



GRAFLEX Journal

SHARING INFORMATION ABOUT GRAFLEX AND THEIR CAMERAS

ISSUE 2 2021

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Pacemaker-to-Graphic View adapter. I must admit that the cool red bellows, triangular rail, and smart Art Deco styling were also factors. In my limited research, the Graphic View may be among the first, if not the very first, monorail view camera in history.

After several months of watching online ads, I found a Graphic View II (as in the top left photo) which was sold including several of the lensboard adapters (right), number 9230 in the old Graflex parts catalogue. They also came with the original grey Vulcanoid case.



USING A GRAPHIC VIEW II IN THE 21ST CENTURY

By Howard Sandler
howard@howardsandler.com

In a previous article in the Graflex Journal, I wrote about my modern workflow using a Crown Graphic. After a few years of using the Graphic, I began to be interested in the types of photos which require more movements, such as tabletop still life's and architecture. Both, incidentally, were good subjects to photograph during the Covid pandemic. The graflex.org article on the Graphic View cameras by Gerald Pierce had a big impression on me. It seemed like having a Graphic View to complement my Crown Graphic would make a lot of sense. The Graphic View II would give me much more bellows draw for small tableaus and close up portraits, full movements, and I could use the same lenses via a



For tabletop work, I soon acquired a lens with an image circle permitting lots of movements, a Schneider-Kreuznach Symmar-S 180mm f5.6.

Of course, one of the first things I tried was an homage to Edward Weston using shishito peppers (left).

The removeable back made doing vertical compositions a pleasure (right). With the Crown Graphic, I would have had to tilt the entire camera on its side to do this.



I then moved on to tableaus which required lens tilt to force the plane of focus to follow the subject matter (left). While the amount of front fall (useful for tabletop work) is limited in the Graphic View, one can easily achieve more front fall by tilting the entire rail downward, then tilting both front and rear standards back up to vertical, as in top left photo.

Eager to expand my architectural photography horizons, I purchased a wide-angle lens with an image circle permitting movements, a Fujinon SW S 90mm f8. Here I discovered some issues relative to its use on a Graphic View II. The bellows on the Graphic View II has many pleats to be able to extend for the full bellows draw of the camera. Consequently, when trying to move the two standards close together for wide angle work, the bellows completely compresses when the two standards are still rather far apart for a 90mm lens focused at infinity. The Pacemaker-to-Graphic View lens

board adapter compounds this problem because it effectively adds about 1cm of extra extension to the lens. I tried to solve the problem by purchasing a recessed lensboard for the Graphic View II and mounting the lens directly to it. I think the recessed lensboard was designed for the age where the small lenses like the Schneider-Kreuznach Angulon or the Optar WA 90mm f6.8 were common. Lenses in larger shutters, such as the Fujinon, which comes in a Seiko 0 shutter, do not fit into the cramped recessed space in the adapter. In the end, I installed the Fujinon in a standard flat Graphic View lens board. Although its focal length is 90mm, it has a flange-to-focal length distance of about 99mm. In practice, this permits the lens to focus on infinity with just enough slack in the bellows to permit a bit of tilt or rise to do effective architectural work, like this photo of the Canadian Supreme Court.



The Graphic View II should be a great tool for close-in portraits. I am eagerly awaiting the end of the Covid pandemic (are not we all), so I can do more people photography.



Of course, what better camera to photograph a vintage Crown Graphic, than a Graphic View.



PACEMAKER SPEED GRAPHIC FOCAL PLANE SHUTTER BEARING CAPS

By Maurice Greeson

From my limited research on the web and from my own collection, I found that most later 1940s, 50s, and 60s Pacemaker Speed Graphics had exposed focal plane shutter bearing caps. My 1948 4x5 had hidden bearing caps, as well as one 1948 example seen on the web.

Here is a chart of what I have observed.

Pacemaker Speed Graphic Bearing Caps					
Size	Serial No.	Year	Exposed Cap	Comments	Other
2x3	425368	1947	Yes	In My Collection	
3x4	754117	1949	No	Seen on the web	Graflok back
3x4	757449	1953	No	In My Collection	
4x5	835137	1948	No	In My Collection	
4x5	879327	1953	Yes	Not mine, given to a friend	
4x5	824464	1949-50	Yes	Seen on the web	
4x5	448310	1947	Yes	Seen on the web	
4x5	881189	1953	Yes	Formerly Mine...Sold	
4x5	838556	1948	No	Seen on the web	
4x5		Later '50's	Yes	Seen on the web	
4x5		Late 40's	Yes	Seen on the web	
4x5		Later '50's	Yes	Seen on the web	Graflok back
4x5		1960's	Yes	Seen on the web	Graflok back
4x5	829621	1947-48	Yes	Seen on the web	Graflok back

Bearings were set out in the camera's patent (2,541,413) applied for in 1947. "Said idler gear 89 is provided with a shaft 89a that is fitted in suitable bearings."

Graflex employee, Tim Holden, noted that "external bearings for f.p. shutter used **again** 4/50," for the Pacemakers Speeds "34" and "45".

From the Anniversary repair manual: "Lubricate the master gear stop pins with wax based lubricant, and lubricate the curtain roller bearings and pinion with graphite grease." Pacemaker "45": "Position the curtain and rollers after lubricating the bearings of the rollers with grease AN-G-25."

According to the service manuals, lubricating the bearings was considered part of general maintenance procedures, and not done by itself.

My feeling is that having the bearing caps exposed and accessible made them easier to lubricate and service. If only we could ask long-time Graflex employee Tim Holden, why the changes!

SPEED KODAKS

By Ken Metcalf

Kodak sold two very different "Speed" cameras. Based on help from Graflex Journal Editor Thomas Evans, David Purcell (feedback@redbellows.co.uk), and Todd Gustavson, George Eastman Museum (<https://www.eastman.org/>), this article will attempt to compare these cameras, especially as set out in Kodak publications.

The two roll-film cameras are the 4A Speed Kodak 1908-1912 and the 1A Speed Kodak 1909-1913 (Both in retail catalogs).



	4A	1A
Depth, height & width	3-7/16 x 6 1/2 x 11 3/4"	2 1/4 x 4 1/2 x 9 3/4"
Volume	263 cubic inches	99 cubic inches
Film size	4 1/4 x 6 1/2" (1/2 plate)	2 1/2 x 4 1/4"
Plate size	same	No plate adapter.
Film	"4A Folding Kodak film cartridges"	"...the Kodak cartridge film system..."
	126 roll film	116 roll film
Weight	6 lbs.	3 lbs.
Price w/o lens	\$50	\$38
Movements	Rising & sliding front	Adjustable finder
Finish	Nickle plating & "seal grain leather"	Gun-metal & "very fine grain leather"

NO. 4A SPEED KODAK

Production- Numbers and release dates are best found in the George Eastman Museum (GEM) collection's Kodak Production Order book. As shown, a sample camera was first sent to Mr. Davison, the head of the UK Kodak operations. Also, it took about six



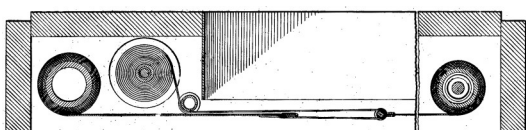
NO. 4A SPEED KODAK			
- ORDERED -		- REMARKS -	
Year	Date	Amount	Total
1906	10/15	1,000	1,000
1907			

1/29- First shipment. Ctn. ctn. number 1-3 sent to Mr. Davison, London.
4/14- First shipment in United States.

months to complete the order, and by Kodak standards, a small order. From samples (58-D...987-D) it appears most of the ordered batch of 1,000 were made.¹

Shutters- In this section, I will attempt to describe the evolution of the focal plane shutter from the 4A Speed Kodak through the 1A Graflex.

4A Speed Kodak - Although described as a "Kodak Focal Plane shutter," a lack of an EKC patent, and a Folmer patent (763,173; 1904) acquired from their purchased company Folmer & Schwing Mfg., strongly suggests it was a Graflex shutter. The shutter was described, in their catalog, as "...a curtain having an adjustable opening..." basically a roller-blind shutter, as described and shown in the Folmer patent.²



As the camera did not have a between-the-lens shutter, this type of shutter was needed to block incoming light when advancing the film, as succinctly put by the 1910 issue of The British Journal Photographic Almanac and Photographer's Daily Companion.

As regards the shutter itself, it is naturally of the self-capping type—any other would be useless for a film camera—with a single slit the width of which is very readily altered. An adjustable scale is provided with a pointer on the side of the camera.

1A Speed Kodak - In the Kodak catalog, it was stated that the shutter was "provided with a curtain with a series of slots of varying widths." A partial disassembly of the camera shows that curtain and a second curtain, which may have been excluded from the description as unnecessarily confusing.



This difference can be explained by viewing Folmer patent 994,914, applied for in 1909 and granted in 1911.



In a photographic shutter, the combination with a main curtain and a safety curtain having a driving roller normally maintaining it in closed position, of means for setting the main curtain independently of the safety curtain, an operating member for opening the safety curtain connected to release the main curtain by a continued movement of the member, a latch cooperating automatically with the operating member to hold the safety curtain closed and means for successively releasing the main curtain independently of the safety curtain.

1A Graflex - Although not covered in this article, the camera shutter is included to show how the use of an SLR-type camera made a second shutter unnecessary.

According to the 1907 Folmer patent 843,140 (which introduced the one-piece multi-slit shutter and changed the camera from rollfilm to plates), he devised a "mechanism" to prevent the shutter from being tripped while the mirror is up. According to the patent -

A further purpose of the invention is to provide a simple and effective construction whereby it will be impossible to operate the shutter in any manner while the focusing-mirror remains in its upper position or position for exposure, thus preventing an accidental second exposure of the plate through an untimely adjustment of the shutter.

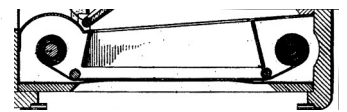
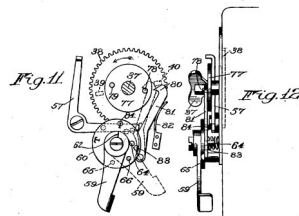


Fig. 11 is a detail side elevation of an addition to the trip mechanism shown in Figs. 4 and 5 and adapted to prevent the shutter from being operated while the mirror remains out of focusing position. Fig. 12 is a side view of the parts shown in Fig. 11.



Finders - Somewhat unique to a Kodak of this kind is the use of two finders: one a "Brilliant reversible finder, with hood" for waist level shooting; and a direct view finder..." which was probably included to help with fast-action shooting.



Camera operation- Again from Making Pictures with a 4A Speed Kodak (transcribed).



Section 1 - Operating the Shutter

Perfect familiarity with the shutter is essential to successful picture making with any camera. The following directions should, therefore, be carefully read and the shutter operated several times before inserting the film.

A focal plane, such as built into the Speed Kodak, differs from all other forms of shutters situated near the lens, in that it operates as nearly as possible to the surface of the sensitive film.

The shutter consists of a cloth curtain, with an adjustable aperture, which passes across the face of the film. The exposure is regulated by the width of the aperture in the curtain and a tension spring in one of the rollers upon which the curtain is wound.

FOR INSTANTANEOUS EXPOSURES.

First. - Set the "time and instantaneous" dial (No. 1, Fig. 10), so that the letter I is immediately over the small pointer located just below the dial. (See Figs. 10 and 11).

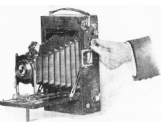
Second. - Adjust the curtain aperture to the desired width by moving the aperture indicator (No. 2, Fig. 10) until it points to the desired aperture, indicated as 1/8, 1/4, 1/2, 1, 3/4, 3, and 0.

With the aperture indicator at 1/8, the aperture in the curtain will be 1/8 of an inch in width, and so on up to 3 inches. 0 indicates that the curtain aperture is fully open, or 6 1/2 inches wide, and is to be used only when making a time exposure.

Third. - Adjust the shutter spring tension to the proper degree by turning the milled head (No. 3, Fig. 10) until the correct speed tension is indicated on the tension dial (No. 4, Fig. 10). If the tension should be higher than desired, reduce by pressing lever (No. 5, Fig 10) until the tension wanted is indicated on the dial. (See Figs. 10, 13 and 14).

When the Kodak is not in use, the tension should be reduced to No. 1 in order to lengthen the life of the tension spring.

FIGURE 11 Adjusting dial for time or instantaneous exposures.



Fourth. - Wind up the shutter curtain by turning the milled head (No. 6, Fig. 10) to the limit of motion. After about eight turns have been made, the shutter will resist slightly, due to the arrival of the safety blind at the top roller of the shutter. Continue winding, according to the aperture in the curtain, until the shutter is fully set (See Figs. 10 and 15).

FIGURE 12. Adjusting curtain aperture.

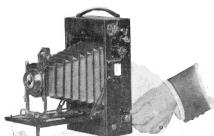


FIGURE 13. Adjusting shutter tension

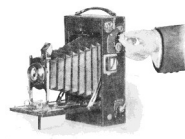
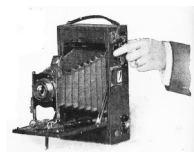


FIGURE 14. Reducing shutter spring tension.

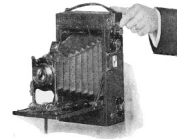
FIGURE 15. Winding shutter curtain.

FIGURE 16 - See also page 35.

Fifth. - Adjust the iris diaphragm in the lens to the opening desired. (See Fig. 16 -See also page 35)

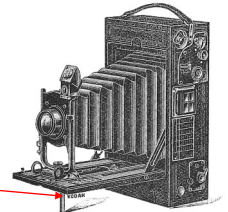


Sixth. - Make the exposure by pressing upwards on the finger release (No. 7, Fig. 10. - See also Fig. 17 at left).



To determine the correct curtain aperture and tension, see table of shutter speeds on page 28.

Note. - When the shutter curtain is wound up, the aperture cannot be changed until it has been released. To change the curtain aperture without exposing a section of film, cap the lens, release the shutter curtain, set the aperture to the desired opening, and re-wind the curtain.



Advertising From the 1910 issue of The British Journal Photographic Almanac, and Photographer's Daily Companion.



THE 4A "SPEED" (FOCAL-PLANE) KODAK.

(Made by Kodak, Limited, 57 to 61, Clerkenwell Road, London, E.C.)

This instrument takes a picture 6 1/4 x 4 1/4 inches, that is to say, it takes the Kodak daylight-loading spool of 4 1/4 inches of 6 or 4 exposures. As regards portability, the total outside bulk of the camera encloses both the roll-holder and the focal-plane shutter, but is very little bigger than would be either of these articles separate. Folded for carrying, the camera measures just under 12 x 7 x 3 1/2 inches. Extended, it allows of the lens panel being placed about 11 1/2 inches from the sensitive film. It will thus be seen that much success has attended the endeavour of the makers to provide a camera suitable for the most rapid exposures with a comparatively small bulk.

As regards the shutter itself, it is naturally of the self-capping type—any other would be useless for a film camera—with a single slit the width of which is very readily altered. An adjustable scale is provided with a pointer on the side of the camera. The pointer has only to be moved from one graduation into the next—it snaps at each point—to give a series of slit widths of 1, 1.1, 1.1, 1.1, 1.1, 1.1, and 3. Externally free from projections, except the one or two very solidly made keys on the left hand side, the camera is eminently fitted for the tourist, whilst its workmanship throughout is of a high mechanical quality, worthy of the Kodak reputation.

A rare look at the company's sales strategy, from a GEM gem, the Trade Circular.

FOR TRADE CIRCULATION ONLY.

Eastman Kodak Company

Trade Circular.

"FOR YOUR INTERESTS AND OUR OWN."

Vol. IX No. 5. ROCHESTER. APRIL, 1908.

"Race horses, automobiles, athletic sports, all are within the scope of the Speed Kodak, at the same time it is hardly half the bulk of other cameras that are made for speed work. Thousands, yes tens of thousands of people who are interested in hunting, fishing, automobiling...and other strenuous outdoor sports are also interested in pictures of the sports. The Speed Kodak is fast enough to do the trick, and small enough to be carried on almost any trip."

"These cameras will be advertised liberally in such mediums as seem to reach the particular class of people that will be interested in this particularly high class instrument."

Attachment- Kodak made one attachment, a Glass Plate Adapter, with ground glass (4¼x6½"). One of these very rare adapters from the Jos Erdkamp collection is shown here.

Glass Plate Adapter, with ground glass, 4¼ x 6½, 7.50
 Double Glass Plate Holders, each, 1.25



The adapter was listed in retail catalogs from 1909 through 1912. Left to right standard and plate.



According to Jos, the hood portion of the back slides out and is replaced with a double plate holder.

NO. 1A SPEED KODAK

When the 1A Speed Kodak was introduced the following year, the Trade Circular had a different view.



Courtesy GEM.

"The much more bulky and expensive 4A Speed Kodak is selling steadily, and will continue to sell to people who want the larger pictures. It's a good camera, and it is worth your while to push it, but you can sell more of the 1A Speed Kodaks, for the same reason that you can sell more 1A Folding Pockets than you can 4A Foldings. There are more people who are willing to spend the smaller price. But you can't sell it so very often unless you stock it - show it. It will be ready May 15th [1909] and just as soon as we have a full supply will be widely advertised."



	4A Speed Kodak	4x5 Auto
Image Size	4¼ x 6½" (½ plate)	4x5
Dimensions closed	3-7/16x6½ x 11¼"	7⅞ x 6⅞ x 7 ⅜"
Volume sq. inch. closed	262	322
Volume cubic inch. open	598	616
Film	126 roll film	4x5 plates
Weight	6 lbs.	4¾ lbs.
Price w/o lens	\$50	\$75

Bulky- "hardly half the bulk of other cameras that are made for speed work..." So they said. For comparison to the 4A, I will use the 4x5" Auto Graflex, also from 1908.

Assuming film size is about the same, either open or closed, using the Auto, the 4A is not "hardly half" as bulky. As with determining ASA in a white tiled room, the choice of a competitor is important!

Production- Again, numbers and release dates are best found in the George Eastman Museum (GEM) collection's Kodak Production Order book. This time EKC made several batches, and the total production scheduled was 2,106. If order-driven, the company was more pragmatic, and production may better mirror demand.

NO. 1A SPEED KODAK					
- O R D E R S -				- R E M A R K S -	
Year	Date	Amount	Total		
1908	12/	100	100		
1909	3/4	500	500	8/12- First shipment. Serial number 1,001.	
1910	5/13	500			
	12/6	1,000	1,500		
1917	8/25	6	6		

Shutter- See first page for discussion of shutters.

Film Loading- Based on a scan of the 69-page Making Pictures with a 1-A Speed Kodak, provided by Todd Gustavson. Here are the steps needed to load roll film (transcribed).

FIG. I. Removing the Back.

Grasping the instrument with the left hand, remove the back by pressing in simultaneously with the thumb and second finger of the right hand, the catches at top and bottom, as indicated in Fig. 1.



FIG. II Pulling out Spool pin.

The Kodak having been opened, an empty spool having a slit in it will be seen in the winding end of the camera. This forms the reel on which the film is wound after exposure. The full spool is to be placed in the recess at the opposite end of the Kodak. To accomplish this, pull out spool pin as far as it will come, as shown in Fig. II, and turn slightly to the right to hold same in place.



FIG. III Inserting the Cartridge.³

Drop the film cartridge into this recess, as shown in FIG. III, being careful to get the top of the spool at the top of the camera. Each cartridge is marked on the end.



Note: If the cartridge is inserted wrong end up, the duplex paper instead of the film will be brought next to the lens, resulting, of course, in the absolute loss of the pictures.

Then release spool pin, by turning it back, so that cartridge revolves on same.

FIG. IV. Threading up the Duplex Paper.

Remove the gummed slip that holds the end of the duplex paper; pass the paper over the two aluminum rollers and thread into the slit in reel, as shown in FIG. IV. Be careful in so doing that the paper draws straight and true.

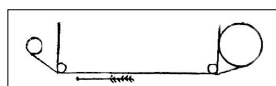


Give the key one or two slight turns – just enough to bind the paper on the reel – and no more. See Fig. V.

FIG. V. Turning Key to Bind Paper in Reel.

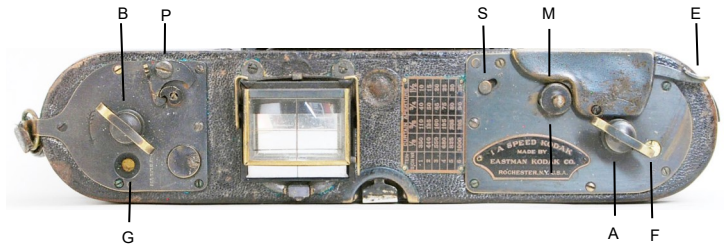


FIG. VI. Showing position of paper. The paper should now be in position indicated in Fig. VI.



Camera operation- Again from Making Pictures with a 1A Speed Kodak (transcribed).

FOR INSTANTANEOUS EXPOSURES.



First- Push the "time and instantaneous" button S to the end of the slot marked "I".

Second- Adjust the curtain aperture to the desired width, which at the same time sets the shutter, by turning key A to the right as indicated by the arrow, watching the disc F until the number of the desired aperture appears as indicated by the figures $\frac{1}{8}$, $\frac{3}{8}$, $\frac{3}{4}$ and $1\frac{1}{2}$.

Note: To make successive exposures of the same duration, it is, of course, necessary to only rewind the shutter to that particular point. For example, if the aperture has been set at $\frac{1}{8}$ and the exposure made, to make another exposure with the same aperture, a half turn of the key will rewind to $\frac{1}{8}$ again.

Third- Adjust the shutter's spring tension to the proper degree for the exposure desired, as indicated on speed plate, by turning the key B until the correct speed tension is indicated on the tension dial G. If the tension should be higher than desired, reduce by pressing lever P back and forth until the tension wanted is indicated on the dial.

When the camera is not in use, the tension should be lowered to No. 1 in order to preserve the life of the tension spring.

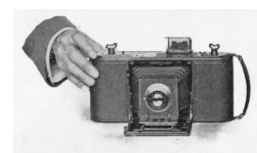
Fourth- Adjust the iris diaphragm in the lens to the opening desired.

Fifth- Locate and center the subject in the finder.

Sixth- Make the exposure by pressing back on the finger release E.

To determine the correct curtain aperture and tension for the speed desired, see plate of shutter speeds on the camera.

If the shutter curtain is wound up by mistake beyond the aperture desired, it may be set back without exposing the film by successively pressing back on button M until the proper number appears.



Making the Exposure.

Advertising- From the 1911 issue of The (British) Photographic Journal. During the life of both the 4A and 1A, there were few ads for Kodak cameras, as their advertising concentrated on film and paper products. As the Photographic Journal targeted professional photographers, their view of Kodak cameras was interesting. "We were faced with the practical certainty of a loss, but went through with it in the best interests of the Society. We shall tap a new order of visitors. There are numbers of people who are out of town in the autumn, and yet who are deeply interested in photography in their own little way. These people are photographers, even if they only carry a Kodak."



A NEW KODAK.

There's only one absolutely new Kodak this year, but that one is going to be a winner. It has "quality" written all over it—The 1A Speed Kodak. It's the first camera to make speed work so simple and easy that our phrase, "photography with the bother left out," can be applied to it. This is no reflection on the 4A Speed Kodak, for that camera makes a 4 1/4 x 6 1/2 picture and is con- though much smaller than other cameras of similar capabilities. But the 4A appeals mostly to those who want something for serious work. The 1A will do the serious, if by that is meant important work, all right, but at the same time it has that small size that appeals to those who go into Kodakery for the fun of the pictures, and for that only.

From the 1909-10 Eastman Kodak Trade Circular.

Every Day a Kodak Day

There are no "dark days" for those who use the No. 1A Speed Kodak. Its Zeiss-Kodak Anastigmat lens, in combination with the Graflex focal plane shutter, makes snap shots a simple matter under almost every out-door condition. Snap shots on cloudy days, snap shots in the shade, snap shots just after sun up, snap shots just before sun down,—all these, to say nothing of high speed pictures of the most rapidly moving objects, are perfectly practical with the

No. 1A Speed Kodak

Price \$60.00

with Zeiss-Kodak Anastigmat Lens and Graflex Focal Plane Shutter.

Picture 2 1/2 x 4 1/4 inches. Uses the daylight loading Kodak film cartridge for 6 or 12 exposures.

COME IN AND LET US EXPLAIN ITS PRACTICAL SIMPLICITY.

We also have the other good things from Kodak City.

Richard Roe & Co.
1001 TRIPOD AVE.

SPEEDS WITH SPEED

"It's the strategic moment for stocking the 1A Speed Kodak.

Last month we announced that, for the first time since its advent a year ago, we were in position to fill orders for the 1A Speed Kodak on sight. We are still in that same position - but whether or not we will be able to maintain it for long is a question. We have started along some advertising that will speed the Speed. There are full pages on Outing, Recreation, and Field and Stream for July with 8-inch double-column spaces in Century Life, Breeders' Gazette, Collier's, Harper's Weekly, Leslie's Weekly, Literary Digest, Life, and Saturday Evening Post. That list is important- but what is even more important is the fact that the people who have bought them are enthusiastic. Several million people, who never before heard of Speed Kodaks, are going to hear about them in the next two weeks. But it is so entirely new to them that they will want to see before buying. You can sell them if you can *show the goods*.

'Speed pictures with Kodak convenience' means a great deal to many people who want the kind of work that can be made with a focal plane shutter...but who will carry only a small and compact camera of the folding type.

The early order catches the sale."

Variations- The first is from the collection of Thomas Evans, Graflex Journal Editor and author of the excellent article, "The 1A speed Kodak and the 1A Graflex" in its first 2015 issue. The camera is fitted with a between-the-lens shutter instead of the regular barrel shutter and an Autographic back, which was not available until 1915, but fits perfectly on his camera.



This 1A Speed Kodak with "A.P.G." stamped on a rail has been identified by subscriber Bruce Thomas as likely to have been from the Army Aberdeen Proving Ground in the state of Maryland, U.S.A.



Conclusions-

In my opinion, both cameras are well-made, but not as easy to use as the Auto Graflex⁴. Although lacking a primary source, I believe Eastman Kodak wanted to expand their retail market with these cameras to include the advanced amateur/semi-professional photographer. Based on the British article, possibly to also enhance the overall reputation of Kodak.



As there was never a model B, I believe EKC realized that it was better to market a simplified version camera through their Folmer & Schwing Division. Thus the No. 0 Graphic and 1.A. Graflex were introduced in 1909. EKC did not sell a focal plane shutter camera again until the 1940s with aerial cameras and the 35mm Ektra.

After an inordinate amount of pondering, I believe the self-capping roller-blind-type shutter was required, but it was a long-term repair liability.

¹ There are also matching numbers 120 and 784 on the inside of the camera back and on an interior side panel. At present, the purpose is not clear. With Graflex cameras, it is thought to be to match parts.

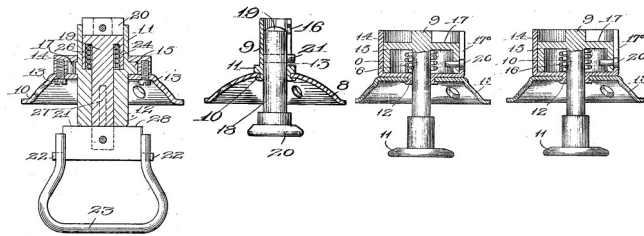
² Flack, James; Graflex Historic Quarterly; "Evolution of the Graflex Focal Plane Shutter;" issue 3, 2007.

"This apparatus was comprised of two pieces of opaque cloth (each somewhat larger than the front lens element) connected by two cloth ribbons at the outer edges. The cloth shutter was wound around one roller against spring tension that, if released, would cause the shutter to wind itself around the opposite roller.

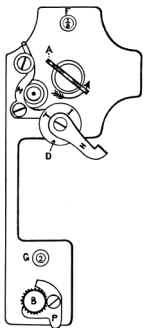
When the shutter was 'cocked' by pulling downward on a string, the shutter cloth was wound around one roller against spring tension until the opaque cloth at one end blocked light entering the front lens element. When released, spring tension quickly pulled the shutter cloth from one roller to the other. When the open segment between the two opaque cloth panels passed over the lens, light was briefly allowed to enter. The shutter cloth continued to be wound from one roller to the other until the second opaque panel stopped over the opening to block light entering the lens again.

The space between the two opaque cloth panels was fixed by the length of ribbon along the edges and large enough to completely open the lens aperture. Thus, the shutter could be 'cocked' half way so that the space between the two opaque panels was in front of the lens, allowing the photographer to use his camera's ground glass for composition and focusing. In this design, the only way to adjust shutter speed was to change the spring tension which affected the rate that the cloth shutter was wound from one roller to the other."

³ A series of four Folmer patents was issued between 1912 and 1916 for a winding key and spool centering. Visually, the winding key appears on both Speed Kodaks and on all the Graflex early roll film cameras. That said, research is needed for other Kodak cameras.



⁴ "The manipulation of the Auto Graflex Camera is extremely simple." Six steps each for the 4A and 1A, while about four for the Auto.



Sketch showing Shutter Attachments. Parts are lettered as on Camera.

DIRECTIONS

The manipulation of the Auto Graflex Camera is extremely simple. By carefully reading the following instructions its operation will be readily understood.
 Open the Camera by unlatching the spring catch at the top near end of handle. Pull the top up until it locks. Set mirror by pressing lever H down as far as it will go.

The focus is adjusted by turning the large milled head on the right side of the Camera near front. The correct position to hold the Camera for general work is against the body. All parts are so arranged that the hands fall naturally into proper position

To Set Shutter for Instantaneous Work

Push lever H down until it locks. Depress disk D and revolve until letter "I" stands directly opposite the white mark on lever H.

Wind the curtain by turning key A in direction indicated by the arrow, until the desired aperture appears at F. The Graflex curtain is made in one long piece and contains apertures varying from "full opening" to $\frac{1}{8}$ of an inch. When the letter "O" appears at F, the curtain is wide open. The other apertures "T" (for time exposures), $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ and $\frac{1}{16}$ follow in rotation as key A is turned.

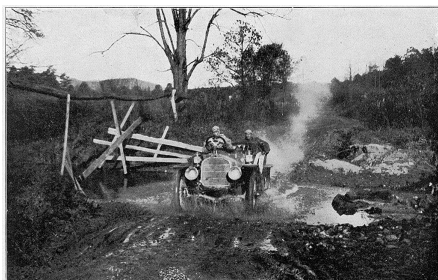
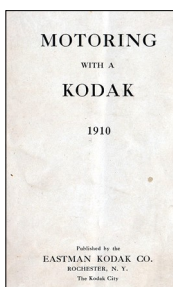
For slow instantaneous work set curtain aperture index at "O". The rising mirror will open the exposure, and the dropping curtain close it, giving equal to $\frac{1}{2}$ of a second exposure.

Remember the curtain cannot be adjusted without first pushing lever H down until it locks. The exposure is made by pressing lever E located on left side of Camera (not shown in diagram).

To Regulate the Speed

To govern the speed, turn milled head B until tension number appears at G. The numbers run from 1 to 6—the highest number indicating the greatest speed.

This 1910 brochure featured the 4A, 1A and No. 0 cameras.



January 10, 1974

Dear Customer:

We find it necessary to discontinue our production of all major photographic camera and electronic flash products.

Because of the requirements of our broad audiovisual product line, we have been unable to continue to develop our photographic products to the extent necessary to remain fully competitive in this highly technical and rapidly changing field. Our product development priorities in other areas, together with reduced customer support of our photographic equipment, make it necessary for us to withdraw from the photographic business.

The decision to do so was a difficult one. Our name has been prominent in advanced amateur and professional photography for nearly a century, and our warm and cordial relations with photographic suppliers go back many years.

Because we feel a deep sense of responsibility and gratitude to you and to the many users of "Graflex" products, we will continue to manufacture and supply, on a regular basis, those accessories and spare parts that are proprietary in nature and cannot be obtained from other sources. A listing of these items is being prepared and will be mailed to you shortly. We will also continue to offer, for an extended period of time, factory service both in and out of warranty.

Those products which we will no longer manufacture include the following: xl Wide Angle Camera System, xl Rangefinder Camera System, 4x5 Crown Graphic Camera System, Stroboflash IV, and Strobomatic 250, 350 and 500. In addition, the distribution agreement on the Norita 6x6 Camera System has expired and these cameras will no longer be available from us.

As part of our decision to discontinue the manufacture of major photographic products, we must ask that you consider this letter as a notice of cancellation of the current dealer agreement between your firm and ours as of January 31, 1974. However, as I stated above, a program is being worked out whereby you will be able to order, on a continuing basis, those accessories and spare parts that may be required by your customers.

The decision will not impact on our production of amateur or professional screens which will continue to be distributed for us through the Intercontinental Marketing Division (IMC) of Interphoto Corporation.

We deeply appreciate and value the relationship our two companies have enjoyed.

Sincerely yours,

Patrick V. Gillette

Patrick V. Gillette
Division Vice President &
General Manager

EVG/ns

Basic Economics, Thomas Sowell. An example of a company that once owned the market, then was knocked off when technology changed. Pages 62 and 101.

Many other corporations that once dominated their fields have likewise fallen behind in the face of changes or have even gone bankrupt. For decades, the Graflex Corporation produced most of the cameras used by press photographers. Movies and newsreels of the 1930s and 1940s almost invariably showed news photographers using a big, bulky camera with a bellows called a Speed Graphic, produced by Graflex. Then, in the early 1950s, outstanding photographs of the Korean war were made with a 35mm Leica camera, using lenses produced by a Japanese manufacturer that also made a new camera called the Nikon.

Advances in lens design and optical technology now made it possible for newspaper and magazine photographers to take pictures with smaller cameras that had enough sharpness and detail to compete with pictures taken by much bulkier cameras. Within a decade, smaller cameras rapidly replaced Speed Graphics and other large cameras made by the Graflex Corporation. The last Speed Graphic was produced in 1973 and the Graflex Corporation itself became extinct, after decades of dominating its field.

A standard practice in the courts and in the literature on anti-trust laws is to describe the percentage of sales made by a given company as the share of the market it "controls." By this standard, such now defunct companies as Graflex and Pan American "controlled" a substantial share of their respective markets, when in fact the passage of time showed that they controlled nothing, or else they would never have allowed themselves to be forced out of business.

OCTOBER
1936AMERICAN
PHOTOGRAPHY

EXTENDING THE SCOPE OF THE GRAFLEX

By W. Bernard Thulin

Fifteen or twenty years ago the Graflex was considered the "ne plus ultra," in camera design. Since then, many new cameras have made their appearance, and they have done much to advance the technique of photography. Very great improvements in negative emulsions have enhanced the picture-making possibilities of the ultra-speed lenses which are practical only with miniature film sizes. These factors have led toward the present popularity of the small camera, and a truly capable instrument it is.

I like the Graflex simply because I believe that its adaptability and versatility make it one of the best all-round cameras for the serious amateur. I should define the "serious amateur" as one who, limited in the investment he can afford, needs a camera suitable for action pictures, landscapes, portraits, and some copy work; a camera designed to secure a maximum percentage of sharp negatives; dependable in action, sturdily built and capable of using all types of negative material of a size sufficient to facilitate retouching when desired. The following material may be helpful to the beginner in selecting a camera and to those who may not yet have achieved the full economy of their cameras.

The Graflex design is functional - in order to do what it is designed to do; it has to be built the way it is. The construction that makes it so satisfactory for action pictures contemplates that the reflecting mirror will flick out of the way as the shutter is released and this very action in some cases causes a jar at the instant of exposure, particularly at the slower shutter speeds. This jarring tendency can be entirely counteracted by the simple expedient of steadying the camera with the chin, as shown in Fig. 1 (right). This method of holding the camera does not interfere with the inspection of the image on the ground glass. Fig. 1 also shows a safety carrying strap threaded through the handle of the camera. This may sometime prevent a big repair bill.



For critical focusing through the hood a magnifier is helpful. A small ten-cent magnifying glass can be used. Make a small slit in the cloth hood in the joint that is about two inches above the ground glass and slip the handle of the magnifying glass through the slit from the inside of the hood. The glass will be held sufficiently rigid at the proper distance above the ground glass to permit magnified focusing.



The revolving back is a convenient feature, but it is by no means a necessity. For pictures that are naturally vertical simply hold the camera on its side and look through the hood at eye level. For horizontal pictures you want to make at eye level, focus and compose on the ground glass in the usual way, note some object in the exact center of the picture area, and then hold the camera up to the eye and

sight along the top left edge toward the center object. In this eye level position, there is less tendency to jar, if the mirror is released independently before raising the camera to the eye. Then the exposure can be made by tripping the shutter trigger at the top right of the camera. For shooting over the heads of people in front of you hold the camera upside down over your head and focus in the usual way. For semi-candid stuff you can try shooting from under your arm with your back toward the subject. These positions are illustrated in Fig. 2 (above left).

Fig. 3 (right) shows a sunshade attached to the Graflex by means of a large rubber band. The design is practical because the sunshade can be raised, permitting access to the lens, and it does not interfere with filters or other attachments. Moreover, it is equally effective in whatever position the camera is held.



A separate ground glass back should be provided for cases where the camera is on a tripod and the position is awkward for focusing on the ground glass in the hood. Although a focusing back can be purchased, a suitable substitute can be constructed at nominal cost. One is shown in Fig. 4 (left). Great care must be used in assuring that the ground side of the glass will be in exactly the same plane as the film. The ground glass can be mounted in a cardboard frame, built up with adhesive tape or scotch tape to fit snugly in exactly the proper position. Preliminary ad-



justments can be made by comparing with the focus on the ground glass in the hood, but the final adjustment should be checked by making negatives of a page of newsprint or of a line diagram at the shortest working distance with the lens wide open. The less expensive Graflexes are not equipped with double extension bellows, but Fig. 5

shows (right) one method of adapting them for full size images. The extension back illustrated is designed so that the film will be held at a distance of twice the focal length from the lens. By measuring this distance from the lens when it is racked about half-way out, the bellows extension available in either direction will permit image sizes from approximately 0.8 to 1.2 of the original. Light-tight joints at both ends of the extension back are secured by padding with felt and scotch tape. The joints can be checked for light leaks by removing the lens and inserting an electric light in the camera. Of course, such an extension back does not have the range of double extension bellows, but it is an inexpensive attachment that will serve for many pictures that otherwise would have to be greatly enlarged.

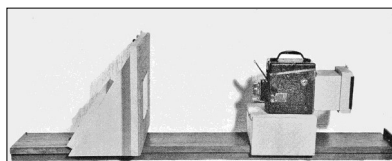
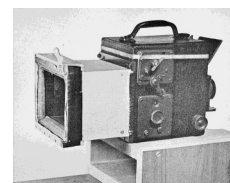
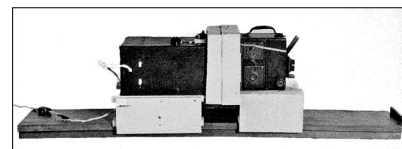


Fig. 6 (left) shows the extension back being used on a homemade copying stand. With this arrangement it is easier to focus by sliding the camera along the baseboard than

by using the focusing knob on the camera. The size of the easel and the length of the baseboard are such that at the closest working distance, and without the extension back attachment, the full area of the easel will be reproduced in the negative. For only occasional copy work permanent lights are unnecessary; adequate lighting can be obtained by waving a flood light so as to illuminate the easel evenly during the exposure. The same baseboard and the same camera carriage used in the copying stand can be used in the home-



made enlarger shown in Fig. 7 (above). Merely set a box containing several bulbs, with the light diffused by ground glass, on another carriage behind the camera. By attaching the negative to the light-box instead of to the camera, the image can be focused by sliding the camera along the baseboard and the lack of long bellows extension on the Graflex will be no handicap. Of course, since there will be some space between the negative and the camera some means such as the paper box shown in Fig. 7 should be used to prevent light from escaping.

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

Masthead picture. American photographer Charles C. Ebbets with a pre-Anniversary Speed Graphic. He was best known for his photographs of New York skyscraper workers. Courtesy Jeff Yost.

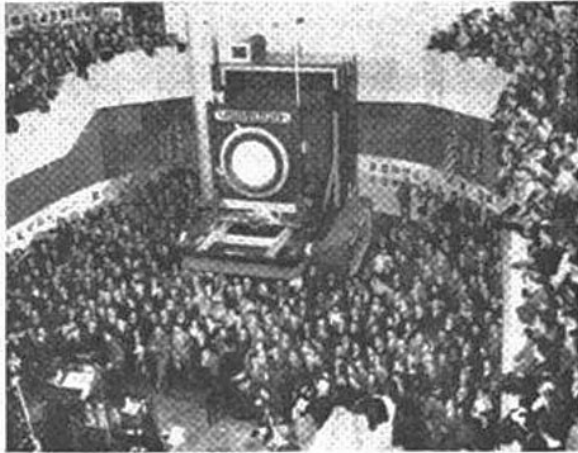
Editors: Thomas Evans and Ken Metcalf
Publisher: Ken Metcalf

Contacts:

Thomas Evans
cougarflat@jeffnet.org

Ken Metcalf
94 White Thorn Drive
Alexander, NC 28701
email: metcalf537@aol.com

THE GIANT SPEED GRAPHIC (a dummy) built by Folmer Graflex Corporation as a decoration for the 9th Annual Exhibit of the N. Y. Press Photographers' Association is believed to be the largest exact replica of a camera ever made. It was



Huge camera featured at N. Y. press show.

a particularly fitting display, since forty of the forty-one pictures in the show that were awarded prizes or honorable mention were made with Speed Graphics or Graflex "Big Berthas." The photograph shows New York's Governor Thomas E. Dewey awarding the prizes at the official preview the night before the show opened.

PICTURE TAKING WITH THE No. 1-A SPEED KODAK

ORDER FILM BY NUMBER

All Kodak Films may be distinguished by the numbers on the ends of the cartons.

116

is the number for film for this camera (No. 1-A Speed Kodak). The number appears both on the carton and on the cartridge.

NOTICE

The Duplex paper (black on one side, red on the other), now used in Kodak cartridges is superior to the black paper formerly used, in that it has no deleterious effect upon the keeping qualities of the film, and absolutely does away with number markings.

In watching for numbers through the red window, one should now look for black numbers on red paper, instead of, as formerly, white numbers on black paper.

Wherever the term "duplex paper" is used in this manual, reference is made, of course, to this black and red paper.

Popular Photography Magazine, July 1944,
courtesy George Dunbar.

987-D

Location of serial number on 4A
Speed Kodak.

