Welcome to the Graflex Journal, the successor to the Journal of 1993 and the Graflex Historical Quarterly of 1996. Our goal of presenting interesting and informative articles about Graflex and its cameras remains the same, although the time of publication will be guided by the availability of articles. “GHQ” refers to the Graflex Historic Quarterly, whose issues are available by email.

Thomas Evans has been added as an editor, along with Les Newcomer and Ken Metcalf.

THE 1A SPEED KODAK AND THE 1A GRAFLEX
By Thomas Evans

The 4A Speed Kodak preceded the 1A Speed Kodak

In 1908 the Eastman Kodak Company introduced the 4A Speed Kodak. This camera used “4A” (No. 126) roll film, producing six 4¼ x 6½ (half-plate) negatives per roll. Unlike the popular box and folding cameras, this model had a focal plane shutter. The Kodak focal plane shutter had an adjustable curtain opening, and combinations of six opening widths and six curtain tensions yielded 36 shutter speeds from 1/5 to 1/1000 second, plus Time. This camera was designed primarily for the photographing of rapidly moving objects. The 1910 Kodak catalog entry stated: “Equipped with this type of shutter, the 4A Speed Kodak is ideal for photographing all objects in rapid motion --- such as athletes, race horses, automobiles, railroad trains, birds on the wing --- and it is also well adapted to home portraiture.” Focusing was by scale, and view-finding was by reversible brilliant finder. A ground-glass focusing panel could be fitted to the camera to allow the use of double plate holders.

The camera was large, nearly a foot long by 6½ x 3½-inches, and weighed six pounds. Certainly not a camera to be trifled with! The price in 1910 with a Bausch & Lomb Zeiss Tessar f/6.3 lens was $111.50, making it among the most expensive cameras in the Kodak line-up.

The 1A Graflex

In 1909 the Folmer & Schwing Division of the EKC introduced the 1A Graflex, which used “1A” (No. 116) roll film and produced six or twelve 2½ x 4¼ negatives per roll, depending on the length of the roll film loaded. This camera appears to have been designed for traveling tourists, as it combined the convenience of roll film with the Graflex single-lens-reflex focusing capability and the sophisticated Graflex focal plane shutter. In 1909 this camera, with a Bausch & Lomb Zeiss Tessar Series IIb f/6.3 lens, cost $94.50. The camera was advertised as being “exceedingly compact” at 9½ x 5½ x 3-inches in size and just over 3½ pounds in weight. This model was produced until 1925, by which time the very reliable Graflex Series B had surpassed it in popularity.

The 1A Speed Kodak

Also in 1909, perhaps realizing the advantages of producing a less ponderous camera than the 4A Speed Kodak, which also incorporated a focal-plane shutter, Eastman Kodak introduced the 1A Speed Kodak. This camera, apparently made in rare collaboration with the F&S Division, was essentially the 1A Graflex without the reflex mirror focusing. It sported the same shutter, the same fine-grain

1A Speed Kodak serial number 2408, left, and its “Darwinian twin,” the 1A Graflex, courtesy Todd Gustavson of the George Eastman House.
Moroccan leather covering and gun-metal finished hardware as the 1A Graflex. It was advertised as having the “well-known Graflex focal plane shutter,” and its utility was described in the 1910 Kodak catalog as: “With focal plane shutter efficiency, yet so light and compact that it can easily be carried in a top coat pocket, and so simple to operate that a beginner can successfully use it, this recent addition to the Kodak family has met with high favor. The mile-a-minute automobile, express trains traveling at full speed, race horses, athletes at their highest strain, instantaneous indoor pictures, home portraiture, ordinary time exposures --- these are all as one to this remarkable Kodak.”

The very compact No. 0 Graphic, which was also introduced in 1909, also had a mirror built into the viewfinder, with the difference that the 0 Graphic mirror could be positioned at a 45-degree angle to allow deceptive-angle viewing. That is, the photographer could appear to be pointing his camera away from his actual subject, and so secure a candid shot.

Besides using a 45-degree mirror in the viewfinder, the No. 0 Graphic and the 1A Speed Kodak shared the basic concept of a roll-film camera with focal plane shutter, and they shared many parts, such as the particular style of the fold-down winding keys and the latches for the back. They also shared several patents, as listed on the back panel of each camera. Since the 1A Speed Kodak lacked the reflex mirror that would protect the film from light as the focal-plane shutter was wound, this camera’s shutter also included an “automatic safety blind” that covered the film gate and protected the film. As the photographer pulled back on the shutter release lever, this safety blind was rolled up out of the way, and it then snapped back over the film gate when the shutter lever was released. (See U.S. Patent 994,914)

In 1910, with a Bausch & Lomb Zeiss Tessar IIb No. 4 (5-3/8”) f/6.3 lens, the 1A Speed Kodak sold for $72.50, or about 23% less than the 1A Graflex, and 35% less than the 4A Speed Kodak.

All three cameras were offered with a selection of Kodak, Bausch & Lomb, Goerz and Cooke lenses, with f/4.5 and f/6.3 maximum apertures, at different costs. The camera could be purchased without a lens so that the photographer could add a lens of his or her choosing.

The Speed Kodak I looked at, serial number 1993, is fitted with a Zeiss Kodak Anastigmat F/6.3 No. 2 lens (focal length of 5") in an Ilex Optical Co. leaf shutter. While the Zeiss Kodak Anastigmat F/6.3 No. 2 was one of the lenses originally offered with the camera, none of the ads or catalog entries I found listed any lens other than barrel lenses. It is likely that a previous owner had this lens fitted, probably wishing to have the choice of using either the focal plane or leaf shutter as best fit the circumstances, just as many photographers have wished to have on their Speed Graphics.

Production Notes

While production of the 1A Graflex continued until 1925, both the 1A & 4A Speed Kodaks were discontinued in 1913. Total production for the 1A Speed Kodaks has been reported to be about 2,100 cameras, and for the 4A Speed Kodak, around 4,000 cameras.
Kodak, 1,000 cameras, although I have been unable to find an original source for this information.

The Autographic feature, allowing the photographer to take notes on the film space between the negatives, was added to the 1A Graflex in 1915, when Eastman Kodak introduced it generally to many of its cameras. Oddly, the 1A Speed Kodak that I looked at, reported to have gone out of production in 1913, also has the Autographic feature. In a conversation with Mr. David Silver, he stated that a replacement back with the Autographic feature had been made available for this camera, so it is reasonable to conclude that the back on this camera was updated sometime after 1915.

The Speed Graphic was introduced in 1912, and it is likely that its favorable reception contributed to the Speed Kodaks being discontinued in the following year. In 1915 the price for a 4x5 Speed Graphic with a Bausch & Lomb Zeiss Tessar Ic f/4.5 was $75.50 (with the Zeiss Kodak Anastigmat f/6.3, it was only $38.25), even less expensive than the 1A Speed Kodak or the 1A Graflex. It may be that the name "Speed Graphic" was derived from "Speed Kodak."

Can you still get film for that camera?

The No. 116 format film was discontinued by Kodak in 1984. The film is 70mm wide, and may sometimes be available as (re-spooled by Film for Classics) 116/616 film from Central Camera Co., Inc. of Chicago. The smaller 616 spool has a smaller key-slot to mate with the winding key than does the 116 spool, so the 616 spool cannot be used as a take-up spool in this camera, but it works quite well as a film supply spool.

The 120 spool is about ¼" shorter than the 116 spool, and one can make, or buy commercially made, 1/8 inch spacers to adapt 120 film to fit cameras made for No. 116 film. The resulting ~ 2 x 4¼-inch negative would have an aspect ratio of about two to one and is, in effect, a moderate panoramic image.

I found the 1A Speed Kodak to be solidly made, compact and a very capable camera, which could be stashed in one’s overcoat pocket and yet produce negatives large enough for contact printing. The relationship it has to the Kodak and Folmer & Schwing cameras is fascinating. One can see how the designers were trying to make the cameras smaller while retaining desirable features. And if one compares the overall design of the 1A Speed Kodak with the first models of the 35mm Leica cameras, it is easy to imagine that Oskar Barnack, who made his first prototype for a 35mm camera in 1912, found some inspiration in the design of the 1A Speed Kodak.

References:
Here are excerpts from *Camera Craft* magazine from July and August 1923, provided by Bob Lansdale of the Photographic Historical Society of Canada (http://www.phsc.ca). The articles provide an interesting view of photojournalism from the era of flash powder and glass dry plates, as set out by commercial photographer L. G. Rose.

**NEWSPAPER PHOTOGRAPHY**

By L. G. Rose  
(Footnotes by Ken Metcalf)

Opening up your daily paper, what is it that takes your eye first?—pictures. The bigger the news, the more the interest in the pictures. However, even inconsequential news often goes over if the pictures are good.

Many newspapers now run whole pages of pictures, and one New York paper is called the “Picture Newspaper.” These photographs are collected from all over and by all kinds of photographers, ranging from an accidental amateur shot to a carefully thought out, planned and plotted shot by a high-priced news photographer. The demand for news photos is enormous, brought about by the fundamental principle that all people and all ages understand pictures. To make it short, pictures speak all languages.

It has been the writer’s good fortune to be associated with news photographers at different times and to get to know how these men work, and the following is written with a view of showing the kinds of apparatus used and how they work to get results.

When you think of newspaper photography, your first thought is a Graflex camera. There are probably more cameras of this type used on newspaper work in America than any other camera. They are easy to operate and can be quickly mastered. The Graflex is very strongly built and can stand almost any amount of abuse, while the focal plane shutter with which they are equipped is practically trouble-proof. This focal plane shutter gives very good results on high speeds and will give more actual light value on the slow speeds and big apertures of the lenses. This advantage is particularly noticeable in dull light. Another advantage of the Graflex camera is that almost everybody knows what they are for. Several years back, when we used to carry the Press Graflex, I often noticed that they were an “Open Sesame” through the police line—“The Power of the Press.” Nowadays, however, with the amateurs carrying the 4x5 or smaller sizes, it is necessary ordinarily, to show your press badge before they will let you by. But, the 4x5 Auto-Graflex, equipped with a plate or cut film magazine, with a good fast lens, is today considered a good outfit.

The revolving back Graflex is not much used on the newspapers, as the extra weight and bulk are objectionable, and the old standby, the Press Graflex, is now used principally for sporting work and special jobs where its bulk and weight are not in the way.
However, the Graflex has a few disadvantages in news work, among which may be mentioned the low position from which the operator views his image, inasmuch as the picture is taken with the Graflex as though before the battery of cameras viewed from a position at about the operator’s waistline and, in a crowd, this feature does not work to the operator’s advantage. Another disadvantage of the Graflex is that it has no slow shutter speed, a tenth of a second is as low as it will go. However, these disadvantages are more than offset by the advantage of seeing the image right side up and in or out of focus up to the very instant of the exposure, which is a big asset in its favor.

Another camera used extensively in this line of work is the "Speed Graphic." [Illustration 1] This might well be called the "Graflex’ brother," as it has the, same efficient focal plane shutter and solid construction, although it does not have the mirror attachment or the image viewing hood. Among newspaper photographers, this is known as a “guess box” from the fact that, in many of their shots with this camera, they guess the focus. Of course, with very little practice, they guess right. This camera is much lighter than the Graflex, and it is the practice with an outfit of this kind to carry the camera, plate holders (they do not use a magazine with a Graphic)\(^1\), flashlight, tripod and a filter all in a small traveling bag, a big advantage in some news work. This camera is generally equipped with a between-the-lens shutter as well as the focal plane, giving two shutters. The front shutter is used for time exposures, flash lights and other slow speed stuff on tripods, such as court work, where the noise of the focal plane would be objectionable. It is also much easier to focus with this camera in a dull light, such as an interior, than with the Graflex where the image is reflected onto the mirror. In a crowd, or in making what are known as “grab shots,” that is, shots where the people will not pose, the Graphic works to advantage, as it is held to the eye level for all snapshots.

Illustration 2 shows what is known among newspaper photographers as a “Big Bertha” outfit. This particular outfit is a 4 x 5 naturalist’s Graflex fitted with a 24-inch lens. The position shown is the way it is used for sporting events such as football, polo, soccer, etc. With such an outfit, it is possible to be on the sidelines of a football game, for instance, and get good-sized images of plays across the field, due to the long focal length of the lens. While this lens is slow, working about 5.6, some remarkable shots have been made.\(^2\)

Nearly all of the Big League basketball games are now covered by such an outfit, oftentimes with the addition of a 5 x 7 outfit equipped with a fairly short focus lens and worked above the home plate in the press box, the “Big Bertha” being worked from the roof of the grandstand or in a high box to one side, and between the two outfits, all the plays can be easily covered.

I would call attention to the wooden rod supporting the camera in a low position. By photographing from this low position, the players, especially in a football game, loom up large. [At least to Mr. Rose, he preferred stick to monopod.]

Footnotes

1. True, but according to the 1923 Graflex catalog, a Graflex back could be ordered for the Speed Graphic, which would accept roll holders, cut film and plate magazines, Graflex-style cut film and plate holders, and film pack adapters. This back, along with a focusing panel, was available for the 4x5 Speed for a mere $13.50.

2. This early use and naming of the Naturalists’ Graflex as a sports camera and a “Big Bertha” were set out in Journal editor Les Newcomer’s Graflex section prepared for McKeown’s Cameras.
Many of the old Press Graflex boxes have been converted into sport cameras by putting on a special extension front and using one of the newer lenses now on the market that give large images with a comparatively short focal length.\(^3\)

As in all other branches of photography, there is as much contention in newspaper work as to what lens is the one best lens to use. Some operators will have nothing but a Carl Zeiss Tessar. Others contend that they can get as good or better results with a Bausch & Lomb Tessar, while still others will swear by the Heliar. The same rule holds good here—almost any good lens will give very good results if properly understood. Not long ago, I covered an assignment at a golf tournament. Part of the day it rained, the light was extremely dull and I noticed a chap working along with an old box camera that had evidently seen long hard service. About every time I made what I considered a difficult shot, using fast plates and a fast lens, wide open, I could hear the zipp of his old shutter. It interested me, and I struck up a conversation with him. I found he was a writer for a golfers' magazine and had been using this old camera for several years. The camera had a single lens working at about F.11, but by timing his shots just at the right position of the swing, he was able to get a large majority of good pictures. And so it is. Stick to a lens, get to know it thoroughly, and humor it if necessary, as you will have to do with any lens to get good results. Of course, it is much easier and is a necessity for newspaper work that you have as fast a lens as can be obtained, which means 4.5 at least, because city editors and assignment clerks do not like “Old Man Alibi,” nor do they want to hear the noise of “Failure.”

The kind of plates and film is also somewhat of a question. There are probably more Standard Orthonon and Seed Graflex plates used than any other makes. While the Standard Orthonon has not the speed of a Seed Graflex,\(^4\) it has many desirable qualities such as being ortho-chromatic and possessing a heavy coating. It is also a good plate for flashlights. The Graflex 60 has far more speed. In fact, it has so much speed that the average newspaper photographer over-exposes, thus bringing back negatives flat and lacking in contrast. Of late, many operators are using cut films in Super and Par speeds. The films are a great improvement over the old weight of the glass plates, are easy to store, although not as convenient when printing from wet negatives, a handicap, considering the fact that there is very seldom time in newspaper work to allow a negative to dry before making the prints. The various European plates, such as the English Imperial Flashlight and German Agfa, as well as some of the Belgian and French plates are very popular with many operators.

A large number of newspaper exposures are made with flashlight and there are times, although it sounds improbable, when flashlights are made outdoors in the bright sunshine. Shots of this character are made, of course, with the grab box, of people in automobiles, under awnings and in like instances.

Footnotes

3. The author conversion of Press Graflex cameras to sports cameras. This may have happened, but samples have not been found, with the use of the Home Portrait Graflex.

4. Todd Gustavson, Curator of Technology at the George Eastman House has some thoughts on comparing film speeds:

   Speed claims on old plates are nothing but confusing. There have been many systems for measuring film speed over the years – see: [http://en.wikipedia.org/wiki/Film_speed](http://en.wikipedia.org/wiki/Film_speed).

   There are a few conversion formulas and a chart toward the end of the entry, but, unfortunately, no plates are listed. When dry plates first went into commercial manufacture, plate speed was initially compared to that of collodion (meaning wet-plate) – along the lines of 2X etc., meaning twice as fast as collodion. This was determined by exposure time as compared to collodion. By the 1920s, they could make plates about 10x collodion, but they stopped using the collodion comparison as numeric scale, switching instead to arbitrary words such as speed, rapid, extra rapid, etc.

My guess of the Speed 60 plates from 1923 would be in the Kodachrome or below range – putting them in the ASA 8 to 12 range. The various plate names were arbitrary from company to company, so extra rapid from one may be slower than the ‘regular’ version from another. This may have been caused by quality control problems or more likely a marketing/advertising issue.
There are many types of flash guns on the market, but probably the one most used by newspaper men is the Caywood gun, although many carry the “Imp” or some automatic gun of that type, — one that will release the shutter and fire the flash simultaneously. An objection to the “Imp” gun is that it uses caps which means another operation and, oftentimes, the time necessarily taken in the placing of a cap means a good news picture gone wrong. However, one good shot with an automatic gun is enough ordinarily, the difficulty coming in the operator firing too early or too late. It reminds one of the old Continental Army slogan “Don’t shoot until you see the whites of their eyes.”

There have been many serious accidents just recently to news photographers, entailing loss of limb or life through the improper handling of flash powder. In one particular case, the hand protector of the flash lamp was smoldering, and when the photographer spread the powder on the tray for another exposure an explosion occurred, which took away his hand, and the broken bottle pierced his body in several places. No matter what the story, nor how important, the operator should not lose his head, figuratively or literally, in handling flash powder. There is a large amount of fast powder used. Personally, I prefer to use a normal powder, although I occasionally get a closed eye, but this can be easily fixed by the art department. However, I do not get as much smoke, and the danger is not as great as with the fast powder. Some of the extremely fast powders can be set off by concussion, which means that if a bottle of it is dropped, there is a possibility of a bad explosion. Never load a flash lamp from a bottle containing more than half an ounce of powder. Better still, carry your powder in a wooden box. Also, do not allow stray caps and loose powder to shake around in the bottom of a grip. There have been some serious explosions resulting from that, too. One photographer has a badly-crippled pair of legs through that very cause. His grip containing camera, flash and caps struck against a partition, and when the smoke cleared away he had only the handle of the bag in his hand and most of the broken glass bottle in his leg.

Occasionally it becomes necessary to use quantities of flash powder outdoors at night, when still more caution must be exercised in its handling. If more than an ounce and a half of flash powder is to be used on a single shot, under no circumstances use a hand gun. I have known operators to use four or five ounces and get away with it, but the chances are against you. Put it in an open pan on a step ladder or similar support, for there is a great possibility of the lamp itself going to pieces. Not only that, but especially in damp weather, the powder may cake and fly over on to the operator, and it is next to impossible to put a fire of that kind out until a serious burn has resulted.

5. Flash powder was first used around 1887 (http://photography.tutsplus.com/articles/a-brief-history-of-photographic-flash—photo-4249) and was refined and synchronized until flash bulbs became available in the early 1930s (GHQ 11,4), and finally electronic flash in the 1940s (GHQ 13, 1).

The Caywood gun described in the article is the early non-battery model, which required an open-flash-close sequence.

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4. continued

From the Studio Light, a magazine of information for the profession 1914 by Sara F. T. Price, Eastman Kodak Company.

Seed Graflex Plates are not intended for studio work, but they have a very fine grain and will produce a better quality of negative with high speed focal plane shutter exposures than any plate that has ever been manufactured.

Press photography not only requires a fast plate but also one that gives good contrast for newspaper engraving. The Seed Graflex Plate may be developed until any desired degree of contrast has been obtained without danger of chemically fogging the negative.

While this strong contrast is desirable for this particular work, we do not mean to say the Seed Graflex Plate will only produce negatives with excessive contrast. It is a plate that may be depended upon to turn failure into success in any kind of fast shutter work under poor conditions of light. If negatives of ordinary contrast are desired, give ordinary development, while if greater contrast is desired, long development will give the result.

Seed Graflex Plates have excellent keeping qualities, better gradation than any plates approaching their speed, and Seed uniformity and dependability – qualities that have made a Seed Plate the one invariably selected for work of the greatest importance.

5. Flash powder was first used around 1887 (http://photography.tutsplus.com/articles/a-brief-history-of-photographic-flash—photo-4249) and was refined and synchronized until flash bulbs became available in the early 1930s (GHQ 11,4), and finally electronic flash in the 1940s (GHQ 13, 1).

The Caywood gun described in the article is the early non-battery model, which required an open-flash-close sequence.
The developing of news negatives has to be done with considerable speed, and the kind of developer to use is a good deal a matter of personal choice, although it is always best to follow the plate or film maker's formula, using a developer somewhat stronger than would be used for portrait negatives, as strength and contrast are what is needed. I believe there is more metol-hydrochinone developer used than any other for this class of work. It does not give a wonderfully good negative to look at but seems to give a negative that answers the purpose and will work well in tanks. Much of this work is done by fast tank development—three, four or five minutes, and it has the advantage that the developer is always ready, and the plates or films are slipped into a holder, then into "soup," as it is called, and as soon as developed can be transferred to the hypo in the same hanger.

The making of newspaper prints nowadays is nearly all done by projection or enlarging. Of the various types of enlarging machines in use, many of them are equipped with an arc light, others with Cooper-Hewitt "M" tubes, and then there are the new projection printers of the vertical type, such as Eastman's.

Nearly all prints are made on glossy paper, although some of the newspapers where they make large prints retouch them and then reduce them down again, prefer semi-matte bromide. But the latter are in the minority. There is considerable discussion as to whether paper with a "Pence" base or that with a white base gives the better results. In the P. M. C. line of papers, No. 4 is the "Pence" and No. 1 is the white. The manufacturers themselves claim that the best results for reproduction are obtained on the No. 4, and I think there is more of that used, although the prints on the No. 1 or white stock look far better to the eye.

Many times during my connection with newspapers, advertising agencies and my work as a commercial photographer, I have seen photographers with what they think are wonderful news shots, and who would rush to the newspaper offices, only to be disappointed because they were not used. Why were they not suitable? Just a collection of people looking at the camera does not make a news shot. A photograph for a newspaper must have news interest, be timely, and the real, ideal news picture tells the whole story, or at least a certain highlight of the story at a glance. What the modern newspaper wants, to use their own words, is a close-up picture that will "knock 'em dead."

---and You Have a Dandy Picture, Day or Night---
if You Use the never-failing IMP FLASHLITE GUN.
Greatest invention in years for photographic use. Overcomes all former flashlight troubles. Anyone can use the IMP FLASHLITE GUN

Beginners get wonderful results with hand or tripod cameras in any light—broad daylight or total darkness. Take moving objects, groups, pets, etc. Dealers make lots of new friends handling the Imp Flashlite Gun. We want more of them.

THE IMPERIAL BRASS MFG. CO.
1205 W. Harrison Street
CHICAGO, ILL.

Gun complete, $1.75

"The IMP Flashlight Gun is simple, reliable and dependable at the fastest shutter speeds required. It operates pneumatic shutters or those actuated by a flexible, spiral cable, with equal facility. You simply pull the trigger; the Gun ignites the flash and operates the shutter SIMULTANEOUSLY."

Mechanically, Bob Lansdale describes the operation as "a cable release which fired a cap/or spun a spark wheel on the gun and at the same time fired the camera with a jolt of the cable release. My first flash gun was like this and I always thought it might cause a blur to the image with such a jolt."

Article illustration showing "made to order" box camera, with an IMP flash, which could also be connected to a front shutter Graflex.

Advertisements on pages 7 and 8, courtesy Bob Lansdale.
We want to report the passing of Gene Miller last November. Gene was a long-time supporter of the Graflex Historic Quarterly and an advanced collector of Graflex-style cameras.

Gene’s first experience with a professional Graflex was in the Kansas Air National Guard in 1949, where he was assigned to the photo unit in Wichita, Kansas.

After the Korean War, Gene worked at Cessna Aircraft in Administrative Engineering, filling in wherever he was needed, including the photo lab. When work began on the T-37 aircraft, Gene began the process of establishing the photo and reproduction area. Gene then went to work at Lawrence Photo Supply as an outside salesman covering eastern Kansas and Oklahoma. He worked with graphic arts installations such as newspapers, schools and commercial photographers.

Gene maintained until recently a fully equipped dark room for printing negatives up to 8x10.

Gene amassed an extensive collection that represents some of the finest Wichita area historical photographs as well as one of the nation’s largest collections of rare Graflex single-lens cameras, and their competitors.

This interesting page from a 1908 Eastman Professional Apparatus catalog was provided by Joel R. Havens.

**F & S. RECORD OUTFIT**

This outfit is designed especially for the purpose of copying insurance applications, legal documents, drawings, or any regular abstract work, as the original placed on the copy holder or stage is photographed direct upon a special record bromide paper, and with the aid of a prism is reversed, giving a reversed negative, thus dispensing with the intervening glass plate negative.

A special Bromide Paper Roll Holder with capacity of 100 feet of paper is so arranged that it reels off sufficient paper for an exposure, locking automatically, preventing waste of paper, and also perforates the paper between exposures registering and tallying each exposure automatically. The roll holder is equipped with a dark slide, so that it may be detached to re-focus or to permit the exposed paper being removed for development.

The copy holder may be adjusted at any desired point by mechanical means operated from rear of cabinet.

A rack and pinion is provided on camera bed, so that the camera may be adjusted back or forth for the purpose of entering the copy on the ground glass.

The camera is also provided with a micrometer focusing device for fine or accurate focusing and the Auto Studio Shutter.

The standard roll holder furnished for insurance application work gives copies 7 x 11 inches wide, reeling off the 7-inch way.

The Copying Camera is 11 x 14, Reversible Back type, 36-inch focal capacity.

For illuminating the copy, we recommend the use of two Aristo Lamps placed on either side of the copy holder, which will enable the operator to make perfect copies in from five to six seconds, with the lens stopped to f. 16.

The price of the outfit (without lens) .............. $275.00

Lenses:

- No. 6 Plastigmat, 13-inch with prism .......... $172.00
- No. 16 P Cooke lens, with prism ............. $151.00
Graflex Journal

The 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 not a for-profit publication. Other photographic groups may reprint uncopyrighted material provided credit is given the Journal and the author. We would appreciate a copy of the reprint.

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Black and white by regular mail, $3.50 per issue, billed annually.

Speed Kodak, serial number 1993, fitted with a Zeiss Kodak Anastigmat F/6.3 No. 2 lens (focal length of 5") in an Ilex Optical Co. leaf shutter.

From Camera Craft magazine article. The General Retreats. General Pershing at Franklin Field for the Army-Navy football game.

From the Photographic Journal. March 1910, courtesy Bob Lansdale.