ZEISS HISTORICA

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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: Three of the Mikrotars discussed by Charles Barringer in his article on page 6. Left to right they are: Mikrotar 1cm/1.6 (prewar) in chrome; Mikrotar 1cm/1.6 (wartime) in bronze; Mikrotar 20mm/3.2 (T-coated postwar) in black. They are posed in front of an unusual aluminum Contax bayonet rear lens cap, vintage unknown.

Back cover: Portrait of August Nagel, made around 1940 when he would have been 58. See Larry Gubas's article on page 21, where he adds information on Nagel additional to Peter Wallage's article in the Spring 2007 issue.

(Artist unknown.)

President's Letter

This has been an eventful year for the Zeiss Historica Society. There were two meetings for the membership. One was here at my home in Las Vegas and another at the US headquarters of Zeiss in Thornwood, NY. To be sure, we kept the costs under control, because I paid for my local meeting and Zeiss paid for the luncheon and provided the site for the East Coast meeting. Thus our expenses were quite low.

Our business meeting was held in the East Coast gathering, and the current slate of officers were reelected. But we made a bit of a move forward in that we selected a new Board of Directors who will oversee the activities of the officers on an ongoing basis. These Directors include Past President, Charles Barringer, and three other members: Robert Ante, James Stewart, and François Vuilleumier. We made a decision to wait for the production of a special DVD of the movies taken by Professor Emanuel Goldberg in the early 1920s to show the possibilities of an amateur using the Kinamo camera. We have been delayed since we found through a member, Dr Michael Buckland, who had a vastly superior copy of these movies prepared in a DVD format using a frame-by-frame copying method instead of using a VHS tape given to me by Dr Herbert Goldberg, who is the son of the Professor. This greatly improves the quality of what we will distribute. This is, of course, the membership dividend for 2007.

The work on this is being coordinated by Secretary, Warren Winter who has traveled to many providers of the DVD creation business to find the best quality and the best price. It is our hope to have it sent out with this issue.

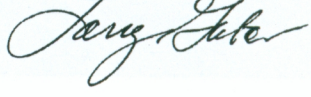
It was also decided that the dividend for 2008 would be a creation of the society. I have been asked at both meetings to write material that would show the great breadth of products that were produced by the Zeiss firms so that we can better understand the development of these firms and their wonderful diverse and pioneering products.

Meanwhile, the editor has judiciously tried to make sure that we have a variety of authors in our publication and so we are looking forward to new ideas and points of view from the membership. We hope that the board of directors will assist in this effort. However, it is you who can best tell us what you would like to see in our publications and, better still, contribute an article or an idea to the editor using the information on the opposite page for emails or mailing addresses.

This issue also contains a response from me regarding an article in our Fall 2005 by Peter Wallage regarding Dr Nagel and his withdrawal from Zeiss Ikon in 1928. I had found some original documents in this regard in my last trip to the archives in Jena and was able to add some more details to that material. This shows that, over the period of nearly 30 years, we have been able to gain additional knowledge of this man and his work. He truly had a lot of business problems but always seemed to land on his feet and improve his place in photographic history in spite of recessions, depressions, business partners who deserted him, a shifting world of technology and a ever-changing political world.

I am also close to finishing the physical layout of my microscope book. If you have an interesting or rare Zeiss microscope, please contact me as I hope to finish this book in the first quarter of 2008. I am happy to accept pictures and descriptions for use in that publication.

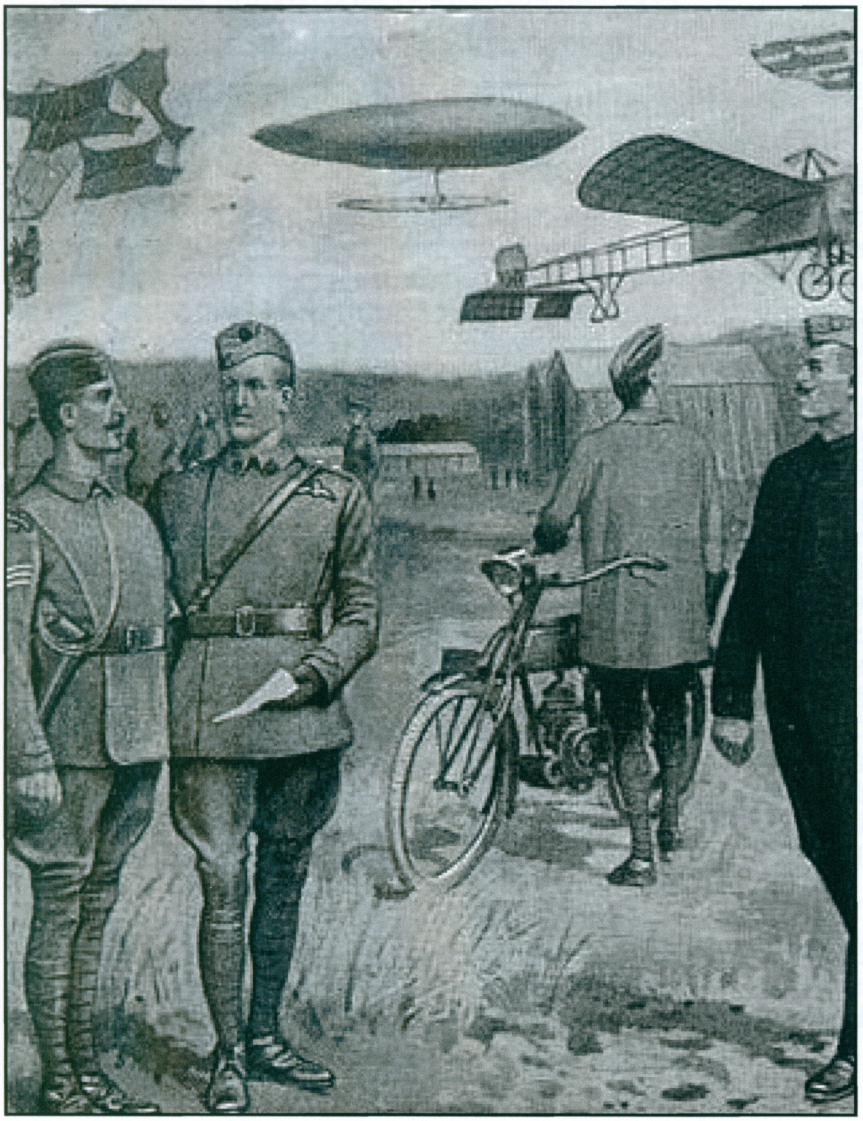
So, until next issue, I ask you to contact me with any questions or concerns that you might have. I can be found via email at larrygubas@gmail.com.



The "best pattern" binoculars for the British Royal Flying Corps

Giuseppe Finizio, Parma, Italy

Prior to World War I the RFC was trying to determine the best binoculars for use in airplanes, and they made their selection just before the onset of hostilities.



The Royal Flying Corps was formed on 13 April 1912 and assumed control of the Air Battalion of the Royal Engineers a month later. It comprised a Military Wing, a Naval Wing, a Reserve, the Central Flying School at Upavon, Wiltshire that was intended to train pilots for the operational wings, and the Royal Aircraft Factory at Farnborough. The Military Wing concentrated on building a reconnaissance force to work closely with the Army on the battlefield. Its principal roles were those of reconnaissance and artillery spotting, coupled with aerial photography. Special cameras and prism binoculars were needed. The Watson Air Camera, built in 1913, was the first camera especially produced for air photography in the RFC. In late 1913 a decision was also made to test all the best available prism binoculars in order to find the best for airborne use.

Carl Zeiss in Britain before the War

In June 1914 the British optical industry was so weak that it could not meet the needs of the Army and Navy. The War Office bought Zeiss-made observation instruments, which is why in 1901 Zeiss founded a manufacturing subsidiary in London that became Carl Zeiss (London) Ltd in 1909. This operation eventually dominated the industry sector in Britain. By 1913 Zeiss's exports to Britain accounted for 21.4% of the entire

German optical industry's total. The Carl Zeiss factory was set up in Bittacy Hill, Mill Hill, north of London, and it employed about 50 people. At the outbreak of war it was soon nationalized. Between 1911 and 1914 the British War Office ordered 1400 prismatic binoculars from Carl Zeiss (London) Ltd. It is obvious that among the tested binoculars many were built by Carl Zeiss.

The comparative tests

On 12 January 1914 Capt J.M. Salmond for the Director-General of Military Aeronautics approached Lt Col F.H. Sykes, commander of the Military Wing with the following request:

> "[T]he question of the best pattern binoculars for the use of the Royal Flying Corps has been raised, and it has been suggested that the Stenor Field Glass would be suitable pattern on account of its light weight and portability. A sample of this glass has been obtained on loan from the Zeiss Co. and is forwarded herewith for trial. A sample of a Zeiss Monocular is also forwarded for the same purpose. In this connection I am to point out that the following types of binoculars are now included in the various Mobilization Store Tables of units under your Command:
>
> Binoculars, special for observers:
> " Prismatic No.2 Mk I [the 6 × 30 Ross, Watson etc. binoculars with no graticule, introduced in 1909]
> " Zeiss, Special 3 [the 3 × 20 Teleplast], 6 [the 6 ×30 Silvamar) and 8 power.
> I am, therefore, to request that it may be reported whether either of the two glasses now forwarded is more suitable for the RFC use than any of the above-mentioned binoculars and could be approved in substitution thereof."

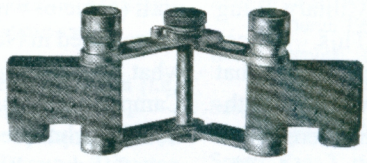
Of the binoculars mentioned in Capt. Salmond's request, the Stenor is shown in figure 1, Teleplast in figure

CARL ZEISS JENA

STENOR

Magnification 5 times

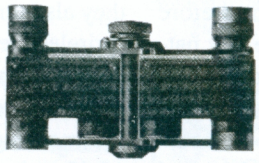
Vest Pocket Binocular



1/3 Full Size

Folds flat to fit into the pocket or handbag

Folded



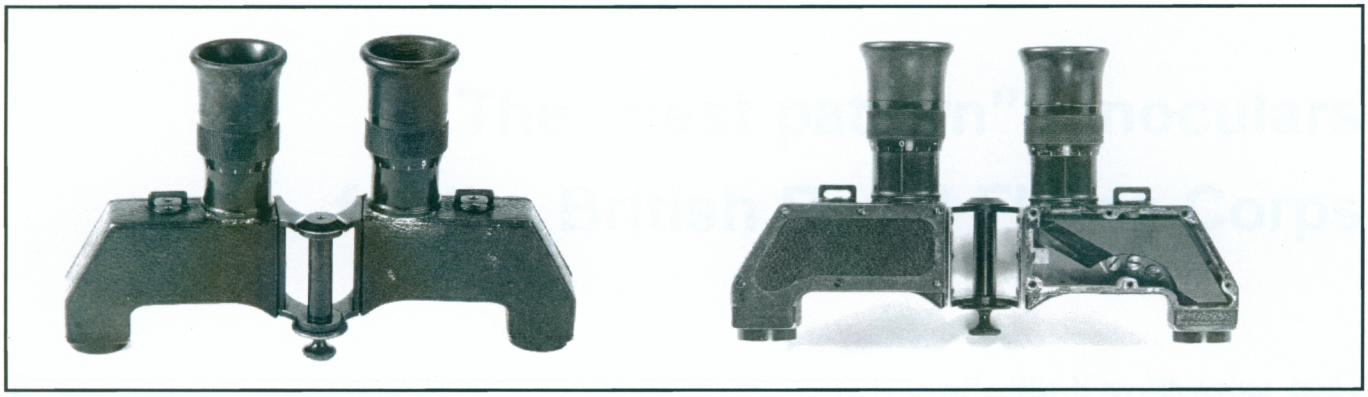
1/3 Full Size

In black stiff leather case . . . . . Codeword: Stenor
In suède leather pouch . . . . . Codeword: Stenorwe

For Prices see Price Slip

Magnification	Effective Diameter of Objective mm.	Effective Diameter of Objective in.	Diameter of Exit Pupil mm.	Light Transmitting Power	Field of View in angular measure	Field of View in terms of yds. at a distance of 1000 yds.	Weight of Field Glass oz.	Weight of Hard leather Case oz.	Weight of Soft leather Pouch oz.
5×	12	0·47	2·4	5·76	8·3°	145	7½	2½	2½

The Stenor 5×, originally suggested for use in aircraft because of its light weight and portability, but found after testing to have too small a field when wearing goggles and too subject to vibration without them. Figure 1

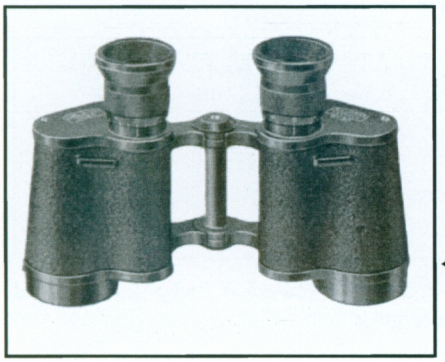


Two views of the Teleplast 3×20: left, a normal view, and right, with one of the covers off to show the internal construction. The Teleplast was not recommended for use from aircraft. Figure 2

2, and the Silvamar in figure 3, below.

Lieut-Col Sykes responded on 22 January and wrote that the monocular received was a Ross (serial number 59454), not Zeiss. Nothing happened for two months or so and on 16 March the War Office solicited the Military Wing commander directly. This officer responded on 21 March reporting "that there has been very little suitable weather for these trials and that, therefore, a complete report cannot yet be made. The trials, so far, indicate that the monocular is likely to be of more use than the Stenor Field glass but that it requires a considerable amount of training before an observer can effectively use any pattern of field glass from an aeroplane. A further report will be made as soon as any definite results have been obtained." Later, in May, Carl Zeiss (London) Ltd tried to sell 3 × 20 Teleplasts with or without "soft rubber eyecups" to the War Office, but Col. Sykes asked that the whole affair "be allowed to stand over for a few weeks [since] I intend going very thoroughly into this question of glasses and eye cups at the Concentration Camp…" In June 1914 the Military Wing of the RFC with a collection of BE 2, Be 8, Avro 504, Bleriot XI, Henri Farman F.20, Maurice Farman S.11 and Sopwith Tabloid aircraft (some of which are shown in figure 4), gathered in Netheravon, Wiltshire for what was known as the "Concentration Camp" to discuss principles and operational techniques and practice flying over Salisbury Plain. Between 15 and 29 June they experimented with methods of observation, reconnaissance, photography, and direction of artillery fire, and they also undertook the first aerial use of "wireless telegraphy." On this occasion different prismatic binoculars from Zeiss, Watson and Ross were tested. On the morning of 29 June (from 9.35 to 10.40 am) pilot Lt Boston and observer Lt Brock flying in a Henri Farman F.20 pusher biplane, serial number 346, carried out a complete series of evaluation tests with seven different prismatic binoculars. Here is the final "Report on Field Glasses for use in aeroplanes" written on the same day by Lieut-Col Sykes and sent to the War Office on 9 July.

Note that Lt-Col Sykes misspelled "Zeiss" as "Zeis" and "Silvamar" as "Silvermar" throughout; he was nothing if not consistent!



◀ **The Silvamar,** judged by the RFC to be "very good, with and without goggles," although the Doppelfernrohr ×5 was superior at night and in mist. Figure 3

"Zeis×3 (old pattern) [that is, 3×20 Teleplast binoculars]
With goggles, these glasses were not good. They did not seem strong enough. Without goggles they were fairly good but had not clear enough definition.

Zeis ×3 (new pattern)
These glasses were better than the old pattern Zeis × 3 but were not very good, with or without goggles. They are not powerful enough if flying at any height over 4000 ft.

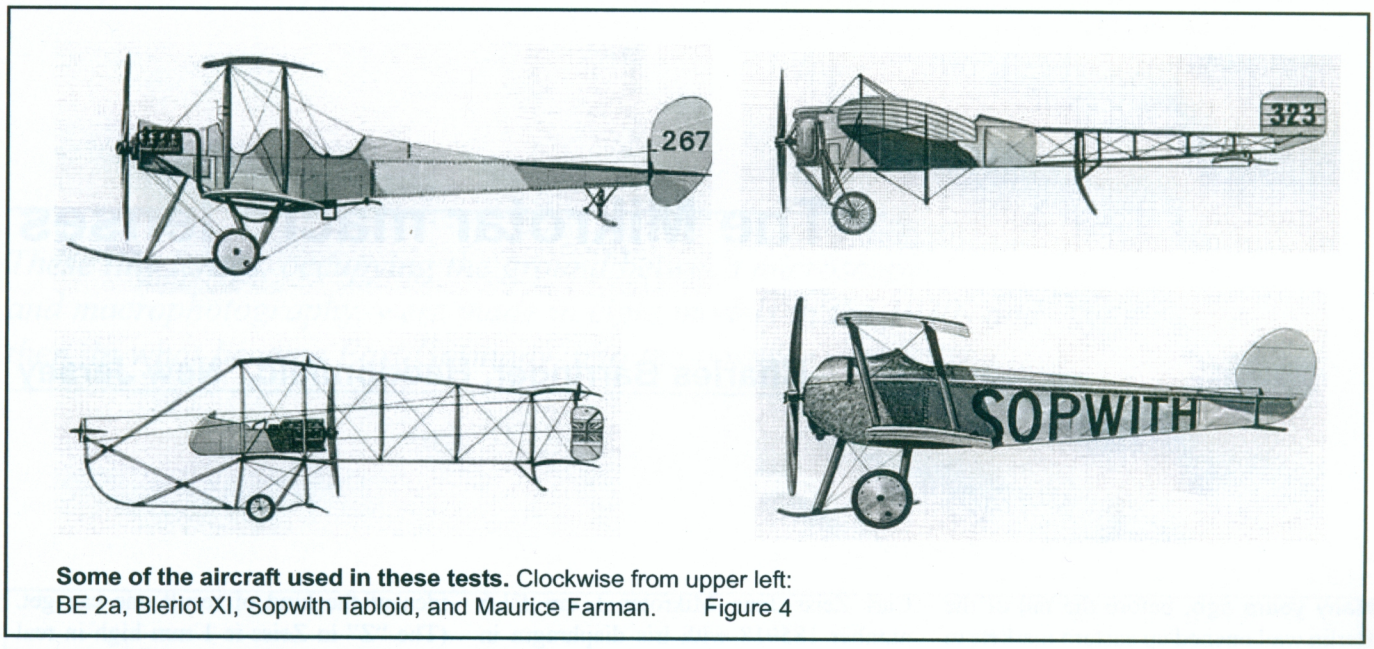
Stenor
With goggles they were not good. They have a very small field, and there is too much vibration. Without goggles the vibration is too great for them to be of any use. Also the field is very small.

Monocle [that is, the Ross monocular]
With goggles, the glass could not be brought close enough to the eye. Without goggles, the glass was fairly useful, but there is excessive vibration, and the field is small.

Zeis Silvermar ×6
These glasses are very good both with and without goggles. They can be held very steady, and have a very clear definition, and a good field.

Zeis M.K. × 6 [not a Zeiss but probably a 6×30 Watson N.2 Mk I or II]
Very much the same as Silvermar as regards power and handiness. But they have not the same clear definition.

D.F. Long × 7 [this was known commercially as the 7×50 Noctar, shown in figure 5, but to the military it was the 7×50 Doppelfernrohr Zeiss]
Very good indeed both with and without goggles. They can be held very steady, and are very clear, and have a large field.



Some of the aircraft used in these tests. Clockwise from upper left: BE 2a, Bleriot XI, Sopwith Tabloid, and Maurice Farman. Figure 4

The machine used was an R.A. [that is, Reserve Aircraft]
Height 4000 feet –5000 feet
District. Salisbury and Wilton

The two best glasses are the Zeis Silvermar and the D.F. 7 × Long. They are very steady, and very clear, and have plenty of power. They could be used at any height. The Zeis Silvermar is handlier [*sic*] and smaller but the long glasses can be steadied a little easier as it is possible to get a good grip on them."

Lieut-Col Sykes recommended that a number of Zeiss Silvamar 6×, Watson Mk II 6× and Zeiss D.F. 7× be purchased for further trial and noted that the "two 6-power glasses are similar to, if not identical with, the service prismatic binocular No. 2, or No. 3."

On 20 July the deputy commander of the Aircraft Park RFC Military Wing wrote to Lieut-Col Sykes that Capt Playfair, one of the Directors of the Carl Zeiss of London, stated:

"..the D.F.7 binoculars….are very superior for use in mist and at night to the Silvermar (*sic*) 6's".

On 4 August Major Brancker of the General Staff, for the Director General of Military Aeronautics, wrote to Lieut Col Sykes: "…please note that arrangements have been made for the early supply to RFC. Headquarters, Farnborough, of glasses as under for equipment of Squadrons :

Zeiss ×7
4 pairs ordered today from Zeiss Ltd for delivery to Farnborough. These are all that the firm have in stock and more of this pattern cannot be obtained at present.

N.3, Mk I prismatic service pattern [i.e. 6 ×24 Zeiss and Ross binoculars]
72 pairs for equipment of Squadrons (4 ×18) from DDOS [Deputy Director Ordnance Services] Woolwich. These are the only glasses that can be spared and are being consigned direct to Headquarters, M.W. and should be distributed to squadrons from there."

On the same day, 4 August, Britain declared war against Germany, the day after that country declared war against France. The whole of the Royal Flying Corps, consisting of 2 Squadron (Maj. C.J. Burke), 3 Squadron (Maj. J.M. Salmond), 4 Squadron (Maj. G.H. Raleigh) and 5 Squadron (Maj. J.F.A. Higgins) together with their Aircraft Park (Maj. A.D. Carden), 105 officers in all, equipped with 63 aeroplanes and 95 motor vehicles accompanied the British Expeditionary Force to France.

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The Noctar, a commercial version of the *Doppelfernrohr* 7×50 judged by the RFC to be "very good indeed." Figure 5 ▶

The Mikrotar macro lenses

Charles Barringer, Haddonfield, New Jersey

Many years ago, before the fall of the Berlin wall opened up eastern markets to western capitalism, I had noted in the famous Zeiss Ikon C-740 catalog entitled *Contax Photography* a minuscule lens described as a Mikrotar. Its specifications were unusual: 1.0 cm f/1.6 in a microscope thread, with no focusing mechanism and an iris scaled from 1 to 11; it was listed in a special section describing the esoteric equipment in the Contax system for "scientific photography."

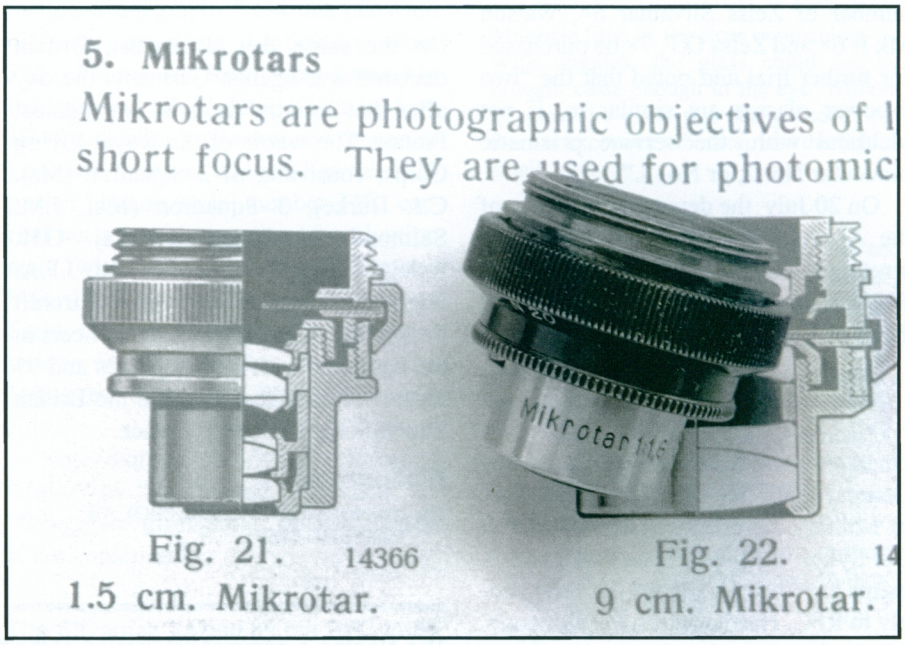
While my Contax collection grew in all other fields, the Mikrotar remained elusive and, as such, became more and more desirable to me. Over a number of years, with diligence as well as some luck, I was able to find the various elements of the Mikrotar outfit I had seen described in the catalogue in such detail – the adapter ring between the microscope thread and the Contax bayonet, the focusing head, the ground-glass screen, the magnifier and micrometric focusing adapter used for critically focusing the tiny lens, and the counterweight one uses during the focusing procedure to compensate for the weight of the camera while focusing on the much lighter ground glass. (While this might be thought of as typical Zeiss overkill, keep in mind that a 1 cm lens focused at an object only a few millimeters away has essentially no depth of field.) But the lens itself was nowhere to be found.

Finally, a few years ago at a European auction I became the proud owner of a Carl Zeiss Jena Mikrotar 1 cm f/1.6 number 185918 with iris diaphragm in microscope thread. It was uncoated and finished in chrome, just as illustrated in the Contax catalogue. Since then I have heard of fewer than a dozen of the 1 cm Mikrotars in any configuration, reinforcing my conviction that the lens is quite rare and helping justify my decision to place what had seemed to be a ridiculous bid to buy it. Figure 1 shows my prize.

Figure 2a shows the setup needed to use the Mikrotar effectively on the Contax of the day; figure 2b gives an idea of the kind of result one can get. (The "Z" in Zeiss is 1 mm high in real life.)

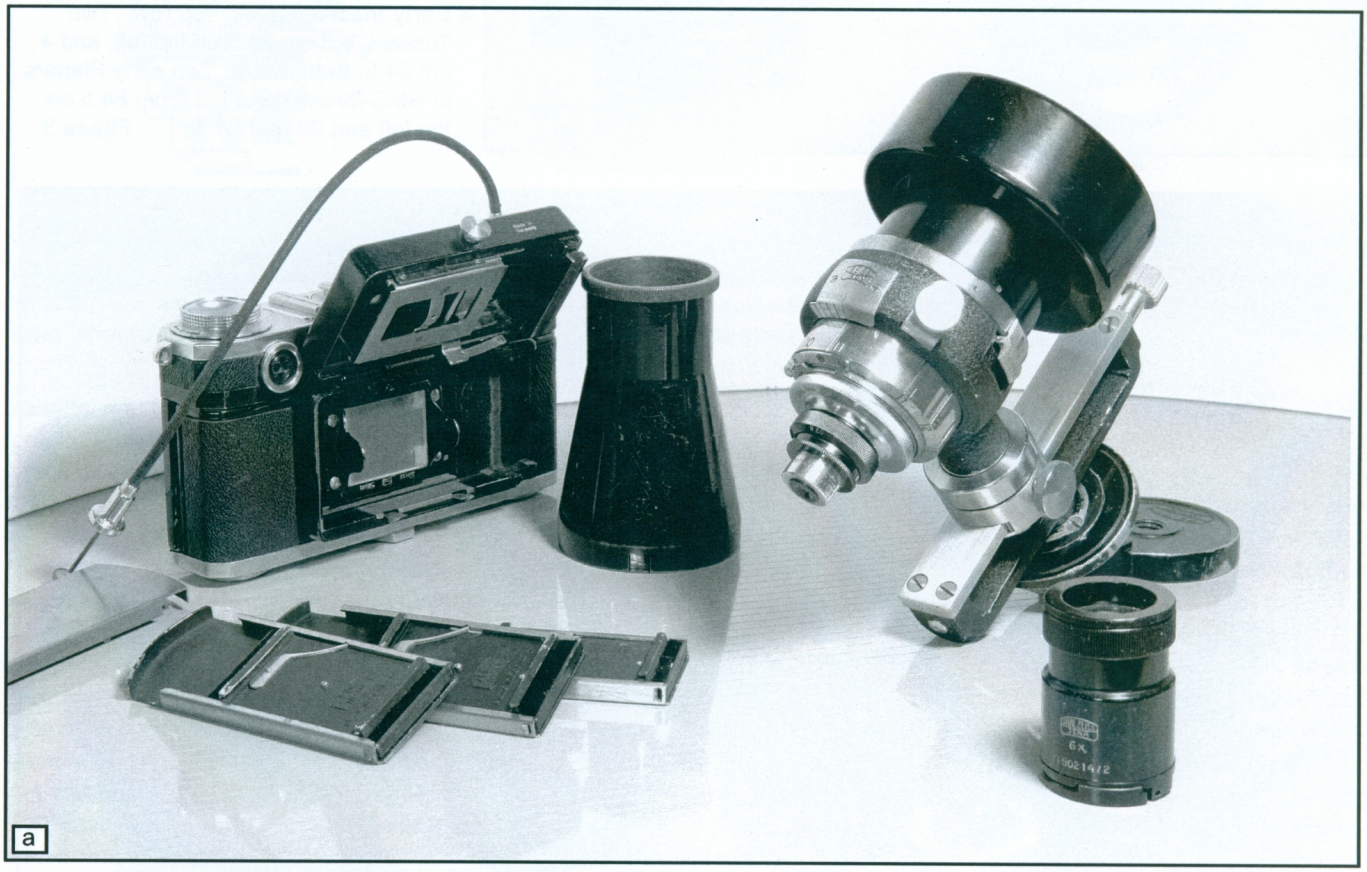
Family of lenses

Some years later I learned that the 1 cm Mikrotar was simply the shortest focal length of a family of Carl Zeiss Jena lenses designed and made to provide a uniformly high standard of performance for true macro work over a wide range of conditions. They are true macro lenses whose sole vocation is maximum performance in a clearly and narrowly

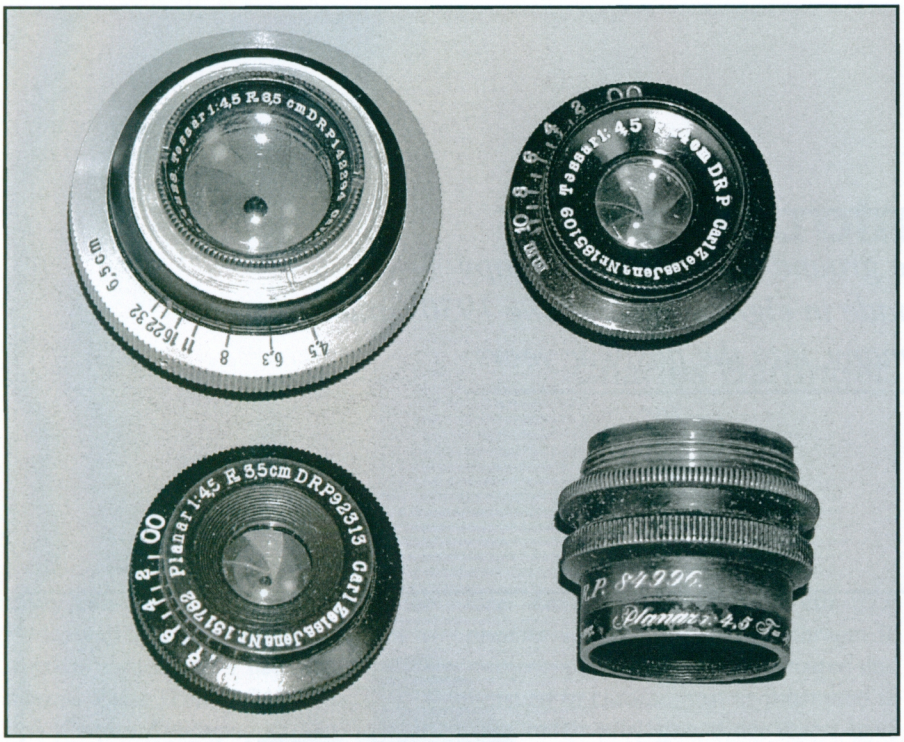


Carl Zeiss Jena Mikrotar 1 cm f/1.6, with iris diaphragm in microscope-thread mount. This was the author's first example of a Mikrotar. Figure 1

These tiny lenses, occupying the ground between microscopy and macrophotography, were made in eight models in the 1930s and then, in what became East Germany, into the postwar years.



Using the Mikrotar. Part a of the figure, above, shows all the elements one needs to set up and focus a camera with the 1 cm Mikrotar. Clockwise from upper left: Contax II with single-shot back and cable release; focusing magnifier; Mikrotar in focusing configuration, consisting of (front to back) lens unit, diaphragm adapter, RMS-to-Contax-bayonet adapter, focusing helicoid, ground-glass adapter, counterweight; all mounted on a micrometric focusing adapter and Duotar tripod head; a 6× loupe for confirming focus on the camera ground-glass, and four cut film (plate) adapters for the single-shot back. **Part b** (right) Mikrotar photograph taken at minimum extension on an Olympus DSLR. The "Z" in the photograph is 1 mm tall in life-size. Note the extremely shallow depth of focus. Figure 2

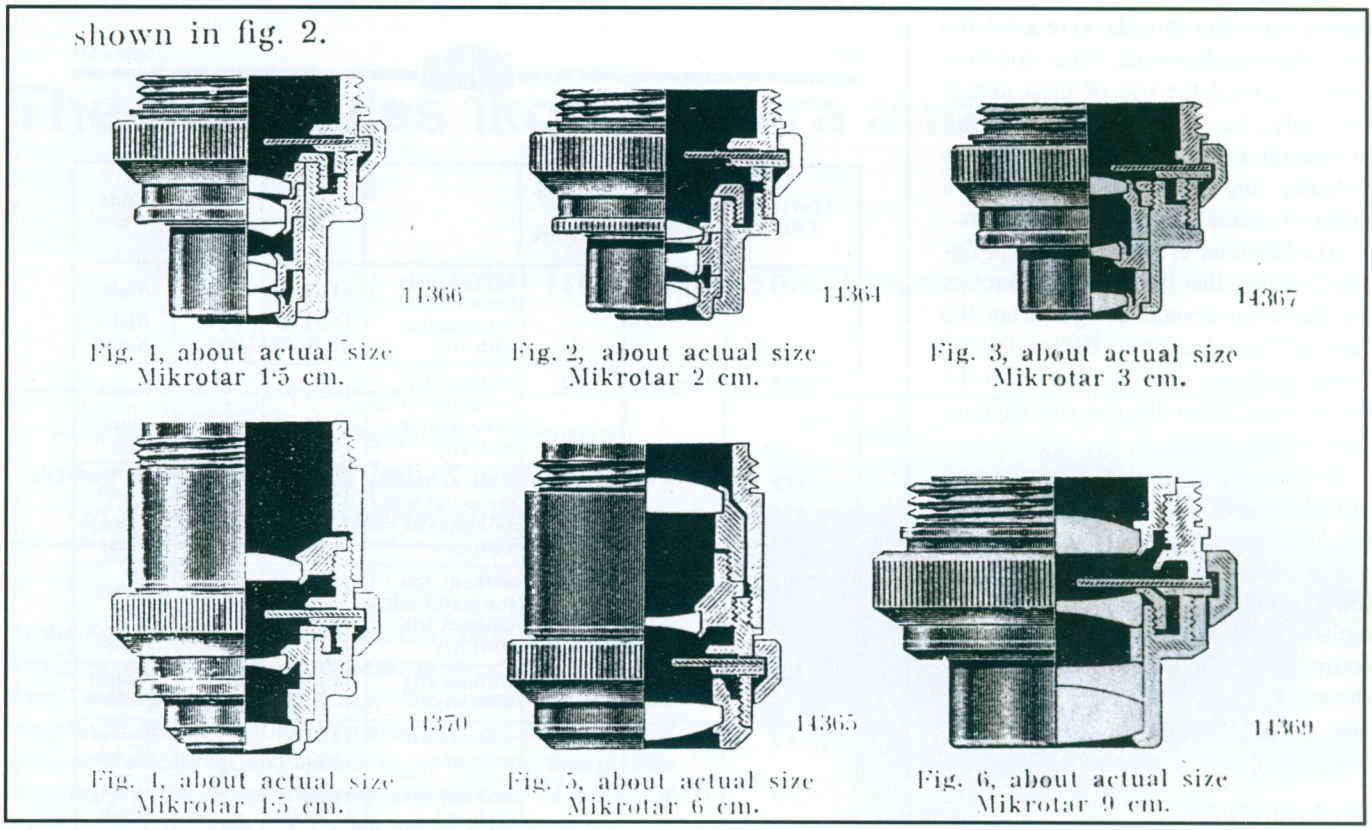


defined range of magnification ratios. They are genuinely useless outside their specifically targeted field, and have always been quite expensive. They are not to be confused with the familiar macro lenses calculated for flat-field close-up work (but useful also for general photography) which became popular in the heyday of the single-lens reflex cameras during the second half of the 20th century.

The range of true macro lenses has never been crowded, and remains small today. The technology of these lenses has one foot in microscopy and one in photography, so the players have generally been major integrated optical firms

◀ **Early macro lenses.** Top row: Two Tessars, 6.5 cm f/4.5 on the left, and 4 cm f/4.5. Bottom row: Two early Planars in RMS-thread mount: 3.5 cm f/4.5 on the left and 20 mm f/4.5. Figure 3

Seven of the eight Mikrotars. Front row, left to right: 1.5 cm f/2.3 in prewar chrome, 3 cm f/4.5 in prewar black without iris, 20 mm f/3.2 postwar T-coated black. Middle row, left to right: 1 cm f/1.6 prewar chrome in Contax-mount adapter, 60 mm f/4.5 postwar coated black. Back row: lens tubes for the 3 cm and 45 mm lenses. (The 12 cm f/6.3 is missing from this set.) Figure 4



Lens diagrams from the Mikrotar brochure. The references to "actual size" mean, of course, size in the original publication. To determine the scale in this reproduction, note that the distance between the knurled surface on the left of "Fig.1" (under the word "shown") and the far side of the cutaway in "Fig. 3" is, in the original, 102 mm. Figure 5

making microscopes as well as photographic lenses. These include Zeiss in its various iterations, Leitz/Leica, Nikon, Olympus, and Topcon, to cite only some of the most visible.

Since Mikrotars were marketed mainly to the scientific community through the microscope sales division, the lenses in this category are relatively rare on the normal photographic market. From an amateur's perspective, they were outrageously expensive, but you get what you pay for, as the saying goes. The investment in these lenses, combined with extreme care in their use, will result in images that cannot be duplicated by any other procedure or equipment.

History

From the very early days of photography, Zeiss had offered lenses especially designed for macro photography, the difficult range between photomicrography using a compound microscope and closeup work using a normal camera with an extension bellows. Indeed, the renowned Planar, introduced in 1897, was initially designed for this use, for which its symmetrical formula made it well suited. Figure 3 shows two early versions in RMS thread, along with a couple of Tessars also offered in closeup configuration. ["RMS," or the Royal Microscopical Society thread, is still in general use. It has 0.7965 inch (20 mm) diameter and 55° Whitworth thread with 1/36 inch pitch.]

At some point in the 1930's Zeiss decided to incorporate its experience in this field into a single line of lenses to be known collectively as Mikrotars. The exact date of their introduction is difficult to pin down, but they are mentioned in Mikro 1 catalogues as early as 1934. *Contax Photography* (C-740), the bible of the prewar Contax system, first shows the 1 cm Mikrotar (but no other) in the C-740c version of 1938.

Among the dozens of texts covering specific aspects of microscopy available from Zeiss before World War II, *Mikro 514* of February 1938 is the only text I am aware of that specifically covers the entire line of Mikrotars, while their use is covered in *Mikro 515*. *Mikro 514* describes eight Mikrotars available prewar: 1 cm f/1.6; 1.5 cm f/2.3; 2 cm f/3.2; 3 cm f/4.5; 4.5 cm f/4.5; 6 cm f/4.5; 9 cm f/6.3; and 12 cm f/6.3. Lenses from 1 cm to 9 cm are shown in figure 4.

The closely stepped focal lengths were designed to cover a range of magnification ratios from approximately 25:1 (25 times life size on negative, so several times more on an 18 × 24 cm, 8 × 10 inch final print) to 0.8:1 with uniform quality and color rendition. Each of the lenses was available in a version without iris as well as one with iris, the latter ones having an index ring calibrated from 1 to 11. As in microscopy, diffraction effects quickly lead to image degradation at smaller openings, so maximum aperture yielded maximum theoretical performance (especially with the shorter focal lengths) and also allowed shorter exposure times. The standard version was delivered in RMS

thread, but other threads were available for other applications. The common thread allowed the use of these lenses not only for applications involving microscopes but also, via adapters, to virtually any camera system with a reflex or ground glass viewing system.

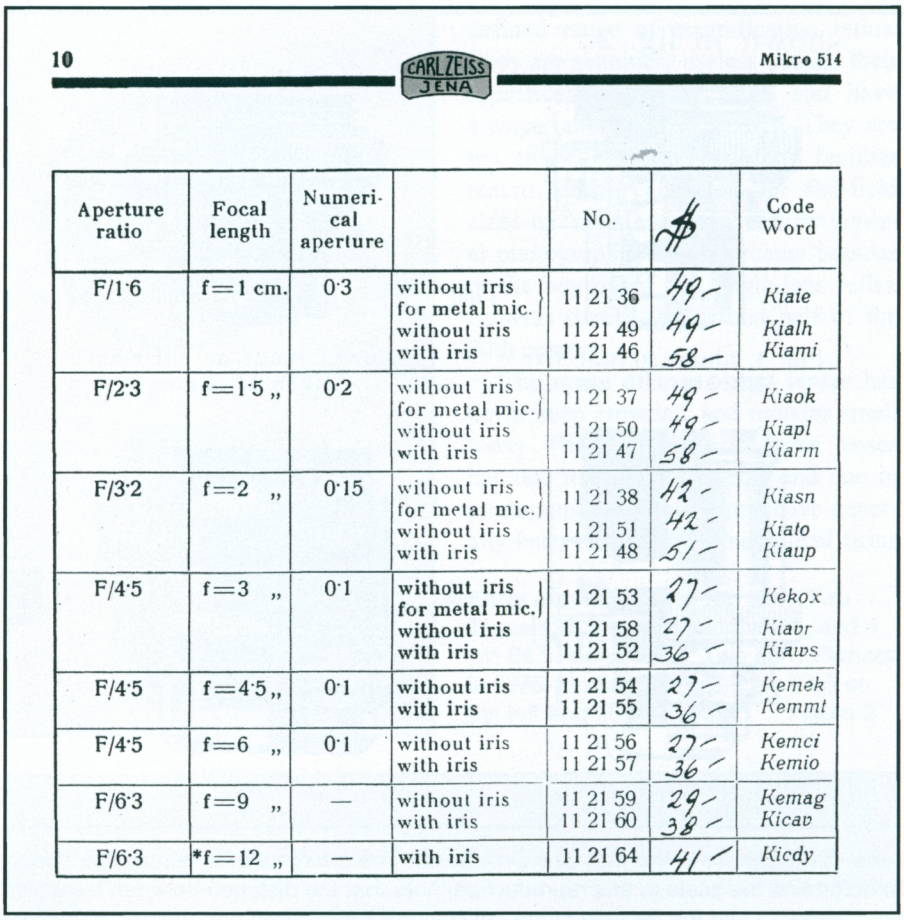
The Mikrotar brochure shows, in figures 5 and 6, that the various Mikrotars are based on several designs from the "normal" lens catalogue: Biotar, Triotar, Tessar, and one that owes more to the Voigtländer Heliar than to any contemporary Zeiss design.

At high magnifications vibration and diffraction are the main enemies of sharp results. The slap of a reflex camera's mirror can be fatal to image sharpness; imagine the potential for disaster when replacing the focusing screen with the entire camera body when using the rig shown previously. With much patience and proper photographic technique, exceptional results are possible.

Postwar reprise

In the years following 1945 the house of Zeiss was divided into two competing components, Carl Zeiss Jena in the eastern zone and Carl Zeiss, Oberkochen in the west. Starting with a clean sheet of paper Zeiss West produced their legendary Luminar macro lenses, scaled in five steps from 16 mm through 100 mm, in the Göttingen plant where the majority of their microscope objectives were made after the war.

Carl Zeiss Jena reprised the Mikrotar line, upgrading the lenses with T coating but optically leaving well enough alone. Focal lengths were now marked in mm, and the finish was black. I am not sure whether the extremes of the line were offered postwar, as I have never seen either the 10 or the 120 mm lenses in postwar trim. The designation varies: many are marked simply "M" instead of Mikrotar and some have no markings at all, while the proud Carl Zeiss Jena logo disappears in favor of the generic "aus Jena" in response to legal pressure. As with normal lenses, the classic red "T" mark was dropped once coating became the norm, probably in the mid-fifties. The serial numbers of all Mikrotars I have noted, both prewar and postwar,



10 CARL ZEISS JENA Mikro 514

Aperture ratio	Focal length	Numerical aperture		No.	$	Code Word
F/1·6	f=1 cm.	0·3	without iris for metal mic.	11 21 36	49–	Kiaie
			without iris	11 21 49	49–	Kialh
			with iris	11 21 46	58–	Kiami
F/2·3	f=1·5 „	0·2	without iris for metal mic.	11 21 37	49–	Kiaok
			without iris	11 21 50	49–	Kiapl
			with iris	11 21 47	58–	Kiarm
F/3·2	f=2 „	0·15	without iris for metal mic.	11 21 38	42–	Kiasn
			without iris	11 21 51	42–	Kiato
			with iris	11 21 48	51–	Kiaup
F/4·5	f=3 „	0·1	without iris for metal mic.	11 21 53	27–	Kekox
			without iris	11 21 58	27–	Kiavr
			with iris	11 21 52	36–	Kiaws
F/4·5	f=4·5 „	0·1	without iris	11 21 54	27–	Kemek
			with iris	11 21 55	36–	Kemmt
F/4·5	f=6 „	0·1	without iris	11 21 56	27–	Kemci
			with iris	11 21 57	36–	Kemio
F/6·3	f=9 „	—	without iris	11 21 59	29–	Kemag
			with iris	11 21 60	38–	Kicav
F/6·3	*f=12 „	—	with iris	11 21 64	41–	Kicdy

A table from the Mikro 514 catalog, listing the eight Mikrotars available in February 1938. The prices shown, in US dollars, are no longer applicable. Figure 6

were drawn from a different register than the one used for normal lenses, with the exception of the 12 cm lens. I suspect this indicates their manufacture in the microscope lens-making facility but have no confirmation of this.

However, the existence of Mikrotars without the full logo suggests that they were being made for the west. While relatively little known in western markets compared to the equivalent Luminar lenses offered by western Zeiss, the Mikrotar line seems to have been available through the importers of Carl Zeiss Jena products in each country. In the US, the official importer was Ercona on Long Island, NY. Nevertheless, for the western amateur buyer, it is eBay that has opened the gates, Mikrotars being regularly offered by Warsaw-pact sellers, often at very reasonable prices. In my experience, all but the two shortest and the longest members of the family have become relatively easy to find.

As I indicated there is not a vast amount of information available on the Mikrotar line. Postwar publications, or even references to these lenses in any language are rare. This may simply reflect their highly targeted market in the scientific community behind the Iron Curtain, notorious for lack of communication with the scientific community in the west, but possibly also because in the captive markets of the Warsaw Pact countries, the lack of competitive pressure made publicity unnecessary. This would also conveniently explain the rarity of Mikrotars in western markets, but this is, at best, a guess.

For further information see the website of ZHS member Klaus Schmitt, http://www.macrolens.de/objektive.php. Please send corrections and comments to me at charzov@gmail.com.

* * *

I thank Nick Grossman for setting me on the path in search of the modern Mikrotars, and Charlie Gellis for providing copies of the original documentation. ❐

The new Zeiss Ikon camera and lenses

John T. Scott, Austin, Texas

A test of the new rangefinder M-mount camera and two of its lenses reveals much to like, but some shortcomings too.

At the Fall 2004 Photokina show, Carl Zeiss announced the imminent arrival of a new camera, to be called the "Zeiss Ikon," with newly designed lenses. The camera (figure 1) is a rangefinder design for film, with manual film loading, manual film-speed selection, and manual frame advance, thus placing it squarely in the "retro" category in a universe of automatic digital reflex designs. But what made this announcement exciting was that for the first time Zeiss put their name on a camera with the Leica M lens mount, thus making it usable with all other M-mount lenses, of which there are legions, and that the new lenses will mount on and couple to Leicas and other M-mount cameras.

Zeiss Historica Society past president Charles Barringer was at the press conference in 2004 and wrote up his first impressions of the system in a Fall 2004 article for this journal. Only two "pre-prototype" bodies were shown at Photokina, and Barringer rated them as "works-in-progress," complaining that the shutter was too loud but finding the rangefinder to be good.

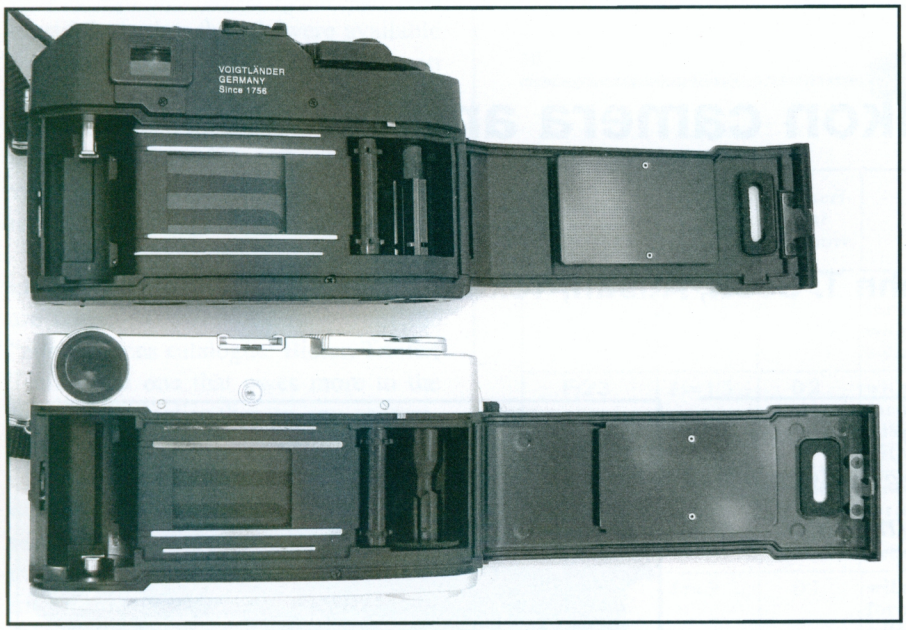
Then last year Peter Hennig, a regular contributor, sent me his manuscript on the C Sonnar T* 1.5/50 ZM lens, one of the new designs for the Zeiss Ikon camera. He traced the history of the design back to the first triplet lenses from the 19th century, and rated the "total picture quality" of the new lens as "outstanding." We published his article in the Fall 2006 issue.

So when I was offered a camera and a couple of lenses on a three-week loan I naturally jumped at the chance to try it and share my experiences with readers. You will see from the details below that I was very impressed by both the camera and its lenses.

The camera body

When I heard that the body was being made for Zeiss by Cosina in Japan my first thought was that it would be simply a re-branded version of the Cosina-made "Voigtländer Bessa" R2M/R3M models, which are also M-mount rangefinders. These so-called "Bessas" already exist in a variety of models

The Zeiss Ikon camera, with the C Sonnar T* f/1.5 50 mm ZM lens, shown in front, back and top views. Figure 1



Interior views of a Cosina-built Voigtländer Bessa R2C (above) and the Zeiss Ikon (below). Only the film-transport area is similar; everything else is new. Figure 2

with different lens mounts; I use a Cosina Bessa R2C, which has the classic Contax rangefinder mount and works well with my old Zeiss and Kiev lenses But I found that the Zeiss Ikon is a new design with useful improvements, and Zeiss claims that it is made under their strict quality control (not that I have had any quality problems with my R2C).

Figure 1 shows three views — front, top, and back — of the camera I borrowed. This one is finished in silver except for the leather-covered finger-grip areas. The body is also available in an all-black version. Figure 2 shows the Cosina Bessa and the Zeiss Ikon with their backs open to reveal the film-transport systems and the shutter blades. Yes, they look much the same inside, but then so do most of the Japanese-made cameras of recent vintage, including the Contax-mount Yashicas and the Contax-branded bodies made by Kyocera. Apparently not much can be done to improve this basic layout. I had a little trouble loading film at first, until I realized that I was pushing the film leader the wrong way into the slot in the take-up spool; you have to push it down towards the bottom of the film chamber, rather than across the top of the spool. Then I found it very easy.

The tripod bush is at the extreme right-hand end of the baseplate, apparently so that an optional hand grip can be mounted there (figure 3). When that grip is in place, it gives you a new tripod bush situated more conventionally in the center of the baseplate.

The shutter on the new Zeiss Ikon is an electronically controlled metal focal-plane design with speeds from 1/2,000 second to 8 seconds. I did not hear the shutter that Barringer found noisy in 2004, but this one seemed quiet enough for me.

The major differences between the Cosina Bessa and the Zeiss Ikon are under the top plate; in the viewfinder, rangefinder, and exposure control. Both viewfinders give you a large, clear view extending beyond the actual frame, with bright frame lines superimposed on it. But in the new camera the frames for 28, 35, 50 and 85 mm lenses are selected automatically when the lens is mounted; in the Bessa you have to do it yourself (and there is no 28 mm option). The frame lines are automatically adjusted for parallax.

The Zeiss Ikon gives you a way to see what field another lens would cover, compared with the lens actually mounted. This is done by pushing the small lever on the front left of the body (the photographer's left) that is visible in my figure 4. At first glance this lever looks rather like the selftimer on the classic Contax rangefinders (from Contax II onwards). There is in fact no selftimer on the new camera, but I was pleased to find a classic cable-release threaded socket that accepts all my old cables. I have been most upset by the expensive electric release cables needed for the Kyocera-built Contax reflexes, and I still have not found the special one I need for the short-lived NX body.

The Zeiss Ikon rangefinder is extremely easy to use and yields accurate results; its 75 mm baseline guarantees greater precision than the Bessa's 35 mm rangefinder baseline.

Shutter speeds are selected via a knob on the top plate. As well as the 1 second to 1/2,000 second range there is an aperture-priority automatic-exposure (AE) option, with +2 to –2 stops of adjustment for bracketing around the central exposure value. Metering is by a through-the-lens, center-weighted system. When using AE the shutter speed automatically selected shows up in the viewfinder as one of a column of numbers arranged vertically to the left of the viewing area. If the shutter speed is selected manually, the chosen value displays in the same way, but in addition the nominally "correct" value displays as a flashing number, so that you can see how your chosen speed compares with the one the camera would choose for you.

There is an auto-exposure lock (AEL) device, to enable you to choose

Optional hand grip in place. Figure 3

and hold a particular exposure value while re-composing your picture, but I found it unusable. Rather than adopting the familiar "push the shutter release button half-way and hold it" method, this camera has a special AEL button, visible in my back view of the camera (figure 1) just below the accessory shoe. This position is exactly where your nose presses against the camera while you frame your shot (or, in my case, the bridge of my eyeglasses touches the camera). I found it impossible to reach this button without moving the camera off my face and losing sight of the viewfinder image. In addition, the button is very small and is surrounded by a raised bezel, so that you cannot press it with the fleshy part of your thumb. I had to use my thumbnail. When I mentioned this problem to my Zeiss contact, I was told that the position is chosen to allow it to be reached with the right thumb [problematic], and the button is designed so that is not likely to be set accidentally [or even deliberately!]. There is an easy workaround, of course. Simply set the shutter to AE, frame your shot and note the selected shutter speed, then go to manual setting and dial in the selected speed before reframing the shot. If you find this too complicated, you have no business trying to use a camera like this; go buy yourself a $100 auto-everything digital point-and-shoot.

The small lever alongside the lens is for manually changing which frame lines appear in the viewfinder. Each lens sets the appropriate size automatically, but with this lever you can see what another lens would cover. Note also that the handgrip extends under the camera body to provide a central tripod bush. Figure 4

The lenses

For this camera Zeiss has designed a new range of lenses with the "ZM" mount. (There are Z lenses with other mounts — a couple of different bayonets and the M42 screw mount; check the website at www.zeiss.com/photo for details.) Since the original announcement in 2004 there have been some changes to the list of ZM lenses. The website currently shows:

Two Distagons (f/2.8 15 mm; f/4 18 mm)
Five Biogons (f/2.8 21 mm; f/4.5 21 mm; f/2.8 25 mm; f/2.8 28 mm; f/2 35 mm)
The C Sonnar f/1.5 50 mm discussed by Peter Hennig in our Fall 2006 issue
A Planar f/2 50 mm
A Sonnar f/2 85 mm.

Of these, the shortest and longest (15 mm Distagon and 85 mm Sonnar) are made in Oberkochen. All the others are made by Cosina in Japan to Zeiss designs and under Zeiss supervision. For those photographers who expect to use only the wideangle lenses, and therefore do not need the built-in viewfinder or the rangefinder in the normal camera, there is a lower-priced version called the Superwide that has neither. It does, however, have an extra accessory shoe for the separate viewfinders available for the 15 mm, 21 mm, 25 mm and 28 mm Distagons, thus leaving the standard shoe available for flash units or what-you-will.

The German lenses have an all-black finish; the Japanese-made ones are available in black or silver.

My first choices for the two lenses I was offered were the C Sonnar f/1.5 50 mm, because of the curiosity generated by Hennig's article, and the 85 mm Sonnar, so that I could compare an Oberkochen lens with one from Cosina. The 85 mm Sonnar was not available, and I judged the only other German lens, the 15 mm Distagon, to be rather extreme and therefore not suitable for the kind of general testing I had in mind. I went for the f/2.8 28 mm Biogon instead, so that I could compare it with the similar Biogon in G-system rangefinder mount. As for the C Sonnar, the first reaction from Zeiss was to the effect that I should try the f/2 50 mm Planar instead. When I persisted, I was shown a document on this lens, titled "Information about special features for dealers and users," that warned about its "special artistic touch." Also, "It renders a sharpness that is slightly rounded" and references the portrait lenses of the 1930s. More worrying, perhaps, is that the focal length changes slightly at different apertures especially when wide open. Users are warned that the sharpest results will be obtained at f/5.6 and

The two lenses used for this test. On the left, the Biogon f/2.8 28 mm ZM; on the right, the C Sonnar T* f/1.5 50 mm ZM. The Biogon performed well throughout; the Sonnar was a little "soft" at full aperture. Figure 5

smaller apertures. Having read these warnings I was even more interested in the lens than before, and got it for the test anyway, along with the 28 mm Biogon (figure 5).

First I made series of lens tests that involved photographing copies of the old 1951 US Air Force resolution charts with different equipment and different conditions. My tests were of the two new Zeiss Ikon lenses mentioned above, plus two other rangefinder systems: a Contax IIa with a Sonnar f/2 50 mm and a Helios f/1.8 53 mm; and a Contax G1 with its Planar f/2 45 mm and Biogon f/2.8 28 mm. I photographed the test charts with all six lens/camera combinations and over the complete aperture range of each lens. Exposures were bracketed plus and minus one stop, and focusing distances were bracketed also by using two additional charts separated by about 10 cm (4 in.) closer and more distant from the middle one. Then I examined the negatives with a loupe and recorded the highest resolution visible on the image of the chart. I would be the first to admit that my tests were amateurish and not of the same standard as professional tests done with optical benches and microscopes; nevertheless they gave me a feeling for the quality of all six lenses.

My tests showed that the two new ZM lenses are superior to the classic Sonnar and Helios (although that Russian lens is pretty good), and not readily distinguishable from my G-system lenses. In particular, the G and ZM f/2.8 28 mm Biogons performed equally well by my test technique. I was able to show readily, however, the softness of the C Sonnar ZM when fully open; but by f/2.8 and above it was excellent except for a little focus shift. The G-system Planar was quite consistent across its entire aperture range.

Of course the way lenses should be tested is by using them to make pictures, and I had a happy time doing just that with the Zeiss Ikon and the two lenses.

The camera in use

The Zeiss Ikon is very easy to use, with no "learning curve" to climb. Everything (except for that pesky AEL button!) works as expected. My assortment of subjects photographed over several days gave results that show very consistent accuracy of exposure (using AE on color negative film), and accurate focusing. The 28 mm Biogon gave me no surprises, performing excellently — as does the similarly specified G-system lens. I did not push the C Sonnar to its f/1.5 limits (in fact I cannot recall often using any lens open wider than about f/3.5 for the kind of photography I do). Whether or not I can see my subjects "drawn ... in a fine, flattering manner ..." with a "sharpness that is slightly rounded" (quotations from Zeiss) are subjective questions that I would rather not answer specifically, but I did find my enlargements to approximately A4 size to be quite acceptable. Bigger prints than these are limited only by the quality of my film scanner, a Nikon Coolscan IV.

My results show excellent color saturation with no visible flare, despite the very bright sunlight in this Texas Fall, shooting into or away from the sun. The rangefinder focusing is easy and quick, and the shutter release rapid and quiet, in contrast to my G1 camera, which has the usual autofocus delay and some accompanying grinding noises from the lens.

What of the future?

You may have gathered by now that I very much approve of this camera and its lenses, but I have to admit that it will appeal only to specialized tastes. For me it has the same appeal as driving a car with manual transmission; in both cases I feel closer to the working parts and more in control. Those who did not grow up with rangefinders and manual transmissions will find both exercises difficult and unrewarding. Does this mean that this new system will have a limited life when the only potential customers expect digital imaging and automatic everything? Not necessarily. Zeiss's answer to the question runs somewhat as follows: "When digital sensor technology takes another leap or two, accepting the high incident angles of a wide-angle M-mount lens to the corners of a full format sensor . . . your Carl Zeiss T* ZM-mount lenses will be ready."

Meanwhile, enjoy this camera — but do remember to remove the lens cap before pressing the shutter release! ❐

Zeiss Ikon, 1926 to 1971

Hans Letsche

In 1980 Hans Letsche, at that time the manager of the Photo Division of Carl Zeiss, gave a talk at the First Western Photohistory Symposium. His topic was the series of mergers that established Zeiss Ikon AG in the 1920s, the turmoil in Jena at the end of the war in 1945, and then the more recent history culminating in the closing of the company's factories in 1971. Letsche was a particularly appropriate speaker for that last stage because, as he explained, he was chosen by Heinz Küppenbender to manage the closure of the factory and the re-settlement of the staff.

We believe he was an officer in the Luftwaffe before joining Zeiss, and we know him as "Colonel Letsche."

The history of Zeiss Ikon has been told many times in these pages, but when a somewhat imperfect transcript of his talk come into my hands I thought it was worth sharing with Zeiss Historica Society members because of his unique perspective. Here is my slightly adapted version of his text.— The Editor

Without a doubt there are more competent people to relate this history, such as Dr Heinz Küppenbender, whose life and work have been associated over the years with the development of Zeiss Ikon in Dresden and Stuttgart and with Carl Zeiss in Jena and Oberkochen. Because of Dr Küppenbender, whom I assisted for some years at Carl Zeiss, I established a fateful link with Zeiss Ikon AG. It was Küppenbender, the Chairman of the Board of Zeiss Ikon, who commissioned me in the middle of 1970 to do an analysis of the Zeiss Ikon camera company's situation and finally to plan a shutdown of these companies. *[Küppenbender had retired eight years before this talk, in 1972, and he died in 1989.]*

The predecessor companies

Let us look first at the past development of Zeiss Ikon. The company came into being as a result of the merger of many camera companies. How and why did this merger take place? In the years immediately before and after the beginning of this *[20th]* century, the German photographic industry threatened to break down. Amateur photography had become a popular hobby, causing a large number of camera firms to be established. Because of their capacity and financial power they supplied the market with too many models and accessories. However, it is not the number of models that denotes progress, but the efficiency of the individual article. From the chemical side, a revolutionary innovation was also making its way: In addition to plates, film also took its place as a photographic material.

At that time, far-seeing firms, especially those that preceded Zeiss Ikon AG, set about trying to bring various departments into closer connection with one another and to increase their productive capacities. In connection with this, mention must first be made of Richard Hüttig, a Silesian. A master joiner by trade, he was engaged in the production of studio cameras, and in 1862 he laid the foundation for the firm R. Hüttig & Son in Berlin. In the mid 1880's, as amateur photography began to look for higher standards from the photographic market, Hüttig developed new types of cameras from his own models. In 1887 he moved to Dresden, which later became the center of the camera industry. In 1904, Guido Mengel took over the management of the business and showed an exceptional talent for business organization. Mengel turned the firm into a leading camera company and, realizing the disadvantages of having too many competitors, sought ways to fuse these different companies into a new organization.

In 1909, the firm of Carl Zeiss in Jena began to have a decisive influence on the manufacture of cameras in Germany, with thoughts running along the same lines as those of Mengel. Thus, in 1909, under Carl Zeiss AG's direction, the firms of R. Hüttig & Son, Dr H. Krügener, Emil Wünsche and Palmos AG were united in Dresden into the ICA AG (International Camera Aktiengesellschaft). A few years later, the Swiss firm of Zulauf & Co in Zurich also joined this newly founded establishment. Dr Krügener's creative activity was of special importance and contributed, to a large extent, to the development of camera construction.

Emil Wünsche had previously worked in photographic retailing before switching over to camera production. Palmos AG, among others, was founded by the firm of Carl Zeiss in Jena (the Palmos camera became well-known everywhere), and the firm of Zulauf & Co in Zurich had been producing special camera models for a long time and controlled the greater part of the market in the Romance countries.

Similar group organizations were started by Heinrich Ernemann in Dresden and by C.P. Goerz in Berlin. Heinrich Ernemann, a man of industrial foresight, built up his camera works from a most modest beginning. His firm also specialized in the construction of

cine technical installations for cinemas (the "one-hole cinema" became famous in the early years), and soon became the leading firm in this line. In 1899 the business was converted into an "Aktiengesellschaft" (AG, or Joint Stock Company) and absorbed Ernst Herbst & Firl in Goerlitz, a company that manufactured studio and reproduction cameras.

In a similar manner to Wünsche, C.P. Goerz also started out as a dealer in photographic materials before turning to production. His optical and mechanical skills attained a world-wide reputation. Goerz's products, through his cooperation with Ottomar Anschütz and the mathematician Emil v. Hoeg, gained the highest recognition in the world of science and from official authorities. In 1903 the firm was converted into an AG.

Finally, a fourth group crystallized around the phototechnical firms of the Contessa-Nettel Ring. The Contessa Camera Works in Stuttgart and the Nettel Camera Works GmbH in Sontheim participated in the founding of this group.

Formation of Zeiss Ikon

In 1926, all four of these enterprises considered it advisable to combine their operational energy, their experience, and their work into one single undertaking. The new combine would be economically sound and less sensitive to business fluctuations, and would therefore be in a position to give full scope to the research that had become necessary during the years of rapid development in order to keep up high standards of production for the future. The Carl Zeiss Foundation took the initiative, and thus on 1 October 1926 the firms of Contessa-Nettel, Ernemann, Goerz, and ICA were merged into the Zeiss Ikon AG. During 1927 and 1928 AG. Hahn for Optics and Mechanics in Kassel, and the Goerz Photochemical Works GmbH in Berlin, also joined the Zeiss Ikon AG.

The Zeiss Ikon Production Program was aimed at reviewing the large number of individual camera models and bringing forth a completely new line of camera products, ranging from inexpensive to expensive camera models with a complete range of accessories.

Zeiss came out with its first catalog in 1927. This catalog listed a complete 35 mm system (24 exposures, 22/33 mm format), consisting of a 35 mm camera,. an enlarger, and a projection apparatus. These cameras were called Unette, Bobette I, and Bobette II — all names taken from the earlier Ernemann program. The Bobette II was available with either Ernoplast f/4.5 50 m, Ernor f/3.5 50 mm, or Ernostar f/2.0 42 mm lenses. The Bob was a fixed-focus conical enlarger for daylight exposure of postcard stock, and Unox was a projector for the film images. The latter had a cine stigmatic lens, and the lamp was rated at 100 W.

Leica and Contax

When 35 mm photography became popular in 1925, with the appearance of the Leica, Zeiss Ikon was at first only able to compete with the Kolibri, a compact camera for a 3 × 4 cm picture size (roll film A8 or 127) with the lens in a "pull-out" tube mount. The Kolibri was scarcely larger than the Leica, but at this time the development of a 35 mm system camera for the 24 ×36 mm format was already in full swing at the Zeiss Ikon factory in Dresden. The development team was headed by Dr Küppenbender, who was transferred to Dresden by Carl Zeiss in 1929 for this specific purpose. As Wolf Wehran wrote in the March 1978 issue of *Photo Boerse*:

> "The time was ripe at the beginning of 1932, and so Zeiss Ikon brought the Contax on to the market. Aside from the film format it had little in common with the Leica. It embodied an independent advanced design. The Contax embodied a series of fundamental innovations in the field of 35 mm photography:
>
> —bayonet socket for interchangeable lenses
>
> —coupled long baseline rangefinder (10 cm baseline)
>
> —film transport and shutter winder knob combined with shutter setting ring
>
> —metal slit shutter
>
> —removable rear cover."

At that time, the unusual shutter design and the transport knob at the front led to the assumption that Zeiss Ikon had to circumvent the Leitz patents. However, this was not true.

Some of the design features were inspired by features of the successful camera models of the firms that merged to form Zeiss Ikon. For example, the prototype of the vertical-slit shutter had previously been manufactured by Anschütz. The large-format Zeiss Ikon models Ideal, Favorit, Tropica and Universal Juwel all had bayonet mounts for interchangeable lenses. The square shape can be found in the casing of the Ermanox. The Ermanox also combined the shutter winder knob with the speed setting ring, and put it on the side of the camera and not on the top. The harmonic and functional integration of these well-tried and tested characteristics in one 35 mm camera was a considerable achievement.

The Zeiss f/1.5 50 mm Sonnar was the first lens with such a high speed. It appeared on the market the same time as the Contax. The Sonnar was calculated by Ludwig Bertele, who was also the designer of the f/2 50 mm Sonnar; both were extremely successful designs with outstanding reproduction capabilities.

There were seven versions of the first Contax model, now called the Contax I. Wolf Wehran described the differences between these as follows:

[Here Letsche quoted at length and in great detail the minute differences among all the Contax I types. The same information, assembled by Hans-Jürgen Kuc for his book On the Trail of the Contax, *is reprinted in the Bestell-nummern Zeiss Ikon catalog distributed to all ZHS members. We pick up his story with the arrival of the Contax II. — The Editor]*

Contax II

The Contax II came on the market at the beginning of 1936. This was the first camera in the world to feature a range–viewfinder — that is to say, the rangefinder and viewfinder were combined and had a single eyepiece. The camera had an integrated self-timer and a shutter with fastest speed 1/1250 second. The film-transport and shutter-speed knobs were located on the top of the case with the release knob in the cen-

ter. The housing was easier to hold due to the slightly rounded ends. All external metal parts were chromium plated.

Noteworthy is the optical principle of the Contax II rangefinder integrated into the viewfinder. This was a long baseline swiveling-wedge range meter. A converging lens, plane on the outer side and curved on the inner side, is swiveled around the center point of this curved area, while the second lens of the system, a diverging lens, has a fixed position. The resulting movable range and viewfinder image is projected into the center of the finder area by means of a prism rod. This arrangement permits a considerably larger rangefinder area in comparison with the rotating wedge principle of the Contax I.

The numbering system with one code letter and a five-digit number was also retained for the Contax II. The number can be found in the viewfinder shoe and inside the camera at the rear. With the exception of some detailed improvements in the shutter mechanics, this model was built without changes until the end of the war. Manufactured quantities were low in the war years, due to material acquisition problems because of defense contracts. Most of these cameras were delivered to the army and the party, as well as to professional photographers and research institutes.

The same applies to the Contax III, introduced on the occasion of the 1936 Olympic Games. This model is identical to the Contax II, but has an integrated photoelectric exposure meter fitted to the top of the camera. The light is measured after opening a protective cap covering the selenium cell. The incident light results in a deflection of the pointer on the moving-coil instrument. By turning the setting ring on the winder knob, the moving-coil instrument located inside the housing is turned in its mount until the pointer, visible in the top window, stands above the setting mark. This ring then indicates the corresponding speed/aperture combinations. The Contax III was the second camera in the world with an integrated photoelectric exposure meter; the first was the twin-lens reflex camera, the Contaflex, introduced in 1935.

Contax prices

These cameras belonged to the top-quality class and their prices were correspondingly high. The following list shows the catalog prices of the various models, each at the time of their appearance on the market:

Contax I, with 3.5/50 Tessar,	RM 275
Contax II, with 3.5/50 Tessar,	RM 300
Contax I, with 2.8/50 Sonnar,	RM 365
Contax I, with 2/50 Sonnar,	RM 500
Contax II, with 3.5/50 Tessar,	RM 360
Contax II, with 2.8/50 Tessar,	RM 385
Contax II, with 2/50 Sonnar,	RM 450
Contax II, with 1.5/50 Sonnar,	RM 585
Contax III, with 3.5/50 Tessar,	RM 470
Contax III, with 2.8/50 Tessar,	RM 495
Contax III, with 2/50 Sonnar,	RM 560
Contax III, with 1.5/50 Sonnar,	RM 695

It was possible to have the Contax II converted to the model III for RM 120. In 1946, about 50,000 Marks were paid for a Contax III. Nowadays *[in 1980 — Editor]* a Contax III in perfect condition costs more than DM 600.

With the exception of some detailed improvements in the shutter mechanism. the Contax II was built without changes until the end of the war in 1945. Aside from the limitations in the production of cameras in the period from 1939 to 1945, Zeiss Ikon AG became a supplier for important war materials, such as components and assemblies for Carl Zeiss in Jena. The principal range consisted of optical fire-control equipment for air-to-ground and ground-to-air combat such as bomb-aiming equipment. antiaircraft rangefinders, and assemblies for the mechanical fire-control computer developed by Carl Zeiss.

Destruction and relocation

At the end of the war in 1945 one of the factories in Dresden was destroyed, but the main factory remained intact despite the horrible destruction of the city. The factories in Berlin were nothing but ruins but, as if by some miracle, the Contessa factory in Stuttgart remained practically undamaged. You must remember that Stuttgart lay in great ruin with many streets covered in rubble and many people lived underground in those cellars that were still accessible.

"The factories in Berlin were nothing but ruins but, as if by some miracle, the Contessa factory in Stuttgart remained practically undamaged."

The factories in Dresden and most of the factories in Berlin were dismantled by the Russians in 1945, but reconstruction of the Zeiss Ikon factories in Dresden was begun with unbroken courage. It was at this time that the next unforeseen blow came.

In June 1947 the Ministry for Economics and Economic Planning of the Government of the Land of Saxony, located within the Soviet Zone of Germany, expropriated the enterprise of Zeiss Ikon AG of Dresden without making compensation, effective as of 1 July 1947. The manufacturing plants in Stuttgart and Berlin remained unaffected by the expropriation. On 3 March 3 1948 a special meeting of the stockholders of Zeiss Ikon AG was held in Stuttgart, in the American Zone, at which a resolution was duly adopted transferring the domicile of Zeiss Ikon AG from Dresden in the Soviet Zone to Stuttgart.

In a judgment rendered on 14 February 1958, in an action between the plaintiff Zeiss Ikon AG and an East German People's Owned Enterprise calling itself "VEB Zeiss Ikon Dresden," the Federal Supreme Court of West Germany expressly upheld the validity of the transfer of domicile of Zeiss Ikon AG from Dresden to Stuttgart. Thus, Zeiss Ikon AG is really the corporation of that name organized in 1926 and

domiciled in Dresden until its expropriation in 1947.

In the first postwar years, from 1946 to 1948, the Nettar, Ikonta and Super Ikonta cameras were built in Stuttgart. The number of workers who came to Stuttgart when the company was transferred was small and there are no exact figures; they were predominantly camera designers and members of the management (Wohlfahrt, Ernemann, Jürgens). Stuttgart already had sufficient craftsmen available to staff the factory.

In 1948, the production of cinematic equipment under the famous name of Ernemann was resumed in a new factory in Kiel. Modern innovations dominating the market, such as stereo film, stereo sound and wide-screen projection, followed in 1950 and 1951. Anamorphic lenses for the latter were developed and produced by Carl Zeiss in Oberkochen.

Because the Contessa factory in Stuttgart was not very large, and it had to accommodate the administration and sales departments, plans for expansion were begun immediately after moving the company headquarters from Dresden to Stuttgart in 1948. Zeiss Ikon surprised amateurs and experts in 1950 with two new designs, the Contax IIa and the Contessa (folding camera). The Contax IIa was a further development of the Contax II, and production was finally stopped when the Contarex appeared in 1958.

There was also a Contax IV, of which three prototypes were made. One of these prototypes can be found in the collection of Wolf Wehran. lt is characterized by a rapid winder, a different exposure meter, and a multiple focal plane frame. It is not known where the other two prototypes are. As a matter of interest, Wehran presently has the largest existing Zeiss Ikon archive and a private collection of' more than 600 cameras.

In 1965, a joint marketing company was founded by Zeiss Ikon AG; and Voigtländer AG at Brunswick *[Braunschweig]*, and the areas of these two world-famous companies that overlapped were reorganized and harmonized. Roughly speaking, the task of Zeiss Ikon in Stuttgart was the production of high-grade reflex cameras with interchangeable lenses and Super 8 movie cameras, while Voigtländer concentrated predominately on viewfinder cameras.

The capital of these two companies was still totally combined in 1970, but the end of the proud camera tradition could be foreseen even then. Of the newly developed Contessa S310 and 312, the latter characterized by an integrated rangefinder, approximately 10,000 cameras were built of each. The S310 was made in Stuttgart and the S312 in Brunswick. Small numbers of the subsequent SL706 Icarex version were later made by Rolleiflex, at the Voigtländer factory.

"...and thus every worker knew beforehand when he would be laid off so that he could find a new job in a timely manner."

The Contaflex 725 was to be the most compact reflex camera in the world. Most of the production tools were manufactured, but the camera itself was never produced. It was decided then, in 1971, to close the camera factories of Zeiss Ikon AG. A truly sad end to a proud tradition.

Decline and closure

How could it happen that a company like Zeiss Ikon AG, which after the Second World War had developed into an extremely dynamic and successful company with 2,300 employees in Stuttgart alone, with an outstanding product line, had to shut down?

You all know about the unusual efforts made by Japan after the war to build up its precision mechanical and optical industry by copying highly qualified successful products. Not only were they precise in their assumption of technical ideas, but they also quickly learned how to further develop the products, thereby liberating themselves from the technology-transfer stage.

The evident penetration of the world market by the Japanese began in approximately 1966. Japanese products were useful, many had even become good, and their prices were considerably lower than the European equivalents. The yearly sales increases of Japanese photographic products led very soon to decreasing sales and poor profit yields in Europe. The Japanese made large profits while the Europeans earned nothing and many lost a lot of money.

Rollei began to set up production facilities in Singapore in 1972, and Leitz moved out to Portugal and Canada. Zeiss Ikon AG did not follow this example. Was this right? Or was this wrong? In view of the many years of considerable losses suffered by Rollei, and the initial problems of Leitz in Portugal, I would like to leave this question open.

One thing is certain: Carl Zeiss could not afford to cover the losses of the Zeiss Ikon factories. The production facilities became more and more obsolete. Investments were insufficient, and the final result was that the production facilities were no longer fully utilized.

The work units that were still able to operate independently at a profit were excluded from the decision to close the camera factories. These were the diecasting factory in Schelklingen, the "Z-Gerätewerk" for slide projectors in Brunswick, and the cinematic machine factory in Kiel. It was intended to maintain the production facilities for safety locks and technical lights in Berlin. Today *[in 1980]* the administration of Zeiss Ikon AG has its headquarters in the Goerzwerk there.

Letsche makes his plans

I carried out an analysis of the production inventory in the Contessa factory in Stuttgart. With that data, it was decided to complete all cameras for which completion would cost less than the sales returns, and to scrap everything else that did not fulfill this condition. Some of the machines and production facilities were sold and some were scrapped.

The production and shut-down sequence was defined in accordance with an exact production plan in which the times for each individual production department to be shut down were specified. This plan was strictly adhered to, and thus every worker knew beforehand when he would be laid off so that he could find a new job in a timely manner. With the exception of only two workers, who were shortly going to retire, all 2,000 employees immediately found new positions; approximately 50 were taken on by Carl Zeiss in Oberkochen. In this final phase. Zeiss Ikon completed 3,000 more Contarex cameras, about 700 of which were trade-marked "Carl Zeiss." This was the signal for a new planned generation of high-grade cameras with Zeiss lenses. The plan was to have the camera body developed and produced by a suitable company under the auspices of Zeiss.

It was in this way that the fundamental concept of the new, present-day day Contax camera was prepared in 1972/73.

The Contessa factory in Stuttgart was taken on by Marwitz & Hauser, a subsidiary of Carl Zeiss that produces eyeglass frames.

Today *[1980]*, Zeiss Ikon employs 1,414 people and has an annual turnover of approximately DM 85 million.

To your and our deep regret, most of the documents concerning the history of the individual cameras built after the war by Zeiss Ikon, and also the serial number code, were missing at the time of closure. This happened because no one felt responsible for these things during this difficult time. Fortunately, however, spare parts and the repair service were safeguarded. The records concerning the foundation of Zeiss Ikon, beginning in 1926 until the end of 1945, were destroyed during the course of the war and the subsequent dismantling and expropriation.

For organizational reasons, it was necessary to convert the model numbers, for example, from 531/1 in the old system to 10.25.00 in the decimal system, to facilitate computer data processing.

Küppenbender's account

I would like to go into some detail on the emergence of the Carl Zeiss Foundation and the Carl Zeiss Company, after the end of the war. I am fortunate enough to be able to convey some of the events after 1945, from a personal account by Dr Küppenbender. He reports:

"On 13 April 1945, the United States Armed Forces occupied the city of Jena. At that time the Board of Management of the Carl Zeiss firm consisted of the following persons, all of whom had been appointed to lifelong service on the dates indicated:

Walter Bauersfeld
Paul Henrichs
Heinrich Küppenbender
Georg Joos
(Dr. Joos resigned as a member of the Board soon after his arrival in the American Zone in June 1945.)

"The principal establishment of the Carl Zeiss firm was located in Jena, and the firm had branch establishments in Berlin, Cologne, Hamburg, and Vienna, as well as in a number of foreign countries.

"In addition, the firm had manufacturing facilities in Saalfeld and Gera, not far from Jena. The Carl Zeiss Foundation owned an interest in each of the following corporations, all of which were located outside the territory allotted to the USSR as its zone of occupation:

Anschütz & Co. GmbH, Kiel. 100% interest.

M. Hensoldt & Soehne AG, Wetzlar. 66% interest.

Zeiss Ikon AG, Dresden/Stuttgart. 70% interest

Alfred Gauthier GmbH, Calmbach. 80–84% interest

Friedrich Deckel Compur, Munich. 30% interest

R. Winkel GmbH, Göttingen. 100% interest

"The total number of persons then employed in the various enterprises in which the Carl Zeiss Foundation had an interest, including the Zeiss and Schott firms, numbered 45,000. of whom approximately 30,000 were employed in locations outside Jena and its vicinity.

"When the American troops first occupied Jena, there were approximately 12,000 employees working at the Zeiss plant there, of whom 7,000 were regular employees, 2,000 were foreign workers, and 3,000 were German laborers conscripted under German wartime labor legislation.

"By June 1945, the 5,000 nonregular workers had left the Zeiss plant, as had 500 additional regular workers.

"On 5 June 5 1945, the Allied Statement on Zones of Occupation divided Germany into four zones. The Land of Thuringia, which included the city of Jena, was in the zone allotted to the USSR. At that time it was the established policy of the United States to search out leading German scientific experts located in territory under American control, evacuate them if necessary, and use them in connection with the continuing war effort against Japan.

The move to the American Zone

"Late in May or early in June 1945, Küppenbender was informed by the American military authorities that they required the Zeiss firm to establish a branch factory in the part of Germany that was to be the permanent American Zone of Occupation, where approximately 2,000 people were to be employed. He was instructed to prepare a plan for the establishment of such a factory. On 13 June 1945 the American military authorities notified Küppenbender that the plan to establish a branch factory in the American zone had been scrapped, and that it had been decided instead to take only such key personnel, records, and special equipment as could be loaded in fifty box cars. Küppenbender was ordered to arrange for the packing of the equipment without delay. On the night of 18–19 June 1945 the American military authorities notified the members of the Boards of Management of the Zeiss and Schott firms that they would shortly be removed from Jena together with a group of top scientific and tech-

nical personnel of the two firms. The American military authorities made it clear to the members of the Boards of Management that because these were military orders they had no choice but to comply.

"The American military authorities instructed the individual Board members to prepare lists of key personnel selected for transportation to the American Zone, but in view of the imminent arrival of Russian troops the American military authorities decided to carry out the evacuation before such written orders were received in Jena.

"The departure of the Zeiss Board of Management and the other Zeiss employees took place on 24 June 1945. Included among the group were 77 leading scientific experts. They were transported to Heidenheim an der Brenz in Württemberg, in the American Zone. Due to the shortage of transportation capacity these people could save only some of their personal property and scientific records. The evacuation was carried out pursuant to directives from the United States Joint Chief of Staff in Washington and General Eisenhower as Supreme Commander of the Allied Forces in Europe, and was based on military necessity.

"One of the main purposes of the American military forces in transferring the Zeiss Board of Management and the Zeiss firm's top scientific, technical and managing personnel to the American Zone was to establish a Zeiss enterprise there, capable of operating and producing equipment needed by the United States Armed Forces. It had been planned to transfer from Jena to Heidenheim such equipment and blueprints necessary for the production of scientific and optical instruments, and that equipment and blueprints had actually been packed for transportation to Heidenheim, but they never arrived at their destination.

"Because of the failure of the equipment and blueprints to arrive in Heidenheim the first task facing the Zeiss group was the preparation, from memory, of blueprints for the construction of machines to be used in the production of scientific and optical instruments. At the same time, with the assistance of the American Occupation authorities, the Zeiss Group was able to obtain equipment belonging to Zeiss from the Bavarian caves in which it had been hidden. In addition. the American authorities released certain industrial space located at Oberkochen, a small town neighboring Heidenheim, for use by the Zeiss group. This was in the summer of 1946.

"At that time the group consisted of approximately 200 employees (90% of whom had formerly been employed at the Zeiss works in Jena). Until around 1 June 1948 the production facility at Oberkochen was in the process of being established, and it was physically unable to produce and sell commercial scientific and optical instruments. From 22 October 1946 until April 1947, the Zeiss and Schott plants in Jena were almost totally dismantled. Three hundred employees and 94% of all the plant equipment were transported to the Soviet Union. On 30 November 1948, the firm's name was removed from the Commercial Register at Jena.

Oberkochen and Coburg

"The first commercial sales were made by Zeiss Opton in 1947, and consisted of eyeglass lenses made at Oberkochen and photographic lenses, marked Tessar, made at the branch factory of Zeiss Opton in Coburg in the American Zone. The first commercial sales of scientific instruments produced at Oberkochen were made around June 1948, at which time the Zeiss group at Oberkochen numbered approximately 800 employees. During the period from June 1948 to October 1953, the production facilities at Oberkochen were engaged in the production of only a limited line of products because of physical and financial impediments to the production of a full line of products such as had been included in the pre-war production program at Jena.

"On 23 February 1949, the Ministry of State of Württemberg-Baden issued an administrative act or decree amending the Foundation Statutes by adding Heidenheim as a legal domicile of the Foundation. In 1953, the Oberkochen facilities experienced their first year of profitable operation. 1954 and 1955 were loss years, but since 1956 the Zeiss firm in Heidenheim has operated at a profit."

That concludes the personal observations of Dr Küppenbender.

Nowadays *[1980]*, the Carl Zeiss Company and its subsidiaries employ approximately 15,250 people with a turnover of more than one thousand million DM. Approximately 12,600 people are employed in the Federal Republic of Germany. The Carl Zeiss parent company, without subsidiaries, has 7,670 employees in the factories.

Oberkochen	4,873
Aalen	1,667
Göttingen	1,130

The subsidiaries employ 4,931 people as follows:

Hensoldt-Wetzlar	980
Prontor factory in Calmbach	855
Zeiss Ikon AG in Stuttgart	1,414
Anschütz in Kiel	822
Busch in Berlin	103
Marwitz & Hauser in Stuttgart	947

Thanks to its widespread range of products in the fields of precision mechanics, optics, and electronics (we have thirteen different product ranges), the Carl Zeiss Company has created a healthy basis for favorable business developments in the future. Our success is essentially based on successful research and development, and on the inexhaustible search for new, high-grade products and technologies.

At times, Carl Zeiss has been compared to a university and we are all very proud of this fact. We are also proud and very grateful for the fact that you have founded the Zeiss Historica Society of America in honor of this famous name, and that you have built an excellent bridge from the past into the present in this way.

Whenever you are in Germany and have the opportunity to come to Carl Zeiss in Oberkochen, please do so with the knowledge that you will meet with good friends. ❐

Further thoughts on August Nagel

Larry Gubas, Las Vegas, New Mexico

I was pleased to read the article in our Fall 2005 issue entitled "August Nagel and the Retina," written and researched by Peter Wallage. However, since I first read this article I have found some pertinent facts that should be added to that text. I wholeheartedly agree with the tenor and many of the opinions in the article, and this should be considered to be a supplement.

The firm of Contessa Nettel was created by more than simply the merger of Contessa and Nettel. Several other firms were involved in smaller and earlier mergers, and partners in the firm were necessary to expand from Stuttgart to two other locations in Reutlingen in 1911 and Böblingen in 1927. In addition to borrowing funds for these expansions, there were more partners in the firm. These include Friedrich Wörtz, Hermann Hoffmann and Robert Mayer.

As the debt and number of partners in the firm increased in the early 1920s, Nagel found himself with less than a controlling interest in the company. About 1921, the firm had not fully paid for the prestigious Tessar lenses that it sold with their upper-end cameras, and the Carl Zeiss Stiftung began to hold a growing position. In the economic confusion in 1923, Nagel's partners sold their shares to the Stiftung and Nagel was offered the position of General Manager of Ica. Nagel declined, because the job would have involved a move to Dresden from his long-time home in Stuttgart. Contessa Nettel and Ica then began to combine some activities, including advertising together with another Dresden firm, Mimosa. In summary, Nagel's firm was sold out from underneath him.

Over the next few years, the firms of Ernemann and Goerz also agreed, and effective 1 October 1925, which is the beginning of the fiscal year at Carl Zeiss, the joint stock company of Zeiss Ikon was formed and Nagel was pronounced as the head of the firm's operations in Stuttgart. Others were named in other locations, with Professor Emanuel Goldberg as the titular head of the organization.

August Nagel as a young man. A portrait of him at a greater age appears on the back cover of this issue of Zeiss Historica.

For the first time in his professional career, Nagel is not his own man and over the course of the next few years, he plans to leave employment and start his own firm close to his home in Stuttgart. When he does leave Zeiss Ikon, on 31 March 1928, he again forms his own firm under the name of "Dr. August Nagel: Fabrik für Feinmechanik in Stuttgart-Wagen." In these perilous financial times for both himself and the Zeiss Stiftung, his equity in the firm of Zeiss Ikon was liquidated to secure his new location at Hedel-fingerstraße 56–58 and to hire his new employees.

As Wallage states, Nagel had a loyal staff who would follow him. One of these staff members was Wilhelm Nagel, the operations manager at the Contessa companies, at Zeiss Ikon in the two years of his brother's tenure and the World War I munitions effort at the firm. These losses from the experienced staff of Zeiss Ikon in Stuttgart was a great impediment for the firm in these early years. This is probably the reason that the location was limited to folding cameras in the pre-World War II years.

I found documents to this effect in the Carl Zeiss Jena Archives, with a copy of Nagle's 1928 curriculum vitae and other professional and financial documents that the Zeiss firms were required to produce, as references necessary for Nagel's financing of his new venture.

Another problem at Zeiss Ikon was that when the company was formed it was agreed that all of the leaders of the former individual firms were to be compensated at the same salary. Some months, the head of the combined firms, Professor Goldberg, was informed that "because of his equity position" Nagel received significantly higher compensation, which caused problems and caused adjustments that increased senior salaries.

Naturally, there were hard feelings. Goldberg had to address the situation in Stuttgart personally, which caused delay in the design of the Contax. Nagel, of course, wanted to use Zeiss lenses in his new products, and this became a bone of contention based on the financial situation of the times and of a new company. If you look closely at the advertising here in the US, Nagel's partners in supplying lenses were very problematic. Carl Zeiss Jena produced the high-end lenses of the day, and their subsidiary in Saalfeld supplied most of the house-brand lenses to most of the other camera firms. Nagel would first promote lenses from Meyer in Görlitz, then new lenses from Leitz, then Goerz USA (which was not in the Zeiss Ikon merger), and finally a longer-term relationship with Schneider in Kreuznach.

In the pre-Internet era, it was rare to find a Nagel or a German-manufactured Kodak camera of the 1930s with a Zeiss Tessar lens. However, I have been searching eBay and the various on-line auction catalogs for a good number of years and have found that, although rare, they do exist, and over the course of the entire period from 1929 to 1940. Nagel must have been persistent, because none of these firms carried the cachet of the Zeiss name. Tessars were available for the range of the Retina cameras as well as the Volenda, Pupille, Duo-620 and their large-format answer to the Super Ikonta, the Regent.

There was another question in Wallage's article as to the origins of the sliding-wedge and rotating-wedge rangefinder. I have gone through all of Nagel's patents and I find no illustration or text that reflects anything resembling the prism basis that is in the Super Ikonta. The patent that does exist is the Küppenbender patent with the sliding wedges. Hubert Nerwin credited Hans Padelt for the use of rotating wedges in the Super Ikonta, Nettas, Tenax II and Super Nettel cameras. Padelt was forced out of the factory in 1932 and I found no successor patent referring to these different wedges.

I did find the Nagel patent for the 35 mm film-spool cassette submitted on 14 October 1936 and approved on 5 September 5 1939. The number is US 2172255. ❐

The German Patent Office

You may have noticed that I often refer to patents in my articles and use the illustrations from many of them to make specific points. Searching for patents in the US government locations is difficult, and copies can only be made for a fee.

The German patent office, however, is available online and searching their data base is quite simple. You can search by all sorts of fields; examples are Patent Number, Patent Title, Applicant (usually a company), and inventor search within the text, among others. Most significant country's patents are available and so, if you search on a given person or title, relevant patents from all of these countries are returned. You can see the text of the patent and the illustrations supplied to the patent office, which can be very revealing.

Go to your search engine and enter the term "depatisnet" and you will be taken to the site that will assist you. It is available in both German and English, and gives you the language of the original country where the patent was applied for. You may find multiple patents for items in different countries. There is no charge and you can directly print the various pages of the patents via your desktop.

Enjoy searching!

"Starred" camera-body serial numbers

Charles Barringer, Haddonfield, New Jersey

When my article about the meaning of the asterisk after the body serial number of some Zeiss Ikon cameras appeared in the Fall 2006 issue of *Zeiss Historica*, I was somewhat surprised to receive several replies advancing alternative theories. In the interest of full disclosure I will give these below and offer my opinions as well.

I have long advocated the idea of the Journal as a forum for discussion, encouraging writers to submit articles that would encourage response and discussion; it was stimulating (and surprising) to get feedback on my article and I thank those who took the time to respond.

Larry Gubas, speaking also for noted German collector Bernt Otto, reports as follows:

"My theory is that the asterisk appears on bodies that were cast before the war but due to the closing of camera manufacture in Stuttgart in 1942, were not used. They were stored and inventoried and when the French left Stuttgart, the Americans wanted production to start immediately. These bodies were taken out of storage and used (according to Hans-Jürgen Kuc) primarily for sale in the PX system of the armed forces and needed immediate cash was offered as an incentive. There was a shortage of lenses and so many of them were supplied with Novar lenses and Schneider Xenar lenses and later the Opton GmbH and Zeiss Opton lenses. This balances nicely with the majority of these cameras which were various Ikonta and Super Ikonta. Most of the Prefixes are M, N, O, P and Q. which fit within the first few years after the war. I have one other which is a G.

"The counter argument here is that the Ikonta 35 seems to be a postwar camera and should not have been in this mix. However, there is a surprise here. I found that the Ikonta 35's patent was filed under Nerwin's name in December 1940. When comparing manufacturing and patent dates, patents typically are filed a year or more after manufacturing begins, and so, while it is not in a catalog or advertising prior to the war, it is a prewar camera.

"There is one further mystery. I have one camera (an Ikonta 35) that begins with an asterisk as a prefix and not a suffix. I have no theory on this one."

And a voice from the other side of the Atlantic, René Fontaine, proposed several ideas that bear mentioning here as well. Translating his correspondence:

"… I note on my four bodies marked with a star, that all the components, lenses, shutters and bodies are from the postwar period, with the exception of the Novar which is impossible to date. This makes me think [the star] indicates a return [of the camera] to the factory [for repairs] but then, why didn't Zeiss simply keep the "original letter code" and simply add the star? As it is now, the existing letter code is sometimes mismatched with other components, lenses and shutters by several years."

He goes on to say that

"If the star corresponds with a return of the camera to the factory for repairs the change of the letter and number might be the result of a complete overhaul, leading to a new date code. This would fit well with the Zeiss Ikon tradition."

My principal argument against the "return to the factory" theory is that a) if this were the case there would presumably be a broad and general distribution of the marks over the entire spectrum of cameras made. I cannot buy the idea that only those cameras from the series noted would have been subject to repairs nor that Zeiss Ikon would have used the star mark during only a relatively short period, only to abandon it later. Zeiss Ikon was very consistent, even through the transitional period of the late 1940s.

I have personal experience with a

repaired camera that was returned to me having undergone repairs and a general overhaul. It was returned with the same leather and serial number it had had when it went in. I have not seen evidence to suggest that the cameras made immediately after the war were in any way more (or, for that matter, less) prone to problems needing overhaul.

And why would a cash-strapped Zeiss Ikon look for ways to spend extra money both in time to strip and in materials used to perform repairs that were not absolutely necessary? I suspect we have all seen cameras with leather that is worn smooth where it is gripped, suggesting hard use; I have never seen a camera that might have been releathered, but there's always a first time.

The other theory addresses the question of WHY the starred cameras might have been put aside, rather than what the star signifies. I see no conflict between the Gubas/Otto idea and my own. Since I did not discuss this issue I welcome the explanation as a complement to my theory but I do not see that the additional information changes my idea that the star designates a camera that was finished under the postwar occupation from elements, sub-assemblies or cameras that were complete save the optical block, that were already in the pipeline before the change of ownership. How long they had been there, and why there are cameras from considerably earlier batches that were now finished and placed into the dealer distribution channels, remains unexplained.

What is clear is that these cameras were finished using postwar components. Is it not logical, given the vastly changed legal circumstances, to theorize that some mark denoting this change was incorporated?

The starred cameras fall into clear production batches in the following series: E, G, H, L (in what I think of as prewar production series), and M, N, O, P and Q (which I classify as wartime and postwar prefixes — these distinctions are not hard and fast.) Other Ikontas with E, G and H prefixes (without stars) have lenses dated to 1937–39. In other words, only some part of the production of the models in question was squirreled away as raw castings, or maybe fully assembled cameras lacking only the lens/shutter assemblies, for a sunny day; the bulk of the production continued to be released unabated. The same pattern prevails after the war in prefixes O and P, where some bodies are marked with stars but virtually all are equipped with postwar lenses, whether from Carl Zeiss, Zeiss Opton, or Schneider.

The really new element in this discussion — the existence of the Ikonta 35 as a wartime design — simply suggests that the management at Zeiss Ikon was involved in extraordinarily prescient forward thinking even under the most devastating circumstances of the war. One wonders when they began ordering Xenars from Schneider in anticipation of needing lenses to go on the front of their unreleased Ikonta 35's! ❐

The Zeiss Ikon Colora F (above) and a Voigtländer Vitoret (below), with die-cast bodies that are apparently identical.

Zeiss cameras adopted from Voigtländer

Yasuo Nannichi, Yamato, Japan

In the previous issue of Zeiss Historica, Vol 29, No 1, Pierpaolo Ghisetti reported on two Zeiss Ikon cameras, namely, the Contessamat and the Colora.

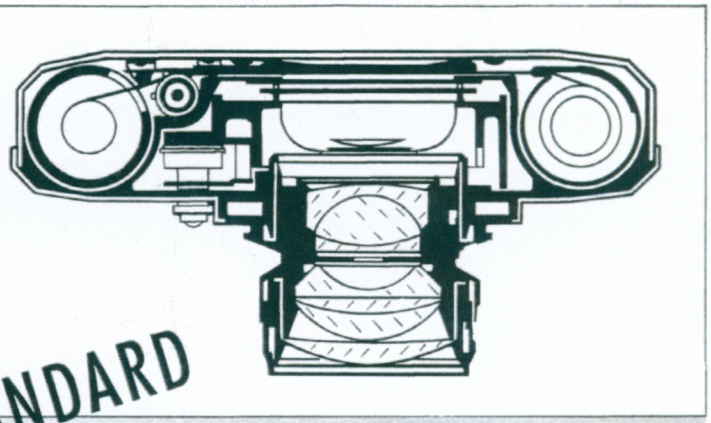
I have a Colora and a Colora F, both equipped with the f/2.8 50 mm Novicar, a cheap Zeiss lens, OK. But holding these Coloras, the feeling is anything but that of Zeiss. The side of the body is round, which is unusual for Zeiss. My figure shows the Colora F with a Vitoret from Voigtländer. They look alike. When I opened their backs, I found a number, 138/2, on the side wall of the film-cassette compartment of both cameras.

This number, which I call the "die code," indicates the type of die that was used to cast the main body of the camera. This die code is almost uniquely found in Voigtländer cameras — the only exception I have seen is in some Kodaks.

To my knowledge Voigtländer adopted the die-code system after World War II, when precision 35 mm camera bodies were made by die-casting with light metal alloys. The first code I have seen is 121/2 in the Vito II, and 138/ was given to later models of the Vito C. By checking the die code, you can follow the developmental history of Voigtländer 35 mm cameras.

There are several variations of 138/ , such as 138/21, I/138, and II/138 assigned to Dynamatic, Vito Automatic, Vito C, Vitoret, and Vitrona. So the Colora was "adopted" into the Zeiss family. I might add that the Icarex from Zeiss Ikon has the number I/158. ❐

ZEISS IKON



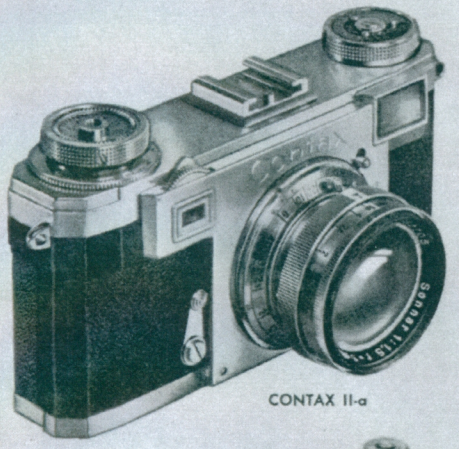
BUILT TO A QUALITY STANDARD NOT A PRICE TAG

You'll pay somewhat more for a Contax—but you'll get *much more* in quality. The best way to appreciate this is to examine a Contax. You'll see right away that every part of this outstanding miniature is flawlessly engineered and finished to the highest precision standards. And when you operate a Contax, the smoothness of its action tells you even more. Only the most skilled and painstaking craftsmanship could account for such perfect performance!

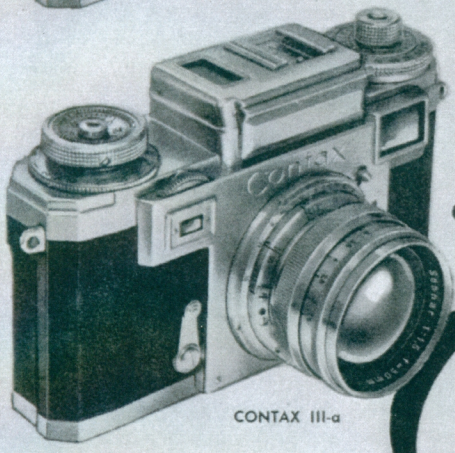
As regards optical design and craftsmanship, the reputation of Zeiss Ikon is world famous. In the Contax, this is exemplified by its ZEISS OPTON lenses—gems of optical perfection! Likewise by its superior long-base swivel type range-finder of prismatic construction, giving more accurate focus and ruggedness.

Besides its inherently fine quality, a Contax offers you many special features of invaluable assistance in picture-shooting.

Why not call on an authorized Zeiss Ikon dealer and have him demonstrate a Contax? Compare it with any other 35 mm camera. You'll agree that Contax quality is well worth its price.



CONTAX II-a



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