FOLIO II

Zeiss HISTORICA

INDEX

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EDITOR - ARCHIVIST
Thomas R.Schreiner
464 Delta Road
Amherst,N.Y. 14226/USA
Tel. 716 837 0317

'FOLIO'

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This FOLIO is the official publication of the ZEISS HISTORICA SOCIETY OF AMERICA. A non-profit educational Society with the Aims and Objectives of studying and exchanging information on the HISTORY, the PEOPLE, the INSTRUMENTS and the LORE of the ZEISS COMPANIES OF GERMANY. The Society has no official connection with these Companies, but mutual interest and friendly liason are encouraged as Official Policy.

Readers are encouraged to submit manuscripts and articles to the Editor for publishing consideration.

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A U S J E N A

1978 Ernst Abbe Prize and Otto Schott Prize awarded

On September 12, 1978, the 1978 Ernst Abbe Prize was awarded to Dipl.-Ing. F. RICHTER, Dipl.-Ing. B GUTBERLET, Dipl.-Ing. R. HOFMANN, Ing E. FISCHER and Mrs. K. HÜTTIG, precision optical worker, members of VEB Carl Zeiss JENA's R&D team for "Streamlining Microscope Lens Manufacture". From 1971 to 1977 the team developed new manufacturing and measuring technologies, which reshaped the production of microscope lenses. New design principles, manufacturing and measuring tools resulted in a fundamental improvement in quality, in terms of geometrical mechanical tolerances, by 3 to 5 classes. A ten- to twenty-fold better precision of optical adjustment was reached. This enabled the traditional way of craftsman-like manufacture of microscopes, which dates back to ERNST ABBE, to be replaced by quantity production at economical costs, notwithstanding the closer centring, clearance and thickness tolerances in modern high performance microscope lenses made at Jena.

Dr. A. BODE and Dipl.Phys. S. JETSCHKE received the 1978 Otto Schott Prize for their contributions to the devlopement of up-to-date methods of testing high-performance lenses according to the graticule-slit-edge analysis. In this connection two things are worth special mention: the accuracy of the methods was substantially improved, also the modulation transfer measurement ranges were extended, which is essential in image quality testing of air and photolithographic lenses. One example is the 4/125 Pinatar lens of the MKF-6 Multispectral Camera – a product of this firm – which had been tested with this new modulation transfer measuring unit.

The Ernst Abbe and the Otto Schott Prize were donated by the Carl Zeiss Stiftung of JENA at the initiative of the Professional Association of Optics of the GDR Physical Society. The intention is to further outstanding scientific and scientific-organizational achievements in the field of optics leading to more efficient optical designs and technologies.

CHRISTIAN HOFMANN

Stone-Age Settlement Found

EAST BERLIN, Nov. 24 (Reuters) — Engineers building a new reservoir in southern East Germany have uncovered the remains of a 6,000-year-old stone-age settlement, the official press agency A.D.N. said this week. Archeologists are examining skeletons, flint tools and fragments of pottery found at the site, near the industrial city of Jena, the agency said.

...early ZEISS men.

ZEISS-IKON CONTAX

Price List No. 1

Effective October 15, 1932

Zeiss-Ikon CONTAX with Carl Zeiss Tessar F/3.5, 5 cm., complete with cable release, film spool, one magazine, lens cap, and black neck strap	$ 92.50
Zeiss-Ikon CONTAX with Carl Zeiss Tessar F/2.8, 5 cm., complete with cable release, film spool, one magazine, lens cap, and black neck strap	100.00
Zeiss-Ikon CONTAX with Carl Zeiss Sonnar F/2, 5 cm., complete with cable release, film spool, one magazine, lens cap, and black neck strap	135.00
Zeiss-Ikon CONTAX with Carl Zeiss Sonnar F/1.5, 5 cm., complete with cable release, film spool, one magazine, lens cap, and black neck strap	225.00
Zeiss-Ikon CONTAX with Carl Zeiss Triotar F/4, 8.5 cm., complete with cable release, film spool, one magazine, lens cap, and black neck strap	115.00
Zeiss-Ikon CONTAX with Carl Zeiss Sonnar F/4, 13.5 cm., complete with cable release, film spool, one magazine, lens cap, and black neck strap	128.00
Zeiss-Ikon CONTAX, no lens, but with cable release, film spool, one magazine, lens cap, and black neck strap	56.00

ZEISS-IKON CONTAX CANNOT BE SUPPLIED WITHOUT A LENS

Carl Zeiss Tessar F/3.5, 5 cm., in CONTAX mount	36.50
Carl Zeiss Tessar F/2.8, 5 cm., in CONTAX mount	44.00
Carl Zeiss Sonnar F/2, 5 cm., in CONTAX mount	79.00
Carl Zeiss Sonnar F/1.5, 5 cm., in CONTAX mount	169.00
Carl Zeiss Triotar F/4, 8.5 cm., in CONTAX mount	59.00
Carl Zeiss Sonnar F/4, 13.5 cm., in CONTAX mount	72.00

Proxar lenses for the Tessar F/3.5 and F/2.8, 5 cm.	
1 x 27 for 1'-6" distance	$ 4.00
2 x 27 for 1'-1" distance	4.00
Proxar lenses for the Sonnar F/2, 5 cm.	
1 x 37 for 1'-7" distance	4.50
2 x 37 for 1'-1" distance	4.50
Proxar lenses for the Sonnar F/1.5, 5 cm.	
1 x 42 for 1'-7" distance	4.50
2 x 42 for 1'-1" distance	4.50
Carl Zeiss light yellow filter (27) for the Tessar F/3.5, 5 cm.	3.50
Carl Zeiss light yellow filter (27) for the Tessar F/2.8, 5 cm.	3.50
Carl Zeiss light yellow filter (37) for the Sonnar F/2, 5 cm.	4.50
Carl Zeiss light yellow filter (37) for the Triotar F/4, 8.5 cm.	4.50
Carl Zeiss light yellow filter (42) for the Sonnar F/4, 13.5 cm.	4.50
Carl Zeiss light yellow filter (42) for the Sonnar F/1.5, 5 cm.	4.50
Sunshade (42) for the Tessar F/3.5, 5 cm.	2.00
Sunshade (42) for the Tessar F/2.8, 5 cm.	2.00
Sunshade (37) for the Sonnar F/2, 5 cm.	1.75
Sunshade (37) for the Triotar F/4, 8.5 cm.	1.75
Sunshade (42) for the Sonnar F/4, 13.5 cm.	2.00
Sunshade (42) for the Sonnar F/1.5, 5 cm.	2.00
CONTAX magazine	1.70
Daylight loading roll of 36 exposures Zeiss-Ikon Ortho-ultra-rapid film (1300° H. & D.)	.70
Daylight loading roll of 36 exposures Zeiss-Ikon Fine Grain film (570° H. & D.)	.70
Daylight loading roll of 36 exposures Eastman Kodak Super-Sensitive Panchromatic film	.90
HELINOX-CONTAX Enlarger	12.50
Eveready carrying case for CONTAX camera equipped with Carl Zeiss Tessar F/3.5, or F/2.8	5.50
Soft leather Zipper pouch for CONTAX camera equipped with Carl Zeiss Tessar F/3.5, or F/2.8	2.50

Additional equipment such as Lenses, Enlargers, Copying and other apparatus will be announced later.

CARL ZEISS, Inc.

485 Fifth Avenue
New York

728 So. Hill Street
Los Angeles

* A V I S I T T O O B E R K O C H E N *

Zeiss Headquarters

Author M E A D K I B B E Y

On September 24, 1979 I was priviledged to visit the CARL ZEISS COMPANY as the representative of the Zeiss Historica Society for the purpose of presenting Honourary memberships to Mr. WOLF WEHRAN; Dr. HANS SAUER (Foto F); Dr. HEINZ KÜPPENBENDER (Foto G); and Dr. LUDWIG BERTELE (Foto H). The meeting had been arranged on quite short notice by Mr. FRANZ SCHNEIDER of their legal department, and frankly it could not have been more enjoyable if it had taken a year to do it !

My daughter, my wife and I arrived about 10:30 AM after a pleasant two hour motorcar drive from Stuttgart. The town is very pretty - (there seems to be no small ugly towns in Southern Germany) and the multistory factory is visible for miles. By rolling down the window of the car near any resident and saying ' ZEISS ? ' one receives an instant point in the correct direction.

At the guarded gate we were guided into a special parking space and Mr.SCHNEIDER met and accompanied us into the lobby where in rapid succession we received ZEISS identification badges, met our host for the day - Mr. HANS LETSCHE; inspected magnificent bronze busts of CARL ZEISS * ERNST ABBE * and OTTO SCHOTT, and saw workmen installing a remarkably fine group of cameras on loan from the WOLF WEHRAN COLLECTION.

The first stop was at Mr. LETSCHE'S office where we left our coats and met Dr. JOACHIM KÄMMERER, Chief Scientist, Photo Instrument Division; and Mr. HANS JOACHIM DREXLER, Sales Manager of the Photo Division. Mr. LETSCHE is presently the Director of the Photo Optical Department and was formerly associated with the ZEISS IKON STUTTGART KAMERA WORKS until its liquidation. He had also been special assistant to Dr. KÜPPENBENDER during his tenure as managing Director of the ZEISS COMPANY, and as a result he was uniquely fitted to explain the operations from a photographic point of view.

We next visited the lens grinding facilities under the management of Mr. MARTEN who explained the operation of many special machines which had been designed by ZEISS in order to hold the exceptionally close tolerances they require. Some lenses were being finished - ground from pre cast shapes, but the majority appeared to come from blanks sawn from large blocks of optical glass. Although our tour had to move quite rapidly, we received the impression of almost clinical cleanliness, and close attention to and pride in the work by all employees ! The special ZEISS designed machines for final assembly and testing of Photographic Objectives conducted extensive tests in seconds - often with a simple red light indicating rejection or unacceptable performance.

Lenses were being made for (among others) Hasselblad, Contax and Rollei. Contax lenses of the commoner types(PLANAR 1:1.7 f=5cm) are also made in Japan (YASHICA) under close ZEISS scrutiny; complex lens designs such as the DISTOGON 1:3.5 f=15mm are made at OBERKOCHEN. In the area where the lenses were mounted, there were some interesting displays including an example of the famous SONNAR 1:5.6 f=250mm used in space exploration. After leaving this area we visited the assembly space approximately six stories high where Astronomical Telescopes are erected and tested. It was my understanding that Planetariums are also assembled in this environment although no work of this type was in progress at that moment.

At 1PM we gathered in the penthouse meeting room where for the first time we met Dr.HANS SAUER,since 1941 Managing Director of the Photographic Objective Department; and Dr.HEINZ KÜPPENBENDER the Inventor of the CONTAX KAMERA SYSTEM. Dr. KÜPPENBENDER since 1929, was head of the design section at ZEISS IKON DRESDEN until the mid 1930's when ZEISS exploded with new ideas in the photographic field. ZEISS had always been innovative, (as early as 1908 they had produced a camera where winding the film also cocked the shutter), but in this period they developed and marketed a split 127 roll film camera with a TESSAR 1:2 f=4cm lens and Newtonian direct viewfinder (KOLIBRI); the 35mm CONTAX SYSTEM which featured the red dot bayonet lens mount still in use all over the world,and the first metal focal plane shutter; the rotating prism wedge coupled rangefinder roll film camera (SUPER IKONTA); the world's first and only 35mm twin lens reflex camera with built-in exposure meter, a viewing image larger than the photographic image (CONTAFLEX TLR); and in optics the legendary 1;2.8 f=180mm Olympic SONNAR in mirror reflex housing; the world's fastest commercial lens for taking 16mm movies of a fluorescent X-ray screen the R-BIOTAR 1:.85 f=4.5cm and many more.

Dr. KÜPPENBENDER had personally developed and patented (see Patent Drawing) early in this period a prototype system by which the CONTAX lenses were electrically coupled to a built-in photoelectric exposure meter and both f opening and shutter speed were used as metering perameters. Knowing all this, I had expected to meet very old men who would have little to say of those distant days. To my surprize and delight they both displayed physical well-being and mental alertness that would befit men in middle age. As we saw them over the next few hours I came to feel that if they were needed in an emergency they could have returned to positions of top authority at any time.

At the first meeting I presented the ZH Honourary Memberships, and Mr. SCHNEIDER accepted for Mr.WEHRAN who was away on holiday,and Dr.BERTELE who lives in Switzerland. We all then drank a toast to the ZEISS WORKS and its current visitors. During a delicious lunch we heard many details of the DRESDEN days and a great deal about the move to OBERKOCHEN. As I understand it essentially what occured was as follows:

Late in WW II the American Army felt that several optical devices - including an Aerial Camera producing 12" x 12" negatives of startling clarity (PLEON LENS) - produced by the ZEISS WORKS were of great strategic importance. Army intelligence at the time of surrender, intended to move all or part of the facilities to either West Germany, England or the United States. JENA was occupied by U.S. forces, but within a few weeks and well before transportation of equipment could be arranged, the Potsdam Agreement required that this area be given over to Russian Control. In a very quick decision the Army decided that even if it proved impossible to move any machinery, the real secret of ZEISS lay in the minds and hearts of its top executives, and possibly in some of its more vital records. The records had already been under American examination, the incredible ZEISS lens collection shipped on June 22,1945 to the Signal Corp Photographic Center,Astoria Long Island (later transferred to the Squire Signal Laboratory, Fort Monmouth,New Jersey); and the ZEISS 'index cards' for each lens which revealed the complete formula ,were sent to Wright - Patterson Air Force base,Dayton,Ohio. Thru the diligent efforts and luck of the American optical designer EDWARD K. KAPRELIAN, these cards were reunited with the lenses.

With only forty eight hours notice several freight cars were loaded with vital records and portable equipment for transport to what would be West Germany by the U.S. Army. In the words of Dr. KÜPPENBENDER - ' and we're still waiting for them to arrive ! ' Next the Army assembled long convoys of trucks in the streets of the Sonnenberg district of the city, rounded up approximately one hundred (some reports say only eighty-eight could be found) top officials of ZEISS and SCHOTT Companies, and on the 24th and 25th of June 1945 rolled out of the city for destinations unknown. The convoy first traveled South to Nuremberg and then swung West leaving Bavaria and finally arrived in the small Swabian town of HEIDENHEIM on the river Brenz. A town about half way between Stuttgart and Munich and quite near Ulm.Our hosts Dr.Sauer and Dr.Küppenbender were among this group. They were lodged first in huts previously used by the Germans to house Polish and Russian prisoners of war. Not long after this move the ZEISS people were allowed the use of an abandoned,but largely undamaged, aircraft gear factory in the nearby village of OBERKOCHEN previously operated by proprietors with the unlikely name of Leitz - not related to another family of the same name manufacturing a line of microscopes and some photo equipment. With seed money payed by the U.S. for the ZEISS lenses, some other funds from the ZEISS Trust and private investment the ZEISS people quickly built up the lens works of OBERKOCHEN, re-opened the STUTTGART camera works and other pre-war operations in the Western Zone. Within 31/2 years they had a line of cameras available together with binoculars,telescopes,microscopes and even a very successful lock factory at the ZEISS IKON AG GOERZWERK, Berlin -Zehlendorf. I know of no other example of such a rapid recovery of a large company which retained only the minds and leadership of such a small group.

I brought a number of photographs of many ZEISS IKON pre-war cameras and lenses, and it was really fascinating to hear Dr.SAUER and Dr.KÜPPENBENDER discuss the development of the early cameras as well as the stories of the early days at OBERKOCHEN. The younger ZEISS people who attended the lunch appeared to be equally interested and very actively added to the more modern aspects of the story.

After lunch, Mr.LETSCHE showed us the microscope assembly and demonstration area. It is my understanding that ZEISS is now the largest maker of optical and electron microscopes in the world. We then visited the ZEISS MUSEUM where we met Mr.Manfred Berger of the marketing services department. The museum is beautifully arranged, but for my taste leans, quite understandably, toward the history of microscopes and spectacles, since those are two of ZEISS'S largest current consumer product lines. The cameras displayed were fine examples of the historical development of photography and included an item which I had not heard of before, the very first hand held camera put up into space orbit by NASA.

This was a CONTAREX SPECIAL chosen perhaps because the ball bearing focusing and shutter could operate without degreasing down to -100 degrees F. The camera was purchased from the stock of a Houston,Texas dealer and the ZEISS company did not know of its use until it was returned to Earth and its magnificent pictures published. ZEISS lenses were used on all subsequent Space trips in conjunction with Hasselblad cameras of special design.

At the Museum we were given special ZEISS pens, and my wife received a beautiful cut glass vase with the Zeiss name engraved. One of the pens and a Zeiss Identification badge which we were allowed to keep have been forwarded to the Zeiss Historica Archives.

Dr.WOLFGANG PFEIFFER, Editor of the ZEISS INFORMATION Journal and Information Director was not present at this time, but he very thoughtfully had left for me a fine selection of ZEISS publications and some reprints of the OBERKOCHEN municipal area which included additional data on the Company.

Lastly, Mr.LETSCHE showed us a beautifully made film about space travel in the sales auditorium in the main building. We then left for Stuttgart firmly convinced that we had spent a day with some wonderful people who are carrying on the great traditions of ZEISS and who made a great effort to help Zeiss Historica and its most grateful representative.

Mead

ZEISS HISTORICA SEMAPHOR ARTICLE A / D.IX.80
Five pages with Foto's F-G-H / VTslK

Feb. 18, 1936. H KÜPPENBENDER 2,031,321

PHOTOGRAPHIC CAMERA US Patent

Filed Nov. 15, 1934

Fig. 1

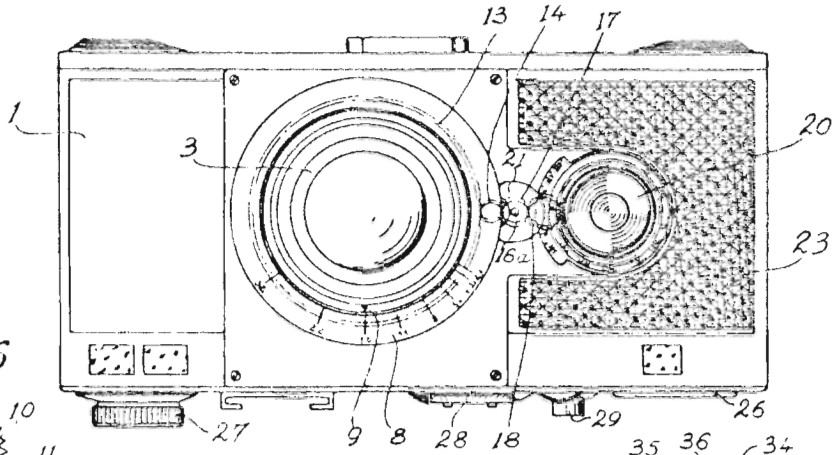
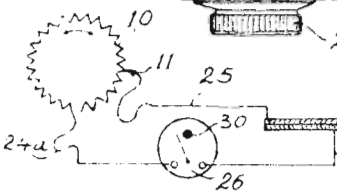


Fig. 6



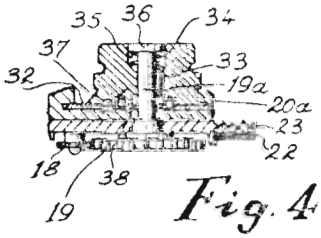


Fig. 4

Fig. 2

Fig. 3

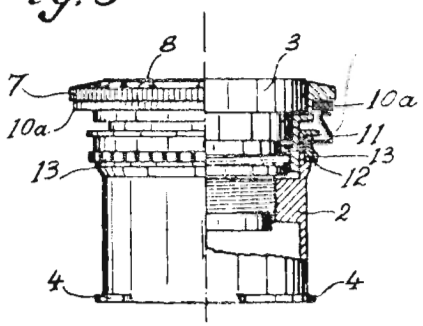
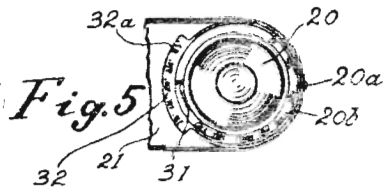


Fig. 5



Inventor

Heinz Küppenbender

by B. Singer

his Attorney

' PENCILS and PIPES ARE NOT ALWAYS
WHAT THEY APPEAR TO BE '

Author * HUBERT NERWIN * Illustrator

++

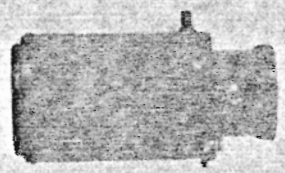
It seems that ever since photography was invented, their has been a demand for cameras which could be concealed so that candid pictures could be made unperceived by the subject.

Several classic examples of this genrie are shown below ...

A. The ARGUS/ERGO monocular 'spy' camera by Contessa-Nettel (1926-1931) with ninety degree viewing and taking lens.

B. The KODAK matchbox Camera of 1943.

C. The EXPO WATCH CAMERA (detective) of 1904.



a

b

c

In 1943 at ZEISS IKON DRESDEN I was approached by Colonel ZAPP of the German Federal Civilian Police (similiar to the USA - FBI); to propose several small cameras that could be hidden in the hand of the photographer. The results were the cameras shown in the attached sketches ...

****

Editors Note ... Hubert Nerwin was a member of management at ...

ZEISS IKON DRESDEN 1932-1945

ZEISS IKON STUTTGART 1945-1947

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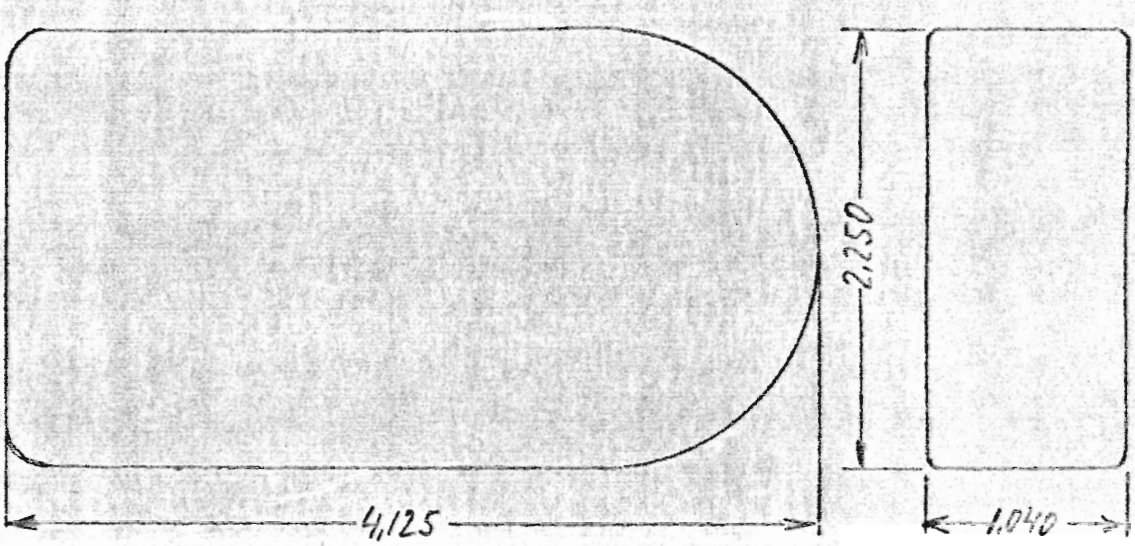
Enclosure - A -

8mm Motion-picture camera



Dimensions: 2,250" high, 4,125" long, 1,040" thick.

Design: Die-Castings and Sheet-Metal.

Filmcapacity: 30 Feet 8mm perforated Film.
(Film was available for Agfa-Movex Camera.)

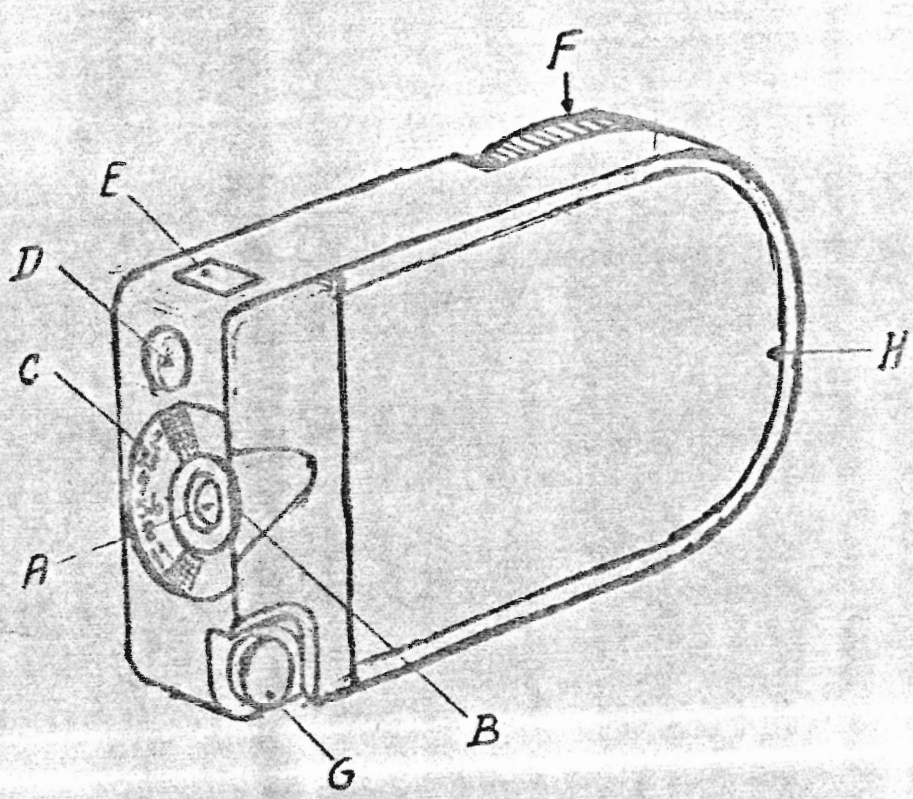
Filmadvance: Spring-Driving-Motor, hand winding.

Lens: Highly Corrected Anastigmat f:2 / 8mm.

Diaphragm: Iris Diaphragm settings, 2, 2,8, 4, 5,6, 8, 11,

Distance: Settings of 10', 15', 20', 40', ∞

Appendix to Enclosure -A-

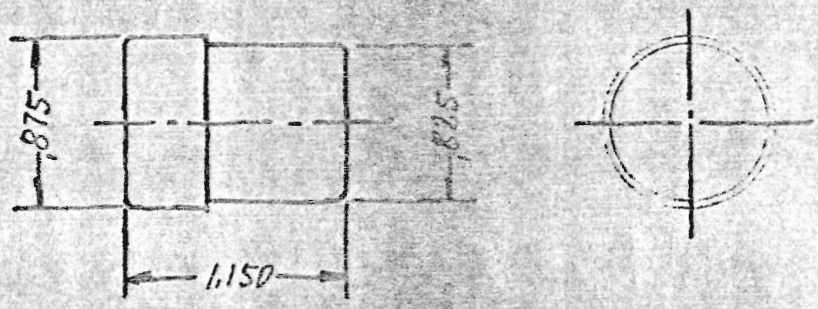


A Objective lens for picture taking f: 2/8 m/m
B Distance setting ring . 10', 15', 20', 40', ∞.
C Diaphragm setting ring . 2, 2.8, 4 5.6, 8, 11.
D Objective lens for Brilliant-View-Finder
E View-Finder lens.
E Winding knob for Spring motor
G Release button for camera
H Cover to close film chamber

Ae.

Enclosure - B -

16mm Still-Camera.



Dimensions: 1,150" long, 0,875" and 0,825" Dia. respectively,

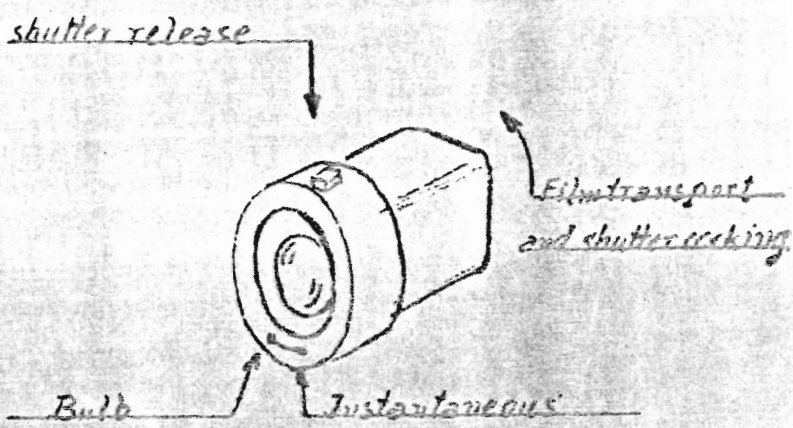
Filmcapacity: 4 Pictures, 9mm by 12mm on 16mm Film,

Filmadvance: Filmtransport combined with Shutter cocking,

Shutter: One Speed (1/50) and Bulb-Setting possible,

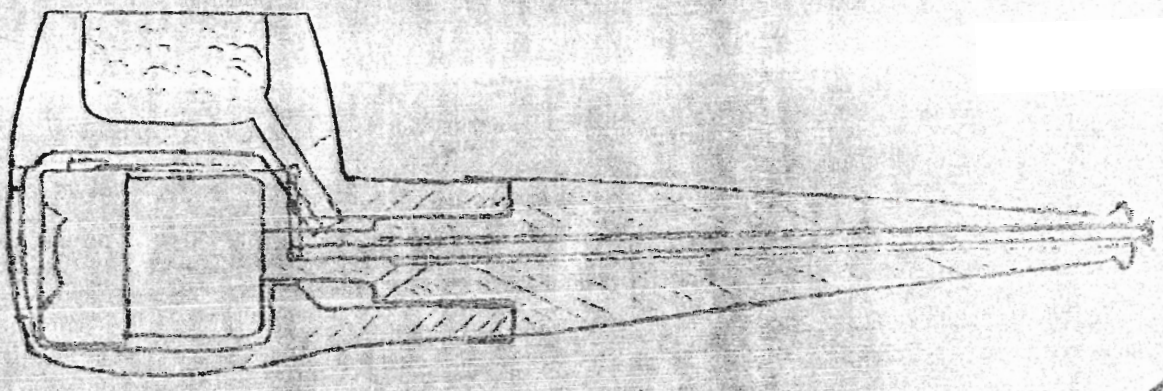
Lens: Highly corrected Anastigmat f:2,8 / 20mm.

Appendix to Enclosure -B-



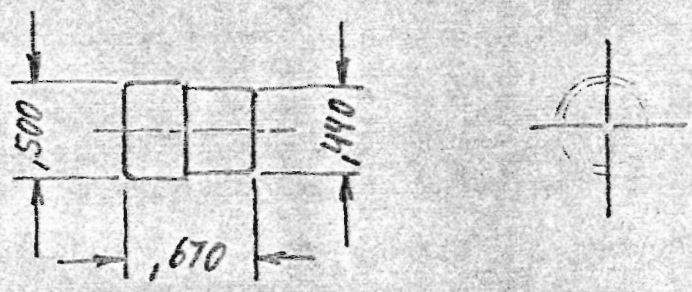
Round front part contains shutter and lens
Rectangular part comprising film container is movable 90° around lens axis for film transport and shutter cocking.

As one example of hiding the camera, an actual smoking pipe could be used.
A dark one filter could be employed to hide the face of the camera which is part of a decorative design on the bowl of the pipe.
The film transport and the shutter cocking could be done by turning the mouthpiece and the release of the shutter by pushing a rod within the mouthpiece with the teeth or the tongue.



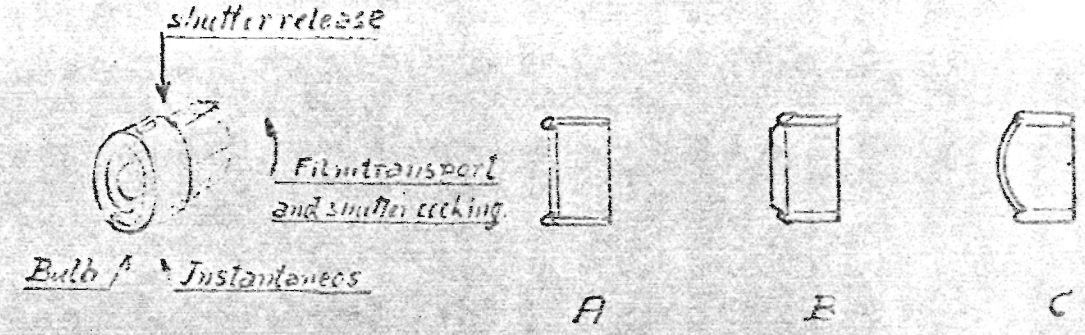
Enclosure - C -

8mm Still-Camera.



Dimensions:	0,670" long, 0,500" and 0,440" Dia. respectively,
Filmcapacity:	6 Pictures, 3mm by 4mm on 8mm Film,
Filmadvance:	Filmtransport combined with Shutter cocking,
Shutter:	One Speed (1/50) and Bulb-Setting possible,
Lens:	Highly corrected Anastigmat f:2,8 / 10mm.

Appendix to Enclosure -C-



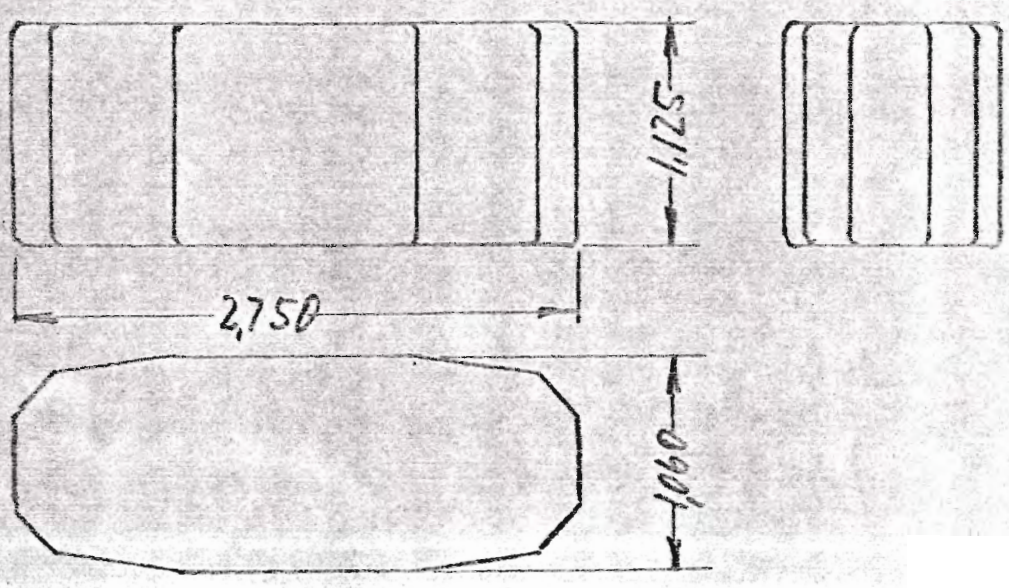
Front face can be covered with dichroic filter (diminishing light power of lens slightly) in order to hide face of camera. Figure A, B, C show examples where by the filter layer is inside.

For stabilization in taking pictures the use of this camera is most favorable in fountain pens or pencils.
Hexagonal part comprising film container and moving bec for film transport and shutter cocking, could thereby be fixedly mounted to the pen - or pencil body while the front part of camera, containing shutter and lens, could be made integral with the cap of the pen or pencil using the clip for release of shutter.

Ne.

Enclosure - D -

16mm Still-Camera. (General Purpose Camera)



Dimensions: 2,750" long, 1,125" high, 1,060" thick,

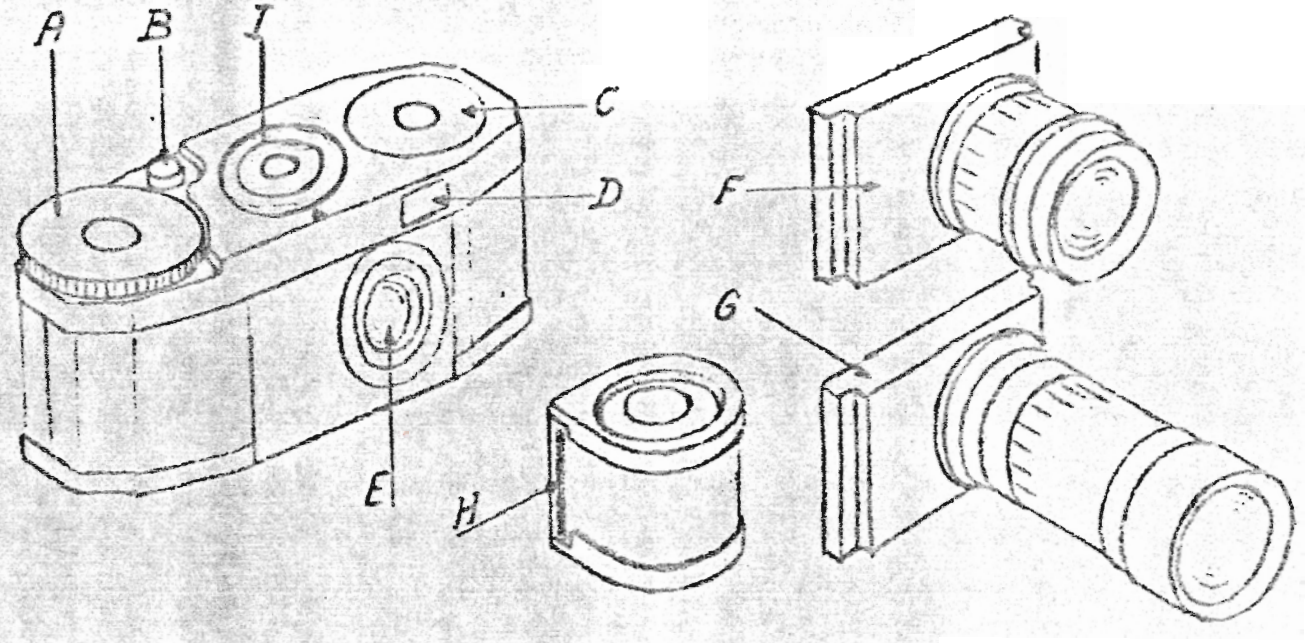
Filmcapacity: 40 Pictures, 10mm by 15mm. Filmlength 30", (Daylight-loading Cartridges)

Filmadvance: Filmtransport combined with Shutter cocking,

Shutter: Speedrange: B, 2, 5, 10, 25, 50, 100, 200,

Lenses: Interchangeable Lenses in Bayonet'Mount, f:2/20mm, f:3,5/45mm, f:5,6/80mm.

Appendix to Enclosure -D-



A Winding knob for film transport and shutter cocking.
B Release button for camera.
C Counting dial
D View finder
E Objective lens f:2/20 mm
F Objective lens f:3.5/45 mm
G Objective lens f:5.6/80 mm
H Film cartridge (Day light loading) Capacity - 40 frames.
I Shutterspeed dial B, 2, 5, 10, 25, 50, 100, 200.

Ae.

Enclosure - E -

Developing Kit for B and C.

A daylight developing kit for these two cameras was designed, which was easily portable in a coat pocket and had approximately the following dimensions: 2" long, 1" wide, 5/8" thick.
Insertion of film had to be done in the dark.

Developing Tank for D.

A daylight developing tank for this camera was designed which received the film cartridge as taken from the camera. The film was then spooled into the developing tank before pouring in the developer.
Approximate dimensions: 3,5" Diameter, 1,5" Height.

Instruments A, B, C had been designed to completion.
Instrument D was designed in it's main components.
Instrument B was produced in a number of models for the purpose of a production run.

Models and drawings had been destroyed by air attack.
Patents had not been applied for because of the secret nature of the work.

Most of the important details of all instruments are still retained in my memory. The instruments therefore can easily be redesigned.

ZEISS IKON
AKTIENGESELLSCHAFT
DRESDEN

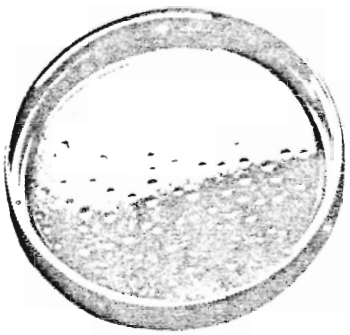
L. Nerwin

ZEISS Softar

New soft-focus attachments

by Dieter Renner

"The unsurpassed delicacy of the picture – the exactitude of the lines – the precision of the forms" – that is what Arago praised in 1839 before the French Chamber of Deputies, speaking of the painter Delaroche He was praising a new invention: photography. But it was long before portraitists occasionally found the crisp sharpness of the photographic lens somewhat disturbing It was at the time when the collodion process was being introduced. The wet plate clearly revealed details which up to then had been covered up owing to the sensitive material employed. As a result, the first soft-focus lenses were born. In 1865 – i. e more than a hundred years ago – Julia Margaret Cameron, the first and highly gifted woman portraitist, used a lens



deliberately undercorrected for spherical abberration in her work. In our days, photography needs both: lenses for needlesharp definition and optimum contrast rendition for realistic recording on the one hand and the soft-focus lens on the other. Following suggestions received from photographic practice, CARL ZEISS now have created a new type of soft-focus attachment, the Softar.

Point image plus soft focus

The Softar will convert any photographic lens into a soft-focus lens. That was known before. What is new is that the Softar combines a core of sharp definition with a soft-focus effect. The basic sharp image and precise contours extend right out to the corners of the field. This facilitates ground-glass focusing and gives an excellent idea of the picture. A twofold gain!

Luminous halo

Characteristic of the Softar is the soft light scatter with highlights spreading into the shadows; the highlights remain completely intact, but they begin to sparkle and shimmer the way we see a burning candle. The diffusion is continuous, without sharp transition. This soft-focus effect is completely uniform over the entire field and independent of the direction of edges – another innovation. But that is not all:

Independent of relative aperture

If soft-focus lenses are stopped down to, say, f/8 or more, the soft-focus effect will disappear. The optical system will then work harshly and without the special appeal of the diffused image. Not so the Softar. Here the effect of diffusion is independent of the relative aperture used. In other words, the camera lens may be stopped down to increase the depth of field without changing the soft-focus effect. Whoever has worked in this field will know how important this is. The majority of all photos are taken with medium apertures. The Softar now guarantees pictorial diffusion in this case also.

Three types – 7 variations

The Softar is available in three different grades. These can be attached to the camera lens either singly or in any desired combination. The sequence of the disks is practically of no importance. We thus obtain a total of seven (!) possible variations:

I, II, III, I + II, I + III, II + III and I + II + III.

Like any good filter, the Softar has no effect on focusing. Thus, if the camera has been focused without a Softar, no refocusing is required after slipping one or more Softars onto the lens.

The Softar in practice

Portraiture will probably be the primary application of the Softar. The appealing freshness of a girl's or child's face will be stressed still further by a subtle halo of diffusion. At the same time, this "optical retouching" will subdue distracting detail such as skin blemishes. The luminous halo, the shimmering highlights, in short all the "glamour" of soft focus are brought out fully by the Softar.

By analogy, in outdoor shots the Softar is often useful for producing the effect of a slight atmospheric haze. A photographer confronted with extreme contrast in his subject – for instance autumn leaves against the light with dark background – will choose the Softar I or II. The Softar is suitable for inanimate objects calling for particularly bright highlights. The combination of several Softars provides the portraitist with a special, unusual instrument for photographing children, girls and women. The diffusion can be made very strong if desired. It will be a matter of taste to decide whether men's portraits should be diffused to such an extent. No hard and fast rules can be laid down. But we should perhaps be grateful for a few things that cannot be standardized.

As the human eye sees it

In the nineteen-thirties and forties, soft-focusing techniques were most popular among photographers, pioneered above all by the Hungarians. However, one disadvantage was soon found to be rather disturbing: even slight diffusion automatically resulted in a decrease in sharpness, in resolving power. This is not the way we see things, however. Let us revert to the example of the burning candle which appears on our retina with the typical soft-focus halo (caused by physiological conditions in the eye). But at the same time we see sharp contours. Now finally the same impression can be captured photographically, thanks to the Softar.

For color photography as well . .

A growing number of soft-focus pictures are now being produced in color photography and above all in advertising. Here also the Softar will be a welcome aid. In this field, wide use is made of large-format cameras in which the lens has to be stopped down relatively far to obtain the required depth of field. With the Softar, there is no limit to stopping down.

The Softars I and II are best suited for color photography. With the Softar III colors may take on pastel shades due to the relatively strong diffusion effect. While this may be desirable in some cases, it will not be so as a rule.

For enlarging and . . . projection

The Softar may also be used to advantage for enlarging, the effect being inverse to that on the camera lens. It will play down the grain and at the same time subdue the highlights in the positive, an effect which may sometimes be very desirable. Since detail sharpness is fully preserved, focusing is easy with the Softar on the enlarger lens. During projection the effect of the Softar is also clearly visible and comparable to that on the camera lens.

Soft-focus effect – exactly measured

From its appearance, the Softar might be described as a neutral filter. Its front surface contains protuberances of about 2 mm diameter. These protuberances are a few thousandths of a millimeter thick and approximately evenly distributed over the surface. The Softar III has the greatest number of protuberances, the Softar I the lowest. These new ZEISS lens attachments have been systematically developed by measuring the soft-focus effect on the basis of the modulation-transfer function.

The transparent medium of the Softar is a highly resistant plastic. Dust should preferably be removed with a soft brush. The disk itself may be exchanged in its precise mount. Thanks to its outstanding features the Softar is a valuable aid to the creative artist in many fields of pictorial photography. Whoever does not want to produce exclusively sober, factual reproductions will welcome this modern and versatile ZEISS soft-focus attachment.

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ZEISS INFORMATION / No.66 (1967) / pps. 124-125
ZEISS HISTORICA REPRINT /with Permission/ D.IX.80 VTslK

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CARL ZEISS SOFTAR PRODUCTION PROGRAMME 1966

	CONTAREX	CONTAX RTS	ROLLEIFLEX SLX	HASSELBLAD
SOFTAR I	20.1217	In diameters of 55 & 67 mm.	20.6110	50512
SOFTAR II	20.1218		20.6120	50520
SOFTAR III	20.1219		in Bayonet Series VI	50539

Editors Note:

The earliest mention I have seen of this diffusion lens is in a ZEISS IKON DRESDEN MOVIKON 16 catalog of 1938, listing a SOFTAR under Nr.982/1 for the Cine SONNAR 1:1.4 f = 25mm. Presumably, during the 1930's ZEISS also made this item for STILL camera lenses, which apparently was of glass composition. Does anyone have catalog data to verify ?

Carl Zeiss

75th Anniversary of his Death

On December 3, 1963, the Zeiss Works and all the plants united in the Carl Zeiss Foundation paid tribute to the memory of the man who, in 1846, founded the factory which, like the Foundation, continues to bear his name. It diminishes in no way the merit of the founder to recall that both the firm and the Foundation owe their international status today primarily to the genius of Ernst Abbe, Carl Zeiss' collaborator and friend, who was an eminent scientist and a pioneer in social reform, and who later became his sole successor.

On May 10, 1846, Carl Zeiss addressed to the head of the County Administration in Weimar an application for permission to found "An Establishment for the Production of Advanced Mechanical Devices". This proves that Zeiss intended from the start to seek "direct association with men of science", and the University of Jena seemed to him the most favorable ground in the immediate vicinity of his home for his endeavor.

However, it was to be roughly 20 years before Carl Zeiss secured the close association with science that he deemed to be indispensible. In those two decades, he grew weary of the groping method of trial and error until "hundreds of lenses produced one good objective".

Nevertheless, in 1866 a close link with Ernst Abbe was established. Abbe, under the spur of his own creative work, sought and obtained the co-operation of Otto Schott, the great glass chemist, who through his optical glass melts for the first time provided the means of putting Abbe's calculations to a practical test.

But even after the collaboration with Ernst Abbe was secured, it took another 20 years before their work bore visible fruit; and it may, perhaps, be considered one of Carl Zeiss' most outstanding qualities that he never faltered on the long and arduous road towards Abbe's goal, with all the expense and risks involved.

On the occasion of this commemoration it seems appropriate to give a brief sketch of the first 20 years after the founding of Carl Zeiss' workshop. During those two decades, Zeiss – the founder, master and owner of a craftsman's workshop which started in a very small way and gradually expanded – was entirely dependent on his own resources until he achieved the close collaboration with scientists he had aimed at from the outset.

Carl Zeiss was born in Weimar on September 11, 1816, the son of Johann Gottfried August Zeiss, "Court Cabinet-Maker and Carver of Portraits in Ivory", and grew up with five brothers and sisters. In 1834 he graduated from the high school in his home town, with the aim of becoming an instrument-maker. While still at school, he "took part in lessons at the Grand Duke's Trade School" and afterwards wrote as follows about his further training:

"Then, in the year 1834, I began four years of apprenticeship in Jena under Dr. Körner, instrument-maker at the Grand Duke's Court, while at the same time attending academic courses suitable for a mechanical craftsman. I had obtained the necessary credentials for doing so by passing the matriculation examination on leaving high school. From January 1838 until October 1845, I continued my training by working in the most reputable physical, optical, mathematical and machine workshops in Stuttgart, Darmstadt, Vienna and Berlin, during which time I did not fail to take advantage of every available opportunity to perfect myself further in the related arts and sciences that are useful and necessary to an instrument-maker. Since my return in October 1845, I have again been sojourning in this city for the chief purpose of studying chemistry and higher mathematics."

Without the thorough theoretical and practical knowledge thus obtained, it would scarcely have been possible for Carl Zeiss to pass the examination required by the Office of the Grand Duke's Superintendent of Works before it granted him "a licence, as requested, to manufacture and sell mechanical and optical instruments and to establish a mechanical workshop." The latter was opened at No. 7 Neugasse on November 17, 1846, with a working capital of 100 thalers ($ 75.00). The moment was favorable. Although Jena then had only 6 300 inhabitants and, as yet, no railroad link, the natural scientists at the university were starting to work in new fields of research, for

Carl Zeiss at the age of fifty.

which they required microscopes and other apparatus to an increasing degree. After Zeiss had hired his first journeyman mechanic in the spring of 1847, he moved his workshop, on July 1 of the same year, to 32 Wagnergasse. At that time, he was selling spectacles, laboratory equipment, scales and optical instruments; he was also repairing a very great variety of apparatus used in scientific instruction at the university. At the end of August, 1847, Zeiss took on his first apprentice. This was August Löber, who later proved his worth, particularly by inventing, independently, a method of checking finished lenses by means of a test glass, an inspection procedure which is still common today.

It was, above all, Professor M. J. Schleiden, the founder of modern botany and of plant cytology, who urged upon Carl Zeiss the idea of taking up the manufacture of simple microscopes, which, from 1848 onward, found a good market. At the same time, Carl Zeiss devoted his attention to the construction of compound microscopes, the first of which was sold in 1858.

In 1855, Zeiss reported that his staff consisted of "a few apprentices, one grinder and one journeyman, or, from time to time, two". Two thirds of his instruments were sold out of town, which proves that his microscopes, to quote the opinion of a scientist of repute, "were of excellent quality in every respect".

By 1866, the number of men employed by Zeiss had risen to twenty. They spent their working day, 11¾ hours at that time (with a quarter of an hour's break in the morning and an hour for lunch), in the spacious premises of his third workshop on Johannisplatz to which Zeiss had moved in 1857.

The products of the Zeiss Workshop had won a good name for themselves, particularly on account of the many improvements that, in the 'sixties, had been developed with infinite care by Carl Zeiss and his foreman Löber. In the face of so much recognition and of the expansion of trade achieved up to that point, many a master craftsman in the same situation would have been content to rest on his laurels. Zeiss, however, declined to go on grinding and combining lenses on the basis of skill and experience, without knowing the laws that governed these processes. His aim was to be able to calculate in advance the curvature, thickness, diameter, and distance of the lenses, and to select, in advance, the types of glass with the best optical performance.

By studying textbooks at night, he tried to familiarize himself with the theory of optics, also enlisting the help of the mathematician Barfuss, whose calculations turned out, however, to be of no use. Carl Zeiss was thoroughly aware of his limitations when fate ruled that he won over Ernst Abbe, lecturer at the University of Jena since 1863, to take an interest in optical problems. Abbe became so involved that he henceforth devoted all his attention to the new task. The principle of the founders, to go into production only after prior thorough research by scientists in the particular field, has since become law at the Zeiss Works.

No one is better qualified or more entitled to pay homage to Carl Zeiss than his long-standing friend, collaborator and partner, Ernst Abbe. In his memorial address to mark the fiftieth anniversary of the ZEISS Works on September 12, 1896, Abbe said:

"In Carl Zeiss, a man has gone from us whose life work gave birth to a new idea and carried it to perfection. It is to his lasting credit that in his own special field of work, he has opened the way to fruitful co-operation between scientific research and technical know-how."

- see FOTO I

ZEISS INFORMATION / No.50 (1963) / pps. 111-113
ZEISS HISTORICA REPRINT /with Permission / D.IX.80 VIs1K

S C R I B B E L S
&
Q U E R I E S

Membership Forum
ZEISS HISTORICA
D.IX.80 / VTslK
BULLETIN G

... am preparing article on the CONTAFLEX SLR stereo system and need copies of any 'Z' publication pertaining to same; please post to JOHN ALLDREDGE --- much gratitude.

... do you wish to learn the date of manufacture of your CONTAREX LENSES ? Simply forward lens type and serial number to MEAD KIBBEY.

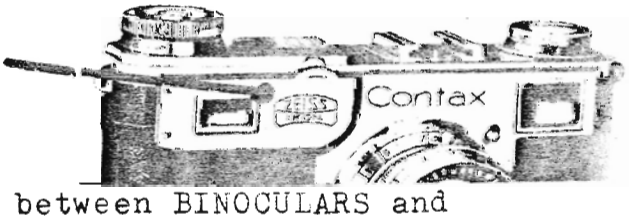
... two members have achieved Immortality by generously donating ZEISS publications to the Archives (Mr.CHARLES N. BARRINGER and MR.HARRY GRAY) -- the Society is indebted.

... ZEISS LORE - ' 10 MARKS PER CENTIMETER ' -jokingly referred to the pricing of the 50cm fern lens for Contax by the marketing department of JENA during the 1930's. HUBERT NERWIN

... inclosed (absolutely free) from NICHOLAS GROSSMAN is a salmon coloured copy of our Membership Application Form, and guess what he asks ??? !!! - you're right on ...

PLEASE HELP YOUR BAFFLED EDITOR

... do you own a Contax with the LOGO - engraved here ?
please send me the body number.



... what precisely is the differance between BINOCULARS and FIELD GLASSES ?

... who has expertize in translating technical German ?

... what do you own in ZEISS military equipment ?

CARL ZEISS · 1926
Fabriques à Iéna, Vienne, Győr

- need info on manufacturing facilities in Vienna, Győr and also CARL ZEISS * HALLE.

*** LOOKING FORWARD TO SHAKING YOUR HAND AT OUR ANNUAL FESTSCHRIFT ***

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further ZEISS reading - POPULAR PHOTOGRAPHY (February '80 -page 15)- (MARCH '80 - page 21) - MODERN PHOTOGRAPHY (February'80 - page 75).

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US PATENT

May 6, 1924. 1,492,583

A. STEINLE

SUBMARINE PERISCOPE

Filed June 19, 1923

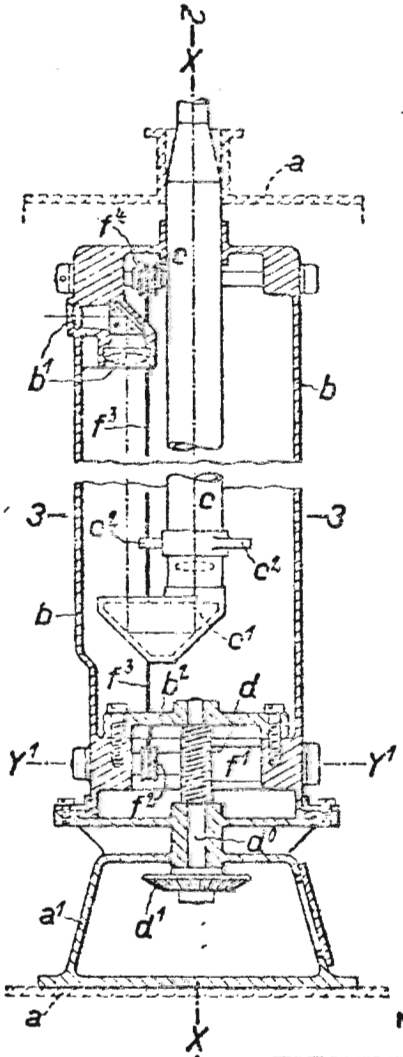

Fig. 1

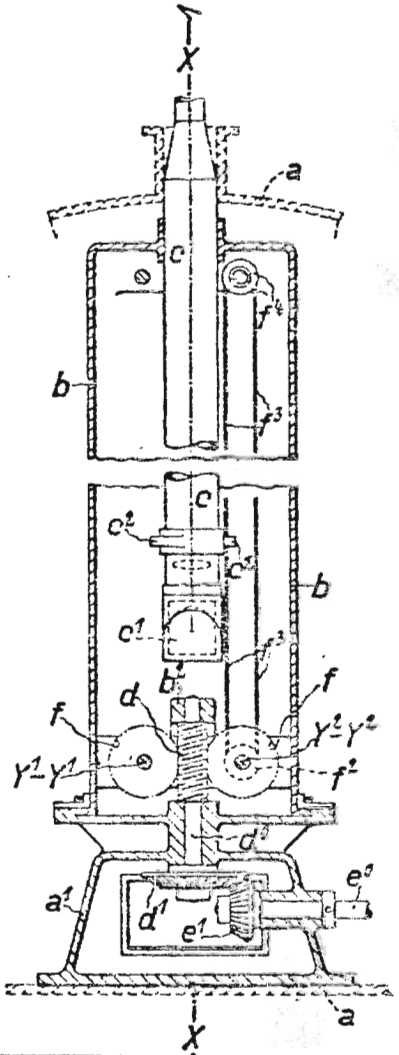

Fig. 2

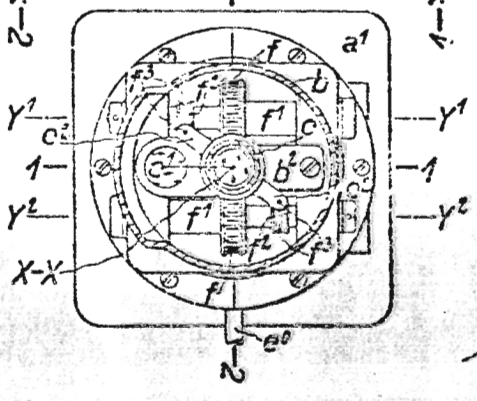

Fig. 3

Inventor:

Adolf Steinle

Patented May 6, 1924. 1,492,583

UNITED STATES PATENT OFFICE.

ADOLF STEINLE, OF JENA, GERMANY, ASSIGNOR TO THE FIRM OF CARL ZEISS, OF JENA, GERMANY.

SUBMARINE PERISCOPE.

Application filed June 19, 1923. Serial No. 646,361.

To all whom it may concern:

Be it known that I, ADOLF STEINLE, a citizen of Germany, and residing at Jena, Germany, have invented a new and useful Submarine Periscope (for which I have filed an application in Germany July 29, 1922), of which the following is a specification.

The present invention relates to a submarine periscope whose ocular is fitted to a casing rotatably supported on the boat's hull in which casing a tube containing the entrance reflector of the periscope is so disposed as to participate in rotations of the casing and as to be displaceably disposed relatively to the casing in the direction of its axis coinciding with the axis of rotation of the casing.

For periscopes of this kind it has been suggested to construct a gearing in such a way that the displacements of the tube may be effected by a motor rigidly set up in the boat's hull without the motion of displacement and of rotation of the periscope affecting each other. According to the invention there is obtained a gearing which is considerably more simplified than those hitherto suggested if the demand that the motion of displacement and of rotation are independent of one another be restricted to such an extent as to warrant the independence at least approximately. This restricted demand is fulfilled if the gearing which serves for displacing the tube contains a worm wheel supported on the casing and engaging in a worm, whose axis coincides with the axis of rotation of the casing. The worm may either be supported on the boat's hull or on the casing or both on the boat's hull and the casing. If provision be made that in the gearing which serves for actuating the worm wheel, inclusive of the motor serving for the actuation, the friction is slighter than in the worm gearing, the worm participates in any displacements of the casing. The independence of the motions is then entirely warranted.

The annexed drawing shows a constructional example of the invention. Fig. 1 is a longitudinal section on line 1—1 of Fig. 2. Fig. 2 is another longitudinal section on the line 2—2 of Fig. 1, Fig. 3 is a cross section on the line 3—3 of Fig. 1.

On a base a^1 assumed to be rigidly connected to the boat's hull a a casing b is supported rotatably about an axis X—X. For simplicity's sake the actuation for the rotation is not shown in the drawing. Within the casing b there is supported displaceably in the direction of the axis X—X a tube c which contains the entrance reflector (not visible in the drawing) of the periscope and which is provided at its lower end with a reflecting prism c^1 which transmits the luminous rays emerging from the tube c in the downward direction to an ocular b^1 disposed at the upper part of the casing b. A worm d is supported on the base a^1 and on a cross head b^2, screwed to the casing b, in such a way that its axis coincides with the axis of rotation X—X. A bevel wheel d^1 supported on the worm-shaft d^2 engages in a bevel wheel e^1 supported on the base a^1, the shaft e^2 of the bevel wheel e^1 being assumed to be coupled to a motor. In the worm d engage two worm wheel gearings f which are fitted each to the nave f^1 of a rope pulley f^2. The two rope pulleys are rotatably supported on the casing b in such a way that their axes Y^1—Y^1 and Y^2—Y^2 are parallel to each other and lie on different sides of the axis X—X. Over each of both rope pulleys f^2 runs an endless rope f^3 which rests upon a pulley f^4 supported on the top of the casing b. The tube c is suspended at the two ropes f^3 by means of a cross bar c^2.

The periscope is drawn in and out by actuating the worm d from the shaft e^2. If the friction in the worm gearing be greater than in the gearing actuating the worm, of which gearing only the bevel wheels d^1 and e^1 are shown in the drawing, in the event of a rotation of the casing b about the axis X—X the worm wheel gearings f drive the worm which entails a slight rotation of the gearing d^1, e^1 . . . inclusive of the motor shaft but does not affect the lifting motion of the tube c. If the conditions of friction be inverse, i. e. if with a rotation of the casing b the worm remains unaffected, the worm wheel gearings f experience owing to their meshing with the worm d a slight rotation about their axes Y^1—Y^1 and Y^2—Y^2 respectively, which rotation is, however, so insignificant that both rotation and displacement may practically be considered independent of each other.

I claim:

1. In a submarine periscope a casing, means for rotatably supporting this casing

on a boat's hull, an ocular fitted to this casing, a tube adapted to contain at its upper end an entrance reflector and having its axis coinciding with the axis of rotation of the casing, the tube being displaceably disposed relatively to the casing in the direction of these axes, means for coupling the casing and the tube for joint rotation, and a gearing adapted to displace the said tube in the said direction and containing at least one worm wheel rotatably disposed on the casing and a worm engaging in this worm wheel, the axis of which coincides with the axis of the casing.

2. In a submarine periscope a casing, means for rotatably supporting this casing on a boat's hull, an ocular fitted to this casing, a tube adapted to contain at its upper end an entrance reflector and having its axis coinciding with the axis of rotation of the casing, the tube being displaceably disposed relatively to the casing in the direction of these axes, means for coupling the casing and the tube for joint rotation, and a gearing adapted to displace the said tube in the said direction and containing at least one worm wheel rotatably disposed on the casing and a worm engaging in this worm wheel, the axis of which coincides with the axis of the casing, the friction in the worm wheel and the worm being greater than that of the other parts of the gearing.

ADOLF STEINLE.

F O T O D A T A # I

TELESCOPE / catalog - ASTRO 6Ie/ cover
ZEISS,CARL;publisher,Jena,Germany
Issued - H.X.22 / Eight pages

' ZEISS adapted the tried and proven FRAUNHOFER objective design of the early I800's for their Telescopes.'

ZEISS HISTORICA FOTO A /D.IX.80/VTslK

MODEL SHOWN - Codeword ASEGUR
Magnifications - x21,x47,x94
Objective 60-mm, (23/8 inch)
Slow motion in altitude and azimuth.

A corner of the ZEISS Telescope assembly shop. (c.I908 ?)
ZEISS,CARL;firm,Jena,Germany
Official ZEISS Foto Nr. A9I

ZEISS HISTORICA FOTO B /D.IX.80/VTslK

MICROSCOPE -preparation type.

Made in the workshop of the optical firm CARL ZEISS, Jena Germany.

Manufacture - about 1860.

ZEISS HISTORICA FOTO I / D.IX.80/VTslK

SCISSORS and STICK with EPOXY

F O T O D A T A # 2

TELESCOPE / terrestrial - binocular
ZEISS,CARL;firm,Jena,Germany (c.I908)
Codeword ASAL / Objective I30mm
Magnification 35x,58x,II6x / Length 80"
This double Instrument may be used by one person and preserves perspective values,or by two persons simultaneously.

Official ZEISS Foto Nr. 9I95

ZEISS HISTORICA FOTO C /D.IX.80/VTs1K

TELESCOPE / terrestrial - monocular
ZEISS,CARL;firm, Jena,Germany (c.I908)
Codeword ASALADO / Objective 2I0mm
Magnification 70x,I20x,200x /Length I69"
Official ZEISS Foto Nr. 9239
In that era ZEISS'S Chief Design Engineer for Astronomical Instruments was Dr.h.c. FRANZ A. MEYER.

ZEISS HISTORICA FOTO D /D.IX.80/VTs1K

TELESCOPE / terrestrial - monocular
ZEISS,CARL;firm,Jena,Germany (c.I908)
Codeword ASALAK / Objective 240mm
Magnification 60x,90x,I44x
Official ZEISS Foto Nr.9I94
Terrestrial's contain 'erecting prisms' to correct the up-side-down image produced by the tube objectives.

ZEISS HISTORICA FOTO E /D.IX.80/VTs1K

SCISSORS and STICK with EPOXY

FOTO DATA #3

LOCATION: Carl Zeiss, Oberkochen
Germany
DATE: Monday -September 24,1979

(Left to Right) - Dr.h.c. HANS SAUER and Ambassador MEAD KIBBEY .

' Presentation of Honourary Membership in the Zeiss Historica Society of America to Dr.SAUER, since 1941 Managing Director of the Photographic Objective (lens) Division of ZEISS; by Mr.Kibbey a member of the Board of Directors of ZHSA. '

ZEISS HISTORICA FOTO F /D.IX.80/VTs1K

LOCATION: Carl Zeiss, Oberkochen
Germany
DATE: Monday - September 24,1979

(Left to Right) - Dr.HEINZ KUPPENBENDER Ambassador MEAD KIBBEY, Mrs.NANCY KIBBEY.

' Presentation of Honourary Membership in the Zeiss Historica Society of America to Dr.KUPPENBENDER, the Inventor of the CONTAX KAMERA SYSTEM; by Mr.Kibbey a member of the Board of Directors of ZHSA. '

ZEISS HISTORICA FOTO G /D.IX.80/VTs1K

Portrait - Dr.h.c.LUDWIG BERTELE
Date - mid 1930's.

' In a letter dated November 20, 1979; and received by the Zeiss Historica Society of America, Dr. BERTELE graciously accepted Honourary Membership in the Society. The world renowned lens designer is the inventor of the ERNEMANN-ERNOSTAR/ZEISS SONNAR ZEISS BIOGON/WILD-AVIOTAR & AVIOGON lenses; FLUOTAR objectives for microscopes and telescope systems for THEODOLITES. '

ZEISS HISTORICA FOTO H /D.IX.80/VTs1K

SCISSORS and STICK with EPOXY

CARL ZEISS
JENA