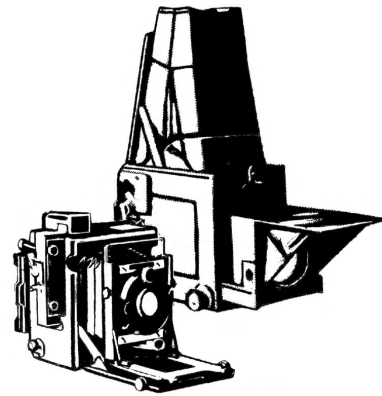


GRAFLEX HISTORIC QUARTERLY

Since 1996



VOLUME 18 ISSUE 2

SECOND QUARTER 2013

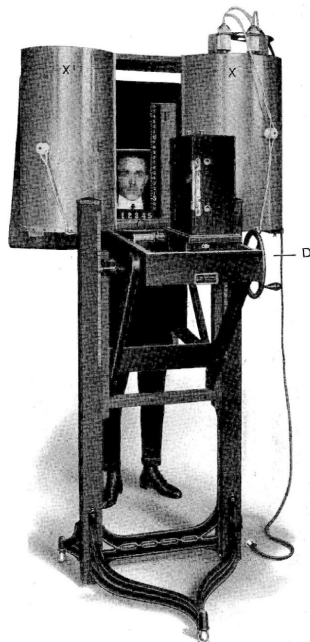
FEATURES

The Graflex Photorecord by Thomas Evans.....	1
The Evolving Auto Graflex by Jim Chasse.....	5
R. B. Tele. Graflex.....	7
Changing Times.....	7

THE GRAFLEX PHOTORECORD

By Thomas Evans

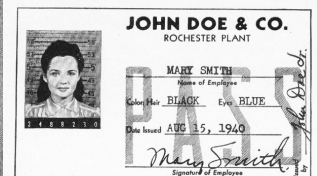
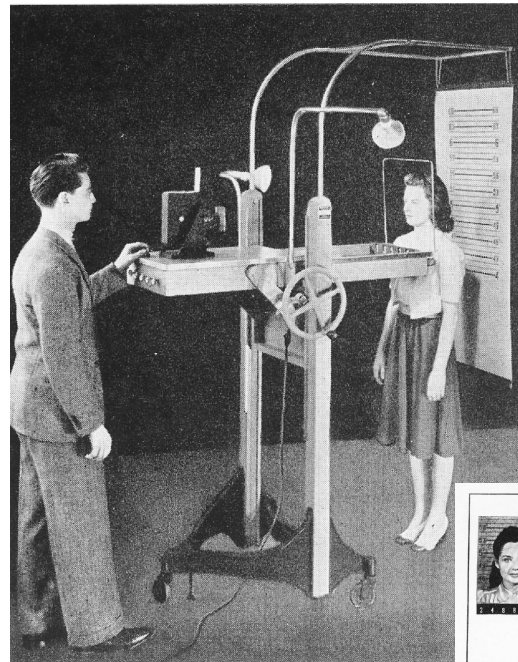
As early as 1918, Folmer & Schwing offered an F. & S. Identification Outfit, complete with fixed focus camera, f/6.3, 4½-inch Anastigmat lens, stand and lights, which was designed to make small format images suitable for printing, with a mask appropriate to the employer, on I. D. cards. Patent number 1,335,728 was issued for this camera on April 6, 1920. The outfit also included a means for recording the height of the employee in the image. The manual for this early I. D. outfit sets forth practical requirements: "Where a large number of employees must be photographed in the shortest possible time, in order to complete the initial photographic record, the apparatus employed



must be capable of rapid operation, as well as accurate and uniform photographic results." The entire outfit, including background and built-in measuring scales, was self-contained so that it could be wheeled to the employees. A magazine for long rolls of Eastman Kodak No. 65 film was provided for the camera. No. 65 film was 1½ inches wide and was available in 150, 500, 1000 and 1500 exposure rolls, and produced 7 negatives per foot of about 1¼ x 1-5/8 inches. The outfit was said to be capable of 300 photographs per hour. The outfit was last listed in Kodak catalogs in 1925.

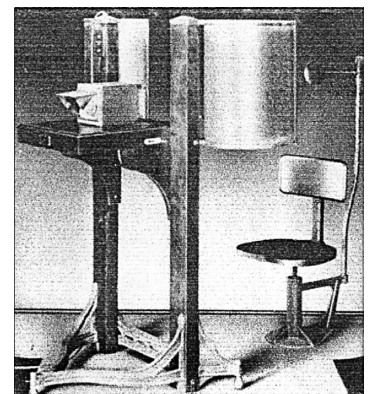


These basic ideas: an outfit containing camera, film magazine for long rolls, integral stand, lights and background, and easy mobility, were carried forward through many permutations of apparatus for decades to come.



McKeown's guide has a succinct description of the Photorecord: "Developed around 1934, introduced to the open market in 1936. Made through the 1950s in many different forms and models, including civilian and military versions. Special purpose camera for microfilming, personnel identification, and copy work. All versions were designed around the same basic heavy cast metal camera and film magazine unit, and were offered as complete outfits including lights, stands, copy or I. D. apparatus. Designed for use with 100-foot rolls of 35mm film, they were capable of 800 'double frame' or 1600 'single frame' exposures. Also capable of single exposures using Graflex plate or film holders."

In the Fourth Quarter 2000 issue of the Graflex Historic Quarterly, Tim Holden wrote about the four basic versions of the Graflex Photorecords. The first was developed in 1932 for law enforcement to make 2-on-4x5 "mug shots," using a standard studio stand, built-in lights with large reflectors, and a simple box camera taking standard 4x5 cut film holders.



The second version, designed by Ed Hinline, Graflex Chief Engineer, was a self-contained copy stand using long rolls of 35mm film to produce microfilm negatives of printed matter up to a full page of a newspaper in size. In an unpublished autobiography, Tim Holden recounts testing this copy camera set-up and being selected on short-term notice to take it to a convention of the American Library Association in Denver to demonstrate it. The Photorecord Microfilm Outfit received a lot of favorable attention at the convention and went into production.



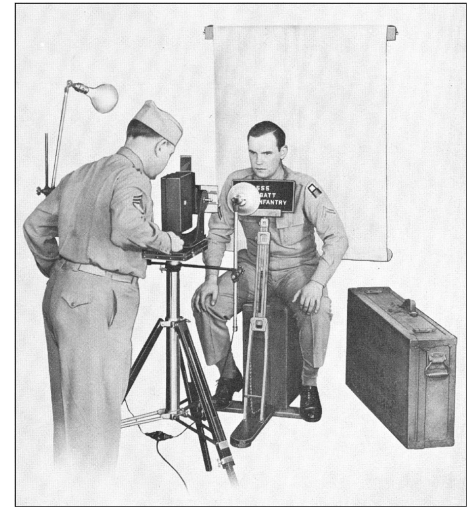
Leica and Leitz made microfilm outfits based on their standard 35mm cameras, but the only real competitor for the Photorecord was the Kodak Recordak, which was a large unit that required Kodak-trained operators. Material could be sent to Kodak to be microfilmed, or, in the case of a large project, Kodak would send operators who would assemble the outfit, produce the microfilms, then disassemble the outfit and take it away. The Photorecord Microfilm outfit was the only "industrial strength" outfit that could be purchased and operated by a business or government agency. The Photorecord was used, for example, to copy all of the books and manuscripts in the French Biblioteque Nationale, 500 years of books and manuscripts at the Vatican, and records in churches, town clerk offices and cemeteries throughout the country by the Church of Latter Day Saints in order to establish a source of genealogical information. More on this outfit below.

The third version of the Photorecord was a personnel identification system using the same 100-foot 35mm film magazine as the microfilm outfit. In an unpublished history of naval photography, George Carroll recounts the events that appear to have led to the development of the Photorecord ID Outfit. In early 1940, Carroll had set up a photographic laboratory in the Navy Department Office of Navy Intelligence in Washington, D.C. Security was high, and all military and civil service personnel were issued a numbered badge allowing access to the facility, but it was realized that a card with a photo of the individual on it would provide greater security. George Carroll was familiar with the Photorecord Microfilm Outfit and met with representatives of the Graflex Corporation, which in turn developed the Photorecord ID Outfit for this use "within a few weeks." It took four outfits about one month to provide 20,000 photo IDs. During World War II, Graflex Corporation furnished several thousand Photorecord ID outfits to the U. S. Government and major industries.



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The fourth version was the military ID Outfit, PH-385, which appears to have used a Compact Stand tripod, rather than the Century-style studio stand, to facilitate the making of photo IDs in the field.

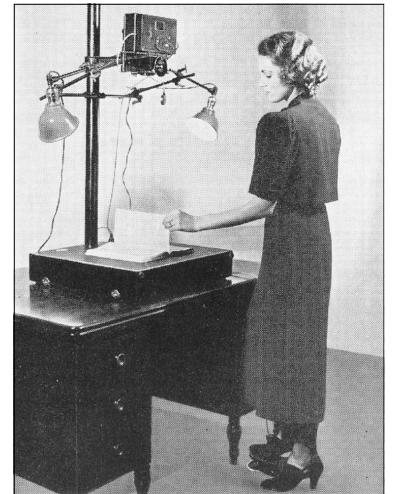


In addition to the camera outfits, Graflex provided developing and printing equipment for the 100-foot rolls of 35mm film, as well as equipment and masks for producing laminated ID cards.

A. K. Aster, in the September 1939 issue of Photo Technique, reviewed the microfilm outfits available at that time and provided useful information about processing long rolls of film. He stated that "the Kodak Recordak apparatus is far beyond the needs of the majority of research workers and librarians," and continued that the apparatus provided by well-known makers of miniature cameras (Leica, Zeiss, Ihagee...) would be handy for field use, "where it would be impossible to carry a complete copying outfit," but that the Graflex Photorecord Microfilm Outfit was especially suitable for libraries and large research organizations.

Photorecord Microfilm Outfit

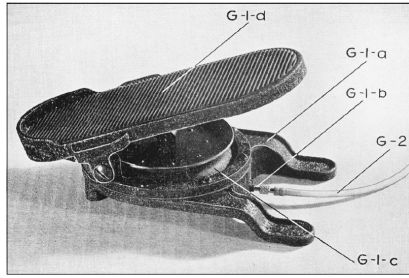
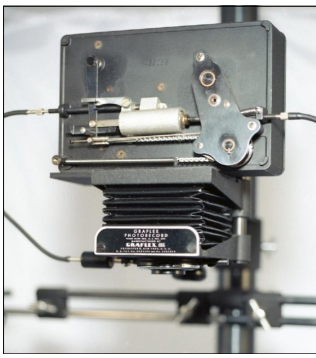
"The Photorecord is a simple, portable outfit designed for the efficient quantity production of microphotographic records on 35 mm film. It incorporates its own lighting system and is operated by air, compressed by a foot pump or by a motor-compressor, or from a pressure cylinder."



At right, Photorecord in use to make microphotographs. From the 1940 Graflex Graphic Photography.

Pneumatic Operation

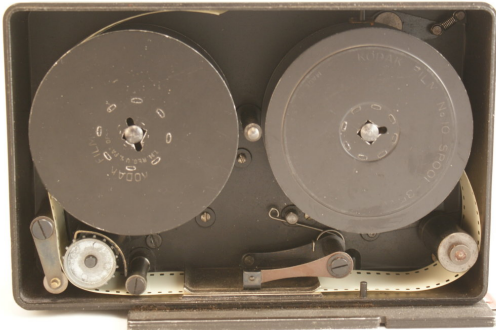
The film magazine and lens shutter could be operated by pressing down on a foot pump, leaving the hands free to manipulate the copy material. The magazine contains a pneumatically operated piston and linkages that advanced the film and film counter, and the same pulse of air pressure was carried through a small rubber tube to the shutter to make the exposure. The film magazine could be set to make either full-frame (24 x 36 mm) or half-frame exposures. The magazine and shutter could also be operated manually, and a magazine was available that did not contain the pneumatic piston.



Left, Photorecord camera and film magazine, with front cover removed to show the pneumatic cylinder and linkages. Right, Photorecord foot pump.

Film Magazine

The magazines held 100-foot rolls of 35mm film on common No. 10 Eyemo movie camera spools, and film was available already loaded in the spools with leader at each end to facilitate daylight loading. The magazine could be switched between single-frame and double-frame, and a small, press-fit mask was inserted in the film gate when single-frame negatives were desired. The air pressure could also be routed through an electrical switch that would turn up the copy lights for the duration of the exposure.



A. K. Aster, in his Photo Technique article, noted that use of motion picture film processing equipment could lead to rack marks left on the film, or fog caused by exposure to air during development, and recommended using 50-foot or 100-foot reels in tanks, as supplied by the Stineman Co., and D-76 or DK-20 developer. He cautioned that using water that had been softened by copper sulfate would introduce copper that could fog the film, and that failing to rinse film between very alkaline high-contrast developer and acid fixer could cause tiny gas bubbles to form, which could then pop and form pin holes in the emulsion. He recommended the Eastman Kodak book, Motion Picture Laboratory Practice.

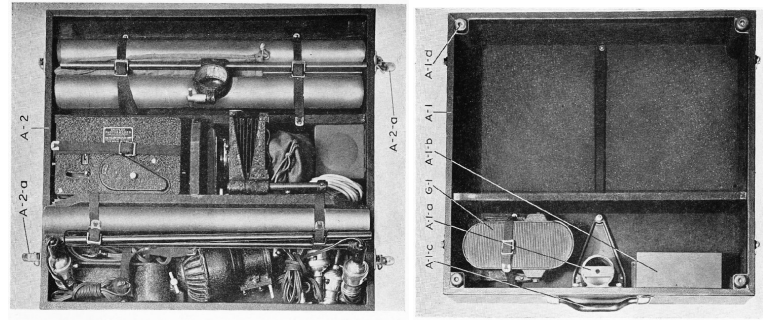
Lighting Units

The outfit came with four 1/2-inch diameter steel tubes and one tube mounted to a ring that fit around the column, which could be clamped together to assemble a rack on which to hang copy lights. The carrying case had an electrical receptacle box built into it with one input socket and two output sockets. Early images of the outfit show only two lights being used, while later images show four, although there is no indication that the number of output sockets was ever increased.

Case

The case comes apart, and the top half is used as the copy stand base, with a built-in socket into which the two-inch steel column is screwed. The column is assembled from three 21-inch sections that screw securely together, resulting in a five-foot high column. The

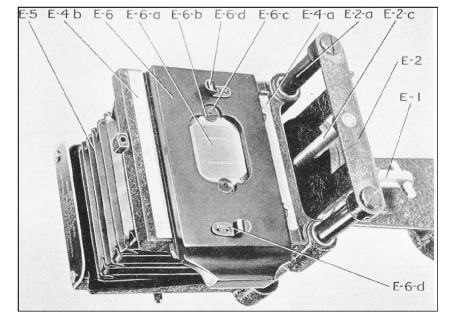
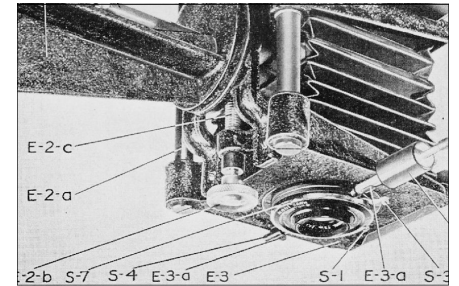
reason behind all of this assembly is that the parts are all designed to cleverly pack inside the case, with tie-downs to fasten them in place. Packed into the case, the whole outfit weighs about 50 pounds, and so it is truly portable.



Photorecord Outfit packed into the Traveling Case.

Camera

The camera is a heavy-duty, cast metal view camera with a 2 1/4 x 3 1/4 Graflex back, was made to mount on an arm, and could be pointed down or to either side. The standard lens was a 75mm Graflex Photorecord f/4.5 with high resolving power, which stopped down to f/22, in a heavy-duty Betax No. 2 shutter, made by Wollensak.



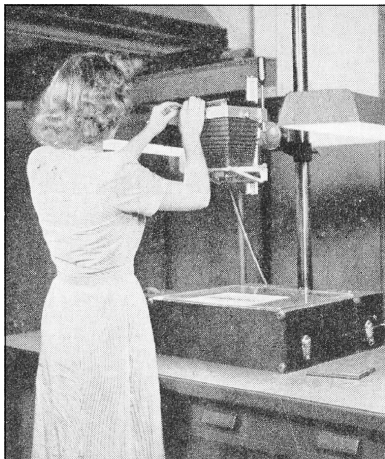
Left, lamp house, and above, lamp house adapter showing focusing screen.

Lamp House for Focusing

The outfit also contains a lamp house that is mounted onto the camera by an adapter which contains a ground glass focusing panel. The purpose of this device is not to transform the outfit into an enlarger, but is to allow the image of the focusing screen to be projected onto the base board. The camera is then manipulated on the column until the correct size (of the copy material) and focus are achieved. Incidentally, the focal planes of the 35mm magazine and the 2 1/4 x 3 1/4 Graflex back are not the same, so if one wished to make copies on sheet film or 120-roll film, a 2 1/4 x 3 1/4 Graflex focusing panel would be needed.

Copy Camera

The Photorecord copy stand could also be fitted with other cameras and be used as a regular copy camera. The two-inch diameter stand is stout enough to hold a 5x7-inch view camera.



Left, Photorecord stand in use with 4x5 Graphic View Camera, and right, stand with a 5x7 Eastman Medical Camera.

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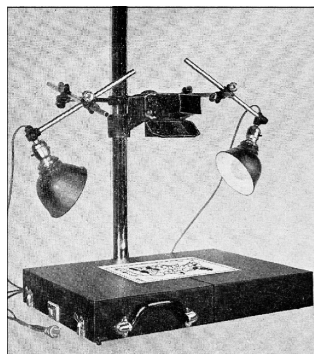
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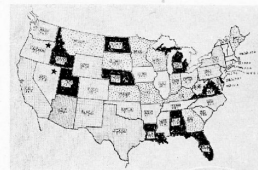
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Morgan, Willard D., Henry M. Lester, 1950, Graphic Graflex Photography. Eighth edition, fourth printing, Morgan & Lester, New York, N.Y.

Morgan, Willard D. 1958, Graphic Graflex Photography. Eighth edition, eleventh printing, Morgan & Morgan, Inc. New York, N.Y.



National Graflex in position for copying maps, charts, diagrams, etc.



ABOVE: The map reproduced for convenient filing or record.

RIGHT: Photomicrograph of Male Dog Flea—27 times magnification.

GRAFLEX COPYGRAPH

THE COMPLETE PORTABLE COPYING OUTFIT

THE GRAFLEX Copygraph includes a supporting column for holding the camera, flexible lighting system, and easel base for the subject matter. The unit is portable and easily dismantled. The easel base which serves as a small carrying case will additionally accommodate the *National* GRAFLEX or other miniature camera used with it.

COPYWORK. The Copygraph, with a suitable camera attached, is especially adapted for the making of permanent photographic copies. Magazine and newspaper articles, manuscripts, stamp and token collections, legal evidence, drawings or still life objects are within its scope. When used in combination with a *National* GRAFLEX, the negatives are ideal in size—especially appreciated when large records, x-ray films, etc. are to be reproduced for file or lantern slide use. Ratio of reduction may be further decreased where copying attachments for the camera lens are available. (See *National* GRAFLEX accessories.)

PHOTOMICROGRAPHY. The Copygraph with its flexible lighting system is ideally suited for Photomicrography. Any standard microscope can be used with it for the photographing of minute organisms, perishable and valuable specimens, or ever changing laboratory experiments.

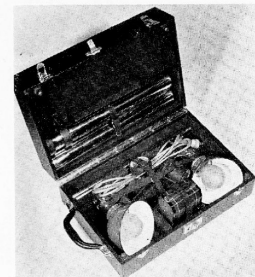
Its portability, in combination with its ability to accommodate all cameras weighing six pounds or less that have a provision for ground glass focusing, makes the GRAFLEX Copygraph a practical, flexible outfit.

Case open showing interior arrangement.

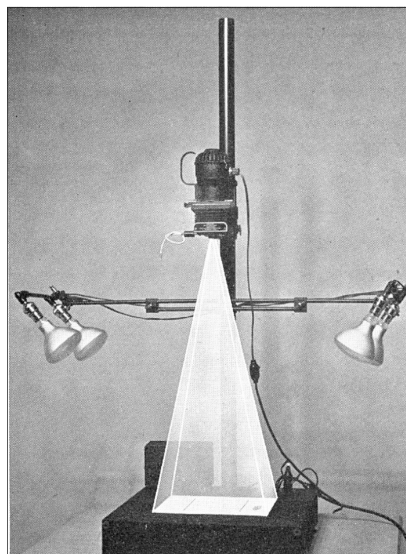
DETAILS

Dimensions of Carrying Case	Closed	17"x11"x6"
Dimensions of Base		17"x22"
Separable Upright Column—Height		30"
Diameter		2"
Additional Center Section of Column—Height		15½"
Maximum Weight of Camera Supported		6 lbs.
Weight of Copygraph Outfit complete, including the <i>National</i> GRAFLEX Camera		18 lbs.

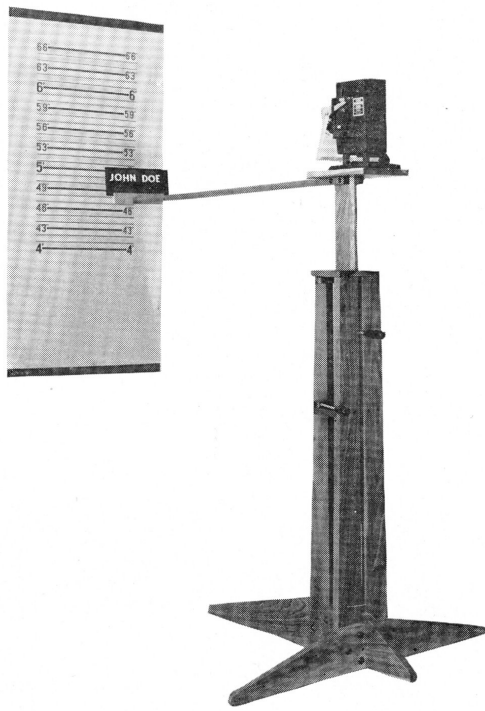
For prices please turn to supplement.



An advertisement from the 1936 Folmer Graflex Corporation catalog shows that a version of the Photorecord, the Copygraph equipped with a National Graflex camera, was offered to the amateur photographer.



Focusing the Photorecord with a projection method could be done by using the lamp house and a focusing panel (in place of the magazine) with two coarse-grained lines scribed on it. You had to move the lamp house and Photorecord until the copy material was covered, then move the lens with the focusing knob.



"Low price" \$312 Utility Identification Outfit, from 1951.

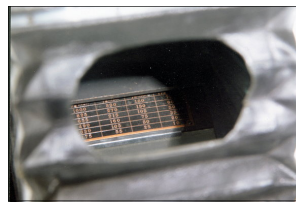


THE EVOLVING AUTO GRAFLEX

By Jim Chasse

Having several Auto Graflex cameras, I started to compare the 4x5 variations. What a transformation from the first one (serial number 9155) above, an approximate 1905 manufactured model, to the one made around 1915 (serial number 42325). All have the fixed horizontal Graflex-style back.

My earliest model has a very interesting accordion-style focusing hood and is hinged in the front. Ground glass viewing is done with a mirror, through an oval cutout in the rear of the hood, and the speed plate is inside and can be viewed only through the hole in



the hood. A push button releases the mirror and focal plane shutter, and the speed and tension plates are connected. Attention to detail is meticulous. Opening the front-standard door to exchange a lens, you will find the back side (interior when the front is closed) leather-covered. This quality feature is invisible when the camera is in normal operation, serves no purpose, and is not continued on the later Auto Graflex models that I examined. Although the Folmer & Schwing catalog of 1904 says that "Metal parts are of oxidized gun metal finish," my cameras appear to have a black painted finish.

GRAFLEX PHOTORECORD MICROFILM OUTFIT

**FOR PRESERVATION AND DUPLICATION
OF PRINTED, TYPED AND HAND-WRITTEN RECORDS**

Among the Many Groups For Which It Is Standard Equipment Are:

ATTORNEYS	RETAIL STORES	ABSTRACT COMPANIES
LIBRARIES	LABORATORIES	INDUSTRIAL FIRMS
HOSPITALS	PUBLISHERS	HISTORICAL SOCIETIES
SCHOOLS	INSURANCE COMPANIES	GOVERNMENT AGENCIES

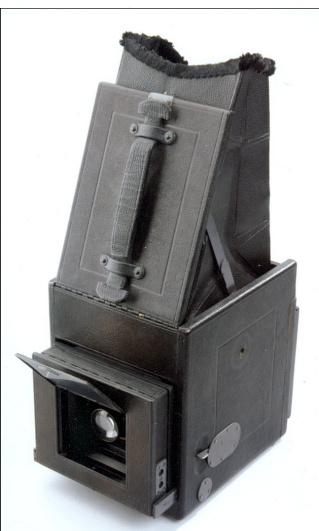
Cover of 1944 Microfilm Outfit brochure.

Early models of the Auto Graflex have beautiful brass lenses. This was my main attraction to these cameras. Later, models of Bausch and Lomb lenses changed to all black barrel mounts.

This early Auto was acquired with accessories, in a custom fitted case. It has a maker's label in it with a Boston, Massachusetts, address. The case has a built-in safelight, battery-powered, in the lid, so you could load the film and plate holders on assignment in any dark corner. A 4x5 roll film holder, made by Eastman Kodak Company, marked Model B, was also in the case. Fortunately, this custom fitted case preserved the camera to near new condition. The Bausch and Lomb lens is a brass f/4.5 Zeiss Tessar Series Ic, patented in 1903. Quite the setup for a turn-of-the-century working photographer.

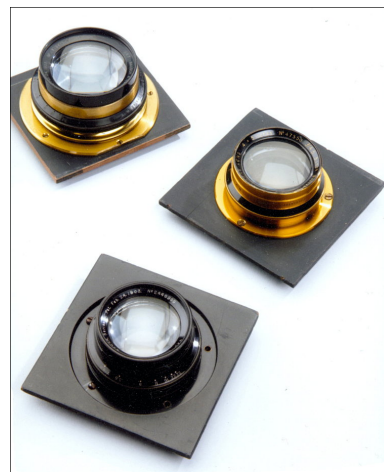


With my next Auto, also with an accordion hood (serial number 13584, ca. 1910), the button release has been eliminated and replaced with a lever release that would remain the standard through the Super D of 1948. Black paint now has replaced the leather-covered interior of the front standard door, and the metal parts now have an oxidized gun metal finish. The camera is fitted with a brass f/4.5 Zeiss Tessar lens.



With the next variation I acquired (above) (serial number 22299, ca. 1912. Until serial numbers were recorded by date around 1921, I estimate the date based on serial number ranges and catalog information.), the front hinge remains, but the top edge of the hood is "fur" lined, and it has a leather folding hood. The speed plate is mounted on the rear of the hood. Workmanship remained

high on this camera. Early catalogs stated that cameras were covered with the finest quality black Morocco leather. I acquired this camera in excellent condition, as it appeared to be used very little. I believe this was due to having been fitted with a beautiful brass f/5.6 Cooke lens, which was very difficult for focusing and viewing, compared to an f/4.5 Tessar or Taylor-Hobson Cooke. After all, these cameras were early versions of single-lens reflex cameras.



Top to bottom: brass Bausch & Lomb, brass Cooke and black Bausch & Lomb.

I acquired the final Auto Graflex at auction, fitted with an f/4.5 Taylor-Hobson Cooke lens. Next to a Bausch and Lomb brass lens, it looks like a piece of jewelry. As luck would have it, I did not have this 4x5 rear-hinge folding hood Auto Graflex. The camera was lacking in condition, but the Cooke lens more than made up for it. The folding hood



looks like simulated leather, the fur edge for the hood is gone, the hardware is simplified, and the barrel lens is now all black. To me, this best describes the evolving Auto Gaflex from a rather unique configuration to a rather common one. Acquiring this camera (serial number 42325) completed the basic style changes, and made this article possible.

But oh, those early brass lenses!!



Disassembled roll film holder from case at top left.

R. B. TELE. GRAFLEX

On pages 42 and 43 of his definitive book, The All-American Cameras a review of Graflex, Mr. Paine describes and illustrates the Telescopic Revolving Back Graflex, which was shown in catalogs from 1915 through 1923 in 3¼ x 4¼ and 4x5 sizes, with some made as late as 1926.

The examples shown in his book are both the 3¼ x 4¼ size. In order to help illustrate Mr. Paine's explanation of the evolution of the Tele. and its later use in the Super D, the 4x5 format is shown here.



4x5 Telescopic R.B. Graflex, serial number 27429, ca. 1912-1913. Also, see GHQ Volume 12, Issue 4.



4x5 R.B. Tele. Graflex, serial number 86809, ca. 1917.



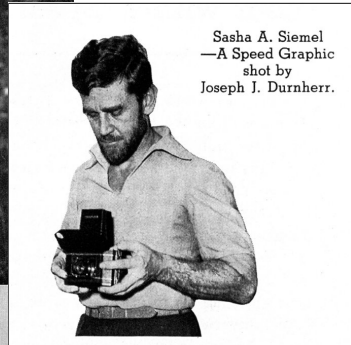
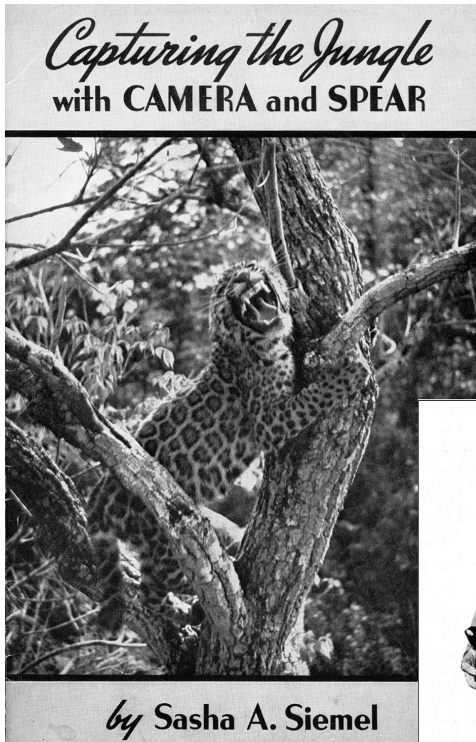
4x5 R.B. Series D Graflex, serial number 319306, 1943.

CHANGING TIMES

In 1937 Folmer Graflex published Capturing the Jungle with Camera and Spear, written by Sasha Siemel. The pamphlet opens with the sentence "Read about the Man Who Shoots Tigers with a Graflex and Kills Them with a Spear...."

"But he shoots all sorts of animals without mercy - with a National Graflex II."

"Nice kitty! We met this tiger [sic] in the open, miles away from bush or thick forest, so chased him on horseback until he was too tired to charge. But I didn't try to pet him. I Graflexed him instead."



Colonel Theodore Roosevelt and a native spearman prepare to journey back to camp with their kill.



Graflex Historic Quarterly

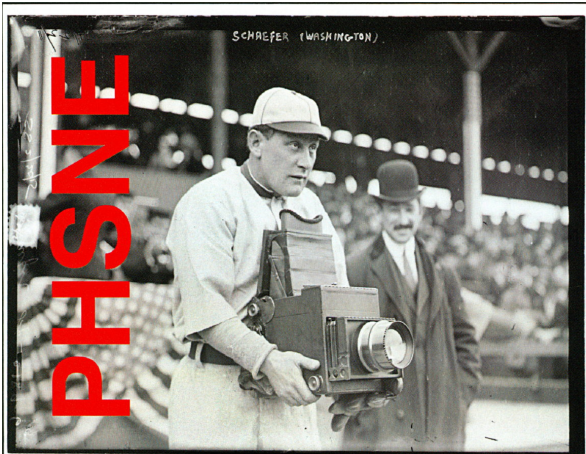
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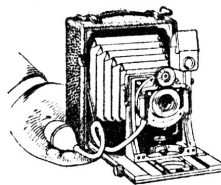
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 E-mail: metcalf537@aol.com



From the Photographic Historical Society of New England. phsne.org.

"Herman A. 'Germany' Schaefer (1876-1919), one of the most entertaining characters in baseball history trying out the other side of the camera, with a [Press] Graflex and an unknown lens. Library of Congress photo."
www.loc.gov/pictures/resource/ggbain.09131/

Can anyone identify the lens?



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 3. You can focus on the ground glass by means of rack and pinion.
 4. You can cut off foreground.
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