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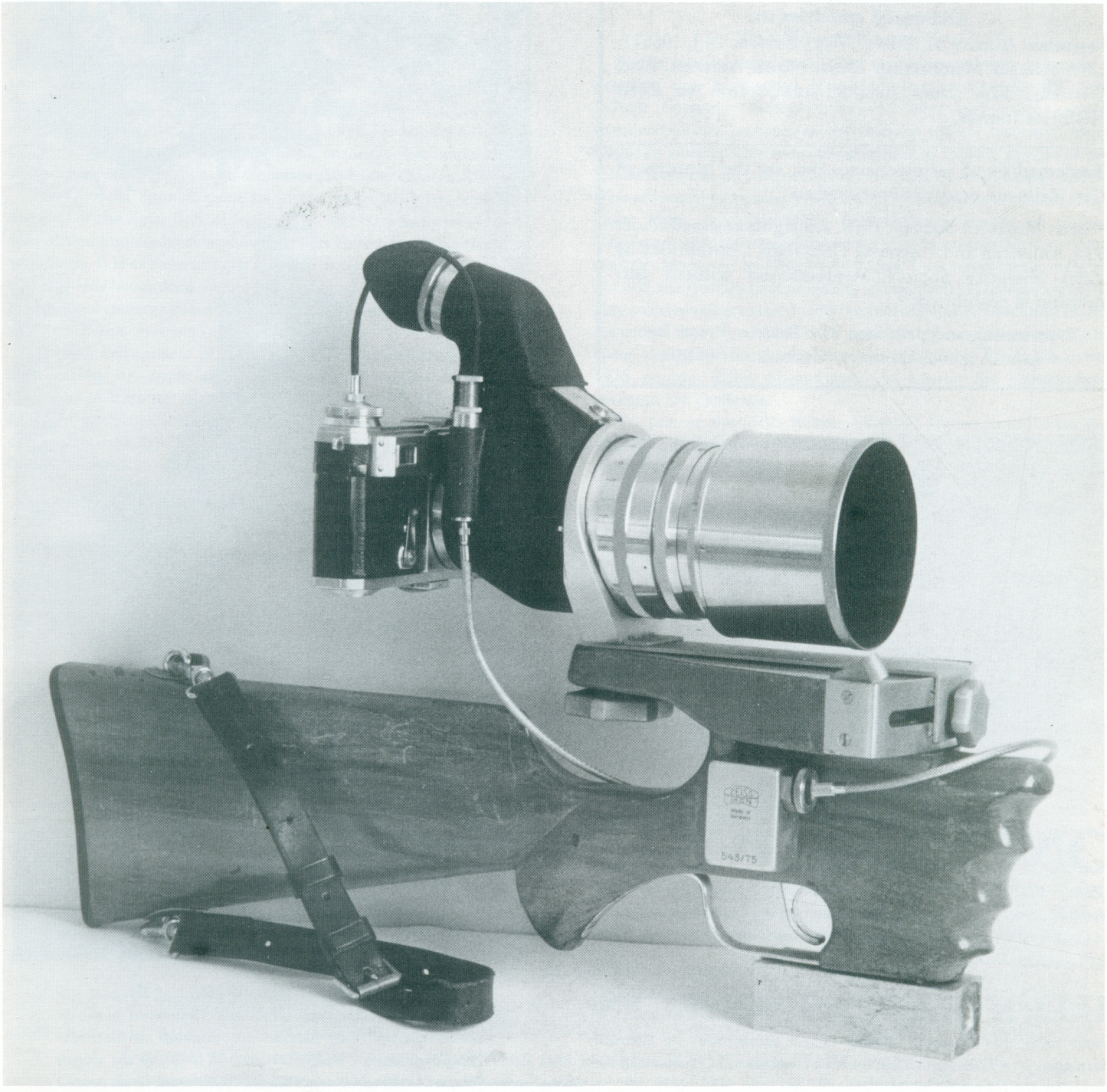

The Zeiss Historica Society of America is an educational, non-profit society dedicated to the study and exchange of information on the history of the Carl Zeiss optical company and affiliates, its people and products from 1846 to the present.

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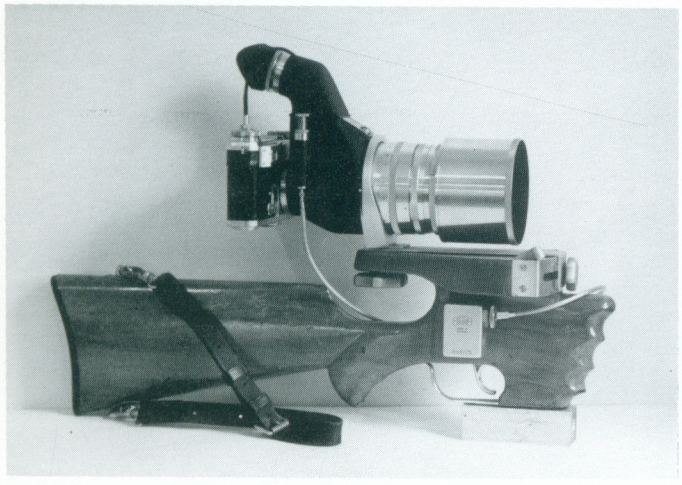


ON THE COVERS

FRONT COVER. Rarest of the rare: prewar Flektoskop-mounted Olympia Sonnar with Contax IIA, sunshade and gunstock mount.
BACK COVER. From The Wall Street Journal: an article comparing Zeiss, east and west.

ILLUSTRATION SOURCES

Front cover and Olympia Sonnar article illustrations by Charles Barringer, Jr. • Telescope article, by Nick Grossman. • "Lichtstrahlen" photos by the Editor.

DRESDEN, SUMMER 1988. Shadows of the past still can be seen on the wall of the old Ernemann plant on Schandauerstr. (near Number 30.) Beneath the faint blue Zeiss Ikon logo, "PHOTO" and "KINO", is the slogan "Unser Arbeit dient dem Frieden" (Our work serves peace.)

THE OLYMPIA SONNAR

Charles Barringer Jr., Haddonfield, N.J.

Since Zeiss's entry into the world of 35mm. cameras in 1932 until the present, only four lenses — the 50mm. Tessar, the 85mm. Sonnar, the 135mm. Sonnar, and the 180mm. Sonnar — have been part of the lineup of each and every one of their top-of-the-line universal systems. Of these, only the 180mm. f:2.8 Olympia Sonnar has kept the same specifications in each system, from Contax rangefinder prewar and postwar, through Contarex, and into Contax RTS.

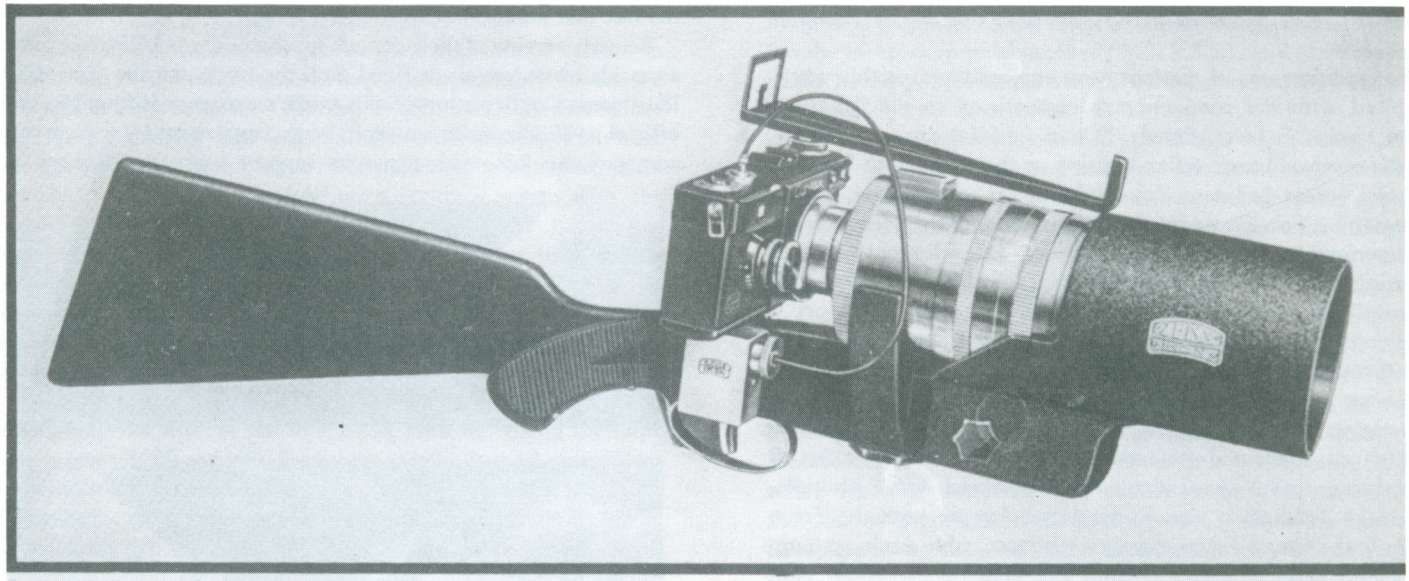
The Olympia Sonnar, since its inception in 1936, has been the flagship of the Zeiss fleet of lenses. The 180 f:2.8 has always been special, and knowledgeable photographers have always associated it with Zeiss. It is a credit to Zeiss's ability to "read" a market not only that this lens has existed, in one form or another, in all of their own professional camera systems over the past 55 years, but that virtually all other 35mm. systems include a similar lens.

Over the half-century of the Olympia Sonnar's existence, it has been offered in many configurations, in a variety of optical formulae, in keeping with Zeiss's goal of incorporating the latest advances in design and materials into their products. This article will examine the five Olympia Sonnars produced for the rangefinder Contax cameras.

The Direct-Mount Lens

As the familiar story goes, Zeiss was pressured into designing a dramatic new high-speed, long-focus lens in time for the 1936 Winter Olympic Games. It was felt that such a lens would demonstrate the prowess of the German optical industry, while allowing selected German photographers to capture images of the games like none seen before, since miniature film technology had by then advanced to a point where such a lens could be exploited fully. Zeiss Ikon, the preeminent German manufacturer of optical equipment, was the logical choice for several reasons. First, the firm was the largest in its field in Germany, by a comfortable margin. Second, the Contax I, alone among its competitors, offered a reasonably reliable and accurate 1/1000 second top speed, which was useful for action shots. And Zeiss had a great deal of experience with high-speed lenses, notably through its incorporation of Ernemann in the 1926 merger. Zeiss, always eager to one-up the competition, accepted the challenge.

No one at the 1936 Winter Olympic Games could miss the imposing chrome lens — 22cm. (8 5/8") long and 9cm. (3 5/8") in diameter — with the huge chrome sunshade in place seen in the



Contax Camera with Zeiss Sonnar F/2.8, 180 mm.

A MINICAM SHOTGUN IS ZEISS'S NEWEST TWIST

. . . for the long-range photographer. The lens weighs ten pounds, the trigger clicks the shutter, an the whole contrivance costs nearly $700. Cameramen used it to shoot the 1936 Olympic Games.

Olympia Sonnar as seen at the 1936 Winter Games with peepsight and 543/75 gunstock. (Illustration is from September 1936 Fortune magazine, but appeared earlier in the May 1936 issue of the Zeiss magazine.)

hands of a few German photographers. The Depression-era public, used to seeing Box Tengors, Maximars and Miroflexes, must have been suitably awed by the sight of the gunstock-mounted lens and camera at the Garmisch and Berlin games. It is hard to imagine an equivalent show-stopper among today's jaded, camera-wise public. Both as a showpiece and as a tool, the Olympia Sonnar, as it quickly came to be known, must have exceeded expectations, for the new lens was an aesthetic masterpiece as well as a technical breakthrough.

The f:2.8 speed, considered fast in 1936 for a normal lens, was unprecedented for a long-focus lens. The well-known Sonnar formula was modified to a 5 element/3 group configuration, and a front element of 75mm. (3″) diameter was incorporated to obtain the f:2.8 speed. With only six air-to-glass surfaces, reasonable flare control was achieved, especially with the sunshade in place. The iris setting ring was located at the front of the lens, and closed down to f:22. A quarter-turn of a broad knurled ring focussed the lens down to 3 meters.

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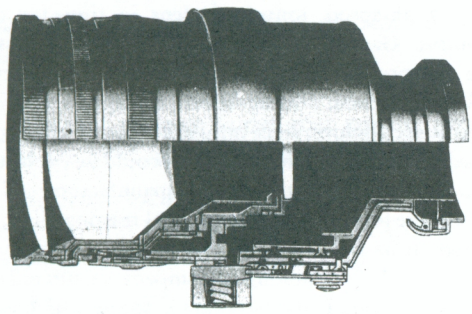


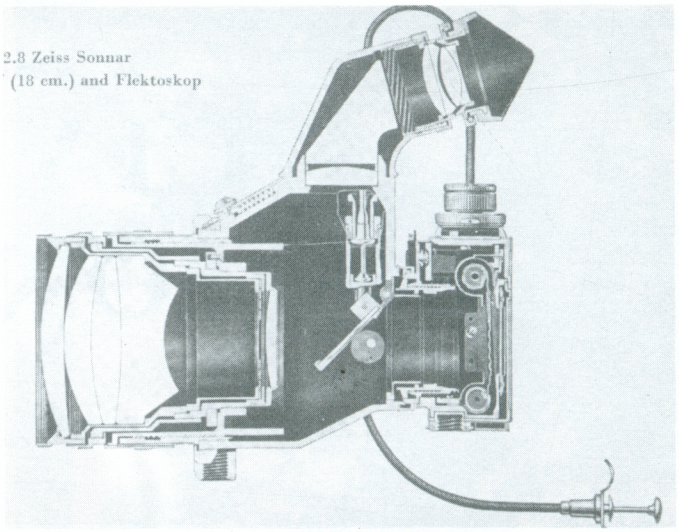
Cutaway of direct-mount Olympia Sonnar.

The lens by itself weighed a hefty 1525 g. (3 lbs., 6 oz.). Located near the center of gravity of the lens was a sturdy, satin chrome tripod bushing which could be rotated to allow vertical format shots. One suspects that the decision on where to place the release (a tab located on the bottom of the lens just behind the tripod mount) was made by engineers rather than photographers, since it was very difficult to get to. Mounted on top of the same ring was an accessory shoe.

The specifications of the lens were especially remarkable when compared with the contemporary competition in the fledgling 35mm. market. E. Leitz offered a 200mm. f:4.5 Telyt in an erect-but-laterally-reversed-image reflex housing as their telephoto lens for the Leica system. In house, Zeiss had only the rangefinder-coupled 180mm. f:6.3 Tele-Tessar for the Contax. Both of these lenses were good performers, but not as sports optics, due to limited selective focussing ability and a lack of action-stopping ability with the films then available.

Having produced a superlative lens for action photography, the next challenge Zeiss faced was to help the user aim and focus it. If you were in no hurry, and precision was paramount, the groundglass adapter (5520/6), or the plate back (540/13) could be used to focus the tripod-mounted lens. Or you could mount one of the existing optical viewfinders (436/7 Universal, 436/1 Multiple or 436/11 Telefinder) already developed for use with the Tele-Tessar in the camera's accessory shoe with acceptable results, as long as you remembered that focussing and viewing had to be two separate operations. But none of these solutions was the real answer for the sports photographer, who would have to wait several years for a reflex housing.

In the meantime, what about the shoe on top of the tripod bushing, which was too far forward to allow comfortable use of the accessory finders? What was its function, and what finder was it designed to be used with?

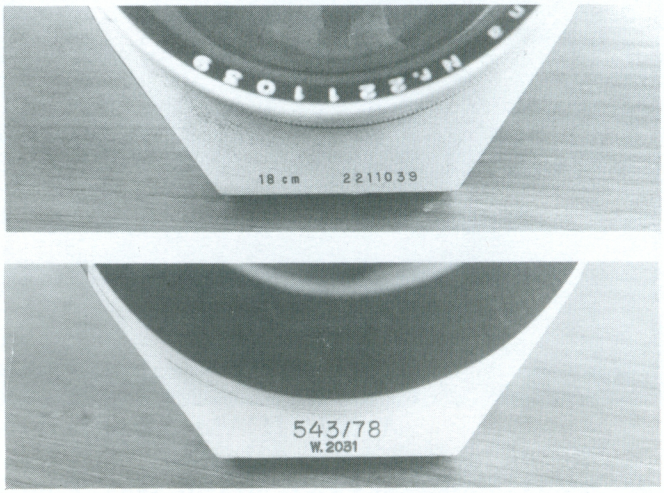


Cutaway of Flektoskop-mount Sonnar.

A brief article and illustration in the April, 1936 issue of the U.S. Zeiss magazine provide the explanation. Under the title "The Contax Gun", the report reads, "The Zeiss Ikon Contax and Zeiss lenses played an important part in recording the thrills of the 1936 Winter Olympic Games. Illustrated is the Contax Gun made for use with the Contax and a specially constructed Zeiss f:2.8, 180mm. (7″) Tessar (sic). With the gun, the sports photographers were able to record the dramatic incidents of the games with ease and precision under almost any conditions. There will be more about the Contax Gun and its f:2.8 Tessar in an early issue." This is believed to be the first official U.S. announcement of the new lens; that an official organ of Zeiss in this country botched the details so badly indicates how rare the lens was at that time.

The illustration accompanying that article shows a peep-sight viewfinder mounted in the *lens's* accessory shoe. Judging by the distance from the photographer's eye to the sight, this viewer might have helped with aim, but could not have been much use in defining a precise field of view. To the author's knowledge, this finder never appeared in any catalog, and its usefulness is perhaps suggested by the fact that none is known to exist today.

An early version of the gunstock (probably the 543/75), featuring a crackle-black lens-shade fixed onto the stock, not the camera, is illustrated. Confirmation of this outfit's existence is found in the official 1936 Olympics souvenir book (sponsored by a cigarette company, no less, with generous support from the Ministry of

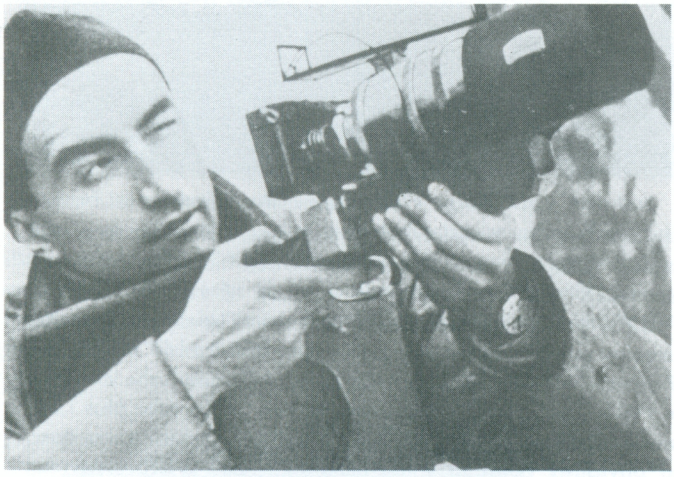


Pre-war Flektoskop. Top photo shows front of tripod bushing with lens serial number; bottom photo shows rear of same bushing with Flektoskop serial number.

Propaganda). Well-known contemporary sports photographer Lothar Ruebelf with his Olympia Sonnar was immortalized, along with Leni Riefenstahl, among others, on a page devoted to media personalities.

The 1937 Contax system general catalog (reference C. 740) which appeared in several languages as *Contaxphotographie, Contax Photography, Le Procédé Contax,* etc. describes two outfit cases for the Contax and the direct-mount Olympia Sonnar. The 1777/42 (not illustrated) contains four lenses from 35mm. to 180mm., plus the camera and some accessories. The 1777/45 is fitted for the direct-mount 180, the 543/85 gunstock, as well as camera and 50mm. lens, Helios lightmeter, filters, and viewing accessories. Alternatively, the lens could be supplied by itself, in a simple cylindrical leather case.

(From a collector's perspective, this is a good illustration of the kind of challenge one faces in assembling a good Contax collection. The sports-finder and the outfit cases are the kind of ephemera one should concentrate on after locating the direct-mount lens and both versions of the gunstock.)



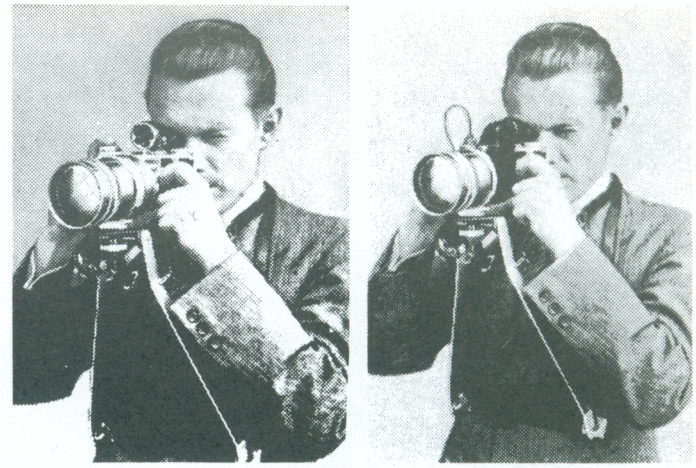
Lothar Ruebelf using direct-mount Olympia Sonnar with gunstock, peepsight at Winter Games in Garmisch.

The Prewar Flektoskop Mount

Having developed and introduced the direct mount version in time for the 1936 Winter Games in response to political pressure, the directors at Zeiss must have decided to step back and wait before modifying the design. The technical department must have felt from the start that a lens of this speed and focal length approached, if not exceeded, the limits of rangefinder accuracy, even with the exceptionally accurate long-based rangefinder of the newly introduced Contax II. But once in existence, the direct-mount Olympia Sonnar was sold unchanged for two years before being offered in a reflex housing. It is not clear if this lapse of time was due to problems in developing the housing (which seems unlikely), to in-house conservatism, or simply for commercial reasons.

Several major problems of the direct-mount lens were solved by redesigning the lens for use in a reflex housing. Using the same optical formula for the lens, Zeiss removed the internal rangefinder coupling mechanism and threaded the rear of the lens barrel. The Flektoskop, as it was baptized, with the corresponding female thread, provided the lens-to-camera link, and since focussing was done directly on the groundglass, the camera's rangefinder was bypassed altogether. The complete unit (without camera) weighed nearly 1,800 g. (just under 4 lbs.).

Though focussing was done on a ground-glass, the image was relatively dim, (by today's standards, inverted and reversed by everybody's). The ocular, with a rubber eye-cup to block extraneous light, was mounted on a diopter correction thread for precise



The magic of the retoucher? Apparently identical Zeiss photos show direct-mount Olympia Sonnar (left) and Flektoskop-mounted lens, both with chestpod.

focussing on the groundglass. A chrome tab on the top of the housing released the tripod bushing and allowed vertical formatting in either direction. To take a picture, the photographer actuated the lower cable release, while the upper cable triggered the camera release; these were independently adjustable to permit the proper sequencing of the mirror lift and the shutter release.

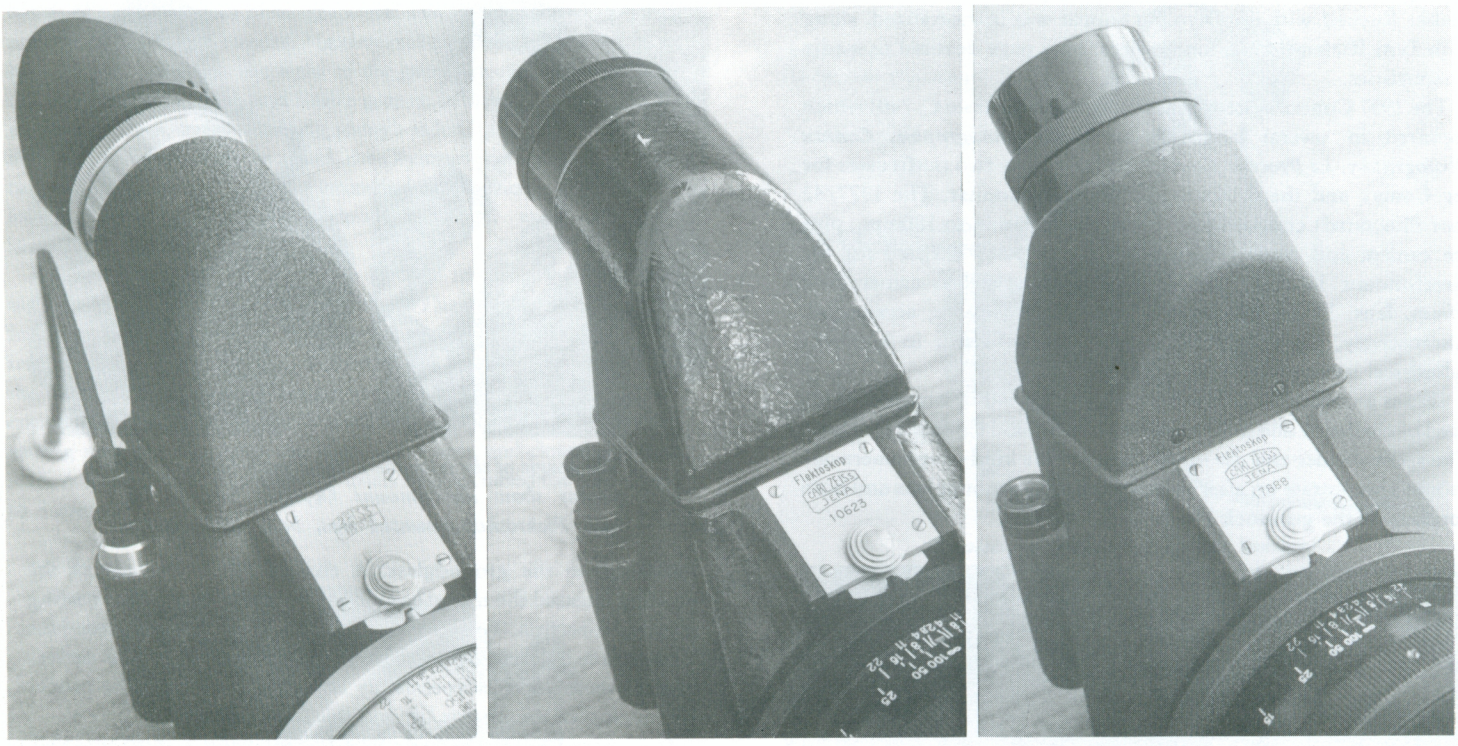
It is possible that focussing and composing a dim, inverted, reversed image represented less of a mental gymnastic for the photographers of the day, who did not have the benchmark of pentaprism viewing, but it must have been difficult nonetheless, especially for sports photography. (At the risk of sounding heretical, the author feels that action photography is actually easier with the direct-mount lens and universal finder than with the Flektoskop mounted lens.Any SLR is preferable to either of the above.)

The reflex housing was finished in a fine-grained crackle-black enamel, with the release tab for the tripod bushing engraved "Zeiss Ikon." Two series have been identified; the more common has the catalog number 543/78 and the Flektoskop serial number (W.2XXX) marked on the rear of the tripod bushing, while the lens number is engraved on the front of this bushing. The other series has the Flektoskop serial number (W.91XXX) marked on the front of the bushing. Not all prewar Flektoskops are serially numbered, particularly in the later series.

The outfit was generally sold in a small case which contained the Flektoskop-mounted lens and had space for a few filters, the rubber eye-cup, and the two cable releases. A semicircular spacer could be removed to accommodate the lens in the case with either the sunshade (inverted on the lens body) or the optional 30mm. extension tube (543/86) in place.

The earliest appearance of the Flektoskop in the Zeiss literature was in early 1938; the Contax catalog shows the direct-mount version in the 1937 edition, and the reflex version in 1938. In the USA, Pricelist #14 July 1, 1938 was the first to feature the reflex housing, even though *Zeiss Magazine* had introduced the Flecktoscop (sic) in the May, 1938 issue. (It is worth noting that the reflex housing described was closer to the Panflex than the Flektoskop. A correction and apology was issued in the following issue, clarifying the distinction between the two units.) At that time, the 300mm. Tele-Tessar and the 500mm. Fernobjektiv were also offered for sale in Flektoskop mount, as was conversion of your direct-mount 180, 300, or 500mm. lens.

The Flektoskop-mount lens is shown in the 1938 catalog with the revised 543/85 gunstock, but careful study of the corresponding images in the '37 and '38 editions reveals the same dapper gentleman in a suspiciously similar pose in both. (The delicate hand of an



Left to right: pre-war Flektoskop, post-war inverted image Flektoskop, post-war erect image Flektoskop. Note differences in finish.

airbrush artist is suspected.) As mentioned above, the gunstock had also undergone modification since its introduction, with the camera-mounting screw now located much further back toward the butt of the stock, allowing direct viewing through the Flektoskop. There is also now an adjustment for orienting the camera/lens assembly relative to the axis of the gunstock, to accommodate all shapes and sizes of photographer.

As an alternative to the gunstock (which cost between one-third and one-half of the price of the lens, depending on the market in which it was sold), a chestpod (1622) was introduced at a very friendly price for use with the Flektoskop-mounted lens. However, for someone willing to invest the equivalent of the price of a car in a camera and lens, the low price was probably not a prime motivation for buying the chestpod.

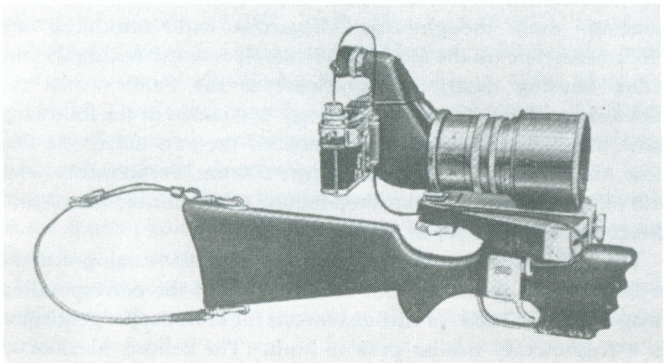
The 1938 price of 660 Reichmarks must have kept this lens out of the hands of the riff-raff. (By comparison, the standard Tessar 5cm. f.28 cost 100 RM, which was already a pretty stiff sum in those days.) The gunstock ran an additional 215 RM, which may partly explain its rarity. In the USA, the January, 1938 prices were respectively $420 for the direct-mount lens, and $210 for the gunstock. In July, 1938, the reflex lens was offered at $400, the gunstock price was not specified, and the chestpod at $16. By May 1939, the gunstock was no longer listed.

Over and above its obvious use for action photography, the Olympia Sonnar was promoted as a general-purpose high-speed telephoto lens for a variety of applications, according to a 1940 German pamphlet. The Flektoskop allowed focussing down to 2 meters (6′8″), at which distance the field of view is 20x30cm. (8″x12″), perfect for very tight portraits. The optional 30mm. extension tube allows focussing down to a 10x15cm. (4″x6″) field at 1.2 meters (50″). (Since it took 15 turns to dismount the lens from the Flektoskop, plus 15 to mount the lens to the tube plus 15 to remount the assembly on the Flektoskop, this operation was slow, and obviously required some planning.) The existing bayonet extension tubes could not be used with the Flektoskop because the plane of focus moved with the reflex housing, and not with the camera body as on a modern SLR.

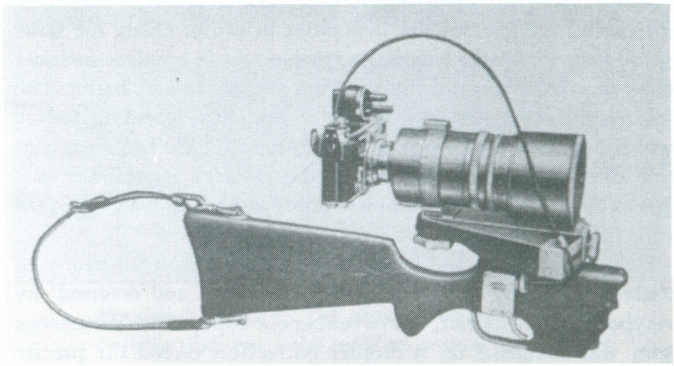
The Olympia Sonnar must have seen service during the war, although specific evidence of this is not available. H-J. Kuc reports that use of the gunstock was prohibited during the war, but one suspects that the kind of people having access to this lens could probably have obtained authorization to use it.

The Postwar Flektoskop Mount

When production began at the heavily damaged Zeiss factory at Jena after World War II, the 180mm. Sonnar made a fairly early debut in the production schedule. The postwar lens sported a revised physical appearance and two major new features: the diaphragm was now a preset unit, similar to the first seen on the 300mm. f:4 Sonnar introduced at the Leipzig Fair in 1940, and all



543/85 gunstock with Sonnar mounted in Flektoskop.



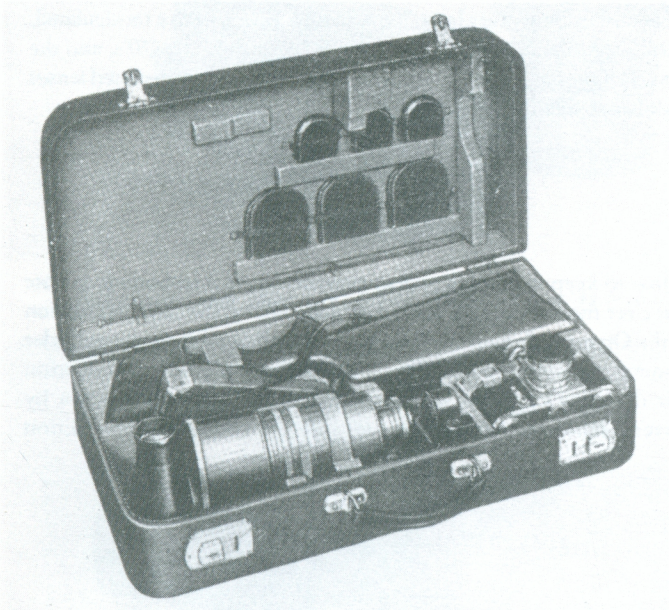
543/85 gunstock with direct-mount Sonnar.

internal and external air-glass surfaces were T-coated. The lens body was now black, and the Flektoskop had a glossier, though still textured, black finish. The word "Flektoskop", the Carl Zeiss Jena logo, and a serial number were engraved on the chrome tripod bushing release tab, while the tripod bushing itself was now black. Less brass and more aluminum presumably accounted for a weight loss of 150g. (5 oz.) compared to the prewar lens and housing, still yielding a substantial 1650g. (3 lbs., 9 oz.).

Very few of these seem to have been produced (perhaps only the stock remaining from before the war) before Zeiss modified the prism in the viewing portion of the housing to give an erect image, although still reversed laterally. The only other change from the previous style was the finish: a fine-grain crackle-black enamel like the prewar version. The mirror is now spring-loaded to the viewing position, whereas the earlier Flektoskops relied on gravity for this. The cases in which the lenses were supplied were much simpler than the prewar suitcases, consisting of stitched brown leather carrying cases.

An early Contax IIa brochure, as well as a general lens brochure of early 1949 from Carl Zeiss Jena, show the Flektoskop in the first configuration. (This, among many other indications, shows how closely the Zeiss factories in the Eastern and Western zones were working together. That is a subject for another article.) Only one other batch has been recorded in Flektoskop mount; later production was all in the generalized thread adopted by Zeiss Jena for all telephoto and long-focus designs until fairly recently, which could not be used on the Flektoskop.

The author is unaware of any publicity or other literature illustrating the erect-image Flektoskop. While something probably exists, it must be kept in mind that very few of these postwar Flektoskops, probably fewer than 500 units, were made before the change to the Flektometer.



1777/45 case for direct-mount Sonnar gunstock outfit.

The Flektometer Mount

After nearly fifteen years of working on the same basic theme, Zeiss Jena finally discarded the Flektoskop in favor of the completely redesigned Flektometer, which was introduced at the Leipzig Fair of 1951. Using the pentaprism concept, which East German Zeiss had pioneered in the Contax single-lens reflex cameras of the day, the Flektometer provided a bright, easy-to-focus, erect, laterally correct viewing image. The groundglass now featured a split image rangefinder, and the ocular was adjustable from +2 to –4 diopters. While viewing through the Flektoskops had

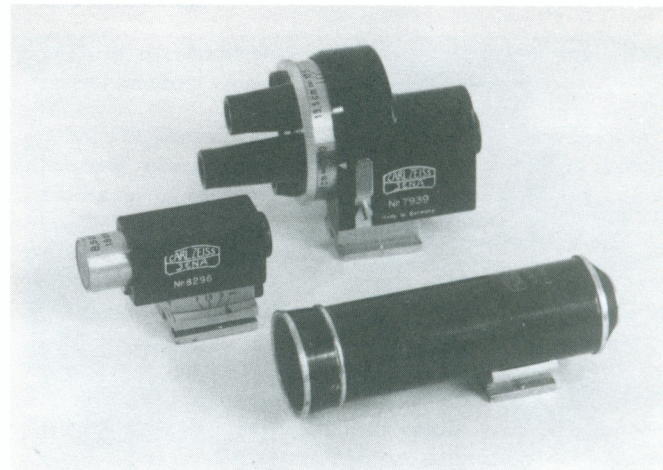
Prewar Flektoskop with extension tube in case. Sunshade and its container are to the left of the case.

been done at greater or lesser angles from horizontal, the optical viewing axis of the Flektometer was parallel to the optical axis of the lens. Total weight had now climbed to 1960g. (4 lb., 5 oz.). The lens head was attached to the reflex housing by a much coarser thread, shared by the various contemporary long lenses from Jena, and could be mounted, by means of interchangeable adapters, on the Flektometer, the Practica (S42), and other cameras.

The Flektometer was delivered with a mechanical mirror/shutter release connector, which could be ordered for use with either the Contax II, then being produced in Jena in limited quantities (in addition to the thousands of II's and III's still in service from prewar), or the new IIa/IIIa which had been released by Zeiss Stuttgart in 1950. Rapid mounting of the Flektometer on the Contax was permitted by a breechlock ring fitting over the external bayonet.

There is no firm information known to the author on the duration of the production run of the Flektometer, but the limited known range of serial numbers (starting at 30,100 with a high in the 30,300's) indicates that very few were made, probably fewer than 300 units. This is confirmed by the rarity of this reflex housing on the collector's market, even though the 180, 300, and 500mm. lenses continued to be available in Flektometer-compatible mounts well past the demise of the Contax rangefinder system.

The only brochures known to the author showing the Flektometer are East German, dated 1954. Two pamphlets show the Flektometer with 180 Sonnar mounted on a Contax II. At the same time, a brochure introducing the "New Contax IIa and IIIa", printed in the USA in February, 1954, shows only the first postwar



Finders that provide correct angle of view for the Olympia Sonnar. Front to rear: 436/11, 436/10, and 436/7.

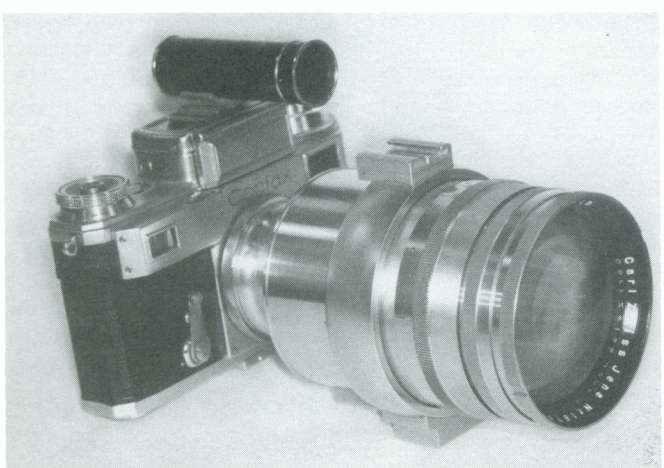
Postwar Olympia Sonnars in (left to right) Flektometer, erect-image Flektoskop, and inverted-image Flektoskop.

Flektoskop, perhaps in an effort to sell existing stock. A West German brochure dated September, 1954, omits any mention of lenses longer than 135mm., while introducing the Stuttgart-made Panflex reflex housing, designed and promoted primarily for closeup use. Subsequent price lists and dealer catalogs are similarly mute on the subject of the longer lenses. Clouding the issue however, is the confirmed existence of the 300mm. Sonnar and 500mm. Fernobjektiv in Panflex mounts, leading to the supposition that the 180 could have been offered likewise, although none are known to the author.

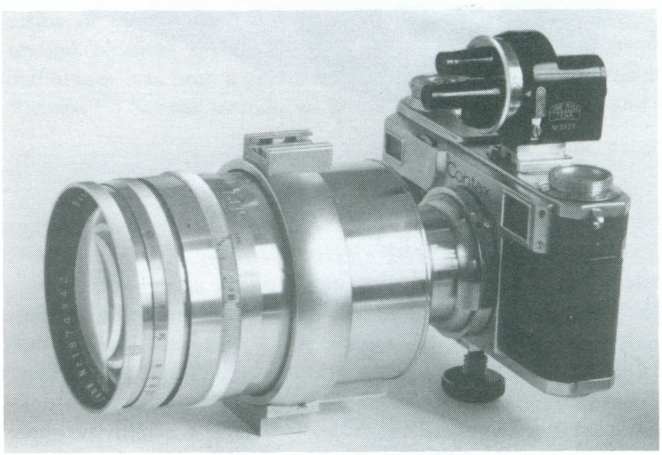
Reflex housings of all sorts were a dying breed by the mid-Fifties due to competition from the vastly simpler-to-use single lens reflex cameras. With the demise of the Contax system in the early '60's came the end of the Olympia Sonnar in its direct-coupled and reflex housing forms. But Zeiss, sensitive to the needs of the fast-growing 35mm. market, and eager to capitalize on the thirty-year tradition of this famous lens, reintroduced it in modified form for the Contarex system only a few years later. This in turn gave way to a recalculated, multicoated version for the Contax RTS in the early '70's, and the lens continues as one of the best-known and most appreciated lenses in the current lineup from the house of Zeiss.

Reconstructing History — The Collector's View

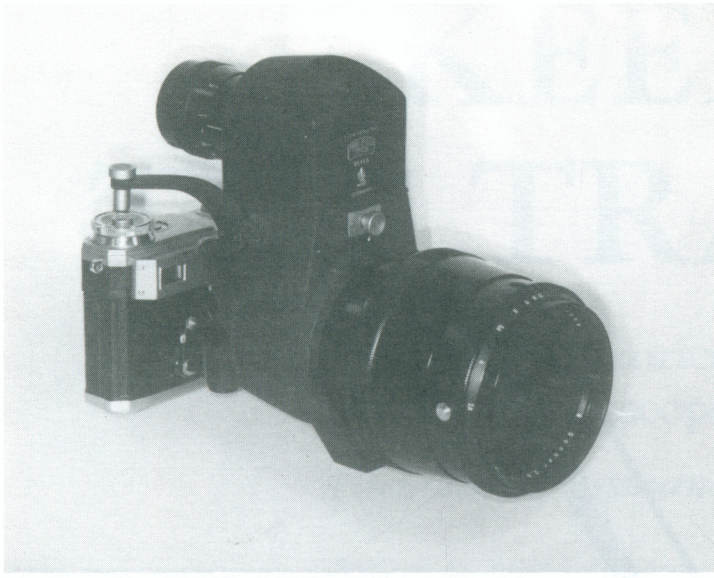
Just to keep matters in proper perspective, it is important to note that over the twenty-five years discussed above, the total production of the Olympia Sonnar in all forms compatible with the rangefinder Contax, was almost certainly less than a single moderate production run of today's camera industry! Incredible as this may seem by current standards, numerous examples of very small production



Direct-mount Olympia Sonnar on Contax III; 436/11 finder.

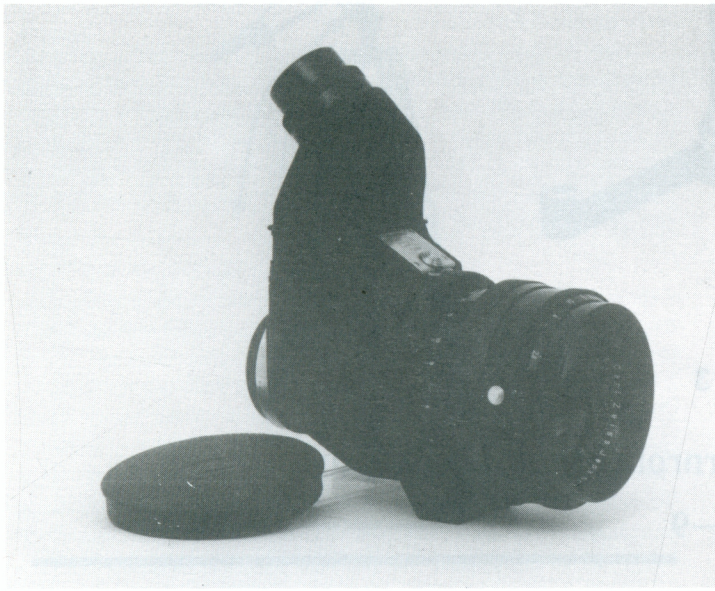


Direct-mount 1936 version of the Sonnar on a Contax II, with 436/7 Universal Viewfinder.



Flektometer-mounted Olympia Sonnar on post-war Contax II.

Flektometer with 180mm. f2.8 and (right) 300mm. f4 lenses.



Erect-image Flektoskop with lens cap.

batches can be observed in Zeiss prewar lens production.

Serial number information now being compiled by the author has revealed only nine production batches of both forms of the prewar Olympia Sonnar. The numbers compiled show none of the batches exceeded 100 units, which leads to an educated guess that a maximum of 1000 pieces were produced, 700 to 800 being more likely. Direct-mount lenses have been identified in only three short batches, leading to the supposition that only 150 to 200 could have been produced, some of which were certainly converted to the Flektoskop mount.

The earliest postware Olympia Sonnars recorded are in the 3,114,xxx series, of which examples are seen on both inverted-and erect-image types of Flektoskops. This batch seems to be one of the largest in the lens's production history, numbering as many as 300 units. Only one other batch was produced in Flektoskop mount before retooling to produce the Flektometer version. As noted, this has been produced intermittently since the early fifties until fairly recently, and higher-numbered batches than those listed are quite possible. The production series identified thus far are as follows:

Number Series	Maximum Poss. Run	Number of Lenses Identified per Batch	Configuration
1,503,xxx*	(25)	3	Direct mount and Flektoskop
1,844,xxx	(63)	3	Flektoskop
1,874,xxx	(40)	3	Direct mount
1,998,xxx	(71)	4	Direct mount and Flektoskop
2,119,xxx	(73)	4	Flektoskop
2,211,xxx	(13)	3	Flektoskop
2,272,xxx	(—)	1	Flektoskop
2,274,xxx	(66)	2	Flektoskop**
2,275,xxx	(43)	3	Flektoskop**
2,404,xxx	(87)	4	Flektoskop
3,114,xxx	(279)	7	Flektoskop (inverted and erect)
3,273,xxx	(172)	2	Flektoskop (erect)
3,615,xxx	(—)	1	Flektometer
4,018,xxx	(31)	2	Flektometer
4,245,xxx	(—)	1	Flektometer
5,902,xxx	(—)	1	Flektometer
6,260,xxx	(—)	1	Flektometer
6,373,xxx	(—)	1	Flektometer
6,383,xxx	(—)	1	Flektometer

*These 180's, like many other Zeiss lenses in the low 1,500,xxx's, belong to batches which do not follow the traditional sequential lens numbering.

**These two batches conceivably constitute a single batch of several hundred units.

NOTE: The information contained in this article is drawn from personal observation, contemporary catalogs and brochures, exchanges of information with other collectors, and H-J. Kuc's book, "Contax Geschichte," Vols. 1 and 2. However, given the nature of the subject, the information should not be considered definitive, and the author welcomes further facts or observations which would expand his knowledge of the subject. Significant new facts supporting (or refuting) the contentions in this article will be published in a further article. Any lists of serial numbers, for any lenses, but especially those connecting the reflex housings and their respective lenses, will be added to the existing data base, and will be much appreciated. Weights listed are those observed by the author, and are not those given in Zeiss catalogs, which unaccountably vary considerably from the actual weights.

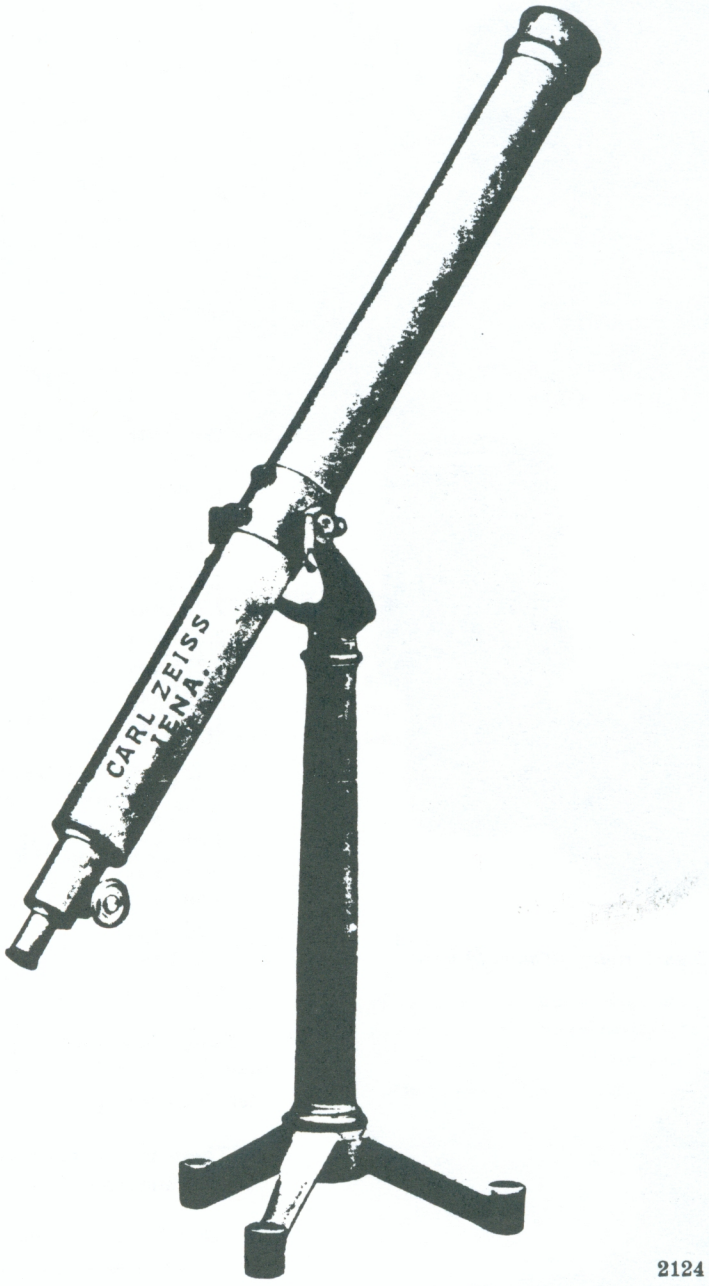


Fig. 3

60—80 mm Azimutale Fernrohre auf Tischstativ

Nr. 1—9

From the ASTRO 8 catalog, May, 1906.

KEEPING THE TRADITION

An Historical Overview of Amateur Telescope Production in Jena

Nicholas Grossman, Rockville, Maryland

"After many years of strenuous activity in other domains of practical optics, Abbe, the astronomer that he was, was at last able to satisfy a long cherished wish and thus to apply the optical and mechanical resources of the establishment to the ideal purposes of astronomy." (1)

This is a crisp summary of the emphasis Prof. Ernst Abbe and Carl Zeiss placed on the development and production of telescopes in Jena. The ASTRO section of the firm was established as a separate organizational unit before the turn of this century. Its aim was to market a broad range of astronomical products from portable telescopes to fully equipped large observatories. This section was also responsible for producing large terrestrial binoculars.

Prewar Amateur Telescopes

The smallest telescope introduced by the ASTRO section was a refractor with a 60mm. diameter objective lens. The 60mm. telescope proved to be a popular instrument. With continuous

CARL ZEISS JENA

Fig. 8
Asegur on extension rod, with sun projection screen

Fig. 9
Asegur with Zenith Prism and binocular eyepiece

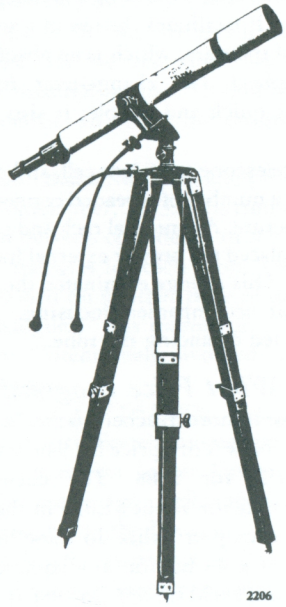


Fig. 10
Asegur without tripod extension rod

CARL ZEISS JENA

ASEGUR

2⅜ inch (60 mm.) Portable Telescope

Magnifications: 21×, 47×, 94×

A combination telescope, equally well adapted for terrestrial and for astronomical purposes. Included in each equipment are:

1 objective, 2⅜ in. diameter, 33⅛ in. focal length;
3 eyepieces: 1 Kellner 21×, 1 Huygens 47×, 1 Orthoscopic 94×;
1 sun glass; one erecting prism system; one eyepiece sliding sleeve;
1 tube mount with 1 eyepiece draw tube;
1 singly extensible wooden tripod;
1 vertical and horizontal slow motion gear;
1 extension rod for tripod;
1 objective sunshade;
1 case holding all parts of telescope and tripod.

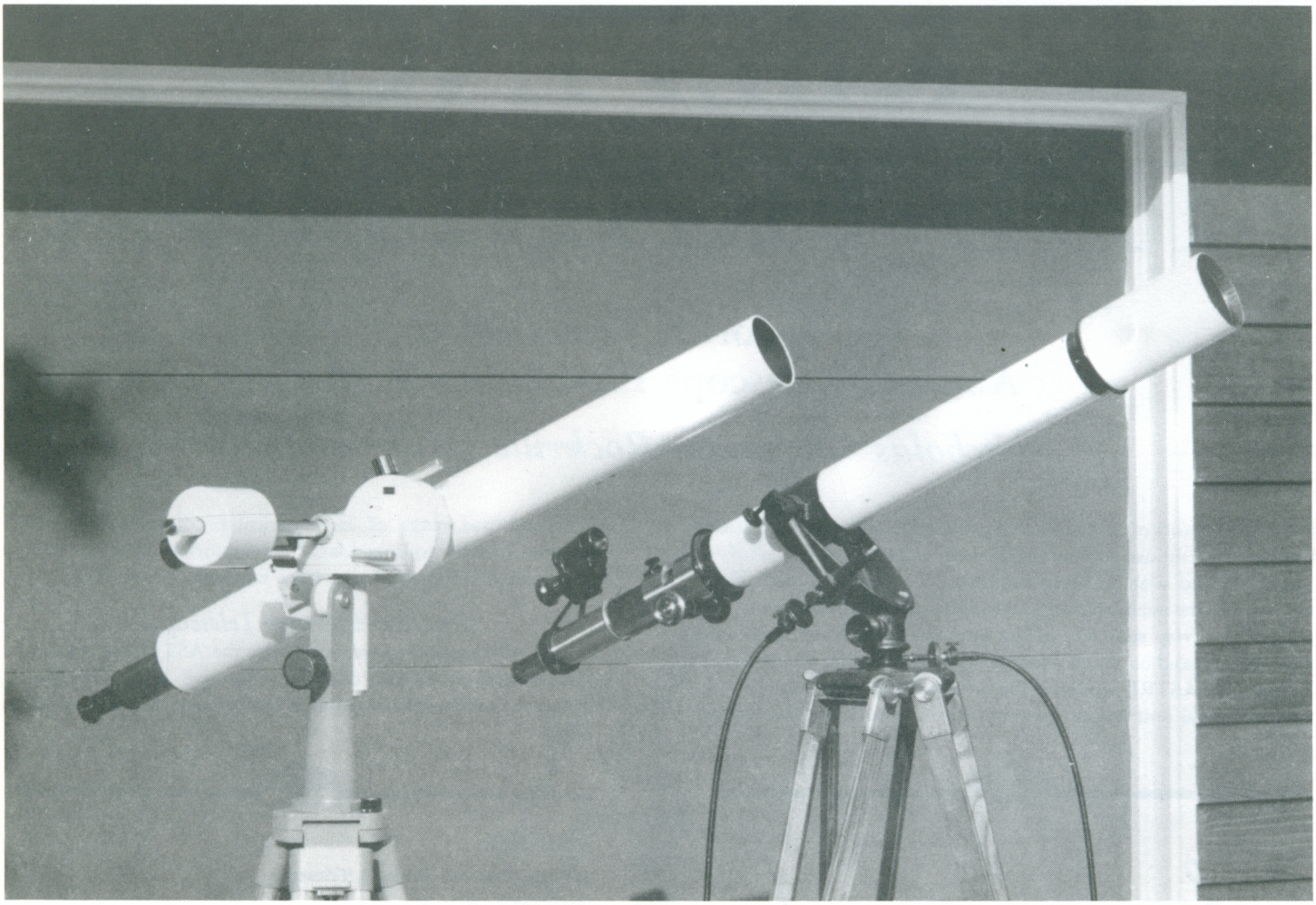
With any one of the three eyepieces and the erecting prism, the instrument will prove an excellent telescope for use in the mountains, at the shore, at your country place, and elsewhere.

When used as an astronomical telescope, it is suitable for any kind of observation, the slow motions permitting it to be easily held in step with the diurnal movements of the heavenly bodies. These results by far exceed those attainable with the *Starmor*. The *Asegur* distinguishes double stars separated by an angular distance of 1.8 seconds of arc. Additional accessories, like the Binocular Eyepiece, the Zenith Prism, Sun Prism, and Orthoscopic Eyepieces for magnifications up to 168×, can be used with this telescope.

Prices on accompanying price sheet — When ordering state Code word:
With tripod and limited slow motion, wooden case for instrument and tripod (Fig. 10) . . . . . *Asegur*

Magnification	Objective		Exit pupil	Light transmitt.	Field of View		Weight			Length of Telescope
	Diameter	Focal length	diameter	power	Angular	Linear at 1000 yd.	Telescope	Case	Stand	
	in.	in.	mm.		degrees	yards	lb.	lb.	lb.	in.
21×	2⅜	33⅛	3.0	9	2.0	38	15.5	24.4	13.2	36¼
47×			1.3	1.7	0.9	19				
94×			0.6	0.4	0.5	10				

The ASEGUR (from ASTRO 94 catalog, November, 1934).



The TELEMENTOR (left) with the ASEGUR. TELEMENTOR mount is in the alt-azimuth position.

refinements it was subsequently marketed in a transportable fitted wooden case. In addition to the telescope itself, the case accommodated a sturdy wooden stand and various accessories. This model, designated as "ASEGUR", was listed in the 1920s and 1930s ASTRO catalogs. (To appreciate the appeal of a "transportable" telescope outfit, the reader should remember that at that time many people depended upon public transportation.)

The Postwar Period

The Space Age awakened public interest in astronomy and in the telescope: the visual symbol of our link to outer space. JENOPTIC JENA Gmbh responded. Among various new developments were the modernization and refinement of the 60mm. telescope. Named the TELEMENTOR, this new model aimed to provide schools with a rugged teaching instrument and amateurs with a versatile telescope. For the technical historian, this telescope offers an opportunity to note and to assess technological evolution that spanned a period of over nine decades.

The optical components had changed little. The nominal objective diameter was increased to 63mm. Instead of the prewar Fraunhofer air-spaced doublet, or the optional air-spaced apochromatic triplet, a cemented doublet was utilized, reducing the number of glass-to-air surfaces. The objective, as well as the other optical components, reflected general advances in glass technology, computer-aided design, and of course, surface coating.

Drastic changes are evident in the mechanical design. Prewar telescopes of this size used alt-azimuth mounts, fully satisfactory for terrestrial use, but very cumbersome for celestial observation. The TELEMENTOR uses an equatorial mount: a concept standard in most professional telescopes. (To follow the apparent motion of the stars caused by the rotation of the earth, a telescope must be continuously moved in altitude (up/down) and in azimuth (right/left). One elegant design solution is to tilt the azimuth axis parallel to that of the earth. This design is called the "parallactic" or "equatorial" mount. It facilitates the use of a simple motor drive to track the motion of the stars, which is an absolute requirement for celestial photography.) The change-over from alt-azimuth to equatorial set-up is quick and simple; it also serves as a practical teaching exercise.

Combining the telescope tube, lens cell, and dew cap into a single module eliminated a number of threaded connections and produced a more rugged structure. An internal rack and pinion focuser acting on the objective replaced the prewar external focuser that moved the eyepiece assembly. This change eliminated the nuisance of eye and nose bumping that accompanied focusing. The fixed eyepiece design also simplified balancing the tube.

What Price Progress?

Assessing real cost is more treacherous than assessing technology. The Carl Zeiss, Inc. New York price list 94a, issued in January 1935 listed the ASEGUR for $588. The current model of the TELEMENTOR retails for about $1,050 in the United States.

Now the treacherous part: what do these figures mean? Let us consider the value of gold bullion as a common denominator. In 1935, one ounce of gold sold for $35. In 1988 it sells for about $400. Thus in 1935 one had to part with about 17 ounces of gold for the ASEGUR. But in 1988 one could obtain the space age TELEMENTOR version for less than 3 ounces of gold!

(1) "The Zeiss Works and the Carl Zeiss Foundation in Jena" by Prof. Felix Auerbach, Fifth edition, 1925.

MORE ON THE CONTAFLEX I

S. Takeda, Tokyo, Japan

With reference to "Two Compurs for the Contaflex I" by Jan E. M. Bisschops in Volume 8, No. 2 of the Journal, and "Identifying Contaflex I Variations" by Mr. Paul Edstrom in Volume 9, No. 2, I should like to supplement these works with some additional findings that seem to endorse the points of view held by the authors.

In the No. 19, December 1953 issue of "BRUECKE", a trade magazine published by Zeiss Ikon A.G. Stuttgart, there was an article titled "AUF NEUEN WEGEN . . . CONTAFLEX 24x35". Printed on pp. 1-4, it was apparently the lead article of this issue.

The article emphasized that the Contaflex should be recognized as a camera based on truly new construction. It would, said the article, resolve the major problem associated with single lens reflex cameras which had preceded it. This problem was the difficulty in focussing with the iris closed down and the resultant delay that might often occur, i.e., missing an optimal moment through focussing with a fully opened iris and then stopping down to the desired value before the shutter was activated.

In the later pages of this issue, therefore, in material titled "WERBUNG FUER DIE CONTAFLEX", it was recommended that the retail trade should be thoroughly knowledgeable about this new camera. Everyone in a shop, from owner to sales clerk, should understand the noteworthy characteristics of this camera as they applied to practical usage. In order for this to be practiced without difficulty, Zeiss Ikon, (for the first time, they said) had prepared some special printed material entitled "CONTAFLEX-BREVIER". It contained information on all of the unique qualities of this camera.

The same article said that advertising and promotion had already started at the end of November, 1953. This timing had been selected to allow the trade to develop confidence in the camera and to plan optimal marketing strategies for each shop. This "CONTAFLEX BREVIER," as explained on another page of the same issue under the title "New Catalogues," was meant for clients only. For this reason, the company "intentionally avoided" assigning a Bestellnummer to the document.

On the same page, "CONTAFLEX PROSPEKT" was mentioned, and identified with Bestellnummer 3026. Whether this is identical with the brochure cited by Mr. Edstrom as No. 3026 dated 0254 (February, 1954) remains to be demonstrated. The context of the article referring to this in the December issue of "BRUECKE" appeared to suggest that it was readily available in December.

The photograph of a Contaflex that appeared in the first pages of this December issue showed the old Compur, with lens number 980782, as cited by Mr. Edstrom.

The next issue of "BRUECKE", Number 20, was dated April 10, 1954. It said, "in the previous issue we have thoroughly covered the technical originality of the Contaflex, so that it is sufficient for us only to mention here that the camera is now available with the same specifications, but also with built-in self timer". On the back cover of this issue, as cited by Mr. Bisschops, two models, i.e., 861/24 Pcm with Synchro-Compur and 861/24 Pcms with Synchro-Compur MXV were listed. These were priced at DM 398 and DM 420 respectively.

Based on what has been mentioned above in papers published by Zeiss Ikon, it is clear that the shipment of the camera from the Company to the trade took place not earlier than November, 1953, and that the version with MXV Compur became available not later than April, 1954.

ADDENDA FROM JAN BISSCHOPS

Thank you for allowing me to see Mr. Takeda's manuscript. It shows that the history of a camera even only 35 years old cannot be completely investigated by any one person — including myself. No one can have access to all available sources. I, for example, have never seen the magazine "BRUECKE", which is obviously a valuable reference.

A general note on the Bestellnummer (order numbers) on Zeiss catalogs, and the dates which the catalogs bore. Identical brochures or catalogs always bore the same Bestellnummer, regardless of the language in which they were printed. If a catalog was reprinted, its Bestellnummer was not changed but the month and year of the reprint were.

Most brochures bear an additional single digit number. I do not know its function yet, but I have noticed the following combinations.

0 . . . . brochures in German with prices.
1 . . . . brochures in German without prices.
8 . . . . brochures in Dutch (only one seen).
9 . . . . brochures in Dutch.

After completing my earlier article, I had the opportunity to study some German price lists. Most important among them were:

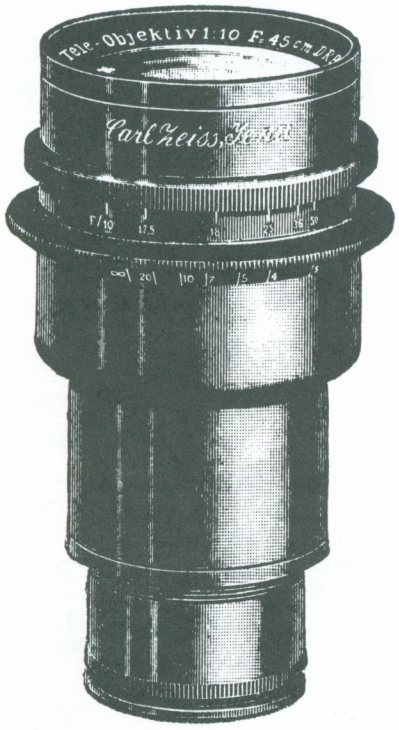
"Export-Preisliste", April, 1954, "Preisaenderungen" (price changes). It lists the Contaflex 861/24 Pcms (with Synchro-Compur MXV) for DM 380. Apparently this camera was for sale in April, 1954.

"Export-Preisliste", June, 1954. In this list, only the Contaflex 861/24 Pcms was offered. The 861/24 Pcm was no longer available.

In my possession is the CONTAFLEX BREVIER printed April, 1954, which is probably identical to the November, 1953, printing. It does not mention the Contaflex I MXV and gives no additional information.

Jan Bisschops, February, 1989

Snapshots in Telephotography



ZEISS SPECIAL ¼-PLATE.

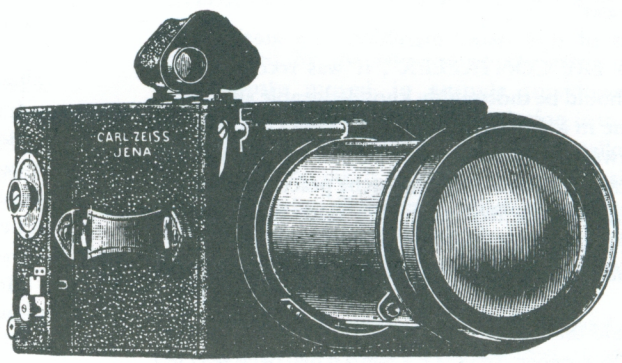
Telephoto Objective - - - F/10
Focal Length - - - - - - - 17¾-in.
Camera Extension required 6-in.

Price (in Focussing Mount) £10.

ZEISS NEW ¼-PLATE (9/12 c/m) TELEPHOTO CAMERA

With Focal Plane Shutter.
With Zeiss Monocular Prism Glass x 4 as view finder.
With Zeiss Telephoto Lens F/10.
Focus 32-in.

Price £45.



Special "Telephoto" List posted Gratis.

CARL ZEISS, (JENA.)

29 Margaret Street, Regent Street, LONDON, W.

Early Zeiss telephoto equipment. Top: 450 mm. f10 Tele-Objektiv. Bottom: Zeiss Magnar Kamera with 800 mm. f10 Tele-Objektiv; focal plane shutter like that of the Minimum Palmos. Ad is from 1909 British book "Photographic Optics and Colour Photography" by G. Lindsay Johnson. (Courtesy of Joseph Brown.)

LICHTSTRAHLEN

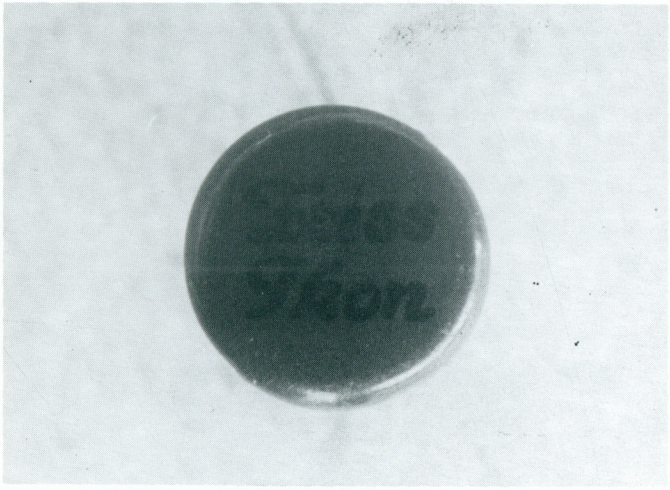
Light Rays: Notes of Interest to Those Interested in Zeiss and Its History

1989 SUMMER MEETING TO VISIT OBERKOCHEN

The Society's 1989 summer meeting in Germany will be held over the last weekend in August, August 26 and 27. The meeting will be held near Oberkochen, and will include visits to the Zeiss facilities there.

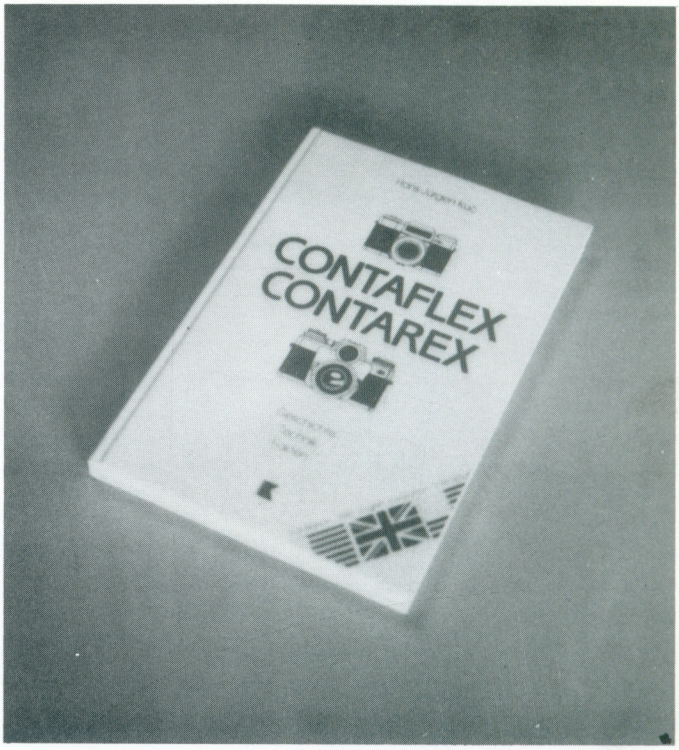
Arrangements for the meeting and accommodations are being made by Hans-Juergen Kuc. If you wish to attend, please write him as soon as possible at Altelandstreasse 156, 2000 Hamburg 63, West Germany.

This should be a once-in-a-lifetime opportunity to visit Zeiss, with an entree that few if any other organizations can offer.



WHAT IS IT? Clues: item is prewar, less than ⅜" diameter. Color is black on the familiar Zeiss Ikon red/orange.

Schott glass is identified by the trademark on the bottom of this modern tea glass from Germany.



"CONTAFLEX CONTAREX" BY HANS-JUERGEN KUC

Now available is Kuc's third book in his authoritative series on Zeiss Ikon and its cameras. (Two previous volumes covered the pre-war and post-war Contax cameras.)

"Contaflex Contarex" covers the two remarkable Zeiss Ikon examples of SLR design in all of their many variations. The book is equally divided among the two cameras.

The first section of this 218-page hardcover is devoted to the Contaflex, both its prototypes and the production models. Included are such rare items as the rectangular (!) 115 mm. prototype Pro-Tessar, four different Steritar attachments, and the interchangeable film magazines.

The Contarex models are described and cataloged, along with much of their history, in the second section of the book. Here again, in addition to more familiar items, we find such esoterica as the Luminar lenses for closeup work, the Telesensors, and the 1000 mm. Mirotar.

While most of the text is in German, the introduction, captions and tabular material are translated into English. Many illustrations grace the book's pages, including rare factory drawings.

The book is one which should be on the shelves of any enthusiast of these Zeiss Ikon SLRs. A knowledge of German is unnecessary to find it both fascinating and useful.

In this country, "Contaflex Contarex" is available for $29.95 postpaid from A Photographers Place, P.O. Box 274, Prince Street, New York, N.Y. 10012.

Zeiss Claimed by Communists, Capitalists

German Optical Twins Thrive on Both Sides of Iron Curtain

By THOMAS F. O'BOYLE
Staff Reporter of THE WALL STREET JOURNAL

JENA, East Germany—Shortly after Germany's surrender in World War II, a U.S. military convoy carried 127 scientists of the Carl Zeiss optical firm from Jena, then in the Soviet-controlled zone, to the Western-occupied part of the country.

Since then, two firms named Zeiss have flourished in divided Germany. What remained in the Communist East was declared "property of the people" in 1948. Today it is the largest and most prestigious of East Germany's 120 state corporations, known as *Kombinate*.

The other Zeiss took root on the banks of the Kocher River east of Stuttgart in what is now capitalist West Germany. Today, a factory in the town of Oberkochen turns out some of the world's most technologically advanced optical products.

The two companies date back to the optical workshop that founder Carl Zeiss set up in Jena in 1846. They still make roughly the same devices: medical and surveying instruments, aerial cameras, binoculars, telescopes, microscopes, eyeglasses.

Carl Zeiss

A Cold-War Corporate Schism

	WEST	EAST
Sales (in millions of dollars)	$2,180	$389*
Exports (as a percentage of output)	51%	65%
Employees	31,700	69,000
Research budget (as a percentage of revenues)	10.4%	12%

NOTE: Figures are for 1988

*Calculated at the current unofficial rate of seven East German marks for each West German mark. Officially, the two marks are at parity.

Separate Identities

Yet each company has forged a separate identity that reflects the strengths and weaknesses of its respective system. Zeiss West is struggling to offset high wages and a low dollar. Zeiss East is handicapped by red tape and an acute shortage of computers and machine tools.

In the West, employees work six fewer hours a week than those in the East, yet earn more than twice the pay. They get six weeks of vacation compared with two in the East. And their work isn't as strenuous: A woman assembling a microscope in the West uses an automatic screwdriver; manual tools suffice in Jena.

While the atmosphere in the West is relaxed, it is tense in the East. The tone is set by the man at the top, Wolfgang Biermann, the general director of the Carl Zeiss Kombinat, who keeps tabs on his visitors via a television monitor facing his desk. In an interview, Mr. Biermann says he "can't afford to be a Samaritan. Whoever doesn't meet my demands, that's too bad. We separate."

In contrast to the near-jovial manner of his Western counterpart, Horst Skoludek, Mr. Biermann is all business. Associates call him an *Arbeitstier*, German for workaholic. Townsfolk say lights burn from 5 a.m. to 11 p.m. in his office atop the Carl Zeiss Kombinat headquarters building, one floor below the big red star on the roof. His work habits have taken their toll: A chain smoker, he has survived three heart attacks in his 60 years.

Powerful Man

Mr. Biermann is a member of the Communist Party Central Committee and a confidant of party boss Erich Honecker. And he runs his Kombinat with an iron fist. If a Zeiss division falls behind in meeting sales, output or export targets, it must pay higher interest rates on borrowings. Company insiders say five division managers have commited suicide during Mr. Biermann's 14-year tenure at the top.

While Jena tries to get as many dollars as it can, Western Carl Zeiss wants to limit its exposure to the U.S. unit, whose weakness hurts export earnings. While it grapples with foreign-exchange fluctuations, it also has to deal, at home, with high labor costs and tough labor demands.

Technical sophistication remains its backbone. The cheapest of today's Zeiss microscopes retails for about $800; the most expensive, $200,000 or more. The latter come equipped with integrated circuits, lasers and computers that scan the field of vision and enhance the image. "For us, the challenge lies not in Jena but in Japan," says Franz-Ferdinand von Falkenhausen, manager of the Zeiss factory at Goettingen.

For Zeiss East, perhaps the biggest challenge is filling a shortage of modern machine tools, says Wolfgang Boehme, the deputy director in the division of microscopes and scientific instruments. "We need time to modernize a little bit every year," he says.

Different Strategies

Another key difference between the two Zeisses lies in their growth strategy. While the one in the West sheds unprofitable operations to become more specialized, Zeiss East broadens its product range. In 1971, Western Zeiss, hammered by Japanese rivals, got out of the camera business, dismissing thousands of workers. By contrast, Eastern Zeiss, prodded by its government, started making cameras in 1986.

Customers say Zeiss Jena has made remarkable strides improving product design and quality. While it lags far behind its West German counterpart in electronics technology, it is closing the gap. And because of low East German wages, it can undercut Zeiss West on prices for comparable equipment. Larry Farrar, a distributor in the U.S. for Zeiss East, says he could sell a lot more of its microscopes "if we got them. But we can't get them."

Another contrast between the two Zeisses lies in their marketing techniques. While Western Zeiss has its own sales and marketing organizations in 28 Western countries, Eastern Zeiss relies solely on agents. And supplying the needs of the East bloc comes first. Western-style marketing "simply doesn't exist" in the East, says Mr. Skoludek, the head of Zeiss West. "Everything that's produced is dictated by the plan."

Having a competitor with the same name and making the same products creates confusion, to say nothing of lawsuits. Both companies claim to be the rightful heir to the Zeiss name, and both held separate celebrations in December to commemorate the 100th anniversary of Carl Zeiss's death.

Reconciliation Unlikely

The two Zeisses laugh at the idea of a common celebration. "That's just not possible," says Zeiss Jena spokesman Reimund Westmeier. "We are the zeal Zeiss. "Carl Zeiss is buried here. Wherever you look, Carl Zeiss is watching you." His firm asserts that the statutes of the Carl Zeiss foundation, set up in 1889 to ensure that the firm follow Mr. Zeiss's social vision, stipulated Jena would always be the site of Carl Zeiss.

Zeiss West claims to be the rightful Zeiss because it adheres strictly to those statutes. "I've asked Biermann at least 10 times to send me a copy of their statute. He hasn't. He has none, so he isn't the true successor," says Mr. Skoludek.

Relations between the two Zeisses are icy. When Mr. Skoludek was in Jena in 1986, he asked to visit the Carl Zeiss cemetery. Request denied. In 1987, when Mr. Honecker paid his first state visit to West Germany, Mr. Skoludek refused to attend a reception at which Mr. Biermann was present.

Courts have ruled that in nations of the North Atlantic Treaty Organization, Zeiss West may use the Zeiss name. Among those of the Warsaw Pact, Zeiss East has the rights. In the rest of the world, the first claimant wins out. Both can sell their products in the other's territory under a different name.

Even this simple formula can be hard to apply. In the 1960s, Western Zeiss claimed Rhodesia. When a Marxist government took power in 1980 and Rhodesia became Zimbabwe, Eastern Zeiss tried to take over—but Western Zeiss had already registered itself two weeks before. In exchange, Eastern Zeiss is "exclusive in Angola now," says Mr. Skoludek. "I gave him Angola but there's no business there."