 1907, Goerz had come out with a whole spectrum of military optics based on extended objective spacing. These included the Armeegalileis in 6x21, 6x24, 8x26, 8x30, 10x30 and 12x30 models, plus some still offered in the old compact style. The 8x38 came later, followed in 1910-1912 by the 12x38 and 16x38 and 16x40 Goerz models that matched the Zeiss 8x40, 12x40 and 16x40 binoculars. Also in 1908 it presented a newly developed 6x40 Galilean binocular, the "Fernglas 08," (figure 11) which was produced in large quantities

during the war followed by the 3 1/2 x 50 Galilean "Marine-Nachtglas" in 1910.

In 1908, Goerz also introduced a coincidence rangefinder that they had been developing since 1906. This was followed in 1909 by the SF 09, a very advanced 10x45 battery-commander's binocular (figure 12), which was immediately adopted by the artillery and pushed the earlier Zeiss design out of that market. Zeiss had to build it under license in order to keep their foot in the door until they introduced their new 10x50 SF 11 and the slightly improved 10x50 SF14. The SF 09 was built until 1918 due to the huge demand during the war. Goerz also built their own 10x50 SF 14 design and in 1916 a bigger 15x60 battery-commander's binocular.

Shortly before the World War, most likely in 1913, Goerz presented their first large aperture straight-sighted binocular, the Goerz 7x52.5 Marine (that is, "navy") Trieder, followed later by the similar 10x52.5 Perpax, matching the Hensoldt Dialyts and the Zeiss straight-sighted Abbe-König models.



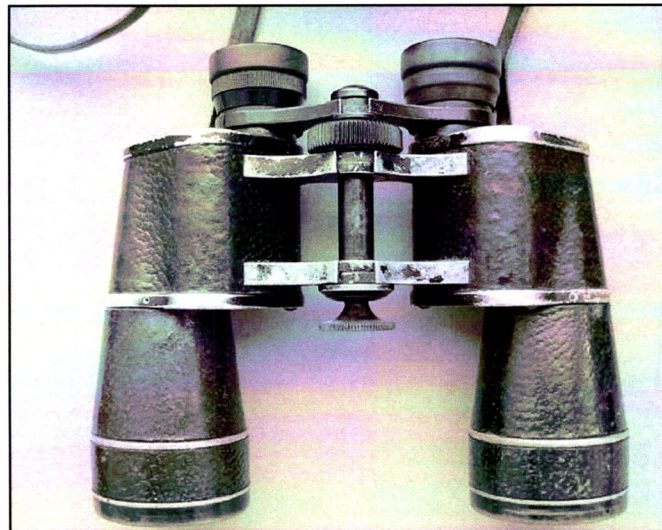
The Scherenfernrohre SF09, a 10x45 artillery battery-commander's binocular. Figure 12



The Marine-Nachtglas 8×56, developed by Goerz in 1918 in a vain attempt to win an army contract. This one is serial no. 542144 of 1922.

Figure 13

(Courtesy Jack Kelly)



The Magon 12×40 of 1927, serial no. 630973. This very rare wide-angle model was one of the last designs made in the last years of Goerz binocular production.

Figure 14

There were no new binocular developments during the war years until 1917. Germany was short of raw materials for the armament industries, and we see in the binoculars built during the later war years more and more parts are manufactured out of substitute materials (zinc or iron parts replace brass; natural leather replaces rubber coverings; binocular cases are made of cardboard or wood instead of thick leather). In contrast to other companies, all Goerz binoculars, until the end of the war in 1918, still had most of their parts made from brass. However, the bodies of some of the late wartime binoculars were covered with painted paperboard.

The 8×56 Marine-Nachtglas

When the conflict developed into trench warfare, the cavalry became irrelevant and airplanes took over their duties. Reconnoitering was now primarily done from the air, since the combatants were stuck in their trenches. Detecting and fighting enemy aircraft became an increasingly important task after 1916, when optics with high magnification and a big field of view were needed to identify flying objects.

In August 1917 the War Department ordered Goerz, Zeiss and Leitz to develop handheld binoculars with a 70° field of view, 8× magnification, and an exit

pupil of 7 mm. Leitz built two prototypes, a 7×50, and an 8×56 with the enormous field of view of 157 m at 1000 m (9°, light intensity $L = 56$). Goerz presented the very heavy 8×56, labeled “Marine-Nachtglas,” in February 1918 (figure 13). Its field of view was 150 m at 1000 m and it weighed 3,500 grams, compared to the 2,565 grams of the Leitz 8×56. Zeiss presented its own development, an 8×60 with a field of view of 153 m at 1000 m (8¾°) in 1918.

Zeiss got the order. In my opinion, the Zeiss 8×60 did not go into production until after the war, although Zeiss insisted it was the first to build wide-angle binoculars. They refer to their 8×40 Delactis (first built 16 November 1917) and the 8×30 Deltrentis (first built in summer 1918), most likely only as prototypes. The Leitz 8×56 never went into production, and, in the early 1920s, a few of the Goerz 8×56 models were built and sold on the civilian market. Many collectors consider this binocular (figure 13) to be the flagship of the Goerz assortment of binoculars.

Collapse and agony

By late 1917 and early 1918 it became evident that Germany had overstretched its economic and military capabilities. The huge losses of material could no longer be replaced by production; the

Allied advantage in material and people rose steadily and in addition, the USA entered the war.

Goerz made big profits during the war, but with the military, political and economical collapse in late 1918 the company was soon on the edge of ruin. Military products could no longer be sold and the Versailles treaty of 1919 explicitly prohibited military production and export. The tools of production had to be destroyed. The small German Army of the 1920s was exclusively furnished with Zeiss optics. Goerz had no market for their products; the years of concentration on military products now proved to be an economic disaster for the company.

The Russian branch factory in Riga had been confiscated in 1915 and only the branch factories in Bratislava (formerly in Hungary, by this time in the newly founded Czechoslovakian Republic), and in Vienna had the opportunity to produce and export military goods in accordance with the Treaty of Versailles. Goerz could not compete with Zeiss, who had the advantage of exporting its military optics in big quantities through the Nedinsco-Zeiss Company in the neutral Netherlands.

Goerz had to reduce production and tried to come out with an assortment of civil products such as calculating

machines and barometers. They still manufactured binoculars, and in 1921/1922 introduced a series of small handheld wide-angle binoculars; first the 8×30 Magon (in the 1922 catalogues), then an 8×24 Magon and also a wide-angled 12×40 Magon with a field of view of 87.5 m at 1000 m (figure 14), increased about 20% but still rather poor (the standard 12×40 had a field of view of 73.3 m at 1000 m). This is a very rare glass built in the last years of Goerz binocular production.

Goerz was beaten in all fields where it had previously played an important role and was therefore taken over by its rival Zeiss. With the help of foreign investments (from the Dawes Plan, which in 1924 extended a massive series of loans to Germany), Zeiss began a campaign to monopolize optical production in Germany. During the time of inflation (1923/1924) Goerz had massive deficits that it could not pay, and it tried to merge with Zeiss. However, Zeiss waited until it was able to destroy the Goerz Trust. In 1926 Goerz had to sign a merger agreement that was more of a surrender than a merger, and was not able to secure any favorable terms.

Zeiss forced Goerz to transfer the whole military business, hand over all of its patents and sell the branches in Vienna and Bratislava entirely to Zeiss, who kept secret that it now owned those operations just as it kept secret that it owned Zeiss Venlo in the Netherlands.

In 1926 Zeiss Ikon was created with the remainder of the Goerz trust together with other companies: Contessa-Nettel of Stuttgart, Heinrich Ernemann AG of Dresden, and ICA AG, also of Dresden. In 1927 AG Hahn was added.

Goerz binoculars were sold for another two years by Zeiss Ikon. A 1927 Zeiss Ikon catalogue still presented the Goerz binocular assortment. In a letter dated April 1928 the Swedish Navy is informed that Goerz has changed its name to Zeiss Ikon and that the company is no longer able to complete an order of 15×60 Pernox binoculars for the Swedish submarine fleet (Forslund, p.18).

Thus ends the story of Goerz binoculars. □

* * *

This article is adapted from a talk given at the Binocular History Society meeting in Portland, Oregon, on 4 September 2010.

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Goerz binocular production

End of year:	Estimated total (cumulated)	End of year:	Estimated total (cumulated)	End of year:	Estimated total (cumulated)
1897	1,734	1910	220,000	1922	550,000
1898	4,926	1911	240,000	1923	560,000
1899	12,000	1912	280,000	1924	575,000
1900	20,000	1913	312,000	1925	600,000
1901	30,000	Start, WW I	330,000	1926	620,000
1902	40,000	1914	340,000		
1903	55,000	1915	375,000		
1904	70,000	1916	420,000		
1905	90,000	1917	480,000		
1906	114,000	1918	505,000		
1907	138,000	1919	515,000		
1908	165,000	1920	525,000		
1909	190,000	1921	535,000		

Part of Zeiss Ikon	
1927	632,000
1928	650,000*

*highest serial number recorded so far is 647,738.

Guido Mengel: An appreciation

Written by Ernst Wandersleb; retrieved by Larry Gubas

*A letter from 1946 that explains in detail
the accomplishments of this man who had so much to do with
the merger that produced Zeiss Ikon.*

Some years ago, I visited the Carl Zeiss Jena Archive in Jena and found some very interesting documents. The Archive is somewhat incomplete as a result of war-time actions, but I did find this item, which provides some good detail on the earlier years of the company. It is a letter written by Ernst Wandersleb, who was the head of the Carl Zeiss Photo Department for more than thirty years, to the company leaders (including Friedrich Schomerus, who was the head of the Carl Zeiss Jena personnel department for even more years). It told of the death of Guido Mengel, explaining in detail who he was and what he had accomplished. It has been translated from the German original by my good friend, Rolf Fricke.

Larry Gubas

To the Carl Zeiss management team
from Ernst Wandersleb,
25 January 1946:

I have learned from a letter dated 7 January from Mr Wohlfahrt, who is the former sales manager of Zeiss Ikon A.G. in Dresden and president of the chamber of commerce of Dresden from approximately 1935 to 1945, that Mr Guido Mengel, the general director of ICA A.G. of Dresden and later of Zeiss Ikon A.G. of Dresden passed away in Dresden on approximately 4th January 1946 at the age of 86.

For decades he played a large and successful role at the Zeiss works and the gentlemen in our current company management can hardly be expected to know anything about him – except perhaps Dr Schomerus. I remember that on Good Friday of 1933 Schomerus spent a few hours with him in my house on the Schäfferstrasse. At that time Mengel was already seventy-three years old and he had gone there to write a letter of sympathy to his long-time management col-

league Professor Goldberg, who shortly before had been taken and expelled from Dresden by the Nazis because he was a Jew. I would like to take this opportunity to tell you something from my memories of my long cooperation with Mengel. Perhaps our general management thereupon will see fit to communicate with the widow of Mr Mengel (whose address is Dresden A, Schaufußstrasse) to express their condolences for the passing of her husband. I myself have already written to her.

Of the men who are active in our company today only a few are likely to have known him well. Among them was Mr Carl Hermann of the photo division and Mr Max Petermann Sr, who had a lot to do with Mr Mengel, beginning at the time of the founding of ICA in 1909. Dr Harting, during his activities in the Reich Patent Office, may also have known Mr Mengel. During the war years of 1914–18, because of his job as the Reich authority on export licenses for the optical and photographic industry, Dr Harting may also have had contact

with Mr Mengel. Dr Harting had been appointed to that job at my initiative and at the recommendation of Mr Mengel, with whom I used to discuss matters of this nature. Our company, that is its photographic division, and thus I myself came into contact with Mr Mengel beginning in 1904. Mengel, who was then 44 years old, at that time took over the management of the ailing camera factory R. Hüttig A.G.

He revived this company in competition with camera manufacturers Wünsche/Dresden, Ernemann/Dresden, Dr Krügener/Frankfurt, and also with Palmos-Zeiss-Jena, and Kodak/Rochester as well as English companies. During the years that followed, he rather quickly developed that company into one of our largest photographic lens customers. In 1909 Professor Straubel, business manager of Carl Zeiss, with the special cooperation by Mr Mengel, initiated the merger of the three camera makers, Hüttig, Wünsche and Dr Krügener with Palmos into “ICA A.G. Dresden,” which was implemented in such a way that a decisive influence was assured for Carl Zeiss from the very beginning. Ernemann, who had participated in the merger negotiations, withdrew at the last moment.

At that time, the transfer of the Zeiss-Palmos camera manufacture to Dresden was entrusted to our young photo employee Karl Hermann. The latter subsequently evolved in one of the most assiduous and most important marketing men in our photographic division, which he still manages to this day. During that time, that is, in 1910, he spent many months in Dresden, where he had a lot of contact with Mr Mengel.

Mr Mengel accomplished the merger of the four combined companies vigorously and in a short time. He ran the new company as the sole manager; the directors that came with the merging companies were not able to stand up to him. The first one to exit, in 1910, was director Scheuermann of Wünsche, followed in 1915 by Dr Rudolf Krügener, a departure that was more complicated because he had a major participation with capital. At my initiative, the Gustav Zulauf company of Zurich was also incorporated into ICA A.G. of Dresden in 1911/12. Mr Gustav Zulauf was appointed co-director with Mengel and Krügener. Zulauf had evolved into one of the major lens customers of our photo division, which was remarkable for that period of time. These lenses were used for some very beautiful special cameras, in particular stereo cameras, which Mr Zulauf equipped with our Tessar $f/4.5$ lenses nearly without exception. With the addition of the Zulauf company the name "ICA" subsequently became a little more justified: Because ICA was the acronym for "Internationale-Camera-Aktiengesellschaft" Mengel – who was from Gera and who originally worked in a bank— conducted a very strict and increasingly successful sales policy.

In the two and a half decades of his activities as a camera manufacturer, he was continuously encouraged and supported by Dr Max Fischer, who was a long-term business member of management, and who was, by the way, of exactly the same age as Mengel. Soon after he joined Hüttig A.G., he concluded the large payment obligation of the Liesegang Company as a customer. That was a difficult decision, because this company, as Mengel once told me, made purchases from Hüttig amounting to 200,000 Reichsmark (RM). It was a also difficult decision because he considered the development of camera sales on installment payments as a danger to the development of the entire camera division. And like Dr Max Fischer, he made every effort to strengthen the normal, competent and steady specialized trade, which at the time was expanding in the camera area in addition to the eyeglass business. But aside from all the market-



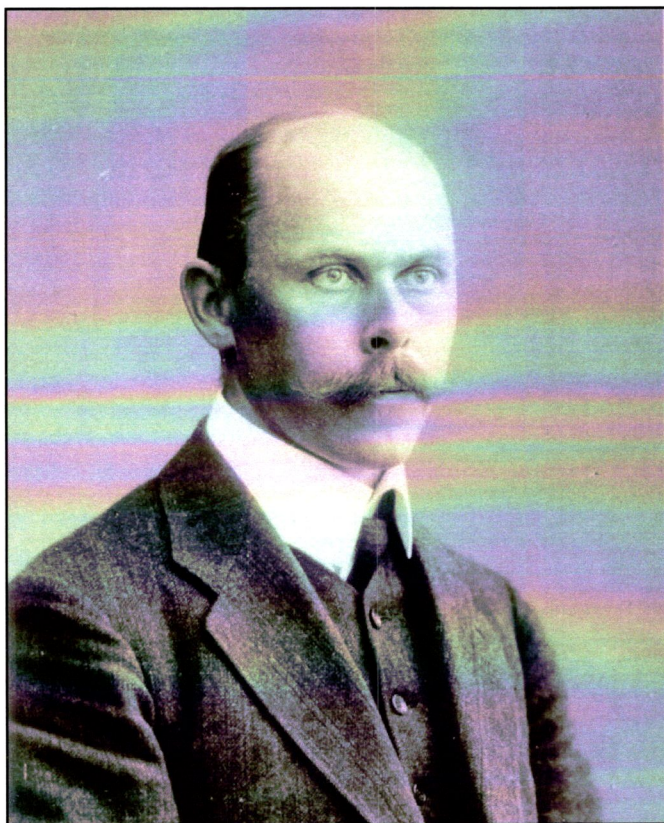
Guido Mengel, in a portrait painted in the days just before his retirement in 1926.

ing tasks of purchasing, sales, finances, and administration, Mengel also had all the technical responsibilities for the manufacture and development of camera models.

In general, he also had a successful way in the development and choice of camera models. I remember that in the period 1913–1914 the "Icurette" 6×6 cm evolved into one of the most popular and current amateur cameras, which was produced in large quantities, mostly equipped with a Tessar $f/4.5$ and a Compur shutter, and was sold all over the world. As far as I know it was the first camera with the 6×6 cm format, and

it played a very important role during the period from the three past three decades to this day, and which replaced the 4×6.5 cm format. The latter had been introduced by Kodak Rochester during 1912–1913 as the then smallest hand-camera format, under the name Vest-Pocket-Kodak and was sold in enormous quantities all over the world.

At the time I recommended to Mr Mengel that he take another decisive step in the direction of small formats, namely the double cine format of 24×36 mm, which would make the standard motion-picture film usable in amateur cameras. Unfortunately, Mr Mengel did



Ernst Wandersleb, the assistant to and successor of Paul Rudolph in the Zeiss Photo Lens department, was active at Zeiss from 1901 until his retirement at age 78 in 1957.



Oscar Barnack took this self portrait in 1914 with his "Ur-Leica" soon after leaving Zeiss, arriving at the Leitz firm, and putting into practice the 24×36 concept rejected by Mengel.

not heed that recommendation. Later on I heard that Mr Barnack, the designer of the Leica camera, who had worked for a number of years at the Zeiss plant, had submitted a design for a 24×36 mm miniature camera that used the perforated motion picture film to Mr Mengel. But Mr Mengel apparently did not like the camera. In any case, he took no interest in it, which is probably why later on Barnack left Zeiss and joined Leitz, where he developed his 24×36 mm miniature camera, the Leica.

During the 1914–18 war I had a lot to do with Mr Mengel concerning aerial and balloon reconnaissance. The development of the respective optics and also of the cameras was largely performed in our photographic department in Jena, but the manufacture of the cameras' focal-plane shutters and cassettes took place mainly in Dresden. Already in 1916, because of the importance of this work, the [German] aeronautical administration awarded the Iron Cross with a white band to Mr Mengel and also to

me. Because Dr Krügener, who left ICA in 1915 or 1916, and Mr Zulauf were both unable to evolve into directors next to Mr Mengel, the latter, who was now in his late fifties, became the sole pillar of ICA A.G.

Mr Zulauf left ICA in about 1918 and returned to Zurich, where he opened a photo store. As a result, our company management considered it very important to assign a younger and energetic assistant to Mr Mengel to safeguard the continued development of ICA AG. The person chosen for this task was Professor Emanuel Goldberg. The latter was born around 1885, and he grew up in Russia as the son of a Jewish doctor. He came to Germany in 1905 to conclude his studies. For a short time he was a student of Wilhelm Ostwald at the newly founded Institute for Physical Chemistry in Leipzig. After that he was an assistant to Professor Miethe at the Photographic Institute of the Technical College in Charlottenburg. His next position was that of a teacher for pho-

tography and reproduction techniques at the "Academy of the Graphic Arts and Printing Trades" in Leipzig, at which point he became a German citizen. Initially he became acquainted with me in connection with the very successful activities for the large Bugra exhibition in Leipzig in 1914 and then with Professor Luther, who was responsible for scientific photography in Dresden and who worked on photographic tasks for the military during the war. Our company management became aware of him because of his special assignments in Jena and in 1917 he was practically imposed on Mr Mengel as a co-director. Goldberg actually succeeded in always working closely with the dictatorially inclined Mengel and then gradually taking the reins into his own hands as Mengel grew older.

After World War I, during the period of great inflation during 1918–1923, I again had a great deal of contact with Mengel, which was in addition to the constant consultation about photo-opti-

cal matters with the Jena people and the manufacturing operation in Saalfeld, which was started in 1910, and which was initially anonymous. I worked with Mengel in the "photo equipment group," which I had assembled at the end of 1918 with the approval of our company management and which I managed between 1923 and 1924. In that group we had brought together the most important German manufacturers of lenses, cameras and shutters and we continuously monitored the prices and the sales conditions based on the exchange fluctuations. This was a very serious responsibility and a worrisome, often thankless task. If we had not tackled that task and implemented it, the decline of Germany in our field would have been much faster and exhausting than it was in reality. It is to the general credit of the vision of Mengel in close contact with Goldberg that ICA A.G. survived the inflation generally unscathed, while its major competitors Goerz A.G./Berlin and Ernemann A.G./Dresden were in difficulties that resulted from their less effective and unsuccessful sales and finance policies during the inflation. The result was that the names of the latter two companies disappeared when the conglomerate was founded in 1925 and which in 1926 was completed by means of the merger of the four companies, ICA AG/Dresden, Contessa AG/Stuttgart, (which had already been associated with Zeiss Ikon since 1921), Goerz AG/Berlin, and Ernemann AG/Dresden, creating the Zeiss Ikon A.G. again at the instigation of Professor Straubel. When Zeiss Ikon was founded, Mr Mengel was already sixty-six years old. For a few years he continued as a director of the new Zeiss-Ikon-Aktiengesellschaft and after his retirement he remained as a member of the supervisory board into the last years of his life. In his letter of the 7th of January, Mr Wohlfahrt also writes that a few years ago he had heard that Professor Goldberg was no longer alive. Goldberg is said to have died of typhus in Bombay where he had been transferred from Tel Aviv during the war. For the information of the gentlemen in company management, I am taking the liberty of citing a few details from my

memories of Goldberg. I worked very closely with him for a number of years and I also had a very high regard for him as a professional, regardless of his "Jewish" vivaciousness, with which he sometimes got on the nerves of co-workers. Because of my admiration of him, I made a serious effort to support him after the Nazis forcefully and ignominiously removed him from his post as a Zeiss-Ikon director in April 1933. I did so especially in the spring of 1933 because of the then newly appointed foundation commissar Dietz. Unfortunately I was not successful.

(Signed Dr Ernst Wandersleb)

As a result of this letter, Dr Schomerus sent the following to Dr Mengel's widow on the 30th January 1946.

To Mrs Mengel (10) Dresden-
Aschafussstrasse

Dear Mrs Mengel:

We have only now learned of the sad fact that your dear husband, the highly regarded general director of Zeiss Ikon A.G., passed away on the fourth of January of this year. We wish to express our heartfelt condolences for the sad loss of your life companion. We happily remember the effective work of your husband in the service of the companies associated with us, ICA A.G. and later Zeiss Ikon A.G. We also know that the members of our company's management who passed away before him, such as Messrs. Max Fischer and Professor Straubel, greatly admired Mr Mengel and valued his work. Now that he has left us at an advanced age, we want to honor his legacy and hold him in praise. At the same time we express the hope that, after he suffered so greatly during and after the war, the work that he completed in such an effective and successful manner may remind everyone of his high stature. That would be the best recognition of the legacy of your husband.

With the highest respect,
(signed) Dr Friedrich Schomerus.

I decided not to make excerpts or to edit this letter because it gives a full account of a first-hand observer. It addresses many points not discussed in detail elsewhere, such as the personalities of the people involved and the situation with Oscar Barnack and his camera (later to be known as the Leica) which does not seem to be documented anywhere else in Zeiss history and, of course, I have been looking into this situation for a very long time. This is the first clear primary source document about Zeiss, Ica and Barnack and his Leica.

I should also like to identify some of the people mentioned in the letter:

Hans Harting was a student of Abbe who worked at Zeiss before leaving for a senior position at Voigtländer. He later headed the German Patent office, and after he retired in the mid-1930s he was placed by the German government into the Board of Management at Carl Zeiss Jena.

Max Peterman was the senior manager of the Zeiss Ikon subsidiary that was located in the old Wünsche factory that made industrial tools.

Karl Hermann was part of the marketing team for Carl Zeiss Photo lenses.

Wilhelm Wohlfahrt was the sales manager for Contessa Nettel and later Zeiss Ikon.

Gustav or Gottlieb Zulauf was the proprietor of Zulauf of Zürich. (I have conflicting information on his first name.)

Max Fischer was the head of the administration and commerce department at Zeiss.

Rudolf Straubel was the head of the Zeiss Board of Management and successor to Ernst Abbe and Siegfried Czapski. He was the head of business until 1934. This letter is the only indication of how closely Mengel worked with the lens designers at Zeiss, but in the course of his tenure at Ica there was very little innovation and that is another reason for the investigation of the availability of Emanuel Goldberg. However, this trend was much the same for other firms of the day; the first real advance of the state of the camera art had to await the presentation of the Ernemann Ermanox in the early 1920s based on the lens innovation of Ludwig Bertele. —LG □

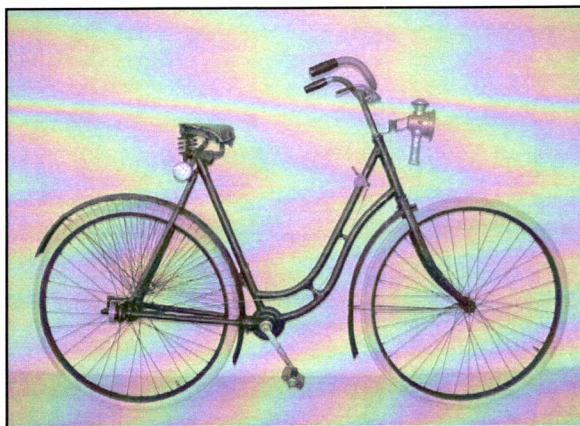
Commentary:

...Readers' comments on recently published articles

Peter von Thuna, of Lexington MA, wrote about Ernst Keller's article on Ernst Abbe. "The Fall 2009 issue was particularly interesting to me because Ernst Abbe has been a hero since my father gave me a book about him a long time ago. That book is long lost but I have Abbe's collected works containing the statutes of the Zeiss Foundation and his detailed commentaries to each paragraph. They are very much worth reading today when power and money are considered the only working incentives in industry. By contrast, the commercial success of Zeiss has shown that fair pay and respect for good work do quite well provided you have the very best scientific and technical people.

"I enjoyed Mr Keller's paper but I would like to add some minor clarifications. His brief description of management salary limits could be mistaken as too egalitarian. Many, if not most, of Zeiss's employees were skilled craftsmen and well paid. Ten times their pay would therefore have been then and still is today a very comfortable salary. The relevant paragraph says specifically:

Para. 94: *The highest pay of any employee, including management, must not exceed ten times the average pay of all wage earners over 24 years old and 3 years with Zeiss, calculated from the last three business years.*



A shaft-driven bicycle. This 1910 lady's model Durkopp is similar to the slightly earlier gentleman's bicycle shown in our photograph of Rudolph, Abbe and Schott on page 4 of the Fall 2009 issue. I mistakenly assumed that the bicycle had lost its chain, but Peter von Thuna has corrected me, above.

Photo: www.yesterdays.nl

Also, paragraph 28 adds:

Management pay must not depend in any way on gross or net profit or margin.

"Both paragraphs and the commentary also contain, of course, much more detail and some exceptions for special contributions or circumstances. Clearly, Abbe was well aware of the temptations at the top. He wanted good managers, not clever parasites as so many chief executives are today.

"Finally, a remark about the photo. I believe Paul Rudolph's bicycle had not lost its chain, but was an early shaft-driven model, probably a "Durkopp", a make that still existed when I was a boy. A friend of mine has a modern one from Japan and loves it." (*see photo below.*)

Hans Keiren, of Panningen in the Netherlands, read Larry Gubas's article on the Herar in our Spring 2009 issue, and writes to tell us of an article he found in the 2 March 1940 issue of the Dutch magazine *Focus*.

"This was about two months before the German invasion," Keiren writes, "so the Netherlands was still a neutral country at that time.

"The article is titled 'A new lens from Carl Zeiss, the Herar.' There follows an explanation of why lenses of simple box-cameras often produce photos with

more brilliance than those made with expensive cameras. The cheap lenses have just two glass/air boundaries and thus few internal reflections. Modern anastigmats need more lens elements and therefore have more glass/air boundaries and internal reflections, which reduce contrast in the photos.

"After reproducing the familiar sketch of the Herar from the patent document, the Dutch article continues:

That's why it is of great importance that in the new lens from the company Carl Zeiss, the Herar, thanks to detailed calculations, achieves a reduction to just four glass/air boundaries. . . . We state that this [*the lens shown in the patent*] is only an example, and that although the final shape, as will be used in production, will differ the concept of the four boundaries will be maintained.

After a conference call it became clear to us that the lens is still not produced for any camera, but we think that this development in optics, especially in the matter of brilliance, is so important that we did not want to keep it from our readers.

The error correction of the lens is very good, and the aperture will be f/3.5. We advise our many Contax owners not to go to their dealers yet as they will certainly not have that lens in stock. The first camera with such a lens still has to leave the factory.

"As you can see, this article adds nothing new (but, Larry, thank you for your good article!) but it shows that the potential of such a lens design triggered the curiosity of the photo enthusiasts of that era."

And, finally, **Bill Lurie** of Lake Worth, Florida, wrote to point out an error in a caption I wrote for page 6 of the Spring 2010 issue. I placed Thornwood in New Jersey. Bill wrote: "It has been my impression, all these years, that the ZHS Annual Meetings were held in Thornwood, *New York*, where I ate lunch almost daily during the nine years I worked in nearby Pleasantville."

He is quite correct, of course; it is the *Fleetwood Museum* that is in New Jersey and hosted some ZHS meetings.

John T. Scott, Editor

Fragment of Charles Barringer's lens list

(Some columns hidden — see text opposite)

Ser	Seq	Lens Mfr	Camera Mfr	Lens Type	Focal Lgth	Max f	Serial Number	Ctd ?	Cam Sys	Cir/Mat	Comments	Camera Type	Ltr	Cam Serno
a	10993	CZJ	Zi Dresden	Sonnar	50	2	1659616	N	CFLX	Chr		Contaflex 860/24	Y	85176
a	10994	CZJ		Sonnar	50	2	1659675	N	CX	Nkl	transitional type/all nickel			
a	10995	CZJ	ZI Stuttgart	Sonnar	50	2	1659718	N	CX	Chr	rigid; no screws around RF window	Contax IIa(1a)	P	97492
a	10996	CZJ		Sonnar	50	2	1659725	N	CX		r/a So 5/1.5			
a	10997	CZJ	Zi Dresden	Sonnar	50	2	1659726	N	CX	Bik/Nkl		Contax I 540/24		
a	10998	CZJ		Sonnar	50	2	1659756	N	CX					
a	10999	CZJ	Zi Dresden	Sonnar	50	2	1659759	N	CX	Bik/Nkl		Contax I 540/24	AU	80385
a	11000	CZJ	Zi Dresden	Sonnar	50	2	1659761	N	CFLX	Chr		Contaflex 860/24	A	46968
a	11001	CZJ	Zi Dresden	Sonnar	50	2	1659799	N	CFLX	Chr		Contaflex 860/24	A	49537
a	11002	CZJ	Zi Dresden	Sonnar	50	2	1659873	N	CFLX	Chr		Contaflex 860/24		
a	11003	CZJ	Zi Dresden	Sonnar	50	2	1659890	N	CX	BN/Chr	transitional BN/chrome	Contax I 540/24(6)	Z	25091
tt	11004	CZJ	Zi Dresden	Sonnar	50	2	1659909	N	CFLX	Chr	type 1	Contaflex 860/24	Z	42403
a	11005	CZJ	Zi Dresden	Sonnar	50	2	1659919	N	CFLX	Chr	type 1	Contaflex 860/24	A	46834
a	11006	CZJ	Zi Dresden	Sonnar	50	2	1659922	N	CX	BN/Chr	transitional BN/chrome	Contax I 540/24		
a	11007	CZJ		Sonnar	50	2	1659939	N	CX	Chr	old style			
a	11008	CZJ	Zi Dresden	Sonnar	50	2	1659953	N	CFLX	Chr	type 1	Contaflex 860/24		
a	11009	CZJ	Zi Dresden	Sonnar	50	2	1659966	N	CX	Chr		Contax II 543/24	K	60897
a	11010	CZJ		Sonnar	50	2	1660024	N	CFLX	Chr				
a	11011	CZJ	Zi Dresden	Sonnar	50	2	1660067	N	CFLX	Chr	type 1	Contaflex 860/24	Z	42119
a	11012	CZJ		Sonnar	50	2	1660107	N	CX	BN/Chr	transitional BN/chrome			
a	11013	CZJ	Zi Dresden	Sonnar	50	2	1660167	N	CFLX	Chr		Contaflex 860/24		
a	11014	CZJ		Sonnar	50	2	1660201	N	CX	BN/Chr	transitional BN/chrome			
a	11015	CZJ	Zi Dresden	Sonnar	50	2	1660203	N	CX	BN/Chr	transitional BN/chrome	Contax I 540/24(6)	Z	68912
a	11016	CZJ		Sonnar	50	2	1669608	N	CFLX					
a	11017	CZJ		Sonnar	50	2	1698851	N	CFLX					
b	11018	CZP	ZI Stuttgart	Sonnar	50	2	1725968	Y	CX			Contax IIa(2)	F	22670
b	11019	CZP	ZI Stuttgart	Sonnar	50	2	1726026	Y	CX			Contax IIIa(2)	R	36287
b	11020	CZP	ZI Stuttgart	Sonnar	50	2	1726200	Y	CX		BLAM; black front ring; separation	Contax IIIa(2)	R	37858
b	11021	CZP	ZI Stuttgart	Sonnar	50	2	1726416	Y	CX			Contax IIIa	C	1995
b	11022	CZP	ZI Stuttgart	Sonnar	50	2	1726422	Y	CX			Contax IIIa(2)	R	36796
b	11023	CZP	ZI Stuttgart	Sonnar	50	2	1726446	Y	CX		barrel	Contax IIIa	B	94030
b	11024	CZP	Arsenal	Sonnar	50	2	1726481	Y	CX		black front ring	Kiev/Cx Noname		
b	11025	CZP	Arsenal	Sonnar	50	2	1726485	Y	CX		black front ring	Kiev/Cx Noname		6307424
b	11026	CZP		Sonnar	50	2	1726585	Y	CX		r/a CZJ So 50/2 B/N			
tt	11027	CZP		Sonnar	50	2	1726590	Y	CX	Chr				
b	11028	CZP	Arsenal	Sonnar	50	2	1726607	Y	CX			Kiev/Cx Noname		6307523
b	11029	CZP	ZI Stuttgart	Sonnar	50	2	1726639	Y	CX			Contax IIIa(2)	R	36216
b	11030	CZP	Arsenal	Sonnar	50	2	1726642	Y	CX			Kiev/Cx Noname		6307513
b	11031	CZP	Arsenal	Sonnar	50	2	1726679	Y	CX			Kiev/Cx Noname		6306902
b	11032	CZP	ZI Stuttgart	Sonnar	50	2	1726857	Y	CX		no serno in shoe; only logo	Contax IIIa(2)		
b	11033	CZP	ZI Stuttgart	Sonnar	50	2	1726887	Y	CX			Contax IIIa(1)	Y	53466
b	11034	CZP	ZI Stuttgart	Sonnar	50	2	1726974	Y	CX			Contax IIIa(1)	A	59758
b	11035	CZP	Arsenal	Sonnar	50	2	1727102	Y	CX		black front ring	Kiev/Cx Noname		6306026
b	11036	CZP	ZI Stuttgart	Sonnar	50	2	1727343	Y	CX		r/a CZJ So 50/2 B/N	Contax IIIa	D	85282
b	11037	CZP		Sonnar	50	2	1727625	Y	CX					
tt	11038	CZP	Arsenal	Sonnar	50	2	1727625	Y	CX		blam	Kiev/Cx Noname		6308218
b	11039	CZP		Sonnar	50	2	1727722	Y	CX					
a	11040	CZP	Arsenal	Sonnar	50	2	1728879	Y	CX		black front ring	Kiev/Cx Noname		6401376
b	11041	CZJ	Zi Dresden	Sonnar	50	2	1729248	N	CX	BN/Chr	transitional BN/chrome	Contax I 540/24	Z	
tt	11042	CZJ	Zi Dresden	Sonnar	50	2	1729853	N	CFLX	Chr	type 1	Contaflex 860/24	A	46245
a	11043	CZJ	Zi Dresden	Sonnar	50	2	1729891	N	CX	BN/Chr	transitional BN/chrome	Contax I 540/24	Z	46635
a	11044	CZJ		Sonnar	50	2	1729893	N	CX					
a	11045	CZJ		Sonnar	50	2	1729903	N	CX	BN/Chr	transitional BN/chrome			
a	11046	CZJ	Zi Dresden	Sonnar	50	2	1729921	N	CFLX	Chr	type 1; dupe w/ CZP Te 50/2.8	Contaflex 860/24	Y	85103

22

The Barringer lens list

John A. Buck, Marietta, GA

*The database compiled by Charlie Barringer
is being continued in other hands, and there is hope
that it can be made generally available.*

During the last two decades of his life, Charlie Barringer had been gathering serial numbers on Zeiss lenses in circulation, creating an enormous database that now approaches 33,000 entries. The list includes lenses from the East and West German manufacturers, and numbers range from the earliest to the latest products that carry the Zeiss name. Charlie's purpose was to gather sufficient data that would allow accurate estimates on production figures, while providing insights on lens evolution through the years. Results of such a study include the ability to assess the rarity of a given lens species, and (as is still hoped) the establishment of precise numbers that signal key production events. Familiar examples of these include the transition from the Zeiss-Opton to the Carl Zeiss label in West German lenses, or the removal of the red "T" mark on the lens front ring.

Charlie was noted for assembling his data with extreme care; any questionable entries would be earmarked for further verification. His confidence in the accuracy was strong, prompting him to once state that he would "go to the wall on the numbers".

Comparisons of the list data to surviving factory production records such as those assembled in the later works by Thiele¹ have been generally consistent, but a few discrepancies have been found. The high level of confidence in Charlie's numbers has led to some concern about the accuracy of the known factory data.

Plans for continuation

Efforts are now underway by a group of ZHS members to continue Charlie's work by adding further data, and to incorporate images where possible. Additionally, ways are being explored to make the list available to all. In addition to myself, the group members include Stefan Baumgartner, Hans DeGroot, Klaus Schmitt, Marc James Small, and Simon Worsley, with John T. Scott serving as liaison to the Society and to the Barringer family. The database software that Charlie used since the beginning is Panorama, which was originally written for Macintosh systems (but is now also available for Windows machines). This software and platform are being maintained for new data

entries. Conversions of the list and portions of it to Excel and then to pdf formats have been carried out to facilitate cross-platform sharing with wider distribution. A goal of the group is to make the list available on-line in read-only form. A few group members are given modification privileges; their responsibilities include data additions and accuracy checks.

What the list can tell us

Each entry in the database gives the lens type, serial number, manufacturer, focal length, maximum f-stop, whether or not it is coated, and any distinguishing features in the lens appearance and markings. Also included, if known, are the type of camera on which the lens was found, the camera serial number if available, and any distinguishing features that the camera might have. Sources have included collectors, museums, dealers, and on-line auctions such as eBay. Primary lens sorting is by focal length and aperture, with lens type secondary.

A portion of the list, showing entries 10993 through 11046, is reproduced on the facing page. In it, several examples of the well-known 50 mm f/2 Sonnar are listed. Not shown are additional columns that indicate the source of each entry, the entry date, and the identity of the person who entered the data. Lenses of pre-war Carl Zeiss Jena manufacture (CZJ) and post-war West German manufacture at Oberkochen (CZP) are shown. Two camera systems are apparent: "CFLX", indicating Contaflex TLR, and "CX" which denotes Contax system cameras. The latter category includes pre-war and post-war German Contaxes, as well as post-war Russian (Kiev) cameras. The alphanumeric camera serial numbers are indicated when known, the letter prefix being shown in a separate column. Post-war Contaxes are indicated as type 1 or type 2, for black dial and color dial, respectively.

A few conclusions can be drawn from this list excerpt. The first 25 entries consist of a batch of uncoated pre-war Jena lenses. This sampling would indicate a nearly equal mix of Contax and Contaflex mounts. The first 23 entries, comprising serial numbers from 1659616 to 1660203, and whose difference

is 587, represent a fairly tight distribution, and so it can be concluded that these lenses represent part of a single production run. Looking at listed numbers that precede those shown in the excerpt, 49 additional entries appear, whose lowest serial number is 1658312. The overall difference between this number and the highest number in the range (1660203) is 1891. Dividing this number by the number of entries in this range (72) yields the average separation between serial numbers (26). It is therefore likely that all lenses made within this span of numbers would have been 5 cm Sonnar f/2's and these would make up a production run of around 2000 units. The next two CZJ entries, having serial numbers 1669608 and 1698851, are of relatively wide separation from the previous numbers and from each other, so these two may likely occur in later production runs.

Next on the list excerpt is a run of coated post-war West German lenses (CZP) whose serial numbers range from 1725968 to 1728879, or a span of 2911. There are 23 entries in this range, so that the average serial number spacing is 126. Of these, the last entry (no. 1728879) would appear to be an outlier because without it, a tighter distribution is obtained, having a span of 1754, with an average spacing of 80 between serial numbers. Conservatively, one would take this latter result as indicating the actual production run of some quantity between 1800 and 2000. From number 1729248, the pre-war Jena lenses start again, with new batches for Contax and Contaflex.

The lens list offers many insights on Carl Zeiss lens production and deployment throughout the life of the company. This includes the Zeiss Ikon era, as well as lens use during prior and subsequent times. The list should prove to be a valuable resource for the Zeiss collector, researcher, or anyone interested in the operations of the company. The reader is encouraged to contact any member of our group for further discussion or information. □

1. Hartmut Thiele, *Fabrikationsbuch Photooptik Carl Zeiss Jena*, vols. 1 and 2 (privately published, 2005, 2002).

The 1927 Zeiss Ikon camera catalog

Lawrence J. Gubas, Las Vegas, Nevada

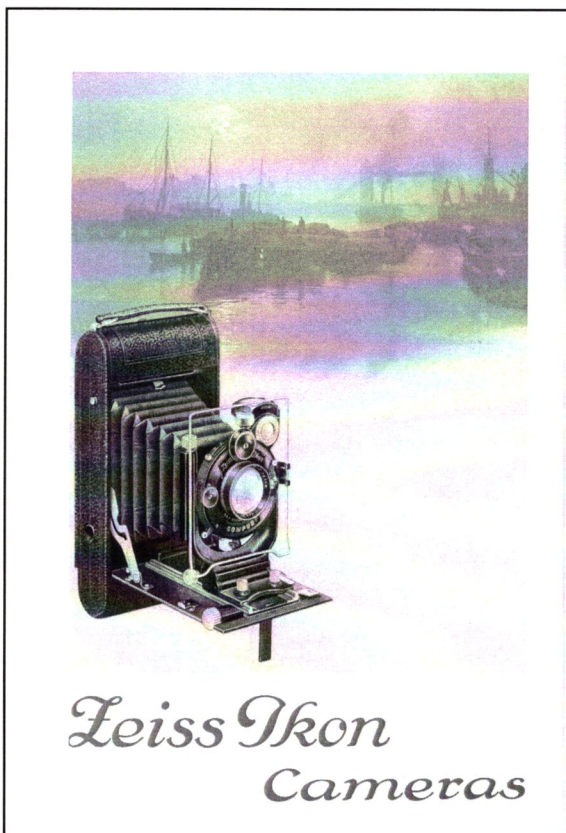
The reprint distributed with this issue lists all the cameras offered by the new company, inherited from the firms involved in the merger.

With this issue of our journal, we are distributing a membership dividend reprint of the Zeiss Ikon Abridged Camera List for 1927/28. While it is not the very first camera catalog for the now one-year-old firm, it is a representative presentation of the camera products of the company from the merger in 1926 to the beginning of 1930. There was little innovation in those early years, because it was a daunting task just to unite the product lines of the four major firms that had combined to become Zeiss Ikon. According to the 1929 edition of the "German Photographic Industry" (*Die Photographische Industrie Deutschlands*) written by Dr Willy Kuhn, the master catalog for the new firm listed 1,043 different cameras when documenting the model, lens and shutter combinations. There were 302 from Ica, 169 from Goerz, 323 from Contessa Nettel, and 249 from Ernemann.

Other catalogs concentrated solely on Accessories, Cinematic Equipment, Projectors and other products of the firm, with flyers on individual products. These are all now quite rare, more than 80 years later. They show that the cameras still utilized a varied mixture of Zeiss lenses as well as some less famous house lenses under various trademarks. The shutters were combinations of in-house products and varieties from Gauthier and Deckel. Streamlining these took many years, and the company was handicapped by the terms of the merger agreement that had been brokered by the German government. The biggest of these terms was that no jobs were to be lost in the factories in the far-flung locations in Berlin, Stuttgart and Dresden. The result was that manufacture of the old models continued for years to come.

Toward the end of 1928, the only new camera to make an appearance in any catalog was the new Ikonette (see opposite). This single-sized Ikonette seems to be a smaller modification of the Ica Icarette or the Goerz Tenax. It was clearly just a stripped-down version of those more expensive roll-film cameras. The shutter is quite simple, allowing only for a time exposure or one "instantaneous" setting. The shutter is not identified and is neither from Gauthier nor Deckel. The iris could only be adjusted to three settings: f/9, f/12 or f/25 (although my Ikonette has f/9, f/16 and f/32 — *The Editor*). The only available lens is the old Goerz Frontar, which is a simple meniscus lens. So it was essentially a folding camera with the features and equipment of a simple box camera such as the Box Tengor.

These early catalogs were either 32 or 36 pages in length and were only marking time until the firm launched a large-scale product-development program just before 1930. These major catalogs were $5\frac{3}{4} \times 8\frac{1}{4}$ inches (14.6×21 cm) in size but in May 1929, Zeiss Ikon issued its first main catalog (*Hauptkatalog*) which was $7\frac{3}{4} \times 10\frac{3}{4}$ inches (19.6×27.3 cm). However, the accumulated inventory of these older designs were still from the pre-merger times. In fact, in May 1934, when Zeiss Ikon issued the huge *Photo-Hauptkatalog*, it was still issuing inventory lists of these old designs at substantial discounts of 60% to clear inventory because it was now selling Contax and Super Ikonta cameras. But at the same time it was also selling seven different plate-back film holders with different coupling designs from the prior companies. Change was slow in coming but it was coming. □

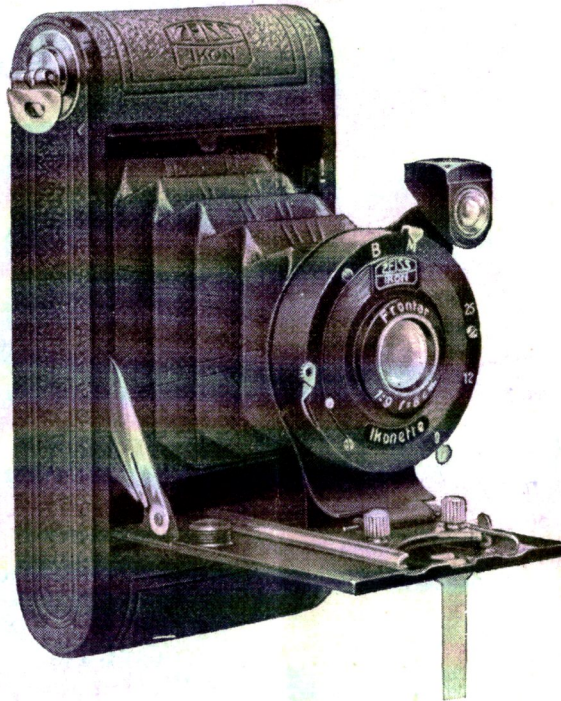


New introduction

New introduction

Ikonette No. 504/12

For Roll Films $2\frac{1}{2} \times 1\frac{5}{8}$ " , eight exposures. Size of the camera $4\frac{1}{8} \times 2\frac{1}{2} \times 1$ ".
Weight 11 oz.



A charming little camera for the Vest Pocket, with Frontar lens F/9, focal length $3\frac{1}{4}$ ".
Metal body, covered with leatherette.

This model has been produced on purpose to attract new amateurs and to render photography an easy and inexpensive hobby. The square form of a box camera is not everybody's taste. There are many who prefer a more compact camera, which may be easily carried in a gentleman's vest pocket or in a lady's hand bag. Such a camera must be very moderate in price and produce good pictures which can be successfully enlarged.

All these conditions are fulfilled by our new Ikonette. The camera is so moderate in price, that it is accessible to the most modest purse. The apparatus may be focused by one single movement, either on 6 feet or Infinity. The shutter can be regulated for Time and Instantaneous exposures. The F/9 Frontar lens has stops for F/12 and F/25. The camera is easily loaded and unloaded in daylight without fogging the film.

No. 504/12 Price of the Ikonette as described RM 24.—

No. 1678/1 Soft leather bag = 4.25

GOERZ
**TRIEDER-
 BINOKELS**

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