



# GRAFLEX Journal

SHARING INFORMATION ABOUT GRAFLEX AND THEIR CAMERAS

ISSUE 2 2023

## FEATURED

A Treasure From My Collection by David Bridge .....	1
Photographic Equipment of the U.S. Army Corps of Engineers in 1817.....	3
Cameras from the Smithsonian®.....	8
Dream Street book review by George Dunbar.....	9
Attachment. Graflex Lensboards prepared by Thomas Evans	

## photographic CANADIANA

Courtesy of the [Journal of the Photographic Historical Society of Canada](#) and Journal co-editor David Bridge. Their fine publication and Society are well worth your attention. [info@phsc.ca](mailto:info@phsc.ca).

## A TREASURE FROM MY COLLECTION...

2¼" by 3¼" Pacemaker

Speed Graphic

by David Bridge



Left, my 2¼" by 3¼" Speed Graphic. Right, 4x5 cousin.

I have always had a liking for the 2¼" by 3¼" roll film format, probably because the first camera thrust into my childhood hands was my father's folder, a Zeiss Nettar of the 6x9\* variety. Some 50 years (eek!) later, I still find the more modern square or 6x7 formats to be a compro-

mise. So the ideal combination of a folding, relatively light, quality 6x9 camera with all the crazy flexibility and unabashed mechanical dorkiness of a small Speed Graphic is irresistible - not to mention the sheer scanability and cropability of the vast 6x9 negative.

Having procured more cameras than I'll ever use, I had been hesitating to buy such a device, but in the fatal "just one more camera won't hurt" mode, I managed to find a very nice small Speed Graphic at a recent camera show.

Buying a miniature Graphic, just like most elderly cameras, is not necessarily straightforward. The internet markets are full of them at low prices that mostly fall into the undesirable category, usually due to the type of film back, missing or broken pieces, or general non-functionality. A combination of info from the classic website mentioned below, and talking to vendors, will help one avoid the grief of an unusable acquisition. Of course, I don't mean to imply that you must purchase a working unit and go out and shoot. The whole Graflex range is a great field for the "I want to collect one of every model of this camera" type. And the 4x5 versions endure as icons of 20<sup>th</sup> century press photography, frequently visible on movie prop houses' websites. You can enjoy the antics of actor/photographers pretending to be "press" in many a movie [see inset last page].

While 4x5 sheet film and film holders for the full size Graphic cameras are still fairly available, the situation for the 6x9 size is a bit more complex. The choice comes down to either finding 6x9 cut film holders and film, or clamping a 120 rollfilm holder on the back of the camera. Neither of these options can be accommodated by a simple search of the usual internet sites. I was lucky to find some reasonably clean holders at a camera show, but then the choice was to spend close to \$100 all-in for a box of new cut film. I was not even sure how to develop such film, since it is dimensionally different than 120 roll film stock.

\*Apologies for mixing metric (6x9) and English dimensions. Somehow a Zeiss requires metric, besides it's easier to type than 2¼" by 3¼". Graflex manuals tend to refer to camera models as "23" or "45".

### The Source of All Knowledge

We all owe an immense debt of gratitude to the longtime primary reference online for all things Graflex, [www.graflex.org](http://www.graflex.org). Sure, the site isn't flashy, but neither is your Crown Graphic Special! Just solid info in a compact package, including an active forum of user advice.

And so a rollfilm adapter seemed the best approach. Finding such an adapter of Graflex (or Singer) manufacture turned out to be difficult, in particular those designed to fit the smaller 6x9 size. And then the rumour was the earlier models were less than scintillating when it came to holding the film flat. This is still a work in progress; I have only once seen a small-size holder in 6x9 of a modern vintage, and the vendor would not separate it from the camera they were selling!



Frankencamera: Graphic with RB67 back.

Fortunately, it happens that the rollfilm backs for Mamiya RB67 cameras will fit on the small Graphics, and the earlier RB67 Professional ones work fine, lacking the complex double-exposure interlocks of the later Pro-S models. By a fluke, I had delayed my plan to get rid of my RB67 stuff, so I was in luck. Unfortunately, these holders are 6x7, so my

complete nirvana of 6x9 will have to wait until I find the genuine Graflex thing.

The RB67 back did fit, but rather loosely, so I was relieved to see that the images, at least those shot on a tripod, were reasonably sharp. However, my first experiments hand-holding the camera and using the body release were completely fuzzy - more experiments are required before I conclude the body release should be labeled "Blur".

## Rise and Fall

My modern small Graphic duplicates the pseudo view-camera "movements" of the larger 4x5 models, notably the ability to raise and lower the front lens standard. I am not an experienced view-camera type, but have used the front rise on my 4x5 Graphic to correct perspective on images of tall buildings.

I was curious if there were any practical use for a front rise feature on a camera whose ground glass was only 6cm high. Also, the painful lack of a rotating back made portrait views too difficult to play with for me. So off we went to our favourite architectural photo target, the Chapel of St. James-the-Less, in St. James' Cemetery, Toronto. Since the building sits on a hill, covering the entire spire usually involves pointing the camera up.

Slipping the front standard up to its highest, the chapel was framed and exposed. Then the standard was lowered to normal, the camera angled up and a comparison image taken.



Left image is taken with front standard at maximum elevation, and right image with lens on film axis. Can you see the difference? Is this even relevant in these days of curvy, distorted cellphone perspectives?

The shots were surprisingly similar, but I think the conical shape of the chapel spire made the correction less visible. Seeing this makes us wonder how many happy owners of miniature Graphics ever used this feature.

## LVFOO For the Nose

If you like the aesthetics and "camera-ness" of the Speed/Crown Graphic cameras, the appearance of the 2¼" by 3¼" Graphic is concentrated perfection. It's fascinating to compare big and small. Some parts were small enough to fit both full-size and the smaller camera, while many others are simply scaled-down versions, right to the decoration on the metal parts. I'm sure many Graflex Corp. designers went home to build model trains.

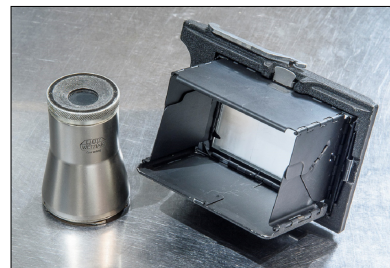
However, while the idea of a miniature camera with a ground glass back for composing and focusing seems like fun, for me the scaled down version of these on my Graphic presents a problem. My ancient presbyopic eyes will not focus well on the tiny ground glass, and either my eye, or my nose, but not both, will fit in the constraint of the metal hood shade.

Fortunately, somewhere in the distant past my co-editor had acquired a Leitz-produced magnifier (LFVVO in Leica-speak) apparently for use on early Visoflex housings. Happily this works very well as a focusing magnifier, and the chimney on the device is long enough that my proboscis does not need to enter the hood. Collectors will, however, be horrified that the LFVVO front element will make contact with the ground glass.

**Thanks to PHSC exec member Bob Carter for the heads-up on this great device!**

## Graphic Cameras: The Movie

It's always fun to watch vintage cameras as portrayed in the movies, and there are lots of Graphic cameos to pique our critical collector sensitivities. The trailer for a recent blockbuster below shows a short sequence of a press photographer scum. We will leave you to figure out just what the guy with the tilted front standard, or the other guy with the bellows racked out fully, were doing!



Left: Leitz LVFOO Magnifier, Right: Ground glass, hood etc. from the 2¼" by 3¼" Speed Graphic.





## PHOTOGRAPHIC EQUIPMENT OF THE U.S. ARMY CORPS OF ENGINEERS IN 1917

By Ken Metcalf

### Part III

Parts one and two (GHO 11,3 and 12,2) highlighted the U.S Army Signal Corps. This part shows some highlights from the U.S. Army Corps of Engineers Engineer Field Manual, Engineering Instruction Manual No. 2, both from 1917,<sup>1</sup> and other primary source material.

First, a brief overview of the history of engineers in the U.S. Army<sup>2</sup>.

1775 The Continental Congress authorized one Chief Engineer.

1805 A separate Corps of Engineers was authorized.

1838 A separate Corps of Topographical Engineers was authorized.

1864 The two Corps were combined.

1916 "Immediately preceding-WWI, the Army adopted the divisional system which constituted the combined arms structure used today. Key to this was the creation of divisional engineer regiments which numbered almost 1500 officers and men."

The British and French governments made the arrival of American engineers their top priority after the United States joined "The Great War" in April 1917.

The thousands of engineer troops that served in France in 1917 and 1918 contributed both to front-line and rear-support efforts. The forestry troops of the 20th Engineers produced roughly 200 million feet of lumber in France. Other engineer troops enlarged French port facilities, constructed more than 20 million square feet of storage space, and built 800 miles of standard-gauge rail lines, plus an equal distance in yards and storage tracks.

### PHOTO EQUIPMENT

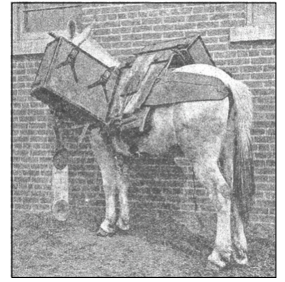
Prior to 1917, "ground" cameras were in limited use for arial mapping, by 1917 they were replaced by specially designed arial cameras (and overall photography became a part of the Signal Corps). Unlike the Signal Corps, that had many custom made tan leather covered cameras (right, 3A Kodak Special, courtesy George Eastman Museum), the Corps of Engineers use off-the-shelf Kodak and Graflex cameras. One exception was a specially Graflex-made tripod, used to support a non-Kodak sketching board.



Graflex was still owned by Eastman Kodak, although in 1917 it was designated as a "Department," due to anti-trust litigation<sup>3</sup>.

### Transportation

The purpose of the manuals was to teach topographical reconnaissance. As defined, it was the "production of maps of SMALL AREAS and routes of travel of sufficient accuracy for temporary military needs." Transportation was described as "divided into wheel and pack..." Further, "The great advantage of pack transportation is its mobility..." "Mules were used interchangeable for draft and pack service on the Mexican boundary survey, and pack mules were put into harness in the China campaign." "The mule is tougher and hardier than the horse, less subject to disease or to inflammation from slight injuries, and usually yields more readily to treatment."<sup>1</sup>



### Tripod and sketching board

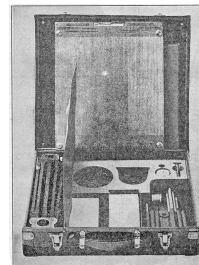
A tripod was custom made by Graflex for the U.S Army. It is very similar in appearance to the traditional fold and slide cherry wood tripod patented in 1903 (731,879), "...made of selected straight-grained cherry, soaked in an oil bath for ten days before being finished. The wood is then rubbed down and shellacked." This tripod was sold until ca. 1942.



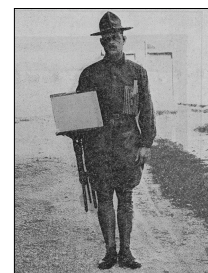
The tripod is dated 1914, has three leg sections, an approximate 4 1/2" top, a 36" extended height (to accommodate a waist-level sketching board), and a collapsed length of 15". To accommodate its various users/makers, stamped on the underside of the head are "Eastman Kodak Co.; U.S Engr. Dept.; and Folmer & Schwing Div."



Okay, the sketching board is not Graflex made. However, it is an integral part of the narrative and will be an integral part of my plant stand.



Sketching board and tripod in case, and board with instructions<sup>3</sup>.



## Cameras

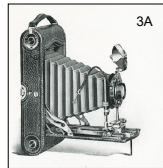
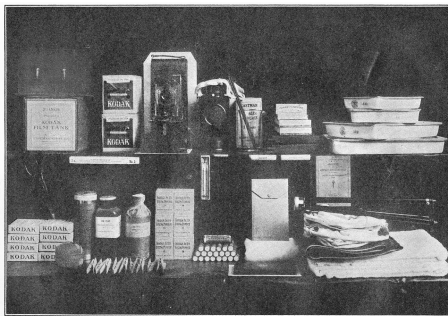
Although the Signal Corps Photographic Section (created in 1917) was responsible for all Army still and motion picture photography, in support of the Corps mission of engineering and construction, photographic equipment and procedures were set out in the 1917 Engineering Instruction Manual. According to the manual:

"Each Engineer company is provided with a 3A auto-graphic [sic] and each regiment and mounted battalion unit with a 3A Graflex camera. The remainder of the equipment is about the same for all units, except that the Graflex camera outfits have about twice the amount of supplies as the other. Both of these standard equipments [sic] are shown in the two [following] plates."<sup>1</sup>



Lacking a good Corps of Engineer photograph, the one at left is from the Signal Corps. From left to right, 3A Graflex, and 3A Kodak. According to the manual, the Kodak camera was Autographic, but by 1917 the 3A Graflex was also Autographic.

### No. 3 Autographic Kodak Outfit



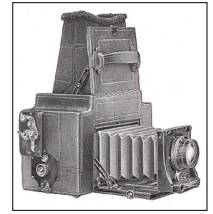
<b>Photographic equipment:</b>	
Camera, 3A kodak.....	1
Tripod, metal, folding.....	1
And the following accessories: Rubber blankets (2); canvas buckets (2); bulb, rubber; printing frames, 5 by 7 inches (2); graduate, 8 ounces; ruby lamp; Photographer's Manual; stirring rods (2); shears, 8 inches; film tank, 3½-inch; thermometer; towels, bath (4); and agate trays (4);.....set..	1
<b>Photographic supplies:</b>	
Albums for 3A films, size 3¼ by 5½ inches.....	1
Books, photo note.....	1
Developer, M. Q. and Pyro, 8 boxes each, boxes.....	16
Films, 3A size, 6 exposures, size 3¼ by 5½ inches.....	24
<b>Photographic supplies—Continued.</b>	
Hypo acid, in ¼-pound boxes, boxes.....	24
Paper, 3A developing, size 3¼ by 5½ inches (1 gross), printing out (1 gross), gross.....	2
And the following articles: Potassium bicarbonate, 1 pound; twine ball (2 ounces); cheesecloth, white, 3 yards; photo clips (12); formalin, 1 pound; intensifier, tube (1); pushpins (12); potassium bromide tabloid tube (1); reducer tube (1); and wicks, ruby lamp (6).....set..	1

Lacking examples and detailed records, it is unknown how the models were distributed, or if the regular model was given the custom leather, but from the GEM example, a Wal-lensak Optimo shutter was fitted with a B & L Tessar.



United States commander, General Pershing, on April 17, 1918, issued the following order "Send no more 3A kodaks...., unsuited to conditions here." At this level, it can be assumed it applied to both the Engineer and Signal Corps. From camera orders, it appears the Speed Graphic was deemed more suited for their "conditions."

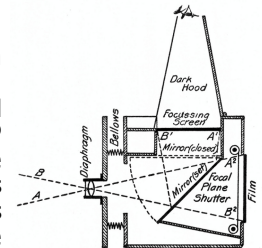
### 3A Graflex Outfit



Photographic equipment: Camera, 3A Graflex, with folding tripod (Crown No. 2).....	1
And the following accessories: Agate trays (4); bath towels (4); canvas buckets (2); chamois skin; duplicating tanks, set; film tank; graduate, 8-ounce; photographer's manual; printing frames, 5 by 7 inches (2); rubber blankets (2); ruby lamp; shears, 8-inch; spotting brush; stirring rods (2); thermometer.....set..	1
<b>Photographic supplies:</b>	
Developer, M. Q. and Pyro, tank, boxes of each.....	15
Films, 3A, 6-exposure.....	48
Hypo acid, ¼-pound boxes.....	48
Paper, developing, 3A size.....gross..	3
And the following: Absorbent cotton; alcohol, denatured, 1 pint; cheesecloth, white, 3 yards; film albums, 3A size (2); formaline, 1 pound, intensifier, 6 tubes; opaque, 1 tube; photo clips (24); photo notebooks (2); potassium bromide, tabloid, 6 tubes; pushpins (24); twine, hemp, 1 ball; wicks for ruby lamp (6).....set..	1

"Practically all that has been said with reference to lenses, stop, time of exposure, etc., in connection with the 3A Kodak Autographic camera is equally applicable to the 3A Graflex camera.

This camera differs from the former: First, in that it is equipped with a finder which, when viewed from above, shows an image reflected from a mirror set at an angle of 45° to the axis of the finder lens. The great advantage of this camera is that it is focused when the finder is focused. The cross section of the camera shows the position of the mirror when set for focusing as well as the focal plane shutter, which operates just in front of the film. This shutter is actuated by springs and has different sized slits so that varying amounts of light reach the film, depending upon the width of the slit used.



The paths of the rays A and B through the lens to the mirror and thence to the focusing screen are shown in diagram. It will be noted that the image is erect. When the mirror is released, an instant before the exposure, the rays pass directly through the shutter slit to the film as at A2 and B2."

The Autographic feature was available for the 3A Graflex, but its use was not described in the Military Photography manual.

With B. & L. Kodak Anastigmat Lens, *f*.6.3, No. 4  
With B. & L. Tessar Lens, Series Ic, *f*.4.5, No. 15a

Although not specified in camera orders, the above U.S.-made lenses were shown in the 1917 Graflex catalog.

## Lenses

The following is a quote from the World War Service Record of Rochester and Monroe County.<sup>3</sup> Blatant backslapping removed!

For the Bausch & Lomb Optical Company, "Prior to the World War no profitable high-grade optical glass manufacturing had been conducted in America, such glass had been obtained, very largely, from factories in Germany, Belgium, France and England. After the World War had been going on for nearly three years, the available supply of imported glass in the hands of the American manufacturers had become depleted seriously, in fulfilling our War contracts for the Allied powers, then engaged.

In those countries where optical glass had been produced before the World War, the essential processes had been conducted in absolute secrecy by the manufacturers. England maintained strict silence as to their methods of manufacturing the higher type of glass. Thus, America was forced to proceed, unaided, to develop in a few months' time an industry in which well-known European scientists had been occupied during the preceding fifty years.

Fortunately, our dependence upon the European nations for this material had for some years been the cause of considerable concern, and for two or three years before the outbreak of the World War, experiments had been conducted by the Bausch & Lomb Optical Company in a group of buildings on the Genesee River flats.

So far as the optical glass supply was concerned, America's position upon entering the World War was very bad.

Expressed in figures, the actual situation at the time our country entered the War was this: Bausch & Lomb Optical Company's plant was producing optical glass at the rate of about 2,000 pounds per month. The total output of real optical glass in America at that time amounted to something over 2,000 pounds per month, while the estimated requirements of the General Munitions Board in April 1917, amounted to about 2,000 pounds per day.

At the close of the year 1917, Bausch & Lomb Optical was producing 40,000 pounds per month of good optical glass."

For Eastman Kodak, "The development of aerial photography was, logically enough, the important arm of the service which the War imposed on the Eastman Kodak Company."<sup>3</sup> In addition to the large number of aerial cameras produced (many using Folmer patents), the company continued to produce a full line of cameras. One of their "photographic problems to solve" was the "design and manufacture of lenses specifically adapted to aerial photographic work."

"The lens designers of the EKC were at work on the design of aerial lenses as early as April 1917. The 10", 20", and 48" Hawk-Eye Aerial lenses. Those in use abroad were for the most part portrait lenses."<sup>3</sup> "Whether any of these possess merits which will lead them to be preferred over pre-war designs, when the latter can again be manufactured, remains to be seen."<sup>4</sup>

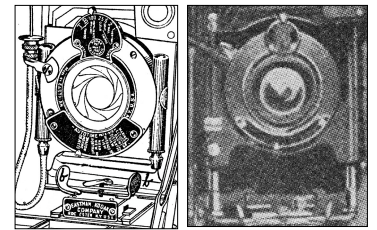
Below is a sample of 1918 "orders to date." Lacking later orders and sample cameras, it is not known if any military cameras had an olive drab finish.

100 3A Kodaks Special, B & L Lenses, OD finish  
50 3A Graflex, B & L Lens, OD finish  
30 Graflex Cameras, 4 x 5, OD finish, B & L Lens  
4 Cameras, Cirkut #10 with Turner Reich Lens  
4 Cameras, 3A Kodaks, Special, Kodak Anastigmat Lens

## Shutters

For some reason, the Corps of Engineers wrote in some detail about the different f/stop systems. The one in common use today was referred to as the "standard British" f/stops system (4, 5.6, 8, 11, 16, 22, 32, 46 & 64), while "most American camera stops are 1, 2, 3, 4, 8.16, 32, & 64." Military sample suggest the "British" system was used. Todd Gustavson of the George Eastman Museum writes that the "EKC 3A FPK Signal Corps camera in the collection uses f/stops. I have never seen a Graflex camera marked in US stops, so I assume it also would have used f/stops. While I can't say for sure as Kodak in fact did use both US and f/stops at that time, the cameras intended for the more "serious" photographer used f/stops. Quoting Dr. Kingslake on page 13 of his book A History of the Photographic Lens, 'For many years all of the lower-priced Kodak and other cameras were marked on this system,' meaning the US system. I don't think either of these cameras falls into the lower-priced category."<sup>B</sup>

Finally, their manual shows an Automatic shutter for the Kodak camera. With this shutter, an indicator is moved to a described weather/coverage conditions, to determine the exposure. The picture on a later page is quite



Pages 10 & 17

different. Go figure! For the Graflex, a CHART was recommended. Kodak focusing is estimated based on the selected coverage. With the Graflex, it is draconian.

With both variances, I believe it was caused by the rapid improvements made by Eastman Kodak.

## Civilian Wartime Camera Use

"Signalmen began documenting the war aboard the ship Baltic, taking still and motion pictures of Pershing and his staff. The Army controlled all combat photography, and civilian photographers were not permitted to operate within the zone of the American Expeditionary Force (AEF). A photographic unit served with each division and consisted of one motion-picture operator, one still photographer, and their assistants. Each Army and corps headquarters had a photo detachment of one officer and six men. Photographic units also served with such private agencies as the American Red Cross and the Young Men's Christian Association (YMCA) to document their activities. Photographic technology had progressed considerably since the days of Mathew Brady, and a combat photographer in World War I could develop a picture in fifteen minutes using a portable darkroom. By 1 November 1918 the Signal Corps had taken approximately 30,000 still pictures and 750,000 feet of motion pictures that were used for training, propaganda, and historical purposes. Wartime censorship kept the public from seeing the most graphic images, however. The Signal Corps' invaluable photographic collection resides today in the National Archives."<sup>5</sup>

Later, restrictions were modified, as set forth in information presented by the George Eastman Museum, "Ground photography in war zones was limited to Signal Corps photographers until mid-1918, when by the decree of General John Pershing, press credentialed professional civilian photographers were granted supervised access to U. S. troops in combat zones. General Pershing's decree was likely due to the success of the American forces near the end of the war." A review of

photographs at the National Archives demonstrates the success of the policy.

Another perspective on wartime photography is given by the Eastman Kodak Company in this advertisement.



The parting gift

A Vest Pocket Kodak

It is monotony, not bullets that our soldier boys dread. No fear, when the time comes, they will uphold bravely the traditions that are dear to every loyal American heart. But in the training camps and during the months of forced inaction there are going to be some tedious, homesick days—days the Kodak can make more cheerful.

Pictures of comrades and camp life, pictures of the thousand and one things that can be photographed without endangering any military secret will interest them and will doubly interest the friends at home. Tens of thousands of brave lads in the camps and trenches of France are keeping their own Kodak story of the war—a story that will always be intense to them because it is *history* from their viewpoint. And when peace comes it will make more vivid, more real *their story of their war* as they tell it again and again to mother Sister and Wife and little

The nation has a big job on its hands. It's only a little part, perhaps, but a genuine part of that job to keep up the cheerfulness of camp life, to keep tight the bonds between camp and home. Pictures from home to the camp and from camp to the home can do their part.

There's room for a little Vest Pocket Kodak in every soldier's and sailor's kit. The expense is small, six dollars. The cheerfulness it may bring is great. They are on sale by Kodak dealers everywhere.

## Conclusion

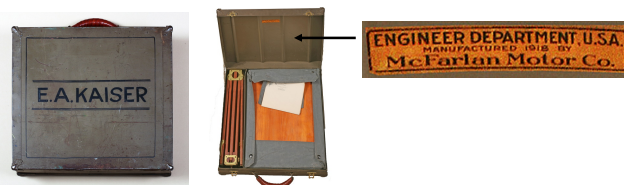
Although the two cameras used by the Corps of Engineers were a very minor part of their mission, I believe that, overall, the material that was found is an interesting addition to the history of Graflex.

## Footnotes:

<sup>A</sup>In 1930, Eastman Kodak and Bausch & Lomb companies contributed articles to World War Service Records, published by the City of Rochester, NY. Both articles are full of information on their development of aerial photography equipment and the development of U.S. optical glass. Two quotes. "The development of aerial photography was, logically enough, the important arm of the service which the War imposed on the Eastman Kodak Company." "Prior the World War, no profitable high-grade optical glass manufacturing had been conducted in America."

<sup>B</sup>From Eric Reinert. Headquarters, U.S. Army Corps of Engineers Office of History.

"Model 1913" explained. Generally the year it was authorized by use by the Army is shown, although that would not have always translated into an immediate appearance (that is, "use.") The caveat was that existing stocks of the item it was to replace were to be used first.



A unique item in their collection is a donated "Reconnaissance set" in a green metal case (Labeled as being made in 1918 by the McFarlan Motor Co.) Inside is a Graflex tripod, a "wooden platform used as a desk, a wrist worn notepad," and the Engineer Field Manual. In addition, the metal case has the name E. A. Kaiser, a boutique design house in Hollywood, California. Les Newcomer did an in-depth search, but could not find a connection with an auto company and the Corps of Engineers. Les' research was prepared in the form of a report from the Sam Spade Detective Agency. His summary follows: "And just to make this report as complete as possible, I will add that I could not find any familial connection between said E.A. Kaiser and Kay Kyser, Kaiser Wilhelm, or Henry J. Kaiser, the west coast ship building magnate, but mainly known today for his ill-fated Kaiser-Fraser Car Company. End of story. End of report. Signed, Sam Spade." A copy of the full report is available from the Graflex Journal!



Subject.	Figure moving at right angles to camera.	At 45°.	Figure moving toward camera.	Figure moving at right angles to camera.	At 45°.	Figure moving toward camera.
100-yard race.....	1-655	1-490	1-270	1-330	1-270	1-130
1/4-mile race.....	1-655	1-330	1-215	1-330	1-215	1-105
1-mile race.....	1-655	1-330	1-215	1-330	1-215	1-105
Swift skater.....	1-1,000	1-655	1-330	1-490	1-330	1-175
Man walking rapidly.....	1-160	1-105	1-50	1-75	1-50	1-25
Horse walking rapidly.....	1-160	1-105	1-50	1-75	1-50	1-25
Bicycle, ordinary pace.....	1-330	1-215	1-105	1-160	1-105	1-50
Bicycle racing.....	1-655	1-490	1-215	1-330	1-215	1-105
Fast horse trotting.....	1-1,000	1-655	1-330	1-490	1-330	1-175
Horse galloping.....	1-1,200	1-825	1-490	1-655	1-490	1-215
Horse jumping.....	1-1,200	1-825	1-490	1-655	1-490	1-215
Train or automobile, 35 miles an hour, distance 100 feet..				1-330	1-215	1-105
Train or automobile, 60 miles an hour, distance 100 feet..				1-655	1-490	1-215

TABLE II.—7-inch equivalent focus lens.

DISTANCE FROM OBJECT.

Stop.	15 feet.	18 feet.	24 feet.	30 feet.
	Depth of field of focus.	Depth of field of focus.	Depth of field of focus.	Depth of field of focus.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
F-5 or U. S. 1.56.....	31	45	80	126
F-6.3 or U. S. 2.50.....	40	58	102	161
F-8 or U. S. 4.....	51	74	132	211
F-11 or U. S. 8.....	71	103	189	311

Guide to intermediate settings for 1-6 tensions.

Sources:

<sup>1</sup> Engineering Field Manual Parts I-VII, Fifth Revised Edition, Government Printing office, 1917, pp. 541.  
Military Photography, Engineer Instruction Manual, No. 2, Government Printing Office 1917, pp. 67.

<sup>2</sup> The History of the Corps of Engineers, U.S. Army Engineer Museum, Fort Leonard Wood, MO., and <https://www.usace.army.mil/About/History/Brief-History-of-the-Corps/World-War-I/>

<sup>3</sup> World War Service Record, of Rochester and Monroe County, NY, Volume III, City of Rochester, 1930.

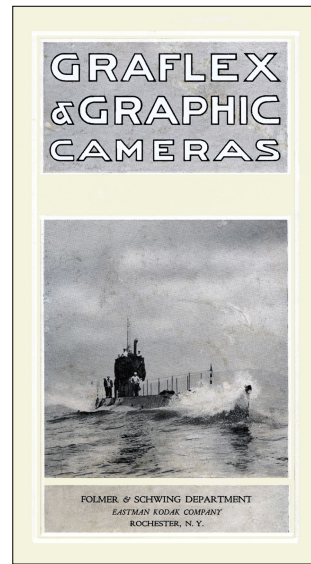
<sup>4</sup> Ives, Herbert, Airplane Photography, J.B. Lippincott, 1920. p. 44.

<sup>5</sup> Raines, Rebecca Robbins, Getting the Message Through, Center of Military History, U.S. Army pp. 188-9.

General References:

Kodaks and Kodak Supplies, 1917, Eastman Kodak Company, Rochester N.Y, p. 64.

A special thanks to Bruce Thomas for scanning a copy of the rare 1917 U.S. Army engineer manual Military Photography for the Graflex Journal.  
 Bruce's Graflex camera site (<http://graflex.coffsbiz.com/>) is well worth a visit.



**THE 3A GRAFLEX**  
*Autographic*

SPECIFICATIONS  
FOR FILM ONLY

Dimensions, 10 x 5 x 6½; focal capacity, 10 in.; weight, 7 lbs.; size of lens board, 3½ x 3½ in.; minimum focus of lens accommodated, 6¼ in.

**THE PRICE**

3A Graflex without lens . . . . .	\$ 75.00
With B. & L. Kodak Anastigmat Lens, f/6.3, No. 4 . . . . .	101.25
With B. & L. Tessar Lens, Series 1c, f/4.5, No. 15a . . . . .	125.00
Leather Case for 3A Graflex . . . . .	8.00
Extra lens boards, each . . . . .	.50

6

**THE 3A GRAFLEX**  
Patent's Patent, February 5, 1907, and April 21, 1908

**A**ll the advantages of a reflecting camera of the highest possible type, with film simplicity and convenience, combine to make the 3A the most popular of the Graflex models. The 3A Graflex makes pictures of pleasing proportions—3½ x 5½, on regular 3A Kodak Film, which may be obtained wherever camera supplies are sold.

The 3A Graflex is fitted with the Autographic feature, which allows the operator to date and title the negatives permanently and almost instantly, at the time the picture is made.

Built into, and part of the 3A Graflex, is the regular Graflex Focal Plane Shutter, giving instantaneous exposures from 1/16 to 1/500 of a second, as well as time exposures of any duration. The front of the camera is exceedingly rigid and large enough to accommodate Anastigmat lenses working at the highest speed.

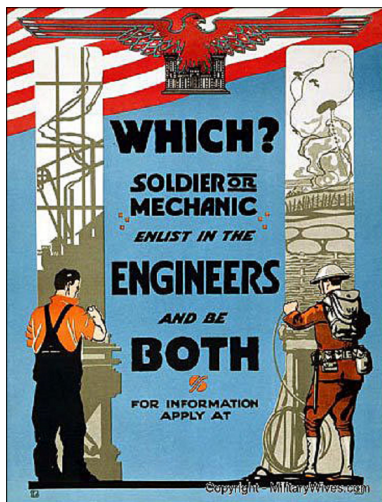
A metal stop is adjusted to the track at a point indicating the "universal focus" of the lens and when the front is drawn out to this point, distant objects may be photographed without focusing.

The focusing hood opens automatically when the cover of the camera is raised, and is detachable, to allow easy access to the ground glass screen when prolonged use makes cleaning necessary.

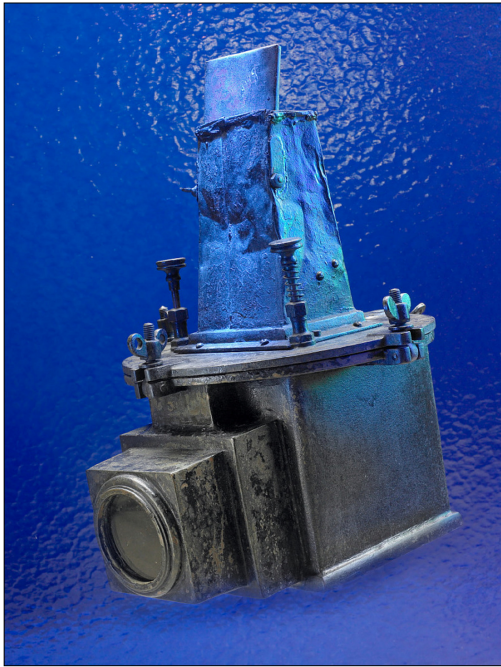
The surplus space at each side of the camera is converted into film storage pockets, each carrying two rolls of film. This permits the operator to carry in the camera sufficient film for fifty exposures.

7

Recruiting posters.



From the



Folmer & Schwing Division, EKC.

This underwater camera housing holds an Auto Graflex 4x5" camera body. It was first used by W.H. Longley of Goucher College in 1918. It was later used to take the first underwater color autochrome photographs.

Measurements 21¼ x 153/16 x 14<sup>3</sup>/<sub>8</sub>".

Graflex Corp.

Charles and Anne Lindbergh used this camera, a Model C, during archeological surveys of Pueblo ruins in the Southwest and Mayan ruins in Mexico in 1929. Flying a Curtiss D-12 Falcon, they explored and photographed the Canyon de Chelly area in New Mexico and found several Indian ruins hidden from ground view.

Lens Taylor-Hobson; Cook f 2.5 Anastigmat number 157701, 6½ in. Dimensions 8½ x 5½ x 7¼"



Graflex Inc.

This lens is from an index camera used from 1962-1972 onboard the U.S. Corona photoreconnaissance satellites. Index cameras took a small scale photograph of the area being covered by the main panoramic cameras and, in conjunction with imagery from the horizon cameras and stellar camera, enabled photo interpreters to more easily determine the exact terrain being photographed by the main cameras.

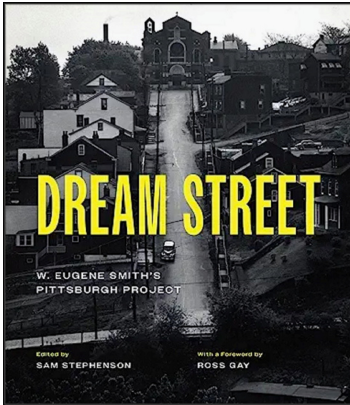




## Graflex Journal

The *Graflex Journal* is dedicated to enriching the study of the Graflex company, its history, and products. It is published by and for hobbyists/users and is a not-for-profit publication. As such, we believe we qualify as a 501(c)(3) educational publication.

Masthead: Alfred Stieglitz ca. 1904 or 1907 by Heinrich Kuhn.



Book review by George Dunbar, July 2023  
(From PHSC online report [phsc.ca](http://phsc.ca))

*Dream Street, W. Eugene Smith's Pittsburgh Project*, edited by Sam Stephenson with a forward by Ross Gay, University of Chicago Press, 177 pages, \$39.00.

*Dream Street* is a collection of hundreds of faithfully reproduced images and a wonderful memorial to the photography of W. Eugene Smith. This is his epic photographic essay on Pittsburgh, PA, during the 1950s. Smith's herculean task to produce and publish this magnificent work during his lifetime (1918-1978) is revealed in fine detail by editor Sam Stephens, along with the photos by Smith.

Smith is considered by many to be one of the greatest photo-journalists of the 20th century. In this new publication, we learn much of the intention, efforts and hardships during the making of his greatest lifetime achievement.

The result is an amazing revelation of the very life of a city; its industry, atmosphere, people, beauty, joy and suffering. This book will surely become one of the valued books of photography to grace the library of any photographer and admirer of stunning images.



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Publisher: Ken Metcalf

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For your nearest Graflex dealer, consult your classified telephone directory.

**GRAFLEX**  
PRIZE-WINNING CAMERAS  
Write for information Dept. PM-15,  
GRAFLEX INC., ROCHESTER 8, N. Y.

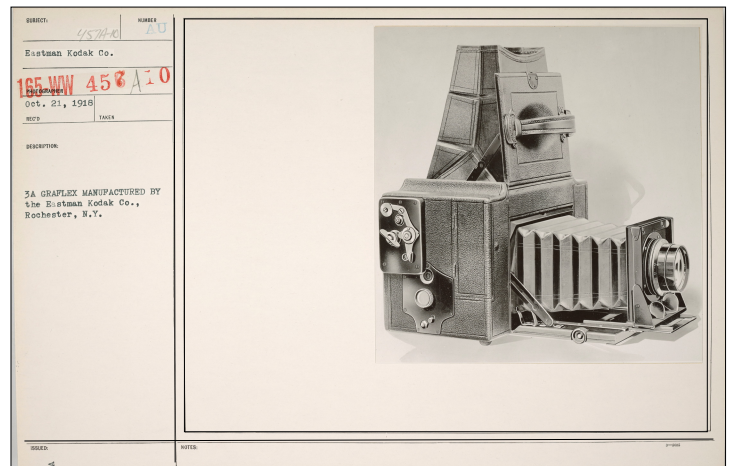
1955 ad courtesy  
George Dunbar

### LENSBOARD ATTACHMENT

By Thomas Evans

Attached is an extensive listing of Graflex lensboards compiled by *Graflex Journal* editor Thomas Evans.

This list is compiled from catalogs and sample cameras.



3A Graflex inventory sheet at National Archives, 1918.

For the 18th consecutive year, we're giving photographers with the many vintage, collectable, and home-made cameras out there the opportunity to order selected custom sizes of ILFORD sheet film and other specialist products without the constraints of the usual minimum order quantities.

For the product list and participating resellers visit:- <http://ow.ly/5BV150OtcNp>

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<http://ow.ly/5BV150OtcNp>

From Graflex Facebook page, courtesy Thomas Evans.