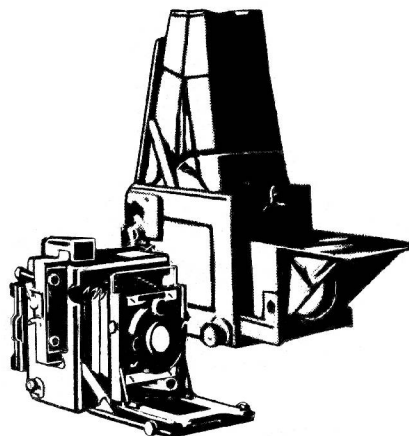


GRAFLEX HISTORIC QUARTERLY

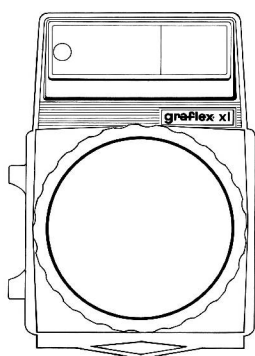


VOLUME 12 ISSUE 2

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The Graflex xl

Part 1

by Ken Metcalf

with William E. Inman, Sr.
(Former Graflex Sales Representative)

The Introduction

From the Popular Photography Test Report of 1966: “Graflex’s xl¹ is a camera system of modules – bodies, backs, lenses, etc., that you can put together in whatever combination you wish.” “Although, at first glance, the xl concept may appear to be somewhat of an anachronism in the face of the trend toward automation, its non-automated simplicity is perhaps one of its greatest virtues.” “It is certainly the most original medium-format system introduced in recent years, and perhaps the most promising. It does have some rough edges but even in its relative infancy it is already a real performer that, like the pre-Anniversary Graphic, points the way to tomorrow.” But “tomorrow” never really arrived for this interesting camera.

In the company’s Grafnotes for 1965, they said “Well, Graflex didn’t quite go about testing the xl Camera Systems as one might test market the newest soap detergent. Instead, Graflex did something no other camera manufacturer had ever done. Graflex took the xl Camera Systems on a ten-month journey all over the United States. We went directly to the people that know, the professional photographers themselves.” “The xl Camera Systems has been improved step-by-step, not after it has been put on the commercial market, but before, which it was in the planning stages.” Not really true, as Tim Holden recorded a number of changes after the camera was introduced, but a nice try by Graflex.

Also from Grafnotes: “The new xl Camera Systems was introduced by Graflex at a press conference Tuesday, April 6th, 1965, at the New York Hilton Hotel.” “Every piece making up the xl Camera Systems has its own individually designed box. Whether grouped separately or packaged as a complete system for unit buying, the xl will be neatly dressed, colorfully clothed and excitingly different.” Therein lies the problem, according to Bill Inman, “The concept of packaging each component instead of offering complete camera units was the worst marketing strategy ever conceived, as it was a nightmare to sell it that way. The problem was that individual packaging took up too much space for the independent camera store. A body, one or two lenses, one or two roll backs, and one or two sheet/pack film backs would take up an entire counter or most of a shelf in the back. The camera dealers did not like it and found it too confusing.” To help overcome the problem, Bill and other sales representatives went to camera stores and put together basic outfits for the dealer to sell. Graflex’s parent, Singer, in 1969 finally changed company policy and put together camera units. Too late, as the damage was done. By the time Graflex got Singer to come around, and let them package an outfit in one box, the world had moved firmly into 35mm or found competitors such as the Mamiya Press, Rapid Omega, or Hasselblad. According to Tim, “The camera was poorly marketed due to the influence of outside managers brought in by Singer. They knew absolutely nothing about the photo market, but they made the decisions without consultation.” Also, according to Tim, the xl line never made a profit, though he suspects the Century/Pacemaker line profited from the leftover lenses after the xl died.

Again referring to Grafnotes: “A plane carrying Graflex’s Tim Holden, the xl Camera Systems, and Mort Nusbaum of Rochester radio and TV, was ordered returned to New York City while in flight to Rochester after the April 6th press conference in New York City. Police radioed for the plane to return after an anonymous bomb threat was telephoned to the air field.

Police said the plane, carrying 45 passengers and five crewmen, was delayed more than an hour while a bomb squad made a search. Luckily, no bomb was found.

Throughout the ordeal, Tim Holden kept a tight grip on the case carrying the xl Camera Systems. Members of the squad searching for the bomb noticed the Graflex name on the case and told Tim, 'Oh! Graflex, we're very familiar with their fine line of cameras.' Tim had little trouble with the police search after that."

History

According to Tim Holden, the camera was conceived and promoted by Hans Padelt, one of the German engineers Graflex "acquired" after WWII from Germany. The military had virtually no input, and outside vendors were involved only in supplying parts Graflex did not make, especially optical parts and plastics.²

In addition to being made as a camera system, Hans wanted to market a copy camera, a view camera, a dental camera system, a reflex camera, and an enlarger, all using the xl platform. Because of the wide use of the Polaroid MP-3 copy camera, Tim found that potential buyers were unwilling to spend more money on their system. Graflex eventually sold the rights to the copy camera and some xl parts to Kinex Corp. of Pittsford, New York.³ With the view camera, Tim remembers that he proved to Hans that it could not be used, because by shifting the axis off center, it would not cover the film. The enlarger, dental camera and reflex camera never made it as far as the other two items.

An always interesting approach to a Graflex product is to look at the patents issued. Of the six patents I found, 3,266,396 (applied for in 1964 and granted in 1966) is the most interesting. See insert for the wording, which reads like a sales brochure, and a drawing that showed a bellows and roll holders, which were never sold as a part of the camera system.

The Camera

Although the xl had marketing problems and could (like other cameras) develop mechanical problems, the camera, introduced in 1965, was and is a marvel of engineering and quality. As a modular systems camera, it was available with three bodies: xls – a non-rangefinder version; xlr – with a rangefinder; and, xls – a super wide angle body designed for a lens such as the Schneider 47mm Super Angulon.

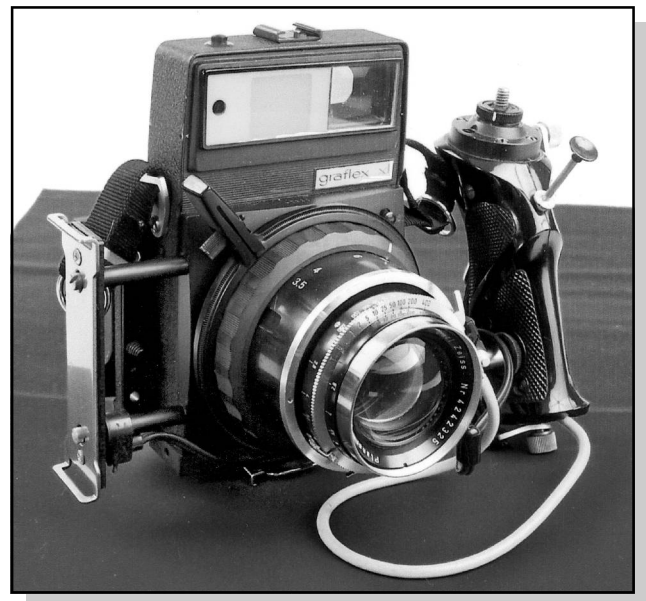
Graflex aptly described the xl as "The Growth Camera." Although available in several sizes and numerous configurations, the xl was primarily an "ideal format" 2 1/4 x 2 3/4-inches (6x7cm) camera and was extensively marketed to wedding photographers for its "ideal format," which was directly proportional to an 8x10 print. The standard "short" normal 80mm focal length compared in angular coverage with a 127-135mm lens on a 4x5, as this lens allowed the press and editorial photographers to "get inside" and to make better use of flash. The optics were superior and remain so today.

It had a near-auto sensing rangefinder. Plug in the cammed lens, rotate it to a particular point, and push the button at the top. The rangefinder was thus synchronized to the lens. It was better than a Crown, Speed, or Century with a Kalart or Graphic rangefinder.

Graflex decided to use a set of spacers, separately or stacked, instead of bellows, even though bellows were part of the original patent.



Bright finish rangefinder model with 95mm f/2.8 Heligon.

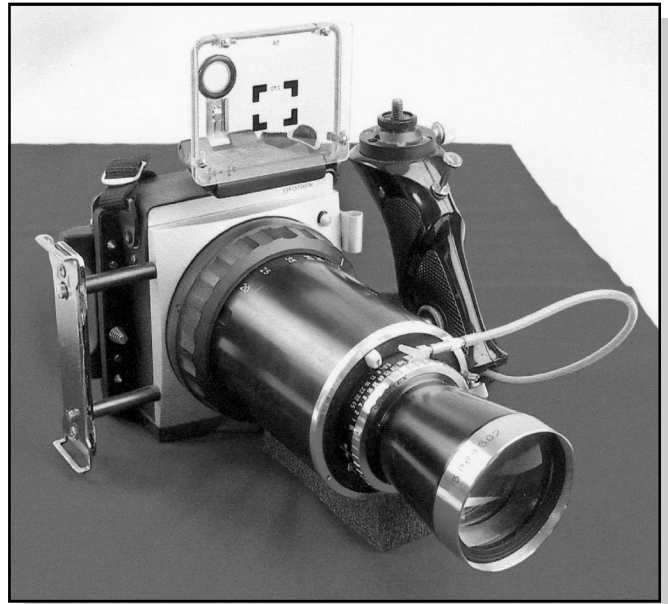


Black finish rangefinder model with 100mm f/2.8 Planar. This and the preceding camera are shown with Multi-Grip, flash bracket, and cable release.

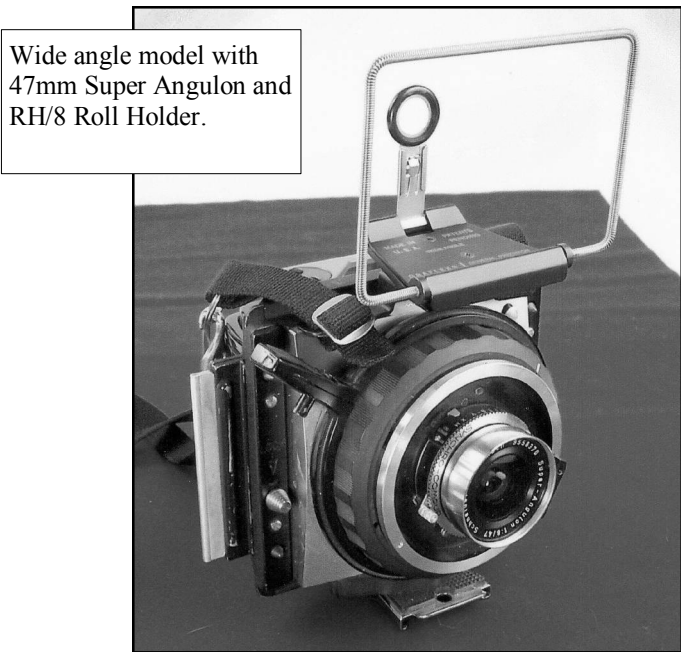
The camera was introduced with a bright finish, and, according to Tim's notes, the xlr body was converted partially to black in 1970, and all black in 1972, both probably to give the camera a more professional look. As versions have surfaced that are all bright finished, partially black and all black, a definitive timeline for changes is not currently possible. No changes to their finish were made to the other two bodies.

The wide angle xslw is a unique xl camera among a unique xl camera system. Without a rangefinder, or optical finder, but fitted with a sportsfinder and the standard 47mm f/8 Schneider Super Angulon, this camera still sells well. Bill Inman has a Brooks Vari Wide finder that was made for the 47mm lens and works well on the xl. According to John Welch's article (GHQ, Vol. 1, Issue 1), "The 47mm f/8 lens on the wide body actually covered the 3 x 3 3/4 image size of an xl Polaroid back, just nipping off the corners! This coverage measures 104 degrees, on the diagonal, although its ground glass back didn't work very well, due to the slanted rays from the wide angle lens. You really couldn't see the whole image from any one position."

The non-rangefinder xls is probably the rarest body produced and for good reason. Advertised for tripod-mounted studio work, macro or other ground glass use, it lacked functionality. It was, however, used as the platform for the aerial camera outfit. See the next article for more details of this interesting camera. Also, if you put the 1/2-inch spacer on the xslw body, you have, in effect, an xl standard body.



Standard model with 270mm f/6.6 non-cambed Rodenstock Rotelar lens, sports finder, flash bracket, cable release and Multi-Grip.



Wide angle model with 47mm Super Angulon and RH/8 Roll Holder.

Accessories

Although tedious, I believe one way to demonstrate the modular nature of the xl and the extent of equipment available is to set out the available accessories. Also, catalog numbers may help identify functions when purchasing these items. See insert.

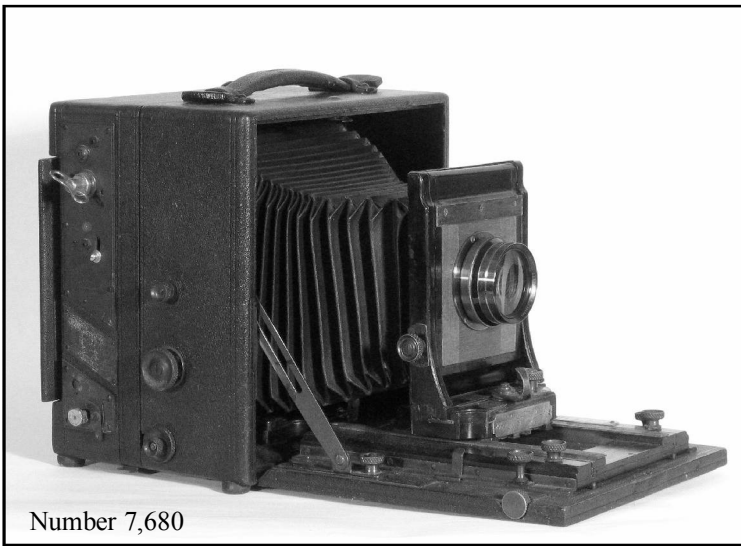
¹Graflex, possibly in an effort to be modern, used lower case letters for the camera name. Other than the poet, e. e. cummings, few have taken to this nomenclature. Also, many people refer to the film sizes using centimeters (i.e. 6X7cm for 2 1/4 x 2 3/4 inches), which was never used by Graflex. Although not Kosher, it certainly saved on typesetting.

²In the Alcoa Aluminum Newsletter of October 1965, under the heading "xl Unlimited" is the following: "A camera with as many personalities as there are subjects to shoot is the achievement of Graflex, Inc., Rochester, N.Y. a subsidiary of General Precision Equipment Corp.

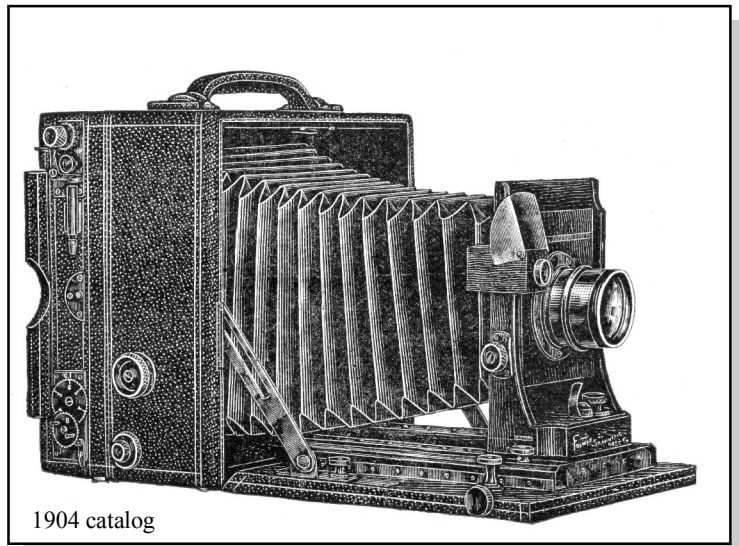
The xl cameras system excels in being just about all thing to all photographers.

The new classic of a camera-maker's art has a corrosion-resistant body of Alcoa hollow extrusion, critical sleeves and bearing of special 6061 pipe tubing. Tote up the rest of the low-cost, tough, lightweight metal in the design, and you've got the lightest load, yet for such a complete studio in a carrying case. And here's welcome news for the photographer – the system can be had at a price suited to his means and needs."

³When he retired from Graflex, Tim worked for Kinex selling the copy camera. It appears that they did not sell well, partly due to the competition and high price. It is unclear from information currently available what xl items were used in the copy cameras and how they were modified. According to Tim, some of their equipment had a Graflex nameplate. From literature distributed in January 1974 by Kinex, they were selling xl parts and accessories. Also, "Kinex using Graflex supplied parts has modified the Polaroid 4x5 Land Film Holder 545 for use directly on your Graflex xl Camera." It appears that the modification was the addition of four pins common to Graflex xl accessories.



Number 7,680

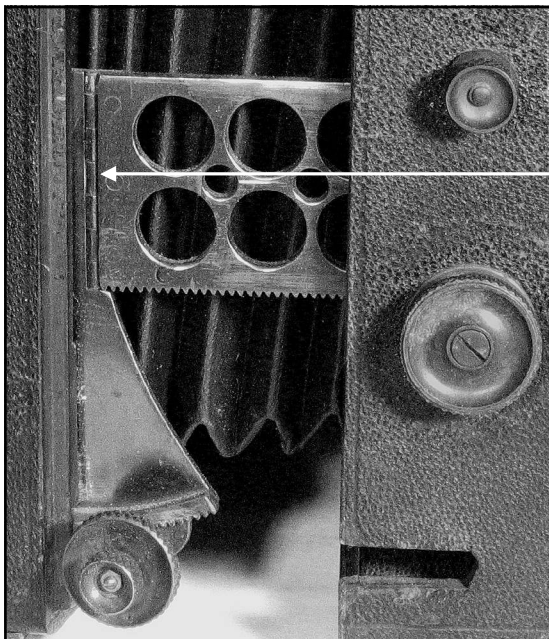
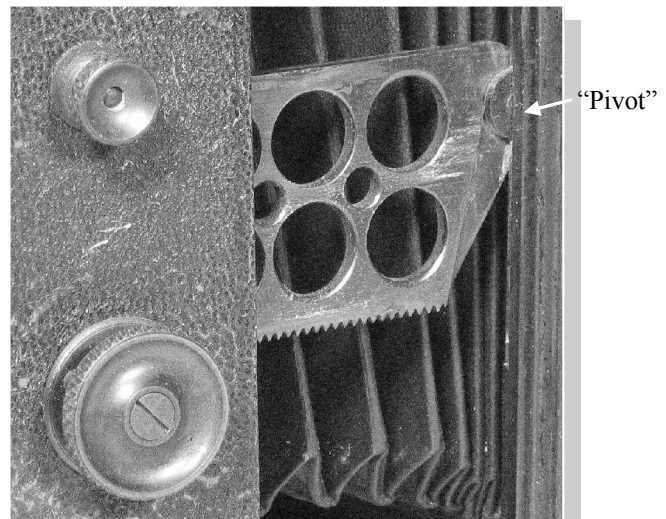


1904 catalog

The Special Graphic

By Ken Metcalf

The Reversible Back Cycle Graphic Special is one of the more interesting William Folmer patented cameras. Of the approximately 105 patents issued to him, this is the only Graphic-style “Camera” patent (number 804,802, applied for in 1904 and granted in 1905). I believe a case can be made that the Graflex-style SLR camera was different enough to warrant patent protection, while the Graphic-type camera was too common to receive such treatment. If for only one feature, the hinge and pivot, this camera is unique among Graflex cameras. “The left-hand plate is loosely pivoted at its rear end ... The right-hand adjusting plate is provided with a hinge near its rear portion ...”



Hinge and tilt adjustment. Also shown are track lock and pinion knob.

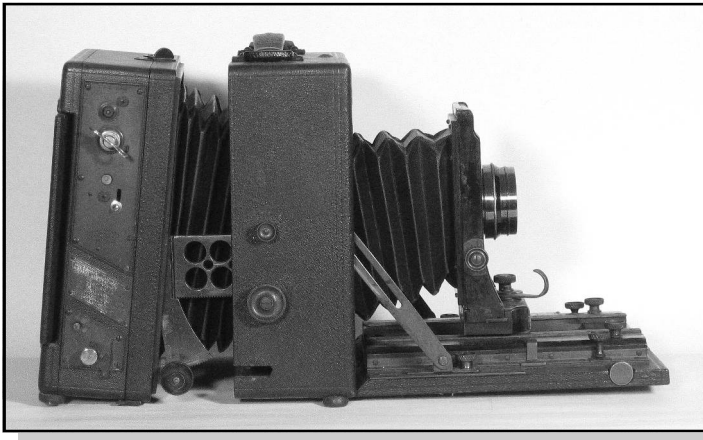
The camera first appeared in the Folmer & Schwing Mfg. Co., NYC catalog of 1904 and was last shown in the Folmer & Schwing Co., Rochester catalog of 1906. A 1905 catalog is yet to be found.

Similar to the Reversible Back Cycle Graphic of 1900, but sold only in 5x7-inch and 6½ x 8½-inch sizes (as compared to five sizes for the regular Cycle), it was a heavier and sturdier camera (5¼ versus 8 pounds) and two inches thicker. The additional size and weight were primarily due to the focal plane shutter (less the weight of a front shutter), which was an integral part of the Special. It was originally sold with the Model B focal plane shutter and in 1906 with the new one-piece Auto Graflex shutter.

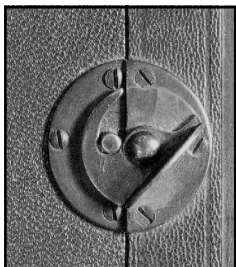
Features included a double shifting front, a falling front (for use with wide angle lenses), a double swing back using a new rack and pinion gear system, front and back focusing, a square rising lensboard, and a reversible back. The “double swing” was actually a swing and a tilt. The removable lensboard was square (3-1/8 x 3-1/8), and in the example shown (serial number 7,680), the lens is mounted off-center to extend the effect of the rising

front when reversed top-to-bottom. Or a prior owner drilled it off center by mistake! The bed was extendable with two telescoping frames.

The “double swing” statement is somewhat confusing. Here is what they say: “For long focus work, the back swing may be operated on its hinge joint and for short or medium focus, either by use of the hinge joint or by an independent double swing at back.” Below are some shots. You decide.



Although the focal plane shutter was removable on its front side (so it could be reversed), the focusing panel was permanently attached to the back of the shutter, thus accessories such as magazine plate holders and roll holders could not be used. The regular Cycle could use these accessories, as well as an attachable focal plane shutter.



Top latch for focal plane shutter.

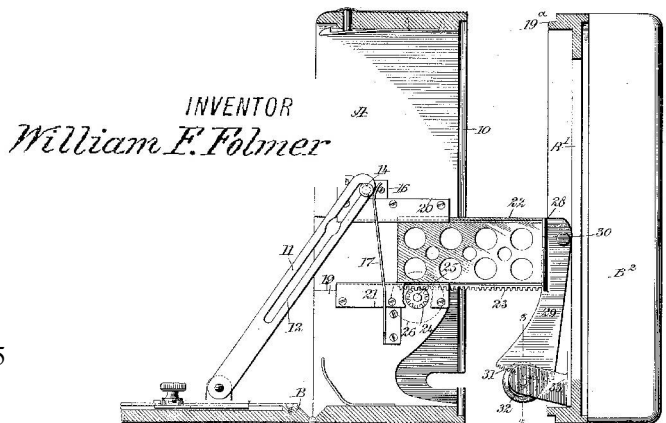
Possibly needing sales features, the regular Cycle claimed to have “back swings upon its hinge,” while with the Special, they had enough swings, so they called it a “falling front.”

The finish is black ebonized wood, and metal parts have a gun metal finish. With the regular Cycle, the wood has a clear finished mahogany with polished brass metal parts.

A word on the restoration of this camera. As no other examples of the camera have surfaced, and the catalog illustrations are not photographs, I made some assumptions. Some wood had rotted and had to be restored or replaced. This was done with Honduras mahogany or stainable wood putty. Although the lensboard appeared old (It was made with three tongue and groove pieces.), it is not black and does not have a rabbet joint on the bottom. Also, a nicely machined piece was used to elongate the lensboard opening from 3-1/8 x 3-1/8 to 3-1/8 x 3-1/4. I did not attempt to fix this difference.

I was very cautious in refinishing the leather and wood. With the ebonized wood, I used Kiwi shoe polish, and with the leather I used a sparing amount of Lexol Leather Conditioner. Some restorers prefer neatsfoot oil because of the undefined ingredients of Lexol. Lexol makes a leather cleaner, but it needs to be washed off with water, which I avoid with hide glue era cameras. Many cameras of this vintage were dyed black but have mellowed to a dark brown. I do not touch them. For later cameras, I use a very light cotton swab application of Kiwi black leather dye on nicks and rubbed edges, then apply Lexol and buff. If in doubt ... don't do it. A long-term project is to make a finder which should be less difficult to do because it appears to be all black. As the camera was purchased without a lens, I fitted a Cooke Anastigmat triplet that formerly resided on a Telescopic Revolving Back Auto Graflex.

It has been suggested that this camera “foretold” the Speed Graphic. Yes and no. Yes: 1. The focal plane shutter was part of the camera. 2. A spring back was used without the possibility of using accessories 3. It was sturdy. No: 1. The way the shutter was attached, it could be considered an accessory. 2. It had too many adjustments for press work. 3. It was too heavy. It was better suited for use on a tripod. 4. It lacked a quick use finder. In my opinion, the regular Cycle Graphic is a better candidate.





U.S. Army Signal Corps

By Ken Metcalf

Part 2

Having set out a generic photographic timeline and naming scheme in the first article, it is time to see how Graflex participated. Although I have not been able to locate early examples, it seems obvious that the Signal Corps purchased “off-the-shelf” Graflex cameras very early. As noted, the earliest specification cameras were the mysterious PH-4 “long-range telescopic camera” and the PH-6 5x7 ordnance camera. According to Tim Holden’s serial number list, which is believed to start around 1915, the first military camera was the “5x7 Ordnance camera” (later listed as a PH-6).^{*} If done chronologically, the PH-4 would have been the first camera made to government specifications. Although it is complete speculation, the definition given above for the PH-4 has some similarities to the Graphic Natural Size Camera (Naturalists’) of 1903-1904. This camera, pictured in Ron Tuttle’s article in the Quarterly (Vol. 9, Issue 4) and in the Folmer & Schwing Mfg. catalog of 1904, was vertically mounted on tripod legs attached to the camera housing and had a “long bellows.” All that is lacking is the prism. It appears that Ron’s camera was sold to one branch of the government, because it has a paper tag reading in part: “U.S. Dept. of AGRICULTURE PI 18...”

As evidence of the dominant role of Graflex cameras in the Army, according to Signal Corps letters from 1918 (GHQ, Vol. 11, No. 1), almost all still cameras ordered were made by Graflex. Although there is evidence to suggest the PH was used as a camera specification, in these letters the prefix PH (along with LP, PR and ON) are referred to as “subject,” with different PH numbers assigned to the same camera model. Also, PH was used to identify suppliers, which suggests their use as a type of purchase request. Go figure! Interestingly, all purchase requests were made to Eastman Kodak for its Graflex Division cameras.

Very few examples of WWI Graflex cameras survive. Three: serial no. 77,225 is a tan 3A, having brass trim and embossed “Signal Corps U.S. Army G-3 No. 34”; serial no. 79,225 a 4x5 Revolving Back Tele Graflex, also with tan leather; and finally serial no. 79,408 another tan leather covered 4x5 R.B. Tele with “G-4 No. 33,” embossing. Although OD was specified by General Pershing for some cameras, examples have not yet been located. It appears that these cameras were produced prior to the time of standardized naming.

From sample cameras, it appears that the Anniversary Speed Graphic was initially ordered by the military at the start of WWII in its civilian form, but later with many parts done in a non-

reflective black finish. Also, due to a preference rating, most cameras went to the military. In the November/December 1941 issue of Trade Notes, Graflex explained that most equipment is going to “the great program of defense.” In January 1942, Graflex announced a “Customized Renewal Plan,” (GHQ, Vol. 8, No. 2) that allowed cameras to be sent in to Graflex for refurbishing, as most cameras made by Graflex were for military use. In the June/July 1942 issue of Trade Notes, an article titled “4x5 Graphics Adopt War Paint for the Duration,” the Speed Graphic and other cameras were finished to “eliminate so far as possible all reflecting surfaces.” “On July 1, the first of the 4x5 Graphics carrying the non-reflecting war paint commenced.” Richard Paine in a review of Graflex, said that a shortage of chrome may also have led to its removal from cameras.

Wartime Anniversary production can only be estimated, but may have been about 39,000 4x5 Speed Graphics and 10,000 2¼ x 3¼ Speed Graphics for all branches and probably including foreign sales. Approximately 1,000 Photorecord units were produced.

As a number of war-painted 4x5 Anniversary Speed Graphics have shown up after the war, it seems reasonable to assume that a number of cameras never made it to war zones. According to a July 1943 Air Force catalog, there were 3,291 cameras on order and 4,778 on hand. For the 2¼ x 3¼, the numbers were 898 and 900 respectively. It is not known if all cameras ordered were received.

Numerous sources suggest that the Speed Graphic was not favored in combat situations due to its being “clumsy,” “awkward” and “cumbersome.” Even so, it remained listed by the military well into the Pacemaker era.

The following is a partial list of Graflex cameras and their designations:

PH-4 See above.

PH-6 Ordnance camera (Later PH-6-A, and probably not made by Graflex)

PH-47

-E Shown in 1945, as a 4x5 Anniversary model, with an anastigmat 127mm f4.7 Ektar or Velostigmat in a No. 2 Supermatic shutter. Equipped with either a Kalart or Hugo Meyer rangefinder. (TM 11- 487F)

-F Shown in 1945, as a 4x5 Anniversary model with an Ilex Paragon series S anastigmat 5½-inch lens in No. 3 Acme synchronized shutter. Equipped with either a Kalart or Hugo Meyer rangefinder. (TM 11-487F & TM 11-2352)

-G Probably was not produced.

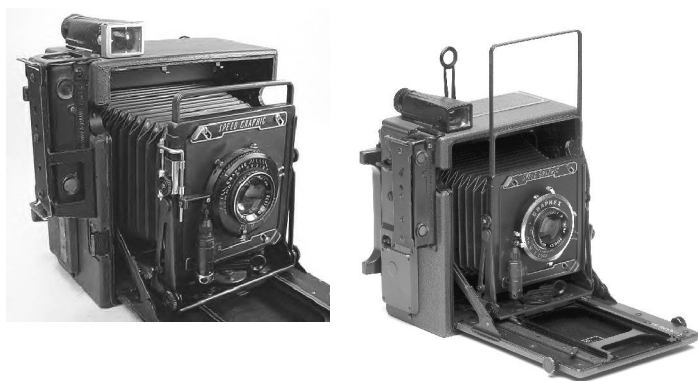
-H Shown in 1950, as an OD 4x5 Pacemaker Speed Graphic with a coated 127mm 4.7 Ektar lens in a No. 2 Supermatic shutter, but with a pre-focus button and a body shutter release. Kalart or Hugo Meyer rangefinder. It had the standard Graphic back. See KE-12(1) for a description of the military version of this camera.

-J Serial number 856,229 is an OD Pacemaker Speed Graphic with a body release and a Graflok back with slide locks. A later number (891,861)(though possibly not tagged

as a J) remained OD, but there was no body release, although it had a Graflok back, but the slide locks were gone. A “J” has even been found without the OD finish but with a side release. Go figure! Identification tags on some Pacemaker cameras suggest that they were purchased under an Air Force contract for the Signal Corps.

- **PH-104** is the camera set including the above listed cameras. Also, there is evidence that the Super-D could have been in this outfit.

New identification system started in 1952 -



KE-12(1) with and without body release.

KE-4(1) The 70mm Graphic “70”. Formerly, PH-518/PF. The camera part of the camera set KS-6(1).

KE-12(1) A 4x5 Pacemaker Speed Graphic. Previous designations of this camera were the KE-9() and PH-47-E through PH-47-J, although the KE-9() was never produced. The KE-12(1) and the PH-47-() “are functionally, but not mechanically, interchangeable.” The PH47-H was the first camera covered in olive drab synthetic leather with black trim. Also, it had a standard Graphic back. As pictured in 1958, the camera did not have a body release. Note: The “()” shown in manuals represented coverage of more than one model of the item. KS-4A(1) is the camera set for these cameras (previously PH-104).

- **KE-12(1)** Pacemaker Speed Graphic.

- **KE-12(2)** Super Speed Graphic.

Although the PH-104 set with the Anniversary Speed Graphic was shown in 1959 TM 11-487F, it was stated “Future procurements of this type of equipment will consist of another unit designated Still Picture Camera set KS-4A (1). The KS-4A (1) is functionally similar but differs mechanically. Bye-bye, Anniversary.

Note: In a memo dated 6 Jan 1977, a “Camera, Still Picture KE-12B” is noted. No example or explanation has yet surfaced.

PH-120-A & B (Later KS-7(1), KS-7(2) and KE-10())- 8x10 Copy camera. Crown Enlarging, Reducing and Copying Camera.

PH-150 (Later KE-1A())-A 8x10 Studio portrait camera. Century Studio Outfit.

PH-151-A 35-mm microphotography unit. Graflex Photorecord Microfilm Outfit.

PH-195-A & B An 8x10 wooden view camera. Probably a Crown view camera. Outfit containing this camera was PH-205 (later AN/PFH-4).

PH-385(C) Identification Equipment.

PH-503 Fingerprint Camera

AN/TFQ-1 Identification camera outfit.

AN/TFQ-1A & B Identification camera outfit.

KS-98A & B Camera sets. Includes xl camera.

One of the most interesting cameras manufactured for the Signal Corps was the Graphic “70.” (GHQ, Vol. 8, Issue 1) Tim Holden worked with the Army on the design of the camera, and after numerous changes were requested and made, Graflex refused to further modify the camera. Graflex and the Signal Corps were honored with an achievement award from U.S. Camera in 1952. It was scheduled for production in 1953, and it was last available in 1962. According to Tim Holden’s serial number book, 500 were scheduled for military production in 1953, and “mil used 490.” Although a batch of 500 was scheduled for civilian sale in a black body version, no examples have yet been found. In a 1955 issue of Trade Notes, the camera was offered to the public “shortly” a “very limited quantity.” It was offered with a Halliburton case, some accessories and a 4-inch f2.8 Ektar, for a whopping \$1,850 (plus “Subject to 25% handling allowance as special order equipment”).

As with other types of Graflex cameras, the collector still has an opportunity to add to his collection. As an example, Roger Adams wrote (GHQ, Vol. 4, Issue 3) about a Graflex 70 Jet prototype camera made for the military. It was a circa 1959 70mm SLR Graflex with a “1000” shutter, and it was manual or CO2 cartridge driven. There were at least two produced, but so far only one has surfaced.

Readers are encouraged to send in information about Signal Corps cameras in their collections, especially if their camera is not adequately or accurately covered in this article.

* According to Art Giberson in Eyes of the Fleet, p. 3, “...many of these sailors were involved in a Bureau of Ordnance program to photograph fall-of-shot during fleet gunnery exercises. The fall-of-shot program, started in late 1915, used both motion pictures and still photographs to show gun crews how well they had done.”

Graflex Historic Quarterly

The Quarterly is dedicated to enriching the study of the Graflex company, its history, and products. It is published by and for hobbyists, and is not a for-profit publication. Other photographic groups may reprint material provided credit is given GHQ and the author. We would appreciate a copy of the reprint.



U.S. Army Air Corps photography school.
Lowry Field, Denver, Colorado 1942.

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3,266,396
CAMERA

Johannes G. Padelt, Rochester, N.Y., assignor to Graflex, Inc., Rochester, N.Y., a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,407
4 Claims. (Cl. 95-11)

The present invention relates to photographic cameras. Heretofore the professional photographer and the highly skilled, deeply interested amateur have had to provide themselves with a whole series of cameras in order to take all of the pictures which either might desire to take. He might have one type camera for use in taking instantaneously developed pictures, that is "Polaroid" type. He might have another camera for ordinary roll film, and still another for slide film. He can provide himself with a camera with a removable focusing back which will permit his using sheet film, a film pack, or roll film, and the roll film used with such a back can be of different sizes; but if he wants to use 70 mm. film he must buy a special camera constructed to take that size film. If he likes a reflex camera for some of his work that means another camera; and if he wants to take some pictures with the focal plane tilted with reference to the lens axis that means still another camera. All this adds up to a very considerable investment in cameras alone; and a tremendous, impractical bulk and load of equipment to carry around.

The primary object of the present invention is to provide a camera construction comprising a basic camera housing, a lens mount therefor, and various easily attachable and easily removable accessories, whereby a photographer can quickly and readily erect an assembly that will provide him with a camera to cover almost any field of photography in which he would like to operate.

Another object of this invention is to provide a camera construction of the type described which will permit the photographer quickly and readily to assemble from a lens mount, a basic housing, and various accessories, cameras suited for large and medium format photography, and which can be used successfully and most conveniently, particularly by professional photographers.

Another object of the invention is to provide a camera construction which will enable a photographer to buy initially a low cost "stand-by" camera, and then purchase accessories which will enable him to convert that camera into a prime tool suitable for making pictures for which ordinarily other and more expensive types of cameras would be required.

Another object of the invention is to provide a quickly assemblable and disassemblable camera construction which will enable a photographer with a minimum of parts to assemble for himself quickly different types of cameras without having to buy a whole series of separate such cameras.

Another object of the invention is to provide a camera construction of the type described which is versatile and relatively inexpensive.

Another object of the invention is to provide a camera construction of the character described which is light in weight and very small for its large picture format.

Still another object of the invention is to provide a camera construction of the character described which will require a minimum of tooling cost.

Other objects of the invention will be apparent hereinafter from the specification and from the recital of the appended claims.

ACCESSORIES NEVER PRODUCED

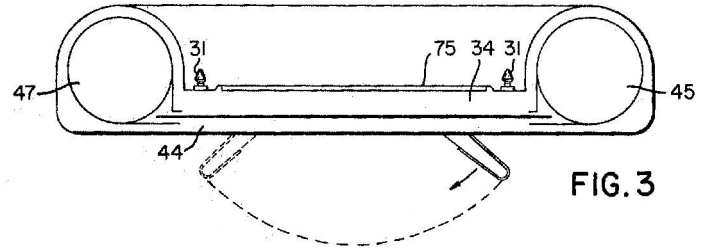


FIG. 3

Figure 3 "...still another type back which may be substituted for the back for Fig. 1 to provide a still further type of camera."

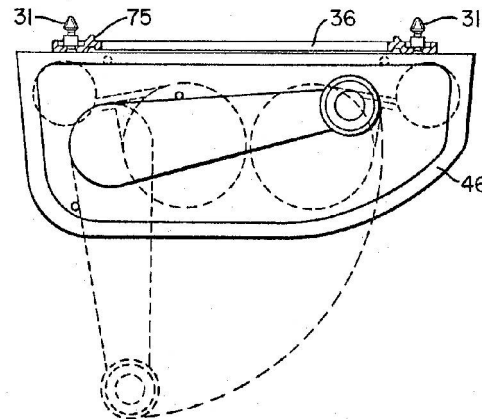


FIG. 4

Figure 4 "...a still further type of back...to assemble still another type of camera."

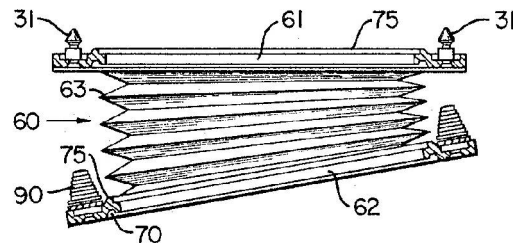


FIG. 6

Figure 6 "...another type of accessory...to convert the camera into a view type camera."

Equipment Available for the xl

Lenses available at various times

- 47mm Schneider Super Angulon f/8 (Cat. No. 7330); f/5.6 (Cat. No. 7342)
- 58mm Rodenstock Grandagon f/5.6 (Cat. No. 7331)
- 80mm Zeiss Planar f/2.8 (Cat. No. 7332)
- 80mm Rodenstock Heligon f/2.8 (Cat. No. 7339)
- 80mm Noritar f/2.8 (Cat. No. 7343)
- 95mm Rodenstock Heligon f/2.8 (Cat. No. 7333)
- 95mm Rodenstock Ysarex f/3.5 (Cat. No. 7338)
- 100mm Zeiss Tessar f/3.5 (Cat. No. 7335)
- 100mm Zeiss Planar f/2.8 (Cat. No. 7334)
- 100mm Noritar f/3.5 (Cat. No. 7344)
- 150mm Rodenstock Ysarex f/4.5 (Cat. No. 7336)
- 180mm Zeiss Sonnar f/4.8 (Cat. No. 7337) First shipped Feb. 1966.
- 180mm Rodenstock Rotelar f/4.5 (Cat. No. 7337 and later 7340)
- 270mm Rodenstock Rotelar f/6.6 (It did not have a cam) Cat. No. 7341)



47mm Schneider Super Angulon



180mm Zeiss Sonnar

Graflok Back- frame only (Cat. No. 7304); including back, focusing panel and hood (Cat. No. 7305); 4x5 (Cat. No. 7307)¹

Focusing Panel

- with Grid Lines (Cat. No. 9276)
- with Limit Lines w/o Ektalite (Cat. No. 9283)
- with Ektalite and Limit Lines (Cat. No. 9284)
- with Ektalite and Grid Lines

Viewing Hood (Cat. No. 9145)

Graphic Film Pack Adapters - 16 sheets, 2¼ x 3¼ (Cat. No. 1232)

Roll Film Holders

- RH/8 (Red) - 8 exposures, 2¼ x 3-1/16", on 120 film (Cat. No. 1252, and later 1290)²
- RH/10 (Blue) - 10 exposures, 2¼ x 2¾", on 120 film (Cat. No. 1253 and later 1291)
- RH/12 (Green) - 12 exposures, 2¼ x 2¼", on 120 film (Cat. No. 1254 and later 1292)
- RH/20 (Yellow) - 20 exposures, 2¼ x 2¾", on 220 film (Cat. No. 1258 and later 1293)
- RH/50 - 50 exposures, 2¼ x 2¾", on 70mm film (Cat. No. 7351)³

Carriages could also be ordered separately, and extra cassettes (Cat. No. 7013) for the RH/50.

Film Pack Adapter

Sheet Film Holder

Grafmatic Sheet Film Magazine - 6 sheets, 2¼ x 3¼ (Cat. No. 1266)

Polaroid Pack Film Holder - 8 exposures, 3 x 4¼ (Cat. No. 7350)⁴

Multi-Grip with right side mounting bracket (Cat. No. 7386); left mounting (Cat. No. 7383) special, less tripod socket mounting for top of grip (Cat. No. 7392). A long mounting adapter (Cat. No. 7390), and a short adapter (Cat. No. 7385) were also available for the top of the grip.



Rangefinder Eye Shield (Cat. No. 7360)

Cable Release – 18" (Cat. No. 7394); 18" locking type (Cat. No. 7393); 13" Body Cable Release with Holder (w/o Multi-Grip) Cat. No. 7382); and, Rapid-lock. Note: 47mm Schneider Super Angulon, the 58mm Rodenstock Grandagon lenses do not have the Rapid Lock Cable Release feature. (Cat. No. 9395)

Quick Focus Lever (Cat. No. 7349)

Sportsfinders

wide frame for use with the 47mm lens (Cat. No. 7361)

standard for lenses from 58mm to 180mm (Cat. No. 7362)

Sportsfinder Masks

Sync Cords

20" straight ASA Bipost (Cat. No. 2701)

20" expand-o-cord (Cat. No. 2810)

20" straight Cap Cord (Din. Fitting for Compur Shutter) (Cat. No. 2721)

36" expand-o-cord Cap Cord (Din. Fitting for Compur Shutter) (Cat. No. 2821)

12" strait. Replacement for use on xl Flash Bracket (Din. Fitting for Compur Shutter) (Cat. No. 7492)

Adapter Rings and 1A filters- all Series 8

40.5mm thread (Cat. No. 7453) (Cat. No. 7458)

49mm thread (Cat. No. 7454) (Cat. No. 7459)

58mm thread (Cat. No. 7455) (Cat. No. 7460)

67mm thread (Cat. No. 7456) (Cat. No. 7461)

Series 8 Filters (Cat. Nos. 7480, 7481, 7482, 7483, 7484, 7485, and 7486)

Lens Shade & Filter Holder – For all xl lenses. Holds xl Series 8 filters. Attaches to front thread of adapter ring or directly to xl sky 1A filters, eliminating need for separate adapter ring. Unique friction grip permits positioning lensshade squarely regardless of thread variation. Rectangular design permits use with the widest angle lens with widest film format without fear of cutoff, yet with full assurance of proper shading. (Cat. No. 7450)

Retaining Ring fits all adapter rings holding Series 8 filters in place. For use when lens shade is not used. (Cat. No. 7465)

Spacers

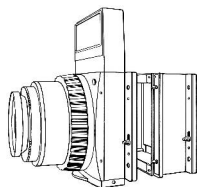
½" (Cat. No. 7321)

1" (Cat. No. 7322)

1½" (Cat. No. 7323)

3" (Cat. No. 7326)

3¾" (Cat. No. 7327)



Custom lengths were available on special order.

Flash Bracket (Cat. No. 7491); bracket only

(Cat. No. 7490); Replacement cord (Cat. No. 7492)

Hand Case, small - (Cat. No. 7370) and Shoulder Carrying Case (Cat. No. 7372)

Vulcanoid Carrying Case (Cat. No. 7373)

Lens Case for 180mm lens (Cat. No. 7377)



Sportsfinder Masks: Clip onto xl sportsfinders to define area of view. Constructed of break-resistant polished plexiglass with bold black markings.

For xlsw Super Wide Angle Camera with Polaroid® Pack film holder **Cat. No. 7363**

For xlrif or xls Camera with Polaroid® pack film holder **Cat. No. 7364**

For xlrif or xls Cameras with RH/10, RH/20, or RH/50 roll film holder **Cat. No. 7365**

For xlrif or xls Cameras with RH/12 roll film holders. **Cat. No. 7366**

7372



7377



7373



7370



¹ The 4x5 Graflok Back (Cat. No. 7307), which was introduced in 1970 and shipped in 1971, fits on any xl body with a four-pin faceplate the same way the standard xl 2¼ x 3¼ Graflok back fits xl bodies. The xl RH/50 roll holders, xl Polaroid Pack Film Holders and spacers, all fit directly to the xl bodies the same way, with the four-pin faceplate fitted to each accessory. The four-pin faceplate was the part that could be used to fit a special accessory directly to the xl body if it did not work on the 2¼ x 3¼ xl Graflok back.

As for the 4x5 xl Graflok Back, an additional feature is that it accepts all the 4x5 Graphic film holder accessories. The 4x5 Roll Holder, the 4x5 Polaroid Pack Film Holder, and the 4x5 Kodak Ready Load Holder. With the exception of the 4x5 Roll Holder, the image on the 4x5 film was 3x3¾. According to Bill, “Some of these accessories made the xl a rather hefty camera to carry and awkward to use. Better left on a tripod.”

Bill has used the 4x5 back with the xl Super Wide body with the 47mm Super Angulon and the 58mm Grandagon on the xl rangefinder body. All the xl lenses will cover the 3x3¾ image on the xl Polaroid Film holder, although the longer lens will vignette some.

² The later lever wind backs (containing rollers) were better than the earlier knob wind backs. One thing to note is that the RH/8 lever wind backs had a 2-1/4 x 3-1/16 opening versus the 2¼ x 3¼ opening of the early 2¼ x 3¼ knob winds. The little bit of width given up is due to the presence of the rollers. Film flatteners were introduced in the knob roll holder in 1960, a year before the Rapid Advance holder was introduced in 1961 and a much improved roll holder introduced in 1971 called the Model II Pro ([GHQ](#), Vol. 7, Issue 3). The Pro model can be identified by a lack of color coding and the addition of a “Singer – Graflex” tag on the back.

³ There were two listings of the RH/50 Roll Holder. One for the 4x5 Graphic (Cat. No. 1240), and one for the xl (Cat. No. 7351). They were exactly the same, except the xl model had a four-pin faceplate fitted to the 4x5 holder faceplate so it could be attached directly to the xl body, as it would not fit on the 2¼ x 3¼ xl Graflok back. Both the RH/50 and xl RH/50 use 70mm film in special 70mm Kodak Cassettes. The Cassette, or Magazine as Kodak called them, was daylight loading with 15 feet of 70mm film. It is the same Magazine used in the 70mm Graphic, Hasselblad 70mm holder and the Linhof Cine Rollex 70mm holder. Bill cannot locate 70mm still film.

⁴ According to Bill: “I made up three masks, one each for 6x9, 6x7 and 6x6 that can be taped inside the holder for the photographer who wants a Polaroid proof of that specific size. The inside area is recessed enough to accept the mask so it doesn’t interfere with the registration of the film pack. I cut out an old dark slide, but a thin piece of cardboard painted black on both sides works just as well. Just Scotch tape it in.” Also, film is still available for the xl Polaroid holder in ASA 100 & 3,000 black and white and ASA 80 color film.