

ZEISS HISTORICA

Journal of the Zeiss Historica Society • Volume 22 • Number 2 • Fall 2000



Table of Contents

1	President's Letter	
2	A voice from 1937. . .	Anonymous
	<i>The text of a talk on Zeiss history presented to a group of British enthusiasts in 1937</i>	
6	Heinz Küppenbender's role in Contax history	Fridolin Berthel
	<i>Close study of the Leica and its shortcomings played a major part in his Contax design</i>	
10	Zeiss Personalities	Larry Gubas
	<i>Paul Rudolph and Walter Bauersfeld</i>	
12	The Zeiss Universarium: A Zeiss Planetarium update	Larry Gubas
	<i>A review of the planetarium that recently opened in New York City</i>	
14	Zeiss Ikon: roots and origins	Joseph K. Brown
	<i>A book published in 1937 examined 75 years of Zeiss-Ikon and its antecedents</i>	
18	New publications	Larry Gubas
	<i>Three reviews: on the transition to Kiev, on rangefinder lenses, and on SLR's from Dresden</i>	
19	Charivari. . .	
	<i>A Robot with a Tessar, and a familiar shape for a winding key</i>	
20	The Jenaflex AM-1 and the Jenaflex AC-1	Peter Hennig
	<i>Cameras from VEB Pentacon and VEB Carl Zeiss Jena in the 1980's</i>	
9 and 24	Advertisements from 1930's British magazines, supplied by	John Baca

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.

Officers

Founder	Thomas Schreiner
President	Charles Barringer, Jr.
Vice President	Marc James Small
Secretary and Treasurer	Maurice Zubatkin
Archivist	Lawrence Gubas
Editor	John T. Scott

Material for the journal can be sent to the Editor at 73 Winsor Place, Glen Ridge, NJ 07028 or to any Officer. Please send all other correspondence to Zeiss Historica Society, 300 Waxwing Drive, Monroe Twp. NJ 08831, USA. Annual membership dues: \$35 (USA), \$45 elsewhere. Dues include subscription to Zeiss Historica, airmail postage overseas.

© Zeiss Historica Society, 2000. All rights reserved under Pan American and Universal Copyright Conventions by Zeiss Historica Society. Reproduction without permission is prohibited. Trademarks and names that are the property of Carl Zeiss are used with permission.

Printing by Lightning Press, 615 Route 23, Pompton Plains, NJ 07444.

Corrections to the Spring 2000 issue:

Box on page 10: Alexandar Smakula's name is misspelled.

On page 15: The photograph in the center shows an f/3.5 Herar mounted on a Contax II, not an f/2.8 (which, as stated in the caption immediately above, does not exist).

The editor regrets the errors.

Front Cover: From Peter Hennig's article on page 20, we show the f/4 300mm Sonnar mounted on a Jenaflex AM-1. This lens from VEB Carl Zeiss Jena is the seven-element version.



Back Cover: An advertisement from a 1957 issue of US Camera, which features the Ikoflex Favorit. Also appearing in this ad are the Ikoflex 1-b and Ikoflex 1-c. You could buy the Ikoflex 1-b for \$99, or the Favorit for \$209. Then, as now, cases are "extra."

We announce with pride
the **IKOFLEX**
Favorit

The ideal solution today? A camera that brings new ease and pleasure to picture taking. Every camera on the market is just what you need in the speed and accuracy of response.

- Built-in photometric exposure meter shows exact reading (ignoring different ground glass lenses to find one which is most precise and best).
- Wrapping the film automatically under the shutter and advancing the film.
- Revolving ring on front permits fast, two-degree manipulation of shutter and diaphragm. Shutter settings and f stops in large, bold numbers are clearly visible from above.
- Concentrated ground glass shows film frame, subject, body when set in use.
- And when you close the back, picture camera automatically goes to rest.

Find out the Zeiss Ikon V3.5 Times Ten, model for its superior picture taking qualities, and the latest type Sonnar Contax 50V5 camera with high critical and soft focus. Sample is \$150.00.

At leading dealers. Write for further literature.
ZEISS IKON, 1000 Broadway, New York 10003

ZEISS IKON
SYMBOL OF EXCELLENCE

THREE GREAT VALUES

With the introduction of the Zeiss Ikon V3.5 Times Ten, the world's most advanced camera, the Zeiss Ikon V3.5 Times Ten is now available in three models: the V3.5 Times Ten, the V3.5 Times Ten II, and the V3.5 Times Ten III. Each model is available in two versions: the V3.5 Times Ten and the V3.5 Times Ten II. Each model is available in two versions: the V3.5 Times Ten and the V3.5 Times Ten II.

At leading dealers. Write for further literature.
ZEISS IKON, 1000 Broadway, New York 10003

President's Letter

Implicit in the First Law of Thermodynamics is the principle that energy cannot be created or destroyed — it is merely transferred or displaced.

It seems that with every issue of this Journal, the gestation becomes longer and more difficult. While we were never flooded with articles for publication we always had some backlog, an adequate quantity of good, if unpolished drafts awaiting transformation into the kind of article you have come to expect of this Journal. But that backlog is gone now; we're living from hand to mouth. Where's the problem? Where's the solution?

I perceive an analogy to this phenomenon in the relationship between, in general, print media and the Internet; specifically, between this Journal and the "Zeiss Ikon Camera Group" forum on the Internet. (ZICG@egroups.com) By extension, this has huge potential significance to the existence of *Zeiss Historica*, of which the Journal is the most visible manifestation and will be its most abiding legacy.

Harking back to the conservation-of-energy idea, I suspect that much of the energy our members once expended on the admittedly arduous task of researching, preparing, writing and submitting articles for the Journal is dissipated on the Internet. The vast number of sites available lets us displace our energy and consume our time in micro-chunks. We then become satiated with the technical equivalent of one-liners. The concentration once reserved for articles and, to an even greater extent, for books, atrophies from disuse. But this is the path we choose to follow because it satisfies, in an immediate and seemingly adequate way, the itch to know one little factoid after the other.

I, too, suffer from the temptation to spend time on the Internet, responding and reacting to the tiny stimuli generated by individual e-mail messages on the IDCC (the International Directory of Camera Collectors, www.well.com/user/silver/idcclist.html) or the ZICG, only to discover that entire evenings I might once have allocated to researching and writing an article for the Journal have simply disappeared. The satisfaction I feel is, at best, ephemeral,

and the enhancement of my knowledge is incremental.

But I'm adamant about the continuation of *Zeiss Historica* as a forum for serious scholarship and sharing of knowledge with other enthusiasts. Maybe I am more aware than most of the fact that the Journal doesn't just happen. It needs to be fed, so to speak, stoked by a steady stream of articles that can then be vetted for accuracy and edited for best presentation. Somebody has to write what you read. Otherwise, *Zeiss Historica* will simply not continue to show up approximately twice a year.

My vision of *Zeiss Historica* is that we are the first and last bastion of serious intent and reliable knowledge for those wanting to find out the whole story about a given Zeiss-related topic. In my mind, this involves a publication in the traditional form that can be archived and referred to in the classical manner. I am simply uncomfortable with the alternative, which I perceive as ephemeral and too easily subject to modification, to say nothing of its being inaccessible to those without computers.

But these are the views of someone who has passed the half-century mark, one who represents the past rather than the future. I learn from heads of similar groups that many of our sister societies are suffering the same sort of burgeoning crisis.

I feel strongly that *Zeiss Historica* has a place in this world but we cannot take for granted that it is secure or eternal. We must collectively and individually take an active role in maintaining and enhancing our position.

Maybe this is the time for a modest, perhaps even radical, rethinking of our priorities. Maybe we need to invent some sort of imaginative process that would combine the immediacy of the Internet with the seriousness of the Journal.

Help me make sure *Zeiss Historica* is a survivor, first by continuing to provide grist for the journalistic mill, and second by generating new ideas on how to create a fusion of the old and the new. Let me add my e-mail address for easier communication:

CHARZOV@HOME.COM.

Charlie Barringer

A voice from 1937 . . .

The following text was found in the materials forwarded to the society from the estate of Tom Schreiner, who was our founder. It is the text of a verbal presentation to a British photo group, introducing the Zeiss Ikon 1937 line of new cameras. The presentation took the concept of the 75th anniversary of Zeiss Ikon, which was really formed only 11 years earlier, in 1926, but which traced its lineage to the firm of Richard Hüttig, formed in 1862. There is no record of who the presenter was but he surely knew his stuff. The talk appears here with minimal editing, and with a selection of appropriate illustrations assembled by the Society's Archivist, Larry Gubas.

I sometimes wonder what the reaction of the veteran photographer of 75 years ago would be if he could have played the part of Rip Van Winkle and awakened at the present moment, after having slept during the last 75 years. If taken to a large photographic dealer's store I am sure he would never believe that many of the beautifully finished instruments displayed were cameras at all, since in a great number of instances the up-to-date cameras bear little resemblance to their grandfathers of 75 years ago.

In the year 1862 there were no cameras made with the fine exactitude that only high precision work can give. There was no coupled distance meter focussing, no built-in electric-cell exposure meters, no fully corrected anastigmat lenses with apertures as large as $f/2$ and $f/1.5$, no daylight-loading films. In fact there were only two types of apparatus available then—the studio camera and the so-called “field” camera. Both types were more or less similar, except that the field apparatus was constructed a little less solidly than its studio coun-

terpart. Both had a sort of double body, consisting of two rigid wooden boxes, one slightly larger than the other, the smaller one sliding into the larger thus forming a variable extension, permitting focussing.

The lenses were generally simple achromatic doublets or Petzval portrait lenses, the day of the anastigmat having yet to come. The plates were for the wet collodion process, and sizes smaller than half plate (or about 7.5×5 in.) were seldom used. The cameras themselves were generally made for larger sizes— 10×8 in. or 12×10 in. at least, with carriers being used for the smaller sizes.

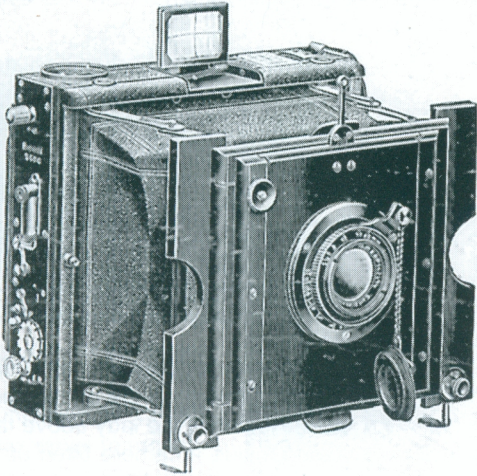
Almost without exception, these cameras were made of solid mahogany, and although I am afraid I do not know the exact weight of an apparatus for 10×8 in. plates, with three dark slides, it must have been something terrific. Certainly, these cameras would have been more than I should care to carry around on a hot summer afternoon. And that was without the other paraphernalia,

such as a dark tent and materials for coating and developing on the spot, which often accompanied the photographer. (It is on record that a camera having a collapsible bellows had appeared in the middle 50's—1856 I believe—but the extensible rigid form was in more general use in the early 60's.)

Enter Richard Hüttig

Such was the type of camera in use when, in 1862, one Richard Hüttig laid the foundations of what is now known as the Zeiss Ikon, A. G. With headquarters and three factories in Dresden, and four other factories in various parts of Germany, Zeiss Ikon products are now known all over the world. Hüttig employed about 30 men in 1862. Now about 7,000 people are employed in the manufacture and distribution of Zeiss Ikon products.

Hüttig was not, in the first place, a camera technician as we should understand the term today. He was an expert cabinetmaker, the finest qualification a camera constructor of his day could



Wünsche
Schlitzverschluß - Camera
„Victrix“
mit verstellbarer Schlitzbreite.

Für Moment-Aufnahmen bis $\frac{1}{2500}$ Sek.,
sowie für kurze u. lange Zeit-Aufnahmen.

== Gedeckter Aufzug. ==

Garantiert sicheres Funktionieren.

Elegante Ausstattung.

Für Plattengröße 6,5 : 9, 9 : 12, 6,5 : 13
und 13 : 18 cm.

Ausführlicher Prospekt gratis.

Emil Wünsche, Aktiengesellschaft für photograph. Industrie, **Reick b. Dresden.**

Man verlange unsere neue Preisliste für 1907.

An advertisement by Emil Wünsche dating from 1907. The "Victrix" trademark was carried over into Ica, but for a very different camera with a very small film format for its time. The Reick factory was later transformed into a tools plant that made all the tools and dies for Zeiss Ikon after 1926.

have, since the camera called for no precision tools or machinery. Measurements would be made with a joiner's rule and not with a micrometer gauge as is the case today.

The type of camera I have briefly outlined remained the standard type of apparatus until about the 1880's, except that collapsible bellows had gradually superseded the extensible rigid body, thereby reducing the weight and giving more portability.

In the 1880's, the so-called "hand and stand" cameras began to make their appearance. This was undoubtedly due to the gradual predominance of dry plates, with more rapid emulsions than the old wet collodion process. Also about this time Schott & Genossen of Jena introduced the new barium glass, which enabled the first anastigmat lenses to be made.

Goerz and others in the 80's

In 1886 the famous Goerz concern began making mathematical instruments, but turned their attention to cam-

eras and lenses in 1888. Three years later Goerz introduced a camera that immediately became popular: the Goerz Anschutz, named after its inventor (photographer Ottomar Anschutz). This camera was really the first press focal-plane type of instrument. I am sure some of you are familiar with the Anschutz, because it had a remarkably long life and was still manufactured up to about seven or eight years ago.

In the late 80's the trend towards lighter and more convenient apparatus was helped by the introduction of celluloid film. In 1888, Dr Krügener of Frankfurt-on-Main began right away manufacturing hand cameras. As early as 1885 he had designed a really compact camera in the form of a pocket book, which now reposes in the Zeiss Ikon museum in Dresden. Dr Krügener was the first to introduce rounded ends to roll-film cameras, and he equipped his cameras with positive spring pressure plates. His cameras were also ventilated to prevent film suction, that is, the film being drawn forward from the

focal plane when the bellows were extended.

In 1889 the firms of Wünsche of Dresden and Ernemann, also of Dresden, began manufacturing cameras. The former concern introduced the "U" or stirrup front, which is still with us today, on a run of the non-self-erecting type. They also made cameras of the self-erecting type, the forerunner of the modern instrument such as the Ikonta and similar cameras. Ernemann decided to concentrate on high-class instruments and equipped his camera with Carl Zeiss, Jena, anastigmat lenses: the well-known Zeiss Anastigmat and the later Protar series.

The early 1880's were a sort of transitional period, and the modern type of roll-film instruments now in universal use really had its beginnings about this time, although obviously by comparison with their 1937 counterparts they appear somewhat crude. The bodies, and generally the baseboards also, were made of wood, as compared with the all metal construction of today, and the shutters

Dr. R. Krügener,
Frankfurt a. M.
Grösste Spezialfabrik photogr. Hand-Cameras,
ca. 300 Arbeiter.
— Man verlange Preisliste für 1905 No. 19 F. —

Dr. R. Krügener's Delta-Camera
weil diese nach streng wissenschaftlichen Grundsätzen konstruiert
und tonangebend für den gesamten Camera-bau ist.

Dr. R. Krügener's Delta-Cameras
Allen voran!

Dr. R. Krügener, Frankfurt-M.
Meine Konstruktionen beruhen auf streng wissenschaftlicher Grundlage.
Man verlange Prachtkatalog Nr. 29 gratis und franko.

Two advertisements for cameras by Krügener. The lady with the 1905 roll-film camera on the left claims it is her favorite for taking on journeys, while the lady above takes the claim a step further by riding inside a camera fitted up to look like an automobile. The Delta trademark seen in both advertisements fell into disuse after the first amalgamation in 1909. The Frankfurt factory of Krügener was closed and amalgamated into the Schandauerstraße location of the new company, Ica A.G.

were anything from a sort of flap to the air-controlled sector type, such as the famous Goerz sector.

The square $3 \frac{1}{4} \times 3 \frac{1}{4}$ in. size was popular, but larger size quarter-plate or post-card size were generally the rule. Box-form magazine plate cameras, usually called "detective" cameras, also appeared on the market, and reflex cameras, both the single-lens and twin-lens types, also made their appearance. There were some other designs too, but these were in fact just novelties, and had very little influence on camera construction generally.

It is interesting to note here that the price in 1897 of a quarter-plate box magazine camera, leather covered, taking 12 plates and with a rapid rectilinear lens, was between £4 and £5. The price of a quarter-plate twin-lens reflex with a Zeiss or Goerz f/7.7 lens was about £20.

Palmos and Nettel

Round about 1901, the Carl Zeiss Palmos focal-plane camera was introduced and rapidly achieved fame. This had the focal-plane shutter afterwards incorporated into the famous Ica Minimum Palmos, which eventually became the firm favorite of nearly every press photographer. Its manufacture only ceased a few

years ago. There are many Palmos cameras in use in various parts of the world today.

Meanwhile, in 1902 the Nettel camera works was founded at Sontheim, and their chief specialties were the Nettel focal-plane cameras, which have stood the test of time. At the present time, the Nettel is Zeiss Ikon's standard press-type focal plane camera. (After the great amalgamation that formed the Zeiss Ikon concern, it was decided to discontinue the other press cameras—the Anschütz, Palmos and Ernemann—in favor of the Nettel.)

The amalgamation, 1909 version

Before the amalgamation the other manufacturers were concentrating on their various specialties. Such well known apparatuses as the Goerz Tenax and folding reflex cameras appeared on the market, as well as the various models Bob and Heag of Ernemann. There was a tendency, however, to overproduction, and the general trend was for cameras to follow more or less individualistic lines combining both good and bad points, owing to the patents of desirable features being held by the various single makers. It was felt that if some of the manufacturers that had in the past

contributed valuable ideas for the improvement of cameras could combine their resources, it would be beneficial to the camera-manufacturing industry and to photography in general. So, in 1909 the first big, amalgamation took place. Dr Krügener of Frankfurt, Wünsche of Dresden, and Zeiss Palmos of Jena, joined forces with Hüttig of Dresden. This combine called themselves the Ica A.G. with headquarters in Dresden. (The name means International Camera Aktiengesellschaft). It was not long before the pooled resources of the amalgamation began to take effect, and many of their products must, I am sure, be familiar to you. For example, the Ica Minimum Palmos, to which I have already referred, the Ica Bebe, Ideal, Juwel, Tudor Reflex, Nixe, and Icarette cameras, many of which are still in active use. The Icarette, for example, is still manufactured. It has been constantly improved, of course, but the basic design has remained practically unchanged.

Contessa joins the group

Meanwhile, in 1910, another manufacturer called Contessa-IndustrieWerke, Stuttgart, entered the manufacturing field, and in 1919 shortly after the Great

War joined up with the Nettel concern. The Contessa-Nettel amalgamation continued to make the Nettel press camera, and it also did a great deal to establish the popular-price roll-film camera with a first-class anastigmat lens. Many of you probably have, or have known, the well-known Cocarette camera, which was introduced in the early 20's. This camera was of all metal construction, had a Conistigmat f/6.3 lens, a three-speed shutter, a patent film carrier that kept the film flat, and was sold in the $3\frac{1}{4} \times 2\frac{1}{4}$ in. size for the moderate sum of £2 7s 6d.

Messrs. Goerz continued to extend their well known Tenax range to include the pocket Manufoc and Taro types, both plate and film pack models, and models for roll films.

It is interesting to note here the gradual predominance of the small negative sizes, $3\frac{1}{4} \times 2\frac{1}{4}$ in. rapidly becoming the most popular size during the years immediately after the Great War. The demands of the post-war photographer were a small, light, easily portable instrument, giving low up-keep costs, and ease in operation. Today, of course, this tendency has been considerably developed, and has led to the miniature type of instrument to which I will shortly refer.

Shortly after the War many advanced ideas emanated from the Ernemann works. No doubt you are aware that Ernemann produced the first really



EMIL WÜNSCHE
Akt. f. fotogr. Industrie
REICK BEI DRESDEN.

Hand- und Stativ-Kameras
 für Platten und Film
Atelier-Kameras
 Projektions- u. Vergrößerungs-Laternen
 Objektiv-Schleiferei
Haupt-Niederlagen:
 Dresden-A., Moritzstrasse 20
 Leipzig, Salzgässchen 1
 Berlin W., Charlottenstrasse 50/51
 Frankfurt a. M., Bethmannstr. 56
 Breslau, Ohlauerstrasse 65
 Hamburg, Rathausstrasse 8
 München, Marienplatz 12
 Graz, Joanneumring.

Sowie durch alle anderen Handlungen der Branche.

Emil Wünsche advertised his cameras and listed eight of his dealers' addresses with the help of a young lady looking remarkably like Dr Krügener's female tourist.

rapid anastigmat lenses, the Ernostar f/1.8. These lenses were made in focal lengths of 8.5, 12.5 and 15 cm. They were used on a special-model focal-plane camera called the Ermanox. They were also made for cinematograph cameras and, after the amalgamation of 1926, Carl Zeiss of Jena continued their manufacture.

Completion in 1926

We now come to what may be regarded as one of the most important events in the photographic apparatus industry during recent years, when in 1926 the great amalgamation of Goerz, Ica, Ernemann and Contessa-Nettel with Carl Zeiss, Jena, took place, and assumed the name Zeiss Ikon, A. G.

The manifold experiences over the years, innumerable patent rights and a large staff of skilled technicians, engineers and mechanic, were thus joined in the Zeiss Ikon concern.

Every camera bearing the name "Zeiss Ikon" has behind it the pooled resources of experiences that stretch back over 75 years, and the value of the

amalgamation very quickly became evident.

The watchword of the Zeiss Ikon concern is "progress," and there is no doubt that during the last decade the most important advances and innovations have emanated from the Dresden home of high-class apparatus.

Naturally, owing to such an amalgamation, many cameras became more or less redundant. Zeiss Ikon's first task was to create new products combining the most desirable features and including now ideas culled from the resources at their disposal.

This evening I would like to describe to you some of their current models, which are put on the market in the full conviction that they represent of their type, the finest equipment that modern research and manufacturing methods can evolve....

At this point the manuscript breaks off, and we may assume that the speaker (a dealer?) turned to a display of current models to demonstrate their features. □



Wunsche's
Photogr.
Apparate
 sind weltbekannt!
 Catalog m. Probebildern
 gegen 20 M. Porto.
Emil Wunsche
 Inh. O. Falcke, Leipzig, 12

Wunsche's cameras are known all over the world, according to the familiar young lady in this advertisement.

Heinz Küppenbender's role in Contax history

Fridolin Berthel

The following is a summary of an interview by Fridolin Berthel, who was a member of the Public Relations staff of Zeiss Ikon and later Carl Zeiss. It was published in the internal magazine Im Bild as the result of his interview on 21 October 1981, about eight years after Küppenbender left the firm.

Berthel, though German, was born in China and lived in Japan in his youth. He is totally fluent in German, Mandarin Chinese, Japanese, English and French. His attention to detail is legendary, and he signs his letters "Yours preZEISSly." The interview anticipated the fiftieth anniversary of the Contax camera and presents both the concerns of the inventor as he was developing the product and an insight to the business concerns of the day.

We thank Berthel for providing it and translating it as well.

—Larry Gubas

In the middle of the 1920s the after-effects of the First World War and the subsequent inflation in Germany led to a crisis affecting the German camera industry. Some companies folded and factories closed down because of sinking turnovers. Other companies tried to survive by joining forces. Under the auspices of Carl Zeiss, Jena, four renowned manufacturers of photo products, whose history dated back as far as 1862, merged to become the Zeiss Ikon A.G. with headquarters in Dresden. They were Ica and Ernemann of Dresden, Contessa-Nettel of Stuttgart, and Optische Anstalt C.P. Goerz of Berlin.

At that time, the Leitz company of Wetzlar, which up to then had produced high-quality microscopes, decided to come onto the market with the 35-mm Leica camera designed by Oskar Barnack. This camera had some features that were revolutionary for that epoch: high mechanical precision, excellent

lenses, focal-plane shutter, and a film capacity of 36 pictures. The growing success of the Leica—60,000 cameras were sold by 1930!—was closely watched by Zeiss Ikon and posed a great challenge.

In order to streamline the production programs and to match the cameras of the four founding companies, Carl Zeiss, Jena, delegated the young scientist Dr. Heinz Küppenbender as chief design engineer to Zeiss Ikon in Dresden.

Küppenbender had studied machine construction at the Technical University of Aachen and—after his diploma exam in 1925—had been appointed first scientific assistant of Professor Bonin, the head of the faculty for steam-engine plants. He joined the company of Carl Zeiss, Jena, in September 1927 as scientific assistant to Prof. Bauersfeld. When he was sent to Dresden he had already done basic studies, primarily in the field

of shutters. He received his doctorate in 1929 at the Technical University of Stuttgart with a thesis on the rotary disk shutters in cameras for the 23×23 cm film size employed even today for aerial photography and photogrammetry.

The Leica's shortcomings

The first thing Küppenbender did in Dresden was to study the characteristics of the Leica camera. In spite of its success in sales, the camera was endowed with a series of defects, which he hoped to avoid in a newly designed camera. As a passionate mathematician, Küppenbender calculated the degree of light transmission of several constructive shutter solutions, and computed the image aberrations of moving objects when employing horizontal or vertical shutters as well as the minimum speed of the shutter. The Leica camera of that time had a fastest shutter speed of $1/500$ th second. The two shutter cur-

tains ran off one after the other in 1/500th second, with the slot automatically widening between them towards the end as the curtains gathered speed, so as to maintain an even exposure time. However, it was Küppenbender's opinion that the Leica shutter did not always run in synchronization. He decided that the curtains of the focal-plane shutter should be coupled tightly with one another and should run the shorter distance, namely vertically, or from top to bottom. The slot between the shutters should be set previously and run together. But as their speed increases towards the bottom, the shorter exposure there should be compensated by slightly tilting the curtains so as to obtain an identical light transmission at top and bottom.

Another defect of the Leica occurred through the so-called "magnifying-glass" effect. With a lens set at infinity, the sun could burn a hole into the rubber curtain of the shutter. Küppenbender decided on metal as material for the shutter curtains. In close cooperation with Küppenbender, the toolmakers of the Dresden factory developed a refined shutter in the manner of a Venetian blind of sheet metal. This metal had to



Heinz Küppenbender in his study at home in Aalen. The photograph was taken in October 1981 by Fridolin Berthel.

be extremely thin, so as to diminish both the tension of the spring and the impact of the shutter; in short, a refined work of precision by master craftsmen.

Rangefinder improvements

Now the question arose how to rotate the mirror of the rangefinder. Employing a lever was a good solution, but that necessitated two cemented lateral planes, so as to enable simultaneous viewing through the rangefinder. For a certain time the cemented surfaces and the silver layer caused problems. It was difficult to distinguish the two images of the rangefinder. Zeiss Ikon later replaced the silver layer by one of gold.

The greater problem, however, was to effectively cement the two rangefinder wedges. Which cement should be employed? Optical cement was too soft. Küppenbender and his team tried dental cement. The idea was good, but proved to be wrong. Dental cement held excellently; one could knock the wedges against the table and nothing broke off. But after some time rangefinders cemented in this way showed small errors at the setting of infinity, which then disappeared only to re-appear again unexpectedly. The reason was that the dental cement was hygroscopic. It absorbed moisture and

expanded, and if the cement layer was not absolutely parallel but a vestige imperfect, possibly during the quality-control adjustment, the thicker end expanded more than the other, and thus caused the error.

To solve this problem Küppenbender decided to study the alternative of a swinging-wedge rangefinder (*Schwenkeil-Entfernungsmesser*), which did not have this error and additionally offered a tolerance three times better.

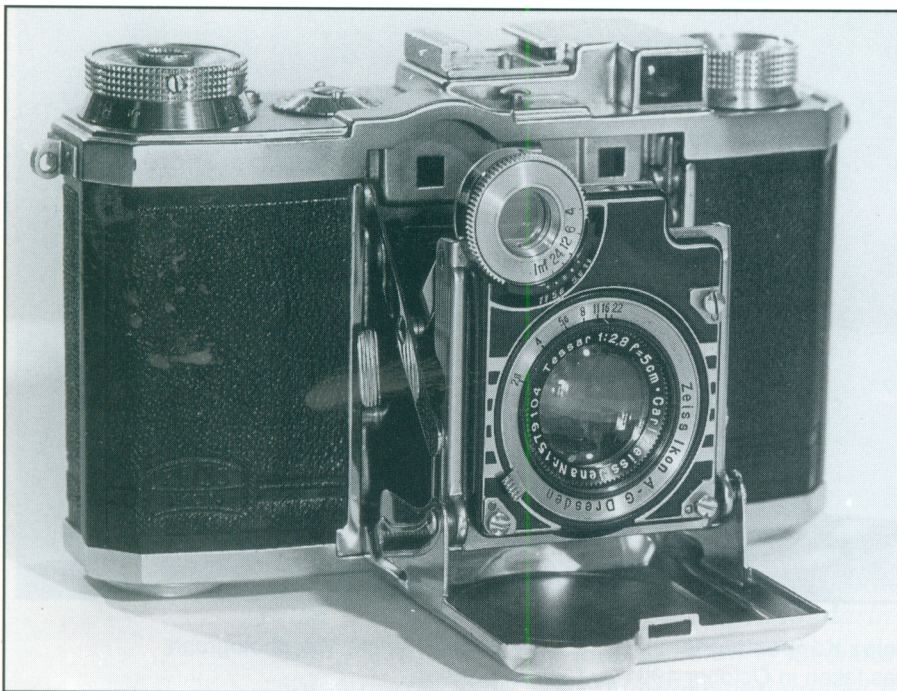
The next step was to eliminate the separate viewfinder. Küppenbender thought that the normal viewfinder of the camera should have enough space for the rangefinder as well. A piece of glass was added to the front of the viewfinder, so as to obtain a wider field of vision and an even wider base for the rangefinder.

But Küppenbender also considered the swinging-wedge rangefinder to be dangerously inaccurate for his demands. He found the final solution in the rotating-wedge rangefinder (*Drehkeil-Entfernungsmesser*). Here the wedge could be rotated by 90 degrees to obtain a beam deflection of less than three degrees. The Contax camera appeared in the market in 1932.

In the meantime the four merged factories of Zeiss Ikon manufactured a



Super Ikonta C, one of the cameras that used the rangefinder design of the Contax in a format originally more commercially successful than 35mm.



The Super Nettel, in the now very rare chrome version. The black version was manufactured over a longer period. Both incorporated many of the features originally designed for the Contax, and at the time Zeiss Ikon was the only company making rollfilm cameras (that is, not 35mm) with rangefinders.

reduced range of cameras typical for their respective programs. There were cameras with the shutter in the front, bellows-cameras in which the front could be twisted, and spring cameras, all of them much too inaccurate to incorporate a rangefinder. A solution was to couple the lens with a rotating wedge rangefinder mounted on the part where the lens and the shutter were located. With its base behind in the camera body, one had a well functioning collapsible camera.

At the outset Zeiss Ikon made most of its business not so much with the Contax camera but rather with several other Contax-like cameras such as the Super-Ikonta and the Super-Nettel, which were equipped with rangefinders. Zeiss Ikon was the only company then with rollfilm rangefinder cameras in its program. Thus the success of Zeiss Ikon was due to the application of the Contax idea to other cameras. The name Contax itself was determined by a competition among the personnel of Zeiss Ikon. An employee received five Marks for his suggestion.

An essential advantage of the Contax compared with the Leica was that it was so much easier to clean. If one of the perforation holes of the film tore inside the Leica, it was practically impossible to remove the splinters. These in turn produced scratches in the film or got stuck in the mechanism. Another advantage was that the Contax camera had a back that could be opened, which permitted the use of plates like those for the Icarette camera. Also, the Contax shutter was insensitive and resisted scratches. One could accidentally brush against it with a thumbnail without damaging it. Furthermore, the problem of the film transport (Filmführung) was solved optimally. Leica introduced Contax-like film transport only in 1954.

Film transport

Initially Zeiss Ikon also came out with its own film cassette for the Contax, while the serious Leica photographer had to cut his film from a 35mm cine-film roll, spool it into the Leica cassette, and then insert into his Leica camera. This procedure often led to loading mis-

takes and tangled films. The well proven Zeiss Ikon film spool consisted of a perforated leader that had to be wound away, then came the unexposed film and at its end a perforated paper trailer. The so-called Contax cassette contained the exposed film, which needed no rewinding. When Kodak introduced the Leica cassette, Zeiss Ikon adapted it for the Contax.

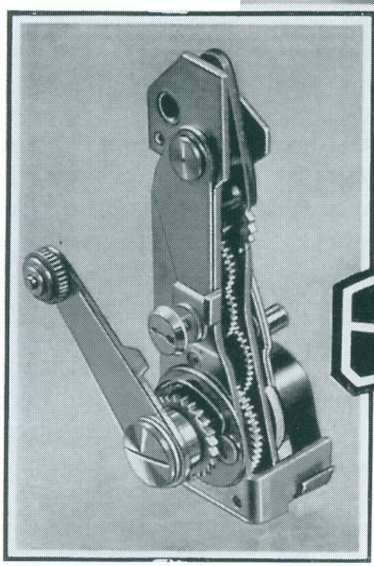
Lens mounts

An important feature of the Contax was the bayonet mount for the interchangeable lenses. The decision for this mount was taken because screw-thread mounts were liable to be mishandled. Also, the lever of the Leica rangefinder lay in an exposed position; people fiddled with it and damaged it. On the other hand, Zeiss Ikon had to surmount some problems with the bayonet mount. It was not possible to shape a curve in the barrel of the lens to set in action the lever of the rangefinder, as is possible with a screw thread. The Zeiss Ikon solution was simply computed after thread and feed (*Vorschub*). But that led to problems with the interchangeable telephoto lenses because they required compensations by means of an additional thread for their own threads. Any second-order errors that cropped up then had to be compensated by a curve in the lens barrel.

When Zeiss Ikon came out with this solution, Kodak objected. In 1936 Küppenbender had to travel to the United States by boat to prove in an interference lawsuit before the court of appeals that the idea had first come from him and not from the Hungarian Ritzdorfer who had patented it.

Towards the end of 1938 Küppenbender's team were already working on a reflex camera with upright viewfinder image. A working model camera was lost when the Ica plant was destroyed during one of the allied bombings of Dresden.

Küppenbender left Zeiss Ikon in 1941 when he was appointed to the board of management of Carl Zeiss, Jena, as successor to August Kotthaus, who died in a motorcar accident. □


Delayed action release . . .

The Contax delayed action release shown in our illustration is but one example of the wide range of movements which combine to make the Contax the most versatile 'miniature.' Although not so important to many photographers perhaps, as the range of 15 interchangeable Zeiss lenses, combined distance meter and view finder, and other major features, the delayed action release shows the care that has been embodied in the design to include a truly comprehensive equipment.

The delayed action release on the Contax is set by a simple motion of a lever. It gives automatically any of the range of shutter speeds between $\frac{1}{2}$ and $\frac{1}{1,250}$ th second. With the delayed action mechanism in action, a time exposure of 1 second can be given. This feature is often of the greatest help to pictorial workers, because the camera may be placed on a flat surface, and the one second exposure can then be given without the chance of jarring the camera when pressing the release.

These and other features exclusive to the Contax enable it to include in its scope almost every subject it may be called upon to tackle.

CONTAX

Write for a copy of the interesting 120 page "Contax Photography,"
or better still, ask your local Contax Expert for a demonstration.

Zeiss Ikon Ltd., 92, Maidstone House, Berners Street, London, W.1

62

The delayed-action release of the Contax II. This advertisement from the January 1939 issue of *Miniature Camera Magazine* (usually "MCM") was provided by John Baca of Mathiston, Mississippi. See page 24 for another of Baca's advertisements.

Two more in the series assembled by Larry Gubas

Paul Rudolph (1858–1935)

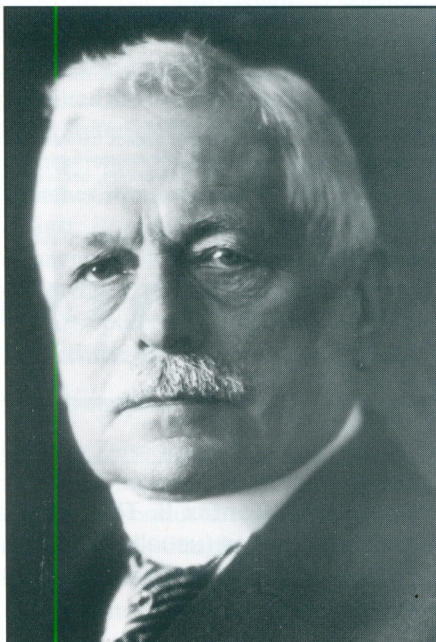
Paul Rudolph had originally trained for work as a mathematical educator but came to Jena as a relatively young man to work with Ernst Abbe to design his new breakthrough color-corrected apochromat objectives for microscopes in 1886. Rudolph's mathematical skills were extremely high, and he formulated some of the first calculations with regard to these microscope objectives. However, his major contribution after settling in Jena was the design of the first anastigmatic photographic lenses using Otto Schott's new glasses in 1888. His photo lens design output was tremendous. In 1890, his first design was the Zeiss Anastigmat which, ten years later, became known as the Protar because he was not able to trademark the term Anastigmat. With this product he founded the photographic division at Carl Zeiss and managed it until his retirement in 1911. It was the first commercially available lens that used Otto Schott's new barium crown glass. By modern standards, it was a slow lens with the widest aperture of $f/7.7$ but Rudolph widened the aperture to $f/4.5$ within a few years.

Rudolph's tremendous mathematical skills and intuition for optical systems set him apart from his peers. He set up lens-testing templates and assisted in developing the new manufacturing process. He also developed a photo stop system and placed a measuring scale on the barrel of each lens that stated the opening in millimeters to permit the photographer to use a scientific measuring scheme for setting the diaphragm opening.

The beginning of this new product line was difficult since Zeiss had limit-

ed facilities and had never manufactured photo objectives before. The firm of Voigtländer in Braunschweig manufactured the first Zeiss lenses until more factory space was acquired and staff trained. There were some negative elements to this since Zeiss soon lost Hans Harting, who had assisted both Abbe and Rudolph, to Voigtländer where he offered the design of the Heliar to the market. Voigtländer would also make their own early copy of the Zeiss prism binocular since there was some doubt of the validity of the patent.

In 1893 both Rudolph and von Hoegh of C.P. Goerz designed similar lenses. Rudolph's was called the Triple Protar and von Hoegh's was the Dagor [Double Anastigmat GOERZ]. Other successful Rudolph designs were the Protar multiple lens sets, the Planar, the Unar, the Double Amatar, and, of



course, the most successful lens design in the history of photography, the Tessar [German Patent 142 294]. He and his assistant Ernst Wandersleb also designed the Magnar $3\times$ telephoto lens. This large lens was even sold with a Carl Zeiss camera attached. Rudolph became quite rich based on his licensing fees for each lens of his design manufactured. These came not only from Zeiss but also other manufacturers and foreign licensees. After Abbe's death Rudolph fell out with the Zeiss firm over the acquisition of a camera making concern within the firm and the later creation of Ica. Rudolph felt that the changes would adversely affect sales to other camera manufacturers, and after nearly 25 years with the firm he left to go into retirement at age 53 in 1911.

However, he did work from time to time for the firm of Meyer in Goerlitz. For them, he produced a number of different versions of his Plasmal design, an attempt to create a color-corrected photo lens. It was a successful design but with the depressed times in Germany after the First World War, it was difficult to introduce new products to the weak photographic firms. Rudolph did provide a Plasmal, a Double Plasmal and a Kinoplanat that reached nearly the same fast speeds that young Ludwig Bertele was also reaching at the firm of Ernemann in Dresden.

Today, after 98 years, his lens design for the Tessar (and others lenses based on this design after the patent expired) are still used in numerous forms. His basic Planar design is still being enhanced and improved 104 years later by almost every optical firm today after he first introduced it in 1896.

Walter Bauersfeld (1879–1959)

A very young Dr. Walter Bauersfeld joined the firm of Carl Zeiss in 1905 after graduating from the Berlin-Charlottenburg Institute of Technology.

Just a few years later, at the very young age of 30 in 1908, he became a member of the Carl Zeiss board of management. He would continue in this position for 48 of his 51 years working for Zeiss. This seems clear enough except that the board had but three members (Scientific: Bauersfeld; Commercial: Max Fischer; Firm Management: Rudolph Straubel) and these three were the major managers for the entire enterprise. Since Bauersfeld's responsibility was the direction of the scientific part of the firm, which included research and development, he was responsible for developing all of the incredible array of new products for nearly 50 years.

In addition to managing, he continued to have a vigorous career as a scientist and product developer in fields as divergent as gyroscopes, water turbines, microscopical and astronomical devices and aerial photography. He had been the chairman of the German Jubilee Foundation for Aviation in 1907, which is very early in this field and would encourage his young scientist, Ernst Wandersleb, to develop products and aerial lenses at a very early stage of this part of the business.

Bauersfeld is best known for the development of the Zeiss planetarium, which he brought to a viable product in 1923 with the assistance of the head of the astronomical department, Walter Villager. Most typical of his career is the fact that he solved so many of the different problems that he encountered

with this unique instrument with great success.

When developing the planetarium, he had great problems with where to project the images of the device. With no ready architectural product at his disposal, he took his science into that field as well. He created the self-supporting dome that was used for the planetarium. This was no mean feat because the projector had such small focussing tolerances. The Zeiss Dywidag dome, as it was called, had to be prepared for each of the newly constructed buildings in such a manner that the weight of the internal dome did not cause construction and maintenance problems. This problem was scientifically solved by Bauersfeld personally with the assistance of the German architectural firm of Dyckerhoff & Widmann AG, first in Jena and Munich and then in many

other locations around the world.

Just a year after the projector was developed, he redesigned it to show the sky at any location in the world.

At a time when compressed oil bearings were being planned for the famous Palomar telescope, Bauersfeld had already constructed a small astronomical telescope with almost frictionless compressed-air ball bearings and installed it in the halls of the Zeiss works. He originated new principles for the production of aspheric optics, mounting large mirrors, and improved the application of the vector correction for the solution of the spatial vibration problems in the Anschuetz gyrocompass and in a platform stabilized with several gyroscopes.

Bauersfeld was a pioneer in many diverse technologies and at the same time helped to manage the Zeiss foundation to success in spite of depressions, two world wars, and the Russian expropriation. Throughout these vicissitudes he remained a model of intellect and character. He loved and nurtured that unique business management creation of Ernst Abbe, the Stiftung. He was appointed a special lecturer at the University of Jena in 1927 and in 1939 was given the title of Professor.

His long list of patents is testament to his scientific prowess.

He was recognized in 1953 in the field of astronomy by having a large newly discovered asteroid (number 1553) named Bauersfeldia in his honor. At 81, an illness took him from his work and a few months later from this life. His combination of gentlemanliness and precision was greatly missed in the halls of Carl Zeiss. □



The Zeiss Universarium: A Zeiss Planetarium update

Larry Gubas, Randolph NJ

A few years ago in this Journal I presented a history of the Zeiss Planetarium that was updated later by Joe Brown. Well, progress is inexorable and things have changed yet again in several ways.

First, there are the ever-new technologies that have changed the Planetarium internally and externally. Second, Zeiss combined the East and West German planetarium departments that had been separated for nearly 45 years into a single location in Jena. Third, there are now more competitors in this segment of the optical business on several fronts. Fourth, the New York Museum of Natural History felt that the latest Zeiss Universarium model VIII was not impressive enough for them and Zeiss therefore customized that model to such a degree that it created a model IX.

New technology

Zeiss had progressively added all of the upgrades in optical technology and lighting over the past few years, and their new model VIII was clearly the cream of what was available. When New York's Hayden planetarium decided that a simple upgrade of their model VI was not what they wanted, they also decided to totally replace the building. The new Rose Center for Earth and Space is the result. The model VIII was upgraded to project its 9,100 stars via a field of high-intensity white light pro-

jected through fiber-optic cables. This makes the stars "tinier, brighter, clearer and more realistic." The old method had used copper templates with precisely defined projection openings. The model VIII was also spherical, with supplementary projectors for planets and special effects, rather than the "dumbbell" or mantis-like shape of its predecessor.

New York's requirements

However, even with these improvements New York was still not satisfied with the model VIII. They asked Zeiss to customize totally new art renderings into the constellations, elevate the projection quality with new Milky Way and other galaxy images, innovate new planetary projectors and more deep-sky nebulae. These changes took Zeiss an additional two years to redesign and reconfigure the delivered instrument. This delay was not a problem for the New York museum, because they had made the decision to demolish their old building and build a new one. So time was not such a problem (except for New Yorkers wanting to visit a planetarium.)

The new system has 45 computers controlling 30 motors. The delivered device arrived in June 1999 and was available for previews for New Years Eve of 2000. It arrived in 14 crates and weighed 4 tons.

Zeiss had to customize even more, because the customer did not like the

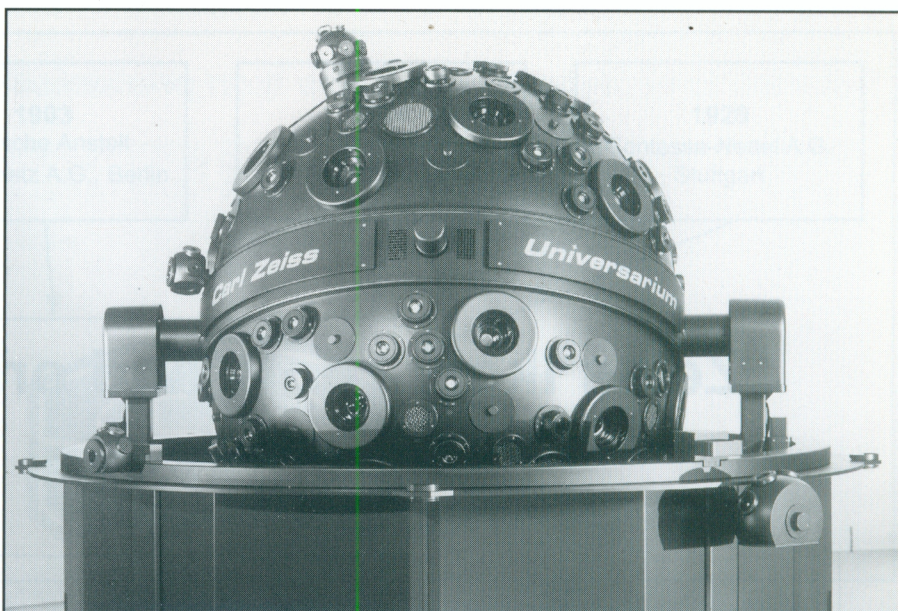
shade of blue of the instrument or the standard sky dome coloring. The instrument was made black and the dome was changed to an even darker hue called Planetarium Ultralight Gray. Zeiss engineers from Jena installed the instrument after the building-construction workers ended each workday at 3 pm, and so this process took nearly six full months.

Most new planetaria are being constructed in the form of an Imax theater, which is more like an enlarged but standard movie theater and projects the images onto the surface of a wall and part of the ceiling while the viewers sit on an angled platform. However, New York has retained the classic and more accurate ceiling-projection method.

At the beginning of this year there are 280 active Zeiss planetaria around the world with 29 in the United States. Zeiss continues to offer smaller instruments in their Skymaster series and many smaller locations are now becoming more common. The Reynolds Space Center of Henderson State University in Arkadelphia, Arkansas is now installing a ZKP3 Skymaster by Zeiss on an 8-meter dome with 45 seats, compared with the New York auditorium seating 325. A new Zeiss planetarium VIII TD has also recently been installed in the new Chabot Observatory & Science Center in Oakland, California, and a IX has been placed in the observatory complex in Bochum, Germany.



The first post-war Model IV, in the old "dumbbell" style, as installed at the Hayden Planetarium in New York City.



The new Carl Zeiss Universarium Model IX that slips under the floor of the new Space Theater in the Rose Center for Earth and Space when it is not in active use. Photograph by Kabelka/Schorcht., Carl Zeiss Jena GmbH.

The new instrument, of course, reflects the Zeiss standard for quality and excellence and is the best available on the market today. The cost of the custom device for New York was \$3.5 million.

A personal view

I have visited the Rose Space Center myself twice in the past few months to get a clear impression of the success of the projector and the new center. The instrument is spectacular but it has been set up so as to not be visible to the spectator. The visual appearance of the

entire Rose Center is also quite impressive. However, I do not think the entire architectural rendering to be a practical success. The architect had good ideas in designing the whole center but the execution leaves a lot to be desired. Much of the material is ambitious but difficult to make use of or is ineffectual with the number of visitors to the site.

If you want more information about my opinion of the center or on planetaria in general, you can contact me by email at Lngubas@aol.com. I have also collected a series of informative web sites on Planetaria and specific loca-

tions as well. I can e-mail these to you in most word-processing forms or as a straight e-mail, or you can forward to me a SASE with normal postage and I will forward it to you in that way.

No planetarium show offers the full impact of the accuracy and potential of the instrument. The shows are typical offerings and they are typically between 20–50 minutes and demonstrate the power of the instrument as only a survey course of current astronomy. Live interactive demonstrations are available at some sites. See their individual web sites for schedules and addresses. □

Major Zeiss Planetaria in the US

	City	Model	Fee	Different Presentations
The Adler Museum	Chicago	VI	\$5*	six different and live; varies
Griffith Observatory Planetarium	Los Angeles	VI	\$4*	one live; 1 hour
Rose Center for Earth and Space	New York	IX	\$19*	one; 25 minutes
Chabot Observatory & Science Center	Oakland	VIII TD	\$14.75*	one live; 1 hour
National Air and Space Museum	Washington	VI	\$3.75	three different

*Includes admission to the Museum as well

Zeiss Ikon: roots and origins

Joseph K. Brown, San Antonio, Texas

The names are well known to camera enthusiasts and especially to Zeiss Ikon zealots: Tenax, Maximar, Ideal, Contessa, and Contax. These and other nameplates formed the badges of honor borne by Zeiss Ikon cameras from the 1920s well into the years after World War II. So powerful were the reputations of many that they can bring a premium price in the collector market even today.

But there were other, earlier names in Zeiss Ikon's pre-history: Ergo, Atom, Heag, Bobette. Those were names once to be reckoned with in the world of photography but are now all but forgotten—vanished with the fading memories of the twentieth century.

A Zeiss Ikon book published in 1937 records many of these names and those of people and firms that gave rise to them. The book sets forth the story of how Zeiss Ikon came to be, how its foundations were built, and how strong and versatile it had become in eleven dynamic years.

75 Jahre Photo und Kino Technik (75 Years of Photographic and Motion Picture Technology) was published as a book to celebrate the seventy-fifth anniversary of Zeiss Ikon. Truth be told, the numbers hardly add up. After all, Zeiss Ikon was founded in the fall of 1926 and an eleven-year existence hard-

ly equals three quarters of a century. Hence the pre-history.

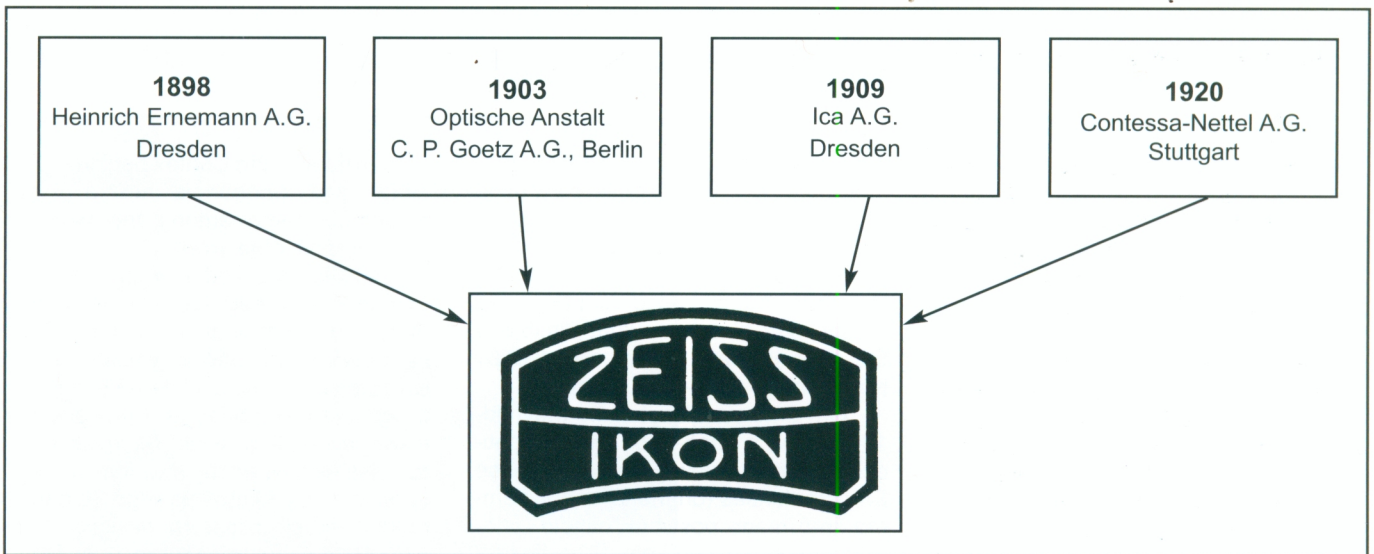
Four major German photographic businesses, Ica, Ernemann, Goerz, and Contessa-Nettel, combined to form

Zeiss Ikon and were joined soon after by two smaller companies, Goerz Photochemical and Hahn Optical. Most of the large firms were themselves composed of smaller entities; the hyphen in Contessa-Nettel's name points unmistakably to a former merger. By some convoluted logic, devised no doubt to make possible a public-relations event, the 1862 founding year of one of Zeiss Ikon's most distant ancestor firms, that of Richard Hüttig, was chosen as the earliest date from which Zeiss Ikon could credibly be traced.

Although the book would seem today to have been a natural to have appeared at the German pavilion at the 1937 Paris Expo, the printing date of November 1937 would make it too late to have been shown at the fair.

75 Jahre in straightforward style extols Zeiss Ikon as an example of a modern 1930s German precision manufactory working to reach a worldwide clientele after having made a strong recovery following a low point in the early years of the 1930s Depression. This recovery is claimed in the book to have been due to Germany's adoption of National Socialism, and given the 1937 date of publication, one would expect some heavy-handed nationalistic over-tone to the German-language text, but





The four major companies that formed Zeiss Ikon. Their dates of foundation are shown here; however, most can be traced back far earlier. For example Richard Hüttig, later a part of Ica, was founded in 1862 with "one craftsman and his helper."

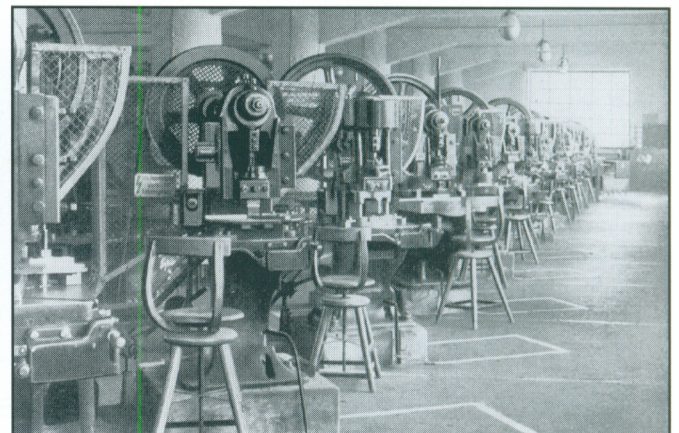
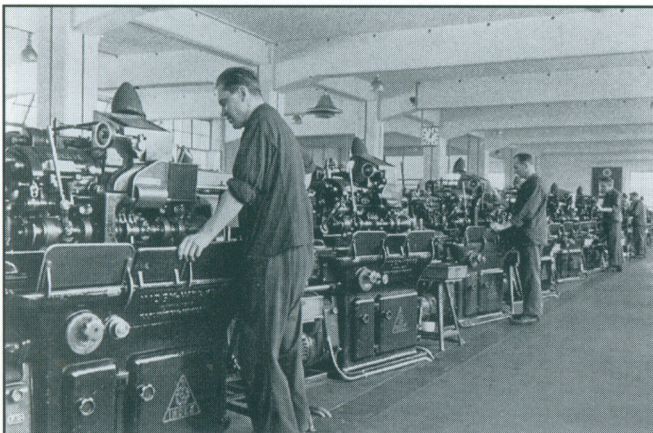
not so. The discoveries of France's Daguerre are set forth in the opening lines of the very first chapter and other references point out the photographic achievements of, among others, Petzval, a Viennese; Fox Talbot of England; and Americans George Eastman and Thomas A. Edison. In the book's early pages a brief, concise history of still photography and motion pictures is presented, after which the remainder of the book describes the work of Zeiss Ikon's predecessor companies plus some of ZI's own products that were on the mar-

ket in 1937. As an epilogue some short biographies of managerial persons of the pre-ZI companies are printed.

Readers also get a verbal introduction to Zeiss Ikon's various functions and factories, some of which are pictured. One comes away with the knowledge that Zeiss Ikon was a very serious manufacturing enterprise—for example, it employed some 8000 persons. Any previously held ideas of elves in the Black Forest are quickly abandoned after seeing pictures of the rows of automatic lathes and heavy presses.

Additionally, the book displays the versatility of Zeiss Ikon through text and pictures of its branch factories producing locks and keys; reflectors for lighting fixtures; mechanical calculators; measuring and testing instruments such as gas pressure analyzers, all seemingly far distant from Contaxes, Nettars, and Super Ikontas. □

(Photographs used in this article are reproduced from *75 Jahre* except for the image of the Heag XV with the Contax)



Screw-cutting automatic lathes (left) and **punch presses** (right) at the Zeiss Ikon Reick plant on Dresden's outskirts. The Contax used 90 separate stamped parts from this factory. (From "75 Jahre.")

Heinrich Ernemann A.G., a Zeiss Ikon predecessor

While all of the firms that were merged to form Zeiss Ikon brought with them skill, talent and expertise, the Zeiss Ikon combine was infused with special strength when Ernemann joined. This firm covered both the amateur and professional sectors of the photo market; they produced ciné as well as still equipment, and it was clearly Ernemann that was a leading force in the European market for 35mm motion-picture projectors before and after the merger, a time when film was moving from silents to the "talkies."

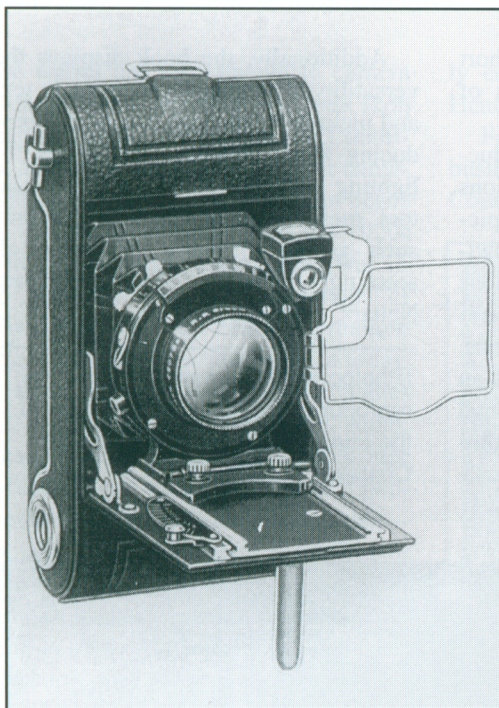
Ernemann was led by an innovative father-son partnership. Besides pro-

ducing movie cameras and the big theater projectors, they pioneered a minicam concept in the Heag XV filmpack camera and the little Bobette folding camera. They claimed sales of 20,000 Bobettes, which used unperforated 35mm-wide film somewhat similar to the later Bantam format adopted by Kodak in the 1935–1960 period

On Ernemann's staff in the mid-1920s was a soon-to-be famous optical designer, Ludwig Bertele, whose Ernostar lenses (on the Ermanox camera line) made possible "candid" photography in existing light. The first f/2 Ernostar lenses evolved into the Son-

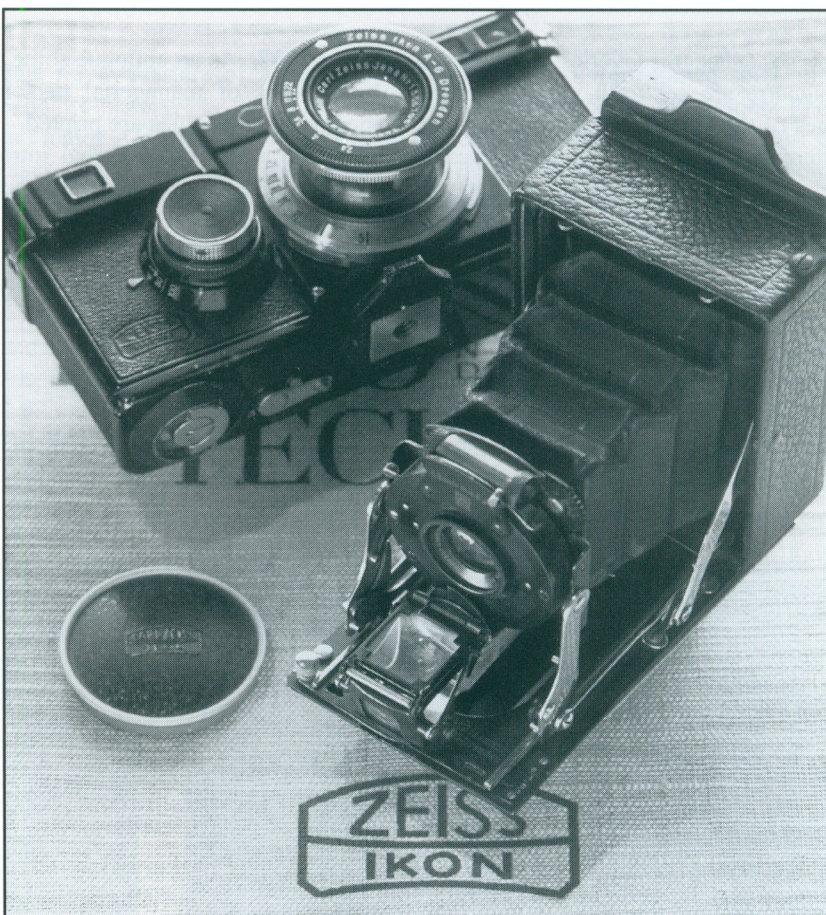
nars used with the Contax beginning in 1932, and Sonnar is still a very respected name among the world's photographic objectives.

In addition Alexander Ernemann, the founder's son, had spent some of his early years with industry in the USA; he believed in, and practiced, what was called rationalization—the simplification of inventories and processes. It was a skill that would be invaluable to Zeiss Ikon when the new firm sought to build its own product range from the multiplicity of disparate designs that after 1926 came to bear the Zeiss Ikon brand and build its reputation.



Ernemann was an early miniature-camera maker. Here are two of them; the 22×33mm Bobette (above), and the 4.5×6cm Heag XV (right) shown alongside a Contax I for scale.

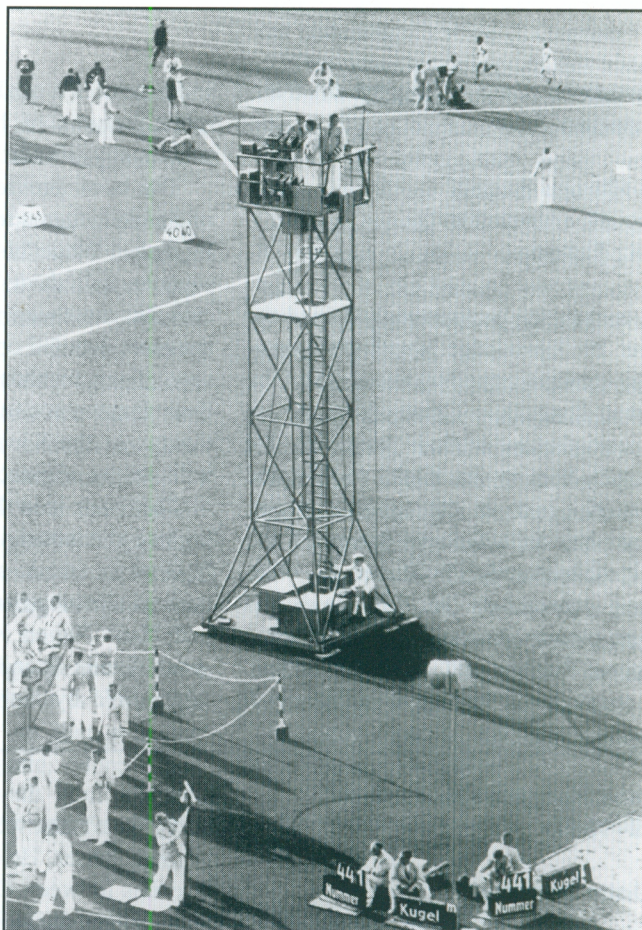
The Bobette, a unique product, could be had with an f/2 Ernostar lens.



More illustrations from "75 Jahre"

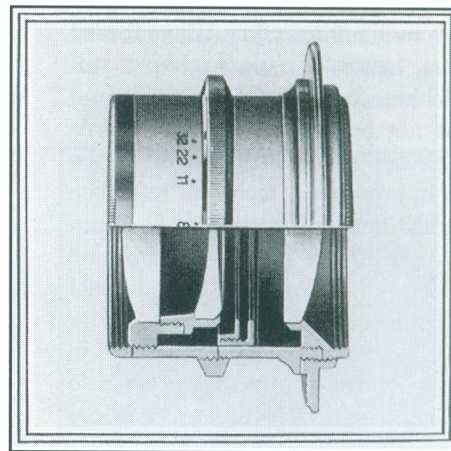
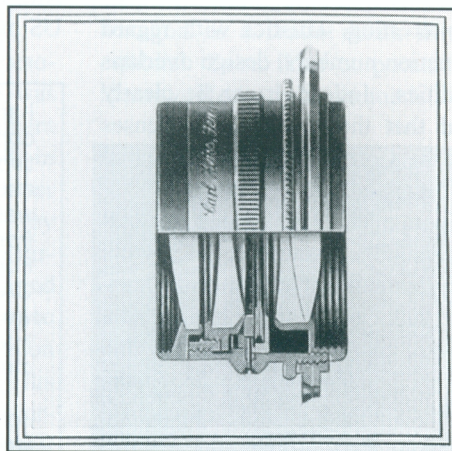


Assembling cylinder locks at Hahn in Kassel. This company also made professional movie projectors and held patents on the carbon arc lamps the projectors used.



Zeiss Ikon devised a photo timing method that was used at the 1936 Olympics. This tower supported the system's dual ciné-camera assembly and its operators.

Top-line Zeiss Ikon cameras used the Zeiss Tessar (left); more modest models carried the Novar (**right**) on which the Zeiss name did not appear. The Novar is believed to have been produced by other firms under contract to Zeiss Ikon.



New publications

Reviewed by Larry Gubas

Contax to Kiev: A Report on the Mutation

by Minoru Sasaki
English Translation by
Fritz Takeda

The author has painstakingly mined the areas of knowledge about the very-much-misunderstood transition from the prewar Zeiss Ikon Contax Cameras to the manufacture of their "twins" in the Arsenal Factory in Kiev, in Ukraine (formerly part of the Soviet Union). Sasaki has collected and compared the sum of knowledge produced by other strong researchers in this field and shows many actual samples of the three cameras that are part of this transition. He works with strong pictorial detail

and produces a quality publication with more pictures of hardware than ever seen in any similar book.

The book provides strong narration of Sasaki's theme in both Japanese and English. While his text is superb, his pictures will show parts of these cameras that most repairmen, let alone even the most detailed collectors, have never seen. Even for those collectors of Zeiss Ikon Contax not interested in the Jena Contax or the Kiev as such, this work will still be of great interest.

This book is in the A4 format, which is close to American 8 1/2 x 11-inch books. It uses the work of previous authors, such as our members Charles Barringer and Hans Jürgen Kuc, as well as the great details found in *Zeiss Cameras 1945-1975* by Kurt Jüttner and Bernd

Otto, all of which are familiar to me. However, he also includes material by others whose work I have not yet consulted, such as Richard Hummel and Jean Loup Princelle.

The results are fascinating and are strongly presented in both Japanese and English. The significant differences in these cameras are clearly presented and illustrated. I am afraid that to reveal any further details of this work here would not be fair to the author or to the potential reader. However, I must recommend it as highly as I possibly can. It is fascinating reading and viewing. The author includes a data sheet that you should return to him if you have further information to send him on these cameras.

US price: \$55 plus shipping.

Contax Rangefinder Lenses 1932-1962

by John Keesing

Because the Contax rangefinder was the first camera for which an entire system of lenses was produced, and because these lenses were made by Zeiss and were therefore the finest of their time, this is an important compilation. Some of these lenses have close relatives still available today after 68 years. Since it could not be based on Zeiss records (which are now either lost or buried deep in proprietary technical reference libraries), this is a work that has been created and then refined by constant research and hunting for additional information.

Keesing organizes the lenses in focal-length order from wide angle to telephoto and discusses the variances from materials to specifications. He provides a concise survey of each lens and its purpose. He provides a splendid overview of production dates, materials, approximate numbers of production

amounts, how they were marked and every detail that we collectors look for in these lenses. He summarizes the differences between Carl Zeiss Jena, post war VEB Carl Zeiss Jena, Opton GmbH, Zeiss Opton and Carl Zeiss. He makes use of a serial-number database that has been painstakingly gathered over the past thirty years by fellow collector Charles Barringer, which has some interesting statistics with regard to production numbers, design overlaps and oddities. Indeed, it can be clearly deduced that there were Zeiss lenses sold for the Contax that never appeared in catalogs or advertisements.

The sum of this information is clearly not available elsewhere. He is not able to picture every lens since the variants are vast. (For instance, he shows 20 various versions of the 5cm/50mm Sonnar f/2.) However, he does have excellent examples of key lenses. He covers prototypes, unique and rare differences, anomalies and materials (brass, alloys and aluminum changes). It is quick, to the point, and is an invaluable aid to any Contax and Zeiss Ikon

collector. It is highly accurate. Keesing is more than happy to hear from anyone with additional points of view and data that will help to further clarify the wide spectrum of this family of important lenses. I hope that that this book, like the Bestell Nr. List, will prompt collectors to share their information with John and so prompt follow-up editions with still more information and perspectives. US price: \$28 plus shipping

I am happy to have had the opportunity to read and use the two books reviewed on this page and recommend them to you as well. In the US, they are available from ACR Book Service, 15965 Forest Hill Drive, Boulder Creek, CA 96506 (or on the Web at www.camerabook.com). Internationally, they are available directly from the authors at:

John Keesing, 18 Winton St., Burwood, 3125, Victoria, Australia;

Minoru Sasaki, Office Heliar, 3-7-4 Jingumae Shibuya-ku, Tokyo 150-0001 Japan. —LG

Spiegelreflexkameras aus Dresden (Single Lens Reflex Cameras From Dresden)

Richard Hummel

available in German language only

This book was published by the author, Richard Hummel, who was for many years the chief of construction at Ihagee Kamerawerk in Dresden. He also drew on the expertise of many other German photographic industry professionals in Dresden, the center of camera design and construction in prewar Germany and in the postwar German Democratic Republic.

The book has two parts. The first is the history of all the major and minor Dresden firms pre and postwar from the first days of Hüttig to the end of Pentacon on 2 October 1990. The second is a textual and pictorial presentation of all of the models of these single-lens reflex cameras in chronological order by manufacturer. All of the Contax and Pentacon marked models are compared side by side. A member of the senior staff of

each company that manufactured the particular cameras makes the introduction for each section.

This hardcover book has a very large vertical format, at $9\frac{1}{2} \times 12$ inches. It is profusely illustrated with clear illustrations of these historical cameras, detailed illustrations of the various works and portions of relevant catalogs. All of the illustrations are black and white and are clear enough to show obvious features and characteristics. I was very impressed with the detailed information including tables of production statistics. It goes as far as I could possibly expect in being complete and reasonably detailed.

The German language may be a problem for some, but it is written in very clear language so that even my poor German is adequate. More impor-

tantly, there are 221 pictures/illustrations in the historical sections and 238 in the camera-by-camera section. These can enlighten even those who do not understand a word of German.

The clear chronology of this history includes those firms who were not physically in Dresden but whose predecessor or succeeding firms were. Therefore firms such as Goerz and Contessa Nettel, who were located in Berlin and Stuttgart respectively, are included in the history, and important personages are identified and where possible pictured.

Other non-Zeiss firms are covered in great detail and comparisons are easy to make, and the book has an all-important index, which makes quick research on specific product quite easy.

The book's price is 98 DM, with air-mail costs to USA being 46 DM, for a total 146 DM. This book is available from Jens Roesner, Baumgartenhof 4, D-09117 Chemnitz, Germany (e-mail Jens.Roesner@t-online.de).

Contact him to arrange payment and currency exchange. □

Charivari....

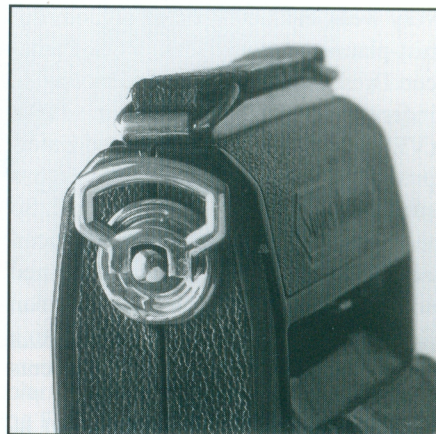
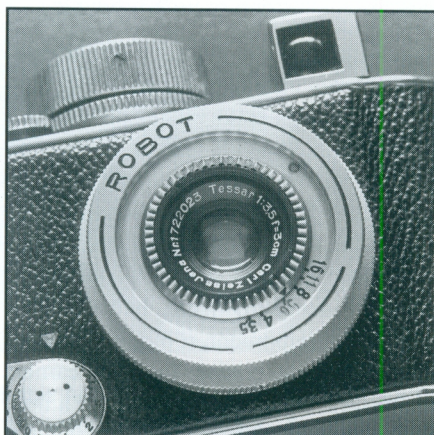
These two items were provided by Joseph K. Brown, author of the article on page 14.

The Robot is credited to photographic designer Heinz Kilfitt and was produced by Robert Berning, a camera manufacturer on the Aachener Straße in Dusseldorf. In the USA during the latter 1930s the Robot was distributed by Burleigh Brook, Inc. The Robot is clearly a piece of high-precision work, and its diminutive size makes it appealing to collectors, especially in its version made for the German Air Force. This civilian Robot Model I (left photo) carries a Zeiss Tessar 3 cm, an unusual focal length for a 35mm camera and one made possible by the 24×24 mm format used by the spring-motor-driven Robot.

A recent article in *Zeiss Historica*

pointed out the use of the angular body shape of cameras and the modified hexagon as a **trade mark device** to establish Zeiss Ikon corporate design identity. Here (right photo) is a subtle

extension of another shape used as part of the design of the winding key on a Zeiss Ikon Super Ikomat C. It is a shape that should be quickly recognized by Zeiss and Zeiss Ikon enthusiasts. □



The JENAFLEX AM-1 (1986-1988) and the JENAFLEX AC-1 (1987-1989)

Peter Hennig, Stockholm, Sweden

The following is a response to our Spring 2000 issue article entitled The Jenaflex. In that article I had expressed surprise at its existence. I have since been able to confirm the material in this article by Peter Hennig from three other sources, including the existence of a point-and-shoot camera with similar markings. I extend our thanks to Hennig for this new information. Anyone with similar information on other products using the Zeiss name during the years of the German Democratic Republic (East Germany), please forward it to me. The East German government's title was abbreviated as GDR in English and DDR in German.

– Larry Gubas

The Jenaflex AM-1 and AC-1 cameras were claimed to represent a false or a counterfeit use of the Zeiss name in *The Zeiss Compendium*. While this may have seemed to be true in an era where a Japanese optical firm (Sigma) was licensed to use the designs and trademarks of Carl Zeiss Jena for its lens manufacturing and marketing activities, these cameras have a legitimate pedigree in the East German world of the Carl Zeiss Jena Kombinat.

In order to exert better control of large-scale production manufacturing (a very weak characteristic of all communist-planned enterprises), VEB Pentacon Dresden lost its independence as an independent "Kombinat" in 1985. (VEB stands for People's Owned Enterprise.) It was then reorganized into a subsidiary of VEB Carl Zeiss Jena. So the camera manufacturer Pentacon became a Zeiss company and remained so until the fall of the East German State, when its assets were sold off to a West German firm and for all intents and purposes ceased to exist.

Rumors from East Germany tell us



The official logo of VEB Pentacon during the period 1985 to 1990. This example was used in addition to the traditional "tower" logo at the end of a prospectus for one of their products.

that there were advanced plans to produce more independent and advanced Zeiss cameras in Dresden—the Jenaflex AM-1 and AC-1 were just the first steps. These two cameras were actually upgraded production models of the previous Praktica BC-1 and BCA. While the fall of the communist regime might be considered to have been a very healthy development, it might well have been more interesting to Zeiss camera collectors, if the GDR had lasted a little bit longer!

The legal status of VEB Pentacon as an integrated part of VEB Carl Zeiss Jena during 1985-1990 is an established fact. In my illustrations I show another Carl Zeiss version of a late model Praktica camera, the BMS, which was not so clearly marked with the trademark on the body of the camera although the original box, instruction book and lens cap clearly use it. This is probably an indigestible fact to some Zeiss purists.

The United Kingdom agent for VEB Carl Zeiss Jena, C. Z. Scientific Ltd., played a leading role in the birth of the Jenaflex, but this does not affect the legal status of the Jenaflex as a Zeiss camera. Probably this was the last commercial camera to bear the Zeiss name.

The interchangeable lenses

There are a good number of Sigma-manufactured "Zeiss" lenses offered for these and other members of the Praktica "B" series of cameras. Most of these appeared in England. They are the Japanese-made lenses produced "under license" from VEB Carl Zeiss Jena.



The two slightly different versions of the AM-1. The differences are most obvious in the design of the bezel surrounding the rewind knob, on the left of the camera as you would use it.



A selection of lenses with the AM-1. Left to right, they are: the Panolar 80 mm f/1.8; the Panolar 50 mm f/1.4 on the camera; the Flektogon 20 mm f/2.8 and the Flektogon 35 mm f/2.4.

Zeiss lenses for Praktica B cameras and the Jenaflex

Prakticar	20 mm	f/2.8	
Prakticar	28 mm	f/2.4	(note 1)
Prakticar	35 mm	f/2.4	
Prakticar	50 mm	f/1.8	(note 2)
Prakticar	50 mm	f/1.4	(note 1)
Prakticar	55 mm	f/2.8	Macro
Prakticar	80 mm	f/1.8	
Prakticar	135 mm	f/3.5	
Prakticar	200 mm	f/2.8	(note 1)
Prakticar	300 mm	f/4	(notes 1 and 3)
Prakticar	500 mm	f/5.6	(note 4)
Prakticar	1000 mm	f/5.6	(note 4)
Vario-Prakticar	35-70 mm	f/2.7-3.5	(note 5)
Vario-Prakticar	80-200 mm	f/8	(note 5)

Notes:

Generally, all these lenses were marked "Prakticar." However, in some of the series made for the Jenaflex, traditional names such as Flektogon, Pancolor, and Sonnar were used.

1. These lenses contain new high-refractive, low-dispersive lanthanum glass developed by VEB Jenaer Glaswerk in the later 1970s.
2. The 50 mm f/1.8 was supplied both by Werk Saalfeld and by the Pentacon lens plant in Görlitz under the trademark Carl Zeiss Jena DDR. These are different lenses, both in construction and design, since the Pentacon lens was a lower-budget production.
3. The first version had five lens elements; the second version, seven lens elements.
4. These are Carl Zeiss mirror lenses.
5. These two zoom lenses probably represent the last major development in the field of 35 mm photography made by VEB Carl Zeiss Jena and Werk Saalfeld. They were ready to be introduced on the market just before Werk Saalfeld was sold to Docter Optic of Wezler. Some samples were said to have been sold in England just as the factory was closed.

Some were also made in mounts for other cameras, but there are some oddities to the German lenses as well.

When VEB Pentacon was transformed into a Zeiss company, that subsidiary did use Carl Zeiss lenses but also made their own lenses in their Pentacon lens-production plant in Görlitz. The full name of this other firm was VEB Pentacon Feinoptisches Werk Görlitz, and it was the last remnant of the

famous prewar optical firm of Hugo Meyer in that city. As a result, there are mixtures of these three different firm's available lenses available for these cameras. In fact some late versions of Pentacon or Meyer lenses were marked as Zeiss lenses under the trademark of Carl Zeiss Jena, in addition to those made by Zeiss themselves.

Despite of all this, the basic program of well made, high-quality lenses from

VEB Carl Zeiss Jena (which were made in the Zeiss Works in Saalfeld—some 50 km from Jena) can be summarized as shown in the table opposite.

There may be additional lenses and improved versions of these lenses available as well. I hope this article clears up some of the ambiguity surrounding these cameras and lenses; if anyone has additional information, please forward it via the editor. □

→
The Praktica BMS, another of the Praktica cameras that was distributed without an obvious Carl Zeiss trademark on the camera body but, as you can see, the famous lens-cell trademark is prominent on the lens cap, the box and the instruction manual.

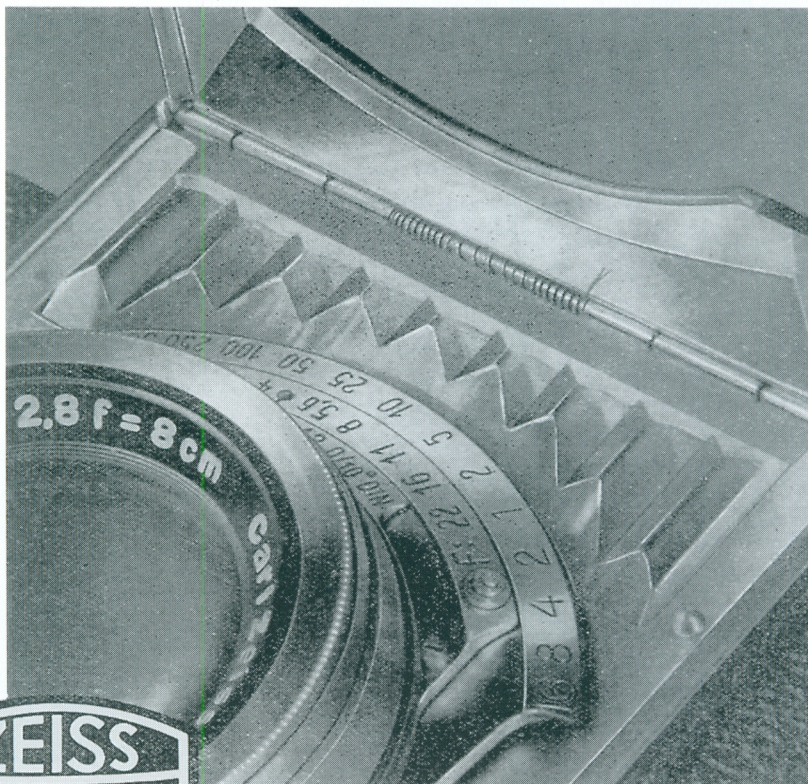


←
Top view of the Jenaflex AC-1, showing the automatic shutter setting on the top bezel.

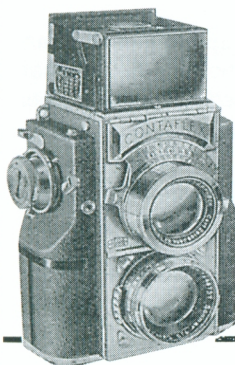
10

THE AMATEUR PHOTOGRAPHER ADVERTISEMENTS

January 26, 1938



Do you know what this is?



The illustration shows the prism construction of the built-in photo-electric exposure meter of the Contaflex. The exposure meter cover springs open at the touch of a spring bolt, and serves to keep out top light which might otherwise cause false readings, while the prismatic design of the meter window ensures that it embraces the same angle of view as the camera lens of 2" focal length.

The Contaflex is the only "miniature" twin-lens reflex camera taking $1\frac{1}{2} \times 1$ " perforated film providing a choice of interchangeable Zeiss lenses; focussing screen shows an image double the size of the negative, while automatic compensation for parallax is provided; metal focal-plane shutter speeded to $1/1,000$ th second, with delayed-action release; detachable back; direct-vision finder by van Albada, and many other exclusive features.

CONTAFLIX

The Contaflex is described in the 96-page book "Contax Photography". Write for a copy, or ask your dealer for a demonstration.

ZEISS IKON LTD., 11, MAIDSTONE HOUSE, BERNERS ST., LONDON, W.1

10

PLEASE MENTION "THE AMATEUR PHOTOGRAPHER" WHEN CORRESPONDING WITH ADVERTISERS

The prism over the twin-lens Contaflex exposure meter. This is another of John Baca's advertisements (see also page 9); this one is from Amateur Photographer, 26 January 1938.

Back cover:

The Ikoflex Favorit, with its Tessar f/3.5 75mm lens, in an advertisement from the U.S. Camera magazine in 1957.

This year, 1957, was also the heyday of the Ikoflex 1-b and 1-c, shown here with their more expensive brother. Note that then, as now, cases were extra.

J. T. Scott

We announce with pride the **IKOFLEX** Favorit

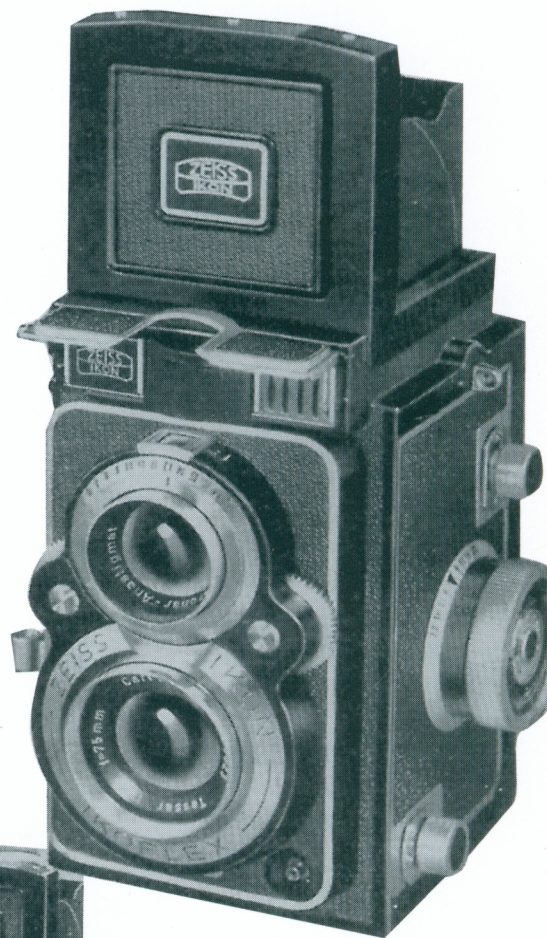
The ideal twin-lens reflex! A camera that brings new ease and pleasure to picture taking. Every control on the Favorit is just where you want it—for speed and accuracy of manipulation.

- Built-in photoelectric exposure meter shows scale reading right on the brilliant ground-glass—always in full view while you compose and focus.
- Winding the film automatically cocks the shutter and advances the film counter.
- Knurled rings on front provide fast, two-finger manipulation of shutter and diaphragm... Shutter settings and F stops, in magnified window, are clearly visible from above.
- Conveniently placed shutter release folds snugly against body when not in use.
- And when you close the back, picture counter automatically goes to zero.

Fitted with the Zeiss Tessar f/3.5 75mm lens, noted for its superior picture-taking qualities, and the latest type Synchro Compur MXV shutter with light values and self-timer. Speeds to 1/500 sec.

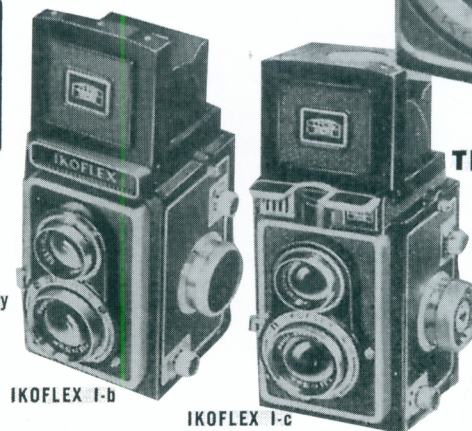
At leading dealers. Write for Ikoflex literature.

CARL ZEISS, INC., 485 Fifth Avenue, New York 17, N. Y.



**SYMBOL OF
EXCELLENCE**

All Zeiss Ikon cameras are made in West Germany



THREE GREAT VALUES

With the introduction of the Favorit, you now have a choice of 3 Zeiss Ikon models from only \$99.

Ikoflex I-b with Novar f/3.5 lens, \$99.

Ikoflex I-c with built-in exposure meter and Novar f/3.5 lens, \$126. With Tessar f/3.5 lens, \$146.

Ikoflex Favorit, \$209.
Cases extra.