



# GRAFLEX Journal

SHARING INFORMATION ABOUT GRAFLEX AND THEIR CAMERAS

ISSUE 2 2020

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attractive in that respect. But as I started to see the differences in contrast, tonal range, and detail of paper vs. film, I began to appreciate that paper is perhaps a more appropriate medium than film for some subjects – particularly in this case where I had pre-visualized a vintage-esque finished image.

Paper has some unique properties when used as a camera capture medium. Though my experience so far has been limited to Ilford Multigrade IV Deluxe RC paper, I find that it is generally more contrasty than film, and it has a significantly lower dynamic range. It doesn't take much to blow out the highlights or block up the shadows with paper negatives. For a normal tonal range, I find it's much better suited to softer light / lower contrast scenes. Some folks will shoot with a yellow filter to try to reduce the contrast. I have personally opted to go the route of pre-flashing my paper when I load the film holders, since I don't have a filter large enough to cover some of the lenses I use (namely, my Aero-Ektar and 8" AM f/2.9). Pre-flashing paper results in an ever-so-subtle fog – so that whites are not completely blown-out whites – assuming correct exposure. My pre-flashing technique is not particularly scientific, but it is repeatable. The loaded film holders sit open on the bathroom counter (my makeshift darkroom), and I flip the ceiling vent night-light on for 60 seconds. I arrived at this combination of distance and time by doing a series of test strips. When that light bulb finally burns out, I'm going to have to calibrate all over again! Paper is also extremely slow. I meter at ISO 8 for Ilford MG IV. Again, I arrived at this ISO by shooting a series of test-strips.



## TIN CHICKEN TRIPTYCH – PAPER NEGATIVES

By Jon Haverstick

Have you ever had an image in your head that simply will not go away until you shoot it? You lie awake at all hours thinking about the composition, light, lens choices, and where it's going to go on your wall. Well, this is that for me. We have a few tin chickens in our garden that serve as very cooperative subjects when I'm experimenting with new (vintage) cameras or techniques. I love to shoot them individually, and it occurred to me that the three together might make for an interesting old-fashioned triptych.

Why paper negative, you may ask. I've been shooting photographic paper in my large format cameras for a couple years: at first because it was a more cost-effective way to experiment with light, exposure, verifying functionality of the cameras, etc. At about \$0.25/shot vs. \$2.50/shot with my beloved Tri-X, you can understand why paper might be

For the Tin Chickens triptych, I opted not to pre-flash the paper. My goal was to have an extremely contrasty image, so no pre-flash necessary. You can see from the BTS image, I set up a white seamless outdoors...and waited. I actually had it set up on



my patio for several days to observe the position of shadows and subsequent texture on the chickens throughout the day. I knew I wanted a hard separation from the white background. Ultimately, I determined that high noon was the best for the result I had pre-visualized.

I spot-metered on the chickens, knowing I'd likely blow out the background (which was my intent), and came up with an exposure of 1/30s @ f/11 at ISO 8. I locked the Speed Graphic down on a tripod, so all I had to do was move the chickens between exposures, and...well... you know the rest.

The paper negatives were developed in Dektol at 1:4, and then scanned on a very basic Epson Perfection V39 flatbed scanner. Nothing fancy. Images were cropped and inverted in Adobe Lightroom and then sent to Photoshop for finishing: dust / scratches / fingerprints, a curve for fine tuning the contrast, and a warming filter (I thought the slight warmish tone better suited the image than the cool neutral black). Final collaging was also done in Photoshop.

I've yet to print these on anything other than my laser printer, but when I figure out a place to hang them, I plan on making 16x20 prints. Can't wait to see how THAT looks on our living room wall!

I attribute my initial interest and any knowledge I've gleaned on working with paper negatives to a terrific series of articles by Don Kittle at <https://emulsive.org/articles/working-with-paper-negatives-part-one-a-story-of-thrift-and-magic>. There is a LOT of info online about shooting paper negatives. And I think I've read / watched almost all of it. Don's articles are far and away the most informative for someone getting started with the medium. Additionally, James Kyle runs a Facebook group for paper negative shooters, "Experimenting with Photographic Paper as Film" (<https://www.facebook.com/groups/1438777439673554/>), and he and the members there have been extraordinarily helpful and gracious in sharing their knowledge of the process.

If you've not tried paper negatives, what are you waiting for? It's a hoot, and I guarantee it will inspire you in new ways - and maybe even keep you up at night.

**Tech Specs:**

- 1950 Graflex Pacemaker Speed Graphic
- ILEX 210mm ACU-Tessar f/6.3
- Ilford Multigrade IV RC Deluxe paper, pre-flashed
- ISO 8; 1/30s @f/11
- Chickens - Tin (from the local nursery)



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**The Faces of Freedom Project**  
<http://jonhaverstickstudio.com/faces-of-freedom-project>  
<https://www.facebook.com/facesoffreedomproject>

Here is an article by subscriber Ronn Tuttle, published in Photographica World No. 162, 2019/2. "The Journal of the Photographic Collectors Club of Great Britain [www.pccgb.org](http://www.pccgb.org)"

**A WET PLATE CAMERA WITH MODERN FILM**

By Ronn Tuttle

In 2004 while helping sort through the estate of my old friend Sam, we found a large cardboard box full of assorted items marked "JUNK" with a felt marker. In the midst of the "junk" was an American Optical Co. four-lens wet plate camera. Wow! Junk?

I eventually acquired the camera, and for the next 14 years, I proudly displayed it in my collection. The camera was originally made to produce 4 CDV sized images on a 5x7" wet plate. The camera is in remarkable condition for a camera possibly made between 1866 & 1871 (according to information in McKeown's guidebook), but it is missing a plate holder.

I am not a practitioner of the wet collodion process, but I could not stop thinking that there should be a way that I could make a photograph with this jewel. I did not want to modify the camera in any way...alas I decided to modify a conventional 5x7 film focusing panel to fit the camera. I used a Folmer-Graflex back that had been modified by a previous owner. It did not fit anything I owned, so cutting it down a little more would do no further harm. I cut it to fit the rear of the American Optical Co. camera, reamed out two small areas to allow it to fit between the mounting



Graflex back on left.

pegs for the original wet plate holder and the rear of the camera, added a screw to mate up with the original spring holder on the camera top...everything fit nicely. Now, how do I compensate for the difference in emulsion speed between wet collodion and modern film? Wet plate cameras did not use shutters, they simply removed the lens cap to perform that function, but this camera has four lenses. Solution, I used the leftover wood from the Folmer back, some more scrap wood, a little glue, some wood fasteners, and made a frame to fit over the camera's front standard, added a piece of plywood to cover the frame, and there it was, a flap shutter.



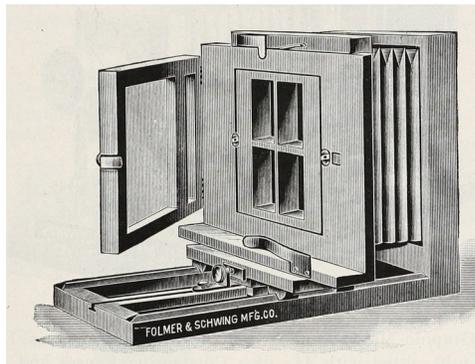
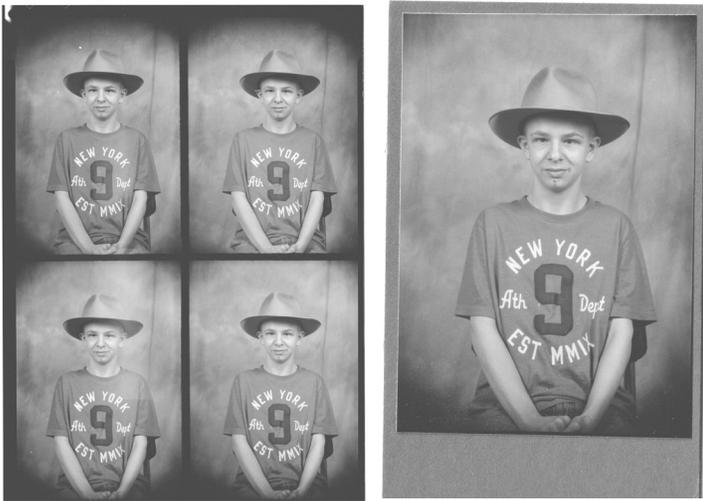
I then used a sheet of pliable plastic material with four holes to form 1/2" holes for diopters to give me an exposure of f16 that was appropriate for use with my studio strobes and Ilford FP 4 film. The strobe modeling lights provide enough light to work in without exposing the film.

The operating procedure is to compose and focus with lenses wide open, place the shutter assembly on the camera front, insert film holder, remove dark slide, lift shutter flap, manually fire strobes, lower flap, replace dark slide, remove film holder and process film as normal. Simple, but it worked. Success! I have made images with a camera made about 150 years ago. "Why?" you might ask. Because I can. Yes, it is much easier and simpler to use a modern camera, but isn't that part of the fun of being a camera collector? I think Sam would think so.

Four images on a single sheet, as well as a single one on mounting board as it would have been when CDV's were popular.



Left to right, modified back, camera, and flap shutter.



1898 Folmer & Schwing catalog.



5x7



4x5

### CENTURY-RITEWAY FILM HOLDERS

By Ken Metcalf

In 1903 George Eastman purchased the Century Camera Company, and in 1905 the Folmer & Schwing Mfg. Company. In 1918 Eastman Kodak registered the name "Century," and in 1934 "Riteway."

The holders are made of hard wood with all joints dovetailed. Made in two styles. No. 1 fits Century Cameras and Century Studio Reversible Backs, Eastman View Cameras, 5 x 7 Premo hand camera, the 8 x 10 Graphic Cameras and the R. O. C. View in 5 x 7 and 8 x 10 only. The number 1 Holder is furnished only in sizes 4 1/4 x 6 1/2, 4 3/4 x 6 1/2, 5 x 7, 6 1/2 x 8 1/2, 7 x 11 and 8 x 10 inches.

1926 professional catalog.

No. 2?

**Century.** As shown above, by at least 1926, Century holders were listed in professional catalogs. Century plate and film holders were first shown in retail catalogs in 1933, but in only 5x7. Both were issued by the Folmer Graflex Corporation, formed in 1926.

The Century-Riteway Graphic-style film holder has three "RITEWAY" patents stamped on the holder face: 1,641,420 (1927), 1,954,917 & 1,954,918 (1934). I think it is reasonable to assume this holder was first made in 1934.

1,954,917

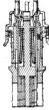
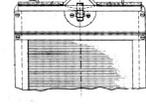
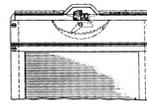


Slit.

This invention relates to means for preventing double exposures when using plate or film holders for cameras of any description.

The above sample has the slit, but I cannot make it work as described below.

1,954,918



### Century Riteway Film Holders 1927 professional catalog.

For, the patented "Riteway" Film Holder eliminates accidental double exposures by means of a self-actuated slide lock that works in combination with special tapered slide pulls. If, after the exposure is made, the slide should accidentally be reinserted into the holder with the white side of the slide pull to the outside, the Riteway attachment stops it. When it is properly reinserted with the dark side of the slide pull to the outside, the slide goes all the way in, and the Riteway attachment springs into position to lock it there until it is deliberately released for unloading. The Riteway Attachment is built into all Century Film Holders in sizes 5x7 and 8x10.

Anyone with information on this holder, please let me know.

### Riteway.



Although loaded with patents, this film holder, introduced in 1952, is comparatively simple. Made in only 4x5, the holder is made of "stretcher-leveled aluminum" in a "thermo-plastic" frame. Along with the holder patent, 2,676,901, described the method to be used in making the holder.

## PHOTOGRAPHERS FROM THE FACEBOOK'S GRAFLEX CAMERA GROUP

Vegar Moen  
and son Sixten



Mr. Moen is a Norwegian photographer living in southern Sweden. Here are portions from an interview with Punctum Magazine (Mgjesdalhammer@gmail.com).

"I set up my first darkroom in our basement when I was 12. I also photographed whatever I thought was disappearing. I photographed my friend and my family for the same reason. I wanted to preserve them.

Much of your early work seems to be made in far-away places, Tibet, India and China to name a few, while your later work is much more focused on Scandinavia, and especially Sweden and Norway.

I like working intensively for weeks in a row without being distracted. When I went off to the distant places, I was in a trance, only walking, seeing and taking pictures. I like language barriers. No talking. It is a big challenge for me to photograph in the place where I live. Harder to concentrate. Harder to get into it for real. Eventually, we were blessed with three kids, and I had to come up with other ideas in order to be near my family.



Some of your most recent work has been made in Rosengård and other areas of Sweden that have often been described as "no-go zones" and have become central to debates about immigration in Scandinavia.



When certain events get so much negative attention, I just feel the need to see it with my own eyes. My wife warned me and expected me to get beaten up. I wanted to prove to her and myself it is not that bad, so I visited all the 60 Swedish so-called "no-go zones". I set up my portrait camera and waited for folks to approach.

Certainly, people were curious and started talking to me, and the next thing you know, my camera was taking a portrait. In fact, I was the stranger being treated kindly. In particular the gangsters were happy to have their photos taken. After all, what's the point of looking tough if nobody can see you?

After my work switched more into portraits, I soon learned that whoever is being photographed

also should be having intentions to get photographed. I asked our kids, if I were to photograph them the way they wanted, what would be most fun. The answer was making their own skins. Skins are costumes and masks in computer games. Stuff they can earn or buy extra to look cool. They wanted to make their own skins from cardboard boxes and other outdated materials in our garage. I was preparing for an exhibition in Røros, Norway at the time and started asking around after kids in Røros who are into making their own skins.



I got lots of response from people wanting to be photographed. After so many years, it still gives me the BIG KICKS. A never-ending fascination. Being with the camera. The shutter and the light. The excitement. Processing the negatives and studying the results with a loupe."

Mr. Moen shoots with both a Press and Home Portrait Graflex, and the Home Portrait is fitted with various fast, high-end Aero Ektar, Dallmeyer, Hugo Meyer, Voigtlander Petzval lens, and he uses Fomapan 100 & 400 film.



Vegar's children Signe, Sixten, and Svante.



Sami girls from Vegar's hometown in Norway.

# THE BIG BERTHA CAMERA

By Thomas Evans

Graflex single-lens-reflex cameras, with a fast, long-range or telephoto lens attached, have come to be known as Big Bertha cameras. The most common camera adapted to this use has been the 5x7-inch Home Portrait Graflex with revolving back for both horizontal and vertical images. The most common lens used appears to have been a 70cm, (28-inch) f/5.0, Carl Zeiss Jena Triplet, originally made for aerial photography from 'aeroplanes' and balloons by the German military during World War One. Zeiss also made f/5.0 50cm and 70cm Tessars, an f/4.8 50cm Triplet, and an f/7.0 120cm Triplet for aerial photography. According to the [Lens Collector's Vade Mecum](#), these aerial surveillance lenses have been associated with Zeiss lens designer August Sonnefeld, who worked on 'deformed' (aspheric) Triplet designs, as seen in US Patents 1,616,765 and 1,825,828. He thinned the outer edges of the rear elements to improve sharpness.

## Lenses

Other lenses used include the 40-inch, f/5.6 Dallmeyer telephoto, and at least one instance of a 60-inch f/5.6 Dallmeyer lens fitted to a Big Bertha for the Associated Press. The latter lens was specially made by Dallmeyer and was said to have taken a year to make, requiring multiple re-casting of the large, up to 8 1/2-inch diameter lens elements to get them right. Because of the weight of the lens, focusing on this camera is made by moving the camera body back and forth. Interestingly, the 40-inch telephoto requires less extension than the 28-inch Triplet, resulting in an over-all shorter camera. The Zeiss Triplet, however, was valued for being relatively lightweight. Even though the Triplet has just three lens elements, it had very good definition.

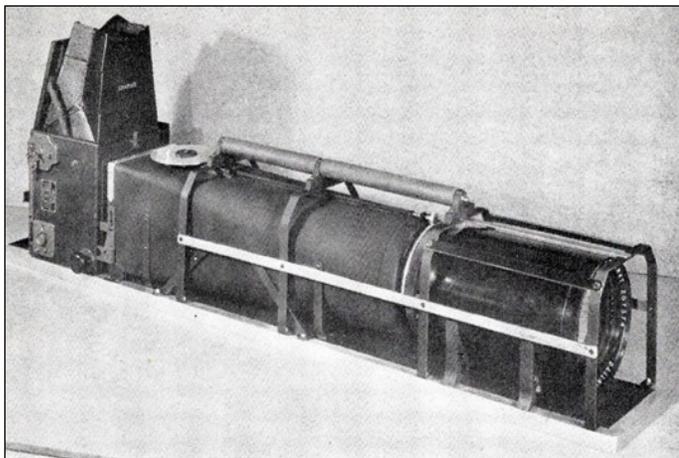
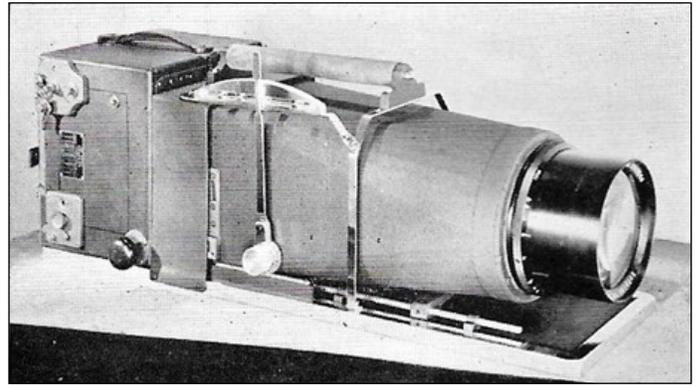


Photo by Folmer Graflex Corp.

The famous "Big Bertha" of the Associated Press has a 60-inch lens; the diaphragm is set by linkage from the dial in front of the hood.

## Joseph A. Sprague

The single-lens-reflex Graflex cameras lend themselves to use with telephoto lenses, and the 4x5" Naturalists' Graflex was sometimes fitted with long lenses of 24 to 32 inches. William Kuenzel, the first staff photographer for the [Detroit News](#), used a 5x7" Press Graflex with a long-range lens to photograph sports events. The Press

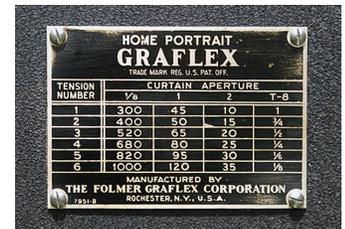


**A NEW BIG BERTHA.** One of the more recent and streamlined of the Big Berthas, this camera is a combination of a Graflex and a 28-inch lens. Notice the lever for quick focusing, the lens which has aperture openings from f/5 to f/32

Graflex was modified with the addition of a wooden extension in front to accommodate the long lens, much like the Naturalists' Graflex has. However, Joseph A. Sprague, then an engineer at the Ackley Machine Shop in New York City, is credited with assembling the first 'Big Bertha.' In 1937 he had the idea of adding a long-range lens to a standard 5x7-inch Home Portrait Graflex, connecting them with a Duraluminum tube, and mounting all on a solid platform to maintain alignment. He is also credited, along with the [New York Daily News](#) engineer George Schmidt, with the idea of adding a 'gear shift' focusing lever, with adjustable, pre-focus stops. With this lever, locations, such as the bases on a baseball field, can be pre-focused, facilitating rapid shift of focus during the action. The Home Portrait Graflex and f/5.0, 28-inch Zeiss Triplet proved to be very popular. By 1940 Joseph Sprague was working for the Folmer Graflex Corporation as Chief Engineer, making Big Bertha cameras on order for major newspapers.

## Home Portrait Graflex

The standard Home Portrait Graflex focal plane shutter is capable of shutter speeds up to 1/500<sup>th</sup> second. Graflex also made a 'professional' version with shutter speeds up to 1/1000<sup>th</sup> second. The latter was usually the version used for Big Berthas. Another unique feature of the HPG was that it could be set to expose through two or more curtain apertures, combining the set speeds for slower instantaneous speeds. The 1/1000<sup>th</sup> shutter can be set to provide six speeds between 1/8<sup>th</sup> to 1 second, and then by combining the 'Open' and '2' (inch) apertures, these speeds are each made 25% longer.



Shutter speed plate on 1/1000<sup>th</sup> model of the Home Portrait Graflex.

## Photojournalism

"Well equipped newspapers" used these cameras on a daily basis during the 1940s and 1950s to make detailed shots of football and baseball players in action, suitable for three- or four-column spreads in their sports sections. The cameraman had assistants to handle the camera and could have messengers who could take the first exposed films and rush them by motorcy-

cle back to the newspaper, to be processed and printed wet to make a quick deadline for the next edition. The newspapers were set up for quick processing of large format films, and it took a while for this to change to accommodate smaller format films.



Big Bertha cameras set up in a Press Box, ca. 1956.

The battery of Big Bertha cameras to cover sporting events were usually set up in a press box, centered some 50 feet above the playing field and 100 to 400 feet from the action. The 28-inch lens could produce an image of the players at 100 feet that was large enough, about six times as large as a comparable, smaller format camera, to be clear and detailed when printed in the paper.



LAUNCHING THE U. S. S. NORTH CAROLINA. It is always an exciting moment when champagne is cracked on a ship's bow—but the photographer is not always allowed within range. A Big Bertha camera made this shot possible—at exactly the right moment  
*International News Photo*

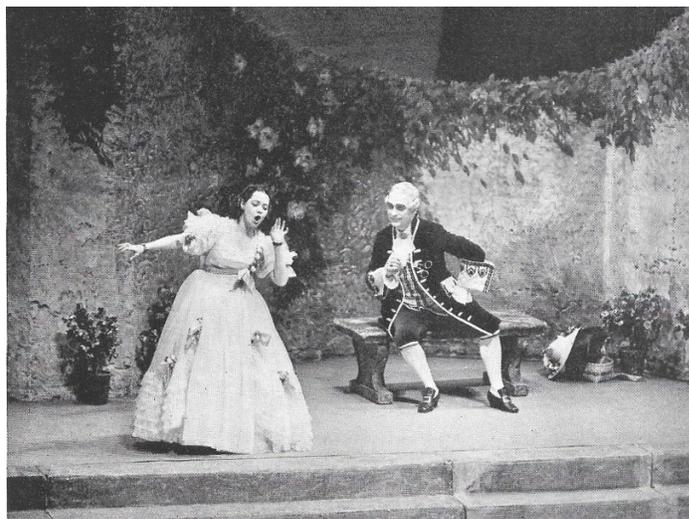
Other uses included close-up views of otherwise hard to get close to events, such as flag-pole sitters and people threatening to jump from window ledges (which could be taken from adjacent buildings), speeches given to large crowds, launching of naval ships, horse races, and plays and operas taken from back balconies.

#### 1940 Graflex Dealer Price List.

##### The 5x7 Big Bertha Cameras

Basically, most of the so-called Big Bertha cameras consist of an especially altered 5x7 Home Portrait Graflex into which there is installed a long focus lens. In many quarters, though, the 5x7 Home Portrait Graflex regularly equipped with any of the regular lenses offered for it well serves the news field, but without exception it is necessary that such cameras be especially equipped with the standard high-speed Graflex focal plane shutter rather than the special shutter which is standard equipment on the Home Portrait Graflex. The 5x7 Home Portrait Graflex when especially equipped with the standard high-speed Graflex focal plane shutter is normally referred to as the "special press model". Prices for it are as follows:

	Net	List
Special Press Model 5x7 R.B. Home Portrait Graflex without lens	\$163.33	\$245.00



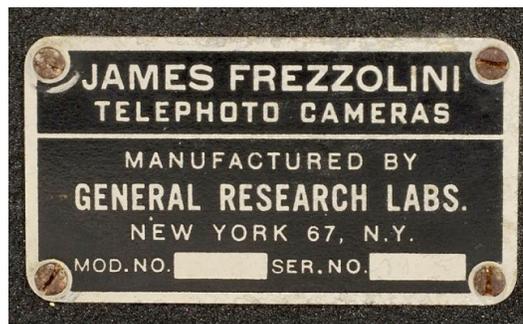
DON PASQUALE. Opera scenes, such as this garden setting, are often dimly lit and present quite an exposure problem. With the Big Bertha and ultra fast pan, however, action shots are possible. DATA: 28-inch Big Bertha, extra fast pan film, 1/2 second, f/5  
*Photo, William Eckenberg, New York Times*

#### William C. Eckenberg

William C. Eckenberg, staff photographer for the New York Times, and William Freese, Manager of the New York Times Studio, photographed 25 operas at the Metropolitan Opera House by 1941. During a performance, any distracting sound was considered to be a disaster, and so Mr. Eckenberg developed techniques to keep his Graflex from making noise during operation, such as avoiding the loud click as the mirror is snapped into place by pressing down the mirror release lever until it was fully in position. The actors were cooperative and would hold position at pre-determined moments to facilitate a planned exposure, and one Stage Manager was an 'ardent camera enthusiast' and would have the lighting adjusted to aid in the photography.

#### James Frezzolini

James Frezzolini, as an electrician at the New York Daily Mirror, built several Big Bertha Cameras for the paper, with an emphasis on streamlining the cameras and reducing the weight. Early on, by substituting Duraluminum for steel and brass parts, he was able to reduce a 120-pound Big Bertha with a 48-inch lens down to 65 pounds. His design uses a large tube within which the lens moves for focusing, and a dial on top of the tube near the camera body which will adjust the aperture setting, as well as the gearshift focusing with adjustable pre-focus stops. The front half of the camera body is essentially armor plated, to strengthen the connection with the large tube, thus eliminating the need for a large and heavy platform under all. His version of the Big Bertha, with a 28-inch Zeiss Triplet lens, weighs about 35 pounds. He later became the head of the General Research Laboratories in New York City, which made Big Bertha cameras well into the 1950s. Customers could bring in their own Home Portrait Graflex to be fitted with the lens and tube assembly.

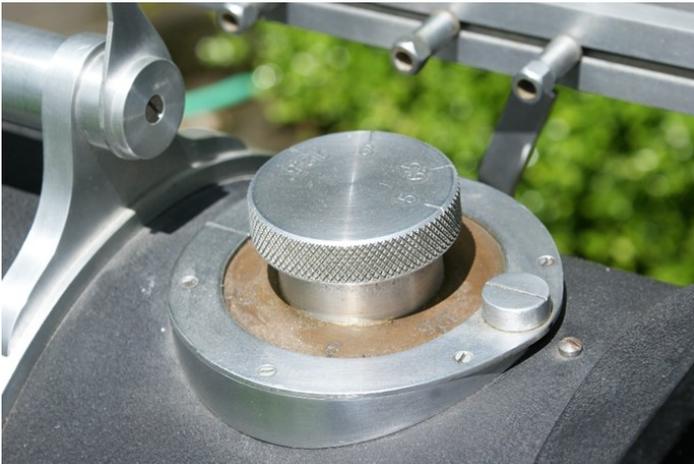


## Making Photographs



Home Portrait Graflex converted to a Big Bertha by James Frezzolini in the 1950s.

The Big Bertha pictured here is based on a Home portrait Graflex that was made in 1916, and is fitted with a 70cm, f/5.0 Carl Zeiss Jena Triplet made in 1914. It does not have the James Frezzolini identification plate, but it is his design, and so it was probably assembled as a Big Bertha in the 1950s. The camera and lens together weigh about 35 pounds, and this relatively light weight is due to the light, three-element Zeiss Triplet, and the use of aluminum parts. The 'gear-shift' can be used to focus on pre-focused locations, set by the four adjustable stops. The camera originally had a sportsfinder frame on the front of the lens tube, so with pre-focus locations set, the lid could be closed and the camera sighted with the sportsfinder. The gearshift can also be released (small knob at its base) and the camera focused with the large aluminum knob, which provides a greater range of focus. The closest focus distance is about 20 feet, but the over-all design seems to favor 100 to 400 feet.



Frezzolini design aperture adjustment dial. The pegs seen in the background are for pre-setting focus locations.

The dial on top of the lens tube is used to adjust the lens aperture, with a range of f/5.0 to f/12.5. The home Portrait Graflex has a revolving back, so that vertical as well as horizontal images can be made. Due to the long distance from the lens to the film, when the back is in the vertical position, about one half inch is vignetted from the top of the image. This is due to the cross bar inside the camera to which the mirror latches. The 700mm lens produces an image size about 3½ times that of the 'normal' No. 34 Kodak Anastigmat, 8½" (216mm) lens usually found on the 5x7" Graflex.



View made with the Big Bertha with 70cm lens.



Same view with 5x7" Graflex B with KA 34, 8 ½" lens.

This World War One vintage Zeiss Triplet has very good definition. The 700mm (28-inch) lens is listed by Zeiss as covering a 9x7-inch format, less than might be expected, and this may be due to only the center of the field of view being well-corrected. The un-coated lens is prone to flare. The front of the lens tube serves as a lens shade, but pointing the lens anywhere near the direction of the sun will produce enough flare to obscure the image. Due to the narrow angle of view, it would be possible to extend the lens shade a foot or more, which should reduce flare.



Zeiss Triplet flare when pointed near the direction of the sun.

## Conclusion

In 1940, when 4x5-inch and 5x7-inch format cameras were the norm for newspapers, Joseph Sprague described the advantages of using a large format camera with a long-range lens from the grandstand: "Better and more negatives can be made by a photographer located in a choice position with a perfect view of the entire field of action than can be made by a man working on the field, trying to guess where the next play will take place. Shooting from a distance avoids possible interference with the game and annoyance to spectators, as well as the actual danger of personal injury involved." He also addressed the question of using a more portable, smaller format camera rather than using the 5x7-inch Big Bertha: "When it is considered that newsmen have deadlines to meet, and rapid development and wet printing is the rule; and when one remembers that the picture editor frequently calls for a sharp 'blow-up' to run about four columns or more, with characters 4½ inches or more in height; then it will be appreciated by those who have tried both that a large negative image in the first place is desirable if not essential." While a camera with a 5-inch (127mm) lens, used at a distance of 200 feet, would produce a 1/8<sup>th</sup>-inch high image of a six-foot man on the negative, the Big Bertha with a 28-inch (700mm)

lens would produce an image of the same man as  $\frac{3}{4}$ -inch high on the negative. He noted, too, that the fact that the larger cameras used individual film holders, rather than roll film, was an important advantage, as the first shots made at the beginning of a game could be rushed by messenger to the newspaper. The films used in the 1940s and 1950s were gaining in sensitivity, and this faster film speed allowed the use of action-stopping shutter speeds with lenses with the relatively fast aperture of f/5.0. Such films as Super Panchro-Press and Super XX then in use had the "fast" speeds of 125 and 100 ASA, and Tri-X had the "super-fast" speed of 200 ASA.

As film, cameras, and lenses improved, the images produced by them became more acceptable to news editors and more common. By the 1960s, very good results could be achieved by using smaller and more portable cameras fitted with telephoto lenses, and the era of the Big Berthas came to an end. For some twenty years, they benefitted from considerable improvement and served their purpose better than any other camera. They continue to be examples of photographic inventiveness and ingenuity.



70cm, 1:5, Carl Zeiss Jena Triplet

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## Newly acquired cameras from the George Eastman Museum



4x5 RB Graflex, serial #87063, modified (resembles Naturalist Graflex, but with metal box) to accept 40-60-inch Hugo Mayer lenses, serial #359508. Listed as a 4x5 RB Telescopic Graflex. One of these, 86809, has an estimated date of 1917.



5x7 RB Graflex Series D (The hood cover is missing, so no serial #.), "Big Bertha", w/ 36-inch f/6.3 lens. Camera is marked "The Courier Journal/ The Louisville Times". Not normally made in this size.

5x7 RB Graflex Series D, serial #153310, "Big Bertha" w/ 75cm f/6.3 lens. 1926. Listed as Home Portrait.

4x5 RB Graflex Series D, serial #176259, "Little Bertha" w/ 40 cm f/4.5 Tessar, serial #678486. 1931.

# "ENLARG-OR-PRINTER"



## Graflex Enlarg-or-Printer

By Jim Flack

The Graflex Enlarg-or-Printer (EoP) is a compact marvel of photographic resources for the at-home photo worker. It was designed to require only a minimum of floor space and produce enlargements of film sizes from 35mm to medium format up to 6x9cm.

It is called the Enlarg-or-Printer because its unique design enables it to be used as a contact printer from film or paper negatives up to 8x10, plus its internal lens and film holder enable it to function as a projection printer to enlarge negatives up to 7 times the original size, depending on the enlarging lens used. Enlargement size is controlled by raising or lowering the glass top according to a scale on the side of the unit.



The EoP looks just like a typical floor-standing contact printer from that era. There is a handle that is raised to unlock the top cover, revealing the clear glass for receiving a contact negative and printing paper. When the handle is closed, the paper and negative are sandwiched next to the glass, and

when latched down, a light is automatically turned on to make the contact print exposure.



Retouching Desk

The EoP is perfect for the photographic workers who handwork their negatives, such as for paper negatives or retouching portraiture. Its height and illuminated glass top enable it to be used as a retouching desk.

The glass top can be tilted for ease of use as a retouching desk. The low-power mode of the enlarger light makes it easy to see through a negative to add pencil shading or paper masking where desired. Masking may be interleaved between the negative and printing paper. Adjustments can be made to a negative while being viewed on the printer's illuminated glass and then printed again and again until the desired effect is achieved.



Tilting Top

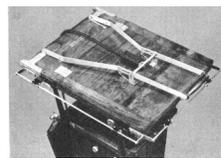
The other purpose of the EoP is to make enlargements from medium format or smaller negatives. The EoP is configured as a vertical enlarger turned upside-down. The light source and diffusion glass are located near the bottom of the unit. This soft, even light passes through a negative, held in a book-style film holder, and focused by a lens pointing upward toward the glass at the top. The glass top can be tilted, if necessary, for perspective correction.

Remember that the glass at the top is clear for contact printing, so to focus the negative from the enlarger below, a "ground glass" accessory made of plastic is placed on the glass top.



The negative carrier is a book-style holder to sandwich a negative together with an appropriately sized film mask.

Film masks are provided for a variety of medium format and "miniature" film sizes. The mask openings, in inches, are: 1-7/16x1-5/16, 1-9/16x2 1/8, 1 1/2x2 3/8, 2 1/8x2 1/8, 2 1/8x2 3/8, and 2 1/8x3 1/8. This covers the range of typical film sizes from 35mm to 6x9cm.



Extension Top

For prints larger than the 8x10 top surface of the EoP, there are two methods for achieving even bigger enlargements. An accessory top was available that raised the enlargement screen high enough for 11x14-inch enlargements. Alternatively, the EoP has a feature allowing it to be used as a horizontal

enlarger that projected an image onto an easel or a wall. This is accomplished by removing the glass top of the EoP and placing it on its back on top of a table. The image can be projected through the top of the EoP and focused on large printing paper affixed to a wall.

When traditional darkroom dodge-and-burn techniques are to be employed for printing enlargements, the EoP provides access through a side door to insert dodge-and-burn tools into the projected light path before the printing paper. A mirror opposite the open door is slanted at a 45-degree angle so that the worker can see the projected image on the paper from below while performing dodging and burning techniques.



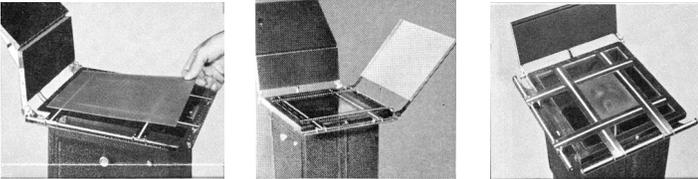
Notably, the film size of the Graflex National Series II camera is a good match for working with the Enlarg-or-Printer. The Graflex Enlarg-or-Printer was produced from 1936 to 1942, closely following the National Series II camera which was produced from 1934 to 1941. It seems that the EoP was conceived to be a companion product for the Nat'l Series II aimed at the amateur photographer who wishes to print images at home. These two products were often advertised together. On page 3 of the Enlarg-or-Printer manual, specific mention is made that the Nat'l Series II camera's lens can be used as the enlarging lens for the EoP. The EoP lensboard has a slid-

ing clip to attach the lens that is similar to the lens mount on the National Series II camera.

Graflex introduced print advertisements emphasizing how the Enlarg-or-Printer and the National Series II camera complement each other. Graflex advertisements from about 1936 offer the book, Photographic Enlarging by Franklin I. Jordan, for free with the purchase of an Enlarg-or-Printer. This book includes several pages devoted to the use of the Enlarg-or-Printer and the National Series II camera.



**Other features.**



Ground Glass Focusing      Hinged Focusing Screen      Adjustable Masking Blades

The connection between the EoP and the Nat'l Series II Camera is also emphasized in the Nat'l Series II Manual, pages 28-29 as follows:

"The Graflex Enlarg-or-Printer was designed to allow your using the National Graflex lens for making these interesting enlargements. With one compact unit, you are provided with an enlarger, contact printer and retouching desk, almost a complete darkroom in itself. The compactness of this unit will be appreciated by those who are forced to work in a confined space. It requires no installation or setting up. It is always set to go.



Not only will the Graflex Enlarg-or-Printer accept your National Graflex negatives, but it will accommodate any negative ranging from 35mm to 2 1/4 x 3 1/4" or that area of negatives up to 4x5".

The Graflex Enlarg-or-Printer will completely round out your enjoyment of National Graflex photography. Complete information on this versatile unit will be sent you upon request by our Service Department."

**Specs:**

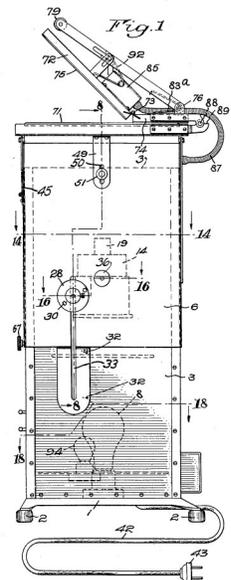
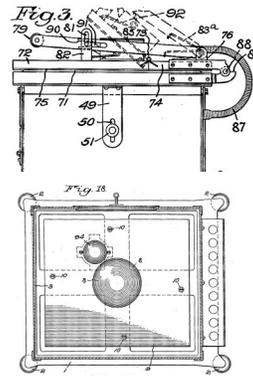


**ENLARG-OR-PRINTER**  
Is extremely compact—only  
11 1/2" x 13 1/4"  
x 26 3/8"  
over-all



2,003,190

Patented  
May 28, 1935



This invention relates to self-contained, complete apparatus for making either contact prints or enlargements, from developed negatives of any character.

Edson S. Hineline, Rochester, N. Y., assignor to Folmer Graflex Corporation, Rochester, N. Y., a corporation of Delaware

Job No.	Date	Serial No.	
		Range	Made
7667	10/15/1935	188289-188488	200
8006	10/15/1935	189489-189738	250
8006	1/8/1936	190122-190141	20
8706	6/24/1936	192623-192872*	250
8706	8/27/1936	194604-194615	12
			732

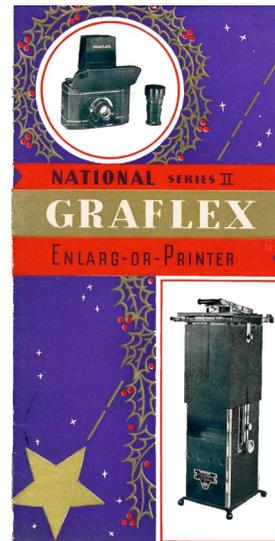
\*Samples 192642 & 192683.

**Initial Pricing**

The <b>GRAFLEX</b> Enlarg-or-Printer, without lens.....	\$87.50
Complete with Graduated Self-Centering Masking Device, Focusing Screen, Dodging Mirror, Metal Lensboard, Lamps, Connecting Cord, Book-type Negative Holder, set of eight Masks and one copy of "Photographic Enlarging." (When specified, Strip Film Holder for miniature negatives will be substituted for the set of Masks.)	
Accessory Extension Top to provide 11 x 14 contact prints or enlargements. . . .	19.50
Accessory Extension Top, improved model, with masking blades and platen switch . . . . .	24.50

**National **GRAFLEX** SERIES II**

With f.3.5 Bausch & Lomb Tessar Lens (with cable release sockets)...	Focal Length 75 mm	2 1/4 x 2 1/2 Series II \$82.50
f.6.3 Bausch & Lomb Telephoto Lens (cost additional).....	140 mm	55.00



# 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 Photo. Signe Moen with 5x7" Home Portrait Graflex.

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## CATALOG #9446 PARTS KIT FOR PACEMAKER "45"



PW 102-3-3 SHFT SLIDE SPACER SCREWS	PW 1082-3 BED BRACE PLATE SCREWS	PW 3048 SUPPORT LOCKING SCREWS	PW 3077-P1 SLIDE LOCK NUT	PW 3070-P1 VIEWFINDER BARREL PW 3375 BARREL SLEEVE	PW 3044-P1 RING FRONT KNOB
PW 151-1-3 CASE RELEASE SCREWS	PW 3184-P2 YOKE LOCK STOP SCREWS	PW 1703-3 YOKE LOCK SCREWS	PW 3040-P1 SLIDE LOCK SCREW	PW 3070-P1 VIEWFINDER BARREL PW 3375 BARREL SLEEVE PW 3380 BARREL SCREW	PW 3070-P1 VIEWFINDER BARREL PW 3375 BARREL SLEEVE
PW 3122 SHIM SCREWS	PW 3080 HANDLE BRACKET SCREWS	PW 151-1-3 BED BRACE PLATE SCREWS	PW 3047-P2 SLIDE LOCK WASHER	PW 104-4-3 ENCLOSING BRACKET SCREW	
PW 3122-P2 BED BLOCK SCREWS	PW 151B2-4 BOTTOM TRIPOD SOCKET SCREWS	PW 112B2-2 BED BRACE PLATE SCREWS	PW 3047-P20 SLIDE LOCK WASHER	PW 2549 BOTTOM CAP NUT	
PW 3056 CASE GUIDE SCREW (OLD STYLE)	PW 102B-4 BED LATCH INSERT SCREWS	PW 3108B-P4 FRONT GUIDE SCREWS	PW 3050-P3 SLIDE LOCK WASHER	PW 2503 LINK BALL	
PW 150B-4 YOKE GUIDE SCREWS	PW 1048B HANDLE BRACKET SCREWS	PW 3044-P1 FRONT STANDARD ECCENTRIC NUT PW 3044 FRONT STANDARD ECCENTRIC	PW 3122-P2 CASE GUIDE SCREW (NEW STYLE)	PW 3127 INSULATOR FOR SOLENOID	PW 3076 CAP ASSEMBLY

See "Voyage To The Bottom Of The Sea" ABC-TV and "90 Bristol Court" NBC-TV, Monday nights. copyright © 1964, THE COCA-COLA COMPANY. "Coca-Cola" and "Coke" are registered trademarks which identify only the product of THE COCA-COLA COMPANY.



Coke in the picture means a lift for your morale, a boost for your energy... and the refreshing taste ever.

things go  
 better  
 with  
 Coke




An obvious publicity still ca. 1938-41. According to the typed information on the back, the lady is actress Carol Bruce, and the actor is Jack Gilford. Gilford worked as the master of ceremonies in the first downtown New York integrated nightclub, Café Society. Pictured with a Press Graflex.