



# GRAFLEX Journal

SHARING INFORMATION ABOUT GRAFLEX AND THEIR CAMERAS

ISSUE 1, 2020

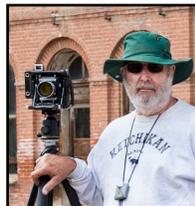
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## HAD I NOT PURCHASED A SPEED GRAPHIC

By Davis Strong

Had I not purchased a 4x5 Speed Graphic in 1964 at the tender age of 17, it is unlikely I would have spent the next 23 years as a news photographer.



My path was not a straight one. When I was 15, I began to develop (pun intended) an interest in photography. My father was an amateur photographer in his earlier years and still had his developing tank and other darkroom items, including an old Federal enlarger, and that is where my story begins.



Any chain is only as strong as the weakest link. In my early attempts to make photographs, the weakest link was the old 2x3" Federal diffusion enlarger with a horrible lens made up mostly of scratches and probably fungus. My first "real" camera was a 35mm Yashica Penta J, not a bad

camera, it made excellent slides. I got to the point where I could produce a well-exposed roll of black and white film and a proof sheet. I shot a lot of bulk-loaded 35mm film and made lots of proof sheets, but when I tried to make an enlargement, the results were pathetic.

I bought a used Minolta Autocord and then a Miniature Speed Graphic (right), hoping to get better enlargements. Of course, those cameras were more than able to produce a negative capable of making a good 8x10, but the enlarger was not.



As an amusing aside, when I first loaded a film holder (one of the two that I owned) for the Miniature Speed Graphic, the book said to put the film notch in the upper

right-hand corner of the holder. What the instructions didn't say was that you had to hold the holder vertically. I was holding the holder horizontally, thus the film ended up emulsion side down. Once I figured that out, things got better.

The first high school I attended had an excellent photography program in the late 1940s and early 1950s. But by the time I arrived, the photography program was only a memory. Fortunately, the school library had an extensive collection of photo books, most of which were 10 to 15 years old. It goes without saying that a large portion of the photos in the books were credited to photographers using 4x5 Speed Graphics.

Here, I thought, was my answer: I needed a 4x5 Speed Graphic. It took time saving, mowing lawns and wheeling matching funds from my father until I came up with the money to buy a used 4x5 Pacemaker Speed Graphic and half a dozen film holders. Since my Federal enlarger was a 2x3", I



needed a different enlarger. The most economical option was a Graflarger back, so that was added to the bill, along with a sheet film tank. At last I could produce sharp 8x10, 11x14 and even larger prints.

By this time, I had moved out of my makeshift bathroom darkroom, leaving behind developer stains on various surfaces. I had a darkroom that my father helped me build in a corner of the garage. Thanks, Dad. It had running cold water, was chilly in the winter and hot in the summer, but it was dark.

One evening in the summer of 1964, the sound of sirens drew me to a car crash a few blocks from my home. Naturally, I took along my Speed Graphic. A car involved in a street race had flipped and burned. At that time, I did not have a reliable flash unit. After attempting a couple of failed flash shots, I placed my Speed Graphic on the road and propped the bed up on a fire hose. I made two -time exposures lit by a fire department work light. I think the exposures were 10 or 15 seconds. I was guessing, since I had not brought a light meter. One shot caught a spray of water from a firefighter on the other side of the car creating a better than average shot.



Very likely because I had a Speed Graphic, none of the firefighters, sheriff's deputies or highway patrolmen on the scene questioned the attendance of a 16-year-old kneeling in the street taking photos.

I developed the Super Panchro Press Type B (the film all the photographers used in the old books), made an 8x10 glossy print and rushed it down to the local twice-a-week newspaper, which was on deadline for the next day. They happily took the photo. The next day I awaited the arrival of the paper and was rewarded with my first published photo, a nice three column cut with my name under it. A week later, I got a check for five dollars. I was hooked.

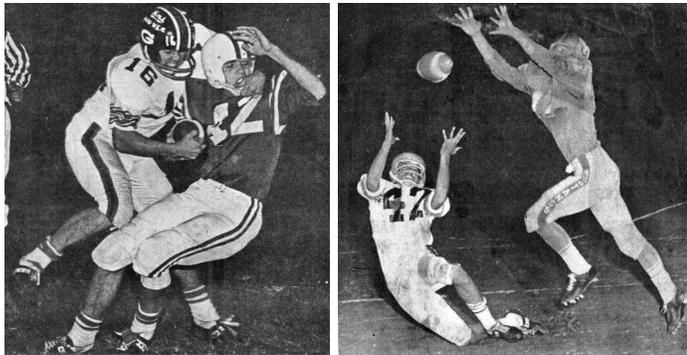
It was about this time that I moved to a new high school. After looking at the previous year's yearbook, I figured I could make better photos and signed on as a photographer for the school newspaper and yearbook.

In Southern California, where I grew up, and in many other parts of the country, high school football is a big deal. Friday and Saturday nights would find a large portion of the local populace warming seats in the bleachers at the high school football field.

The yearbook football photos from the previous year had been shot from too far away using the school's Yashica TLR, and the film had been commercially processed and printed. By this time, I had acquired a used Dormitzer electronic flash to which I had added another capacitor for more power. Somehow, I avoided electrocuting myself, although I did get the occasional tingle. A Graflex Strobflash II came later.



Now armed with a Speed Graphic and a powerful flash, I had the perfect tool for night football photography. The lighting at most high school football fields of the time was abysmal. Shooting with available light (there was a lot more available dark) was a non-starter. Most fields would give a 1/60 or 1/125 of a second if you had an f:2.8 telephoto and used Tri-X pushed to the max with the attendant grain, blur and un-sharpness. There was just enough light that shooting flash with a 35mm camera at 1/60 would cause ghosting and leave behind streaks where the light reflected off the helmets.



The lens on a TLR produced too small an image on the negative most of the time. But the normal lens on the Speed Graphic was long enough that if the action was even 40 to 50 feet away, I could get a good print from the enlarged section of the big negative. If the action came closer, I got an even better image. After awhile I got a pretty good feeling how far to turn the focus knob if the action got close. There was no time to use a rangefinder.

The aforementioned local paper did not have a staff photographer; although, they did own an Anniversary Speed Graphic which nobody knew how to use. Most of the grip and grins and other routine photos were taken by a local studio photographer using a 4x5 Crown Graphic. He undoubtedly had better things to do (like weddings) than hang around a football field for a couple of hours on a Friday or Saturday night. Hence the sports pages had no photos of most local sports.

But I had the photos I shot for the yearbook, so I took them by the newspaper, and the sports editor was thrilled. I have always had the feeling that because I had a Speed Graphic, they assumed I knew what I was doing (which one pretty much has to) and that I could deliver the goods.

Within a couple of weeks, I was asked to photograph games other than those at my high school. I was off and running, and those big checks for \$5 a photo started rolling in. Often two photos of a game would run in the Sunday edition and then a third in the Wednesday paper as a preview of the next game. Apparently, I was breaking the bank, because after a discussion with the owner/publisher no less, they decided to pay me only \$4 a photo if they used more than one from an assignment.



When basketball season started, I still had a job. Most of the gyms were equally dim, so the Speed Graphic and flash were still a good choice. I would place my Graflex case at the end of the court and sit on it. That gave me a lower angle, and shooting was a lot easier than hustling up and down the sidelines at a football game. Lots of close action filled my wire frame finder, and smaller lens openings made for lots of depth of field. I always tried for some floor action rather than the overdone layup photo.

Typically, I would shoot a maximum six sheets at a basketball game and up to 10 at a football game. From these I got my three keepers. (Wait for the shot, no motor drive here.) At the time, a 100-sheet box of 8x10 Kodak Polycontrast glossy cost about \$10, and a 100-sheet box of 4x5 GAF Super Hypan (ASA 500) cost about the same. With an income of \$12 per game, it didn't take too many sales to pay for the materials.

After high school, I attended a college close enough that I could come home on weekends to shoot sports and, of course, get my laundry done. Thanks, Mom. During the summer break, I worked in the local camera store and on days-off developed my own photo features, which I shot and sold.

By the time I was in college, I had a brand-new Nikon F with 28, 50, 105 and 200mm lenses for the heart-stopping sum of \$900. I was working part time for \$1.65 an hour in a camera store and making \$4 or \$5 a photo shooting for the local paper.

Despite the ownership of a state-of-the-art 35mm and a Rolleiflex, I continued to shoot night football with the Speed Graphic because, in my opinion, there was no

better tool for the job. I did shoot some games with a borrowed Tele Rolleiflex with a prism. It was a nice camera, but the action would occasionally come too close to be photographed and the camera was way too expensive, so I stuck with the Speed Graphic.



After college graduation, I worked for a number of newspapers in the United States and Canada, ending up at the Edmonton Alberta Sun. During that time, football field lighting got better, and I had fast telephoto lenses, so I didn't take another newspaper photo with a Speed Graphic until 1981. However, I did use the Strobflash II for several years until the batteries got too expensive.

While in Edmonton, I produced a photo feature on a steam-powered excursion train. In the past, I had chased and photographed steam trains as a hobby. I decided one of the photos should be a night shot, and for myself I wanted a negative I could really enlarge. I dusted off the Speed Graphic, loaded holders with Ilford FP4 and sometime around midnight (the sun goes down late in the summer in Edmonton) made a photo of a fired-up steam locomotive being prepared for the next day's excursion. I used available light augmented with walk around flash. The resulting photo ran as part of a feature and is probably the last published newspaper photo taken in Canada with a Speed Graphic.

As one of the official team photographers for the Edmonton Oilers, I also used the Speed Graphic for the annual color team photo. The Speed Graphic was also used for aerial photography where the final product was a 40x60-inch color print.

Stepping back, perhaps I owe my career as a news photographer to my dad's old Federal enlarger. If my father had owned a better enlarger, I may never have progressed past 35mm, never acquired the perfect tool for photographing night football on dimly lit fields, and never become a news photographer. Many a career was started with a Speed Graphic. But by the mid-1960s, though it was no longer the predominant news camera, for me it was the perfect camera.

I never achieved great fame or fortune or had a photo published in Life Magazine, although I came close a couple of times. I enjoyed news photography, being where the action is and never knowing what the next day or next minute of work would bring. But after a few Edmon-

ton winters where the temperatures dropped to -40, where film snapped when you tried to load it, I decided to go back to school to study Information Technology. I spent the next 25 years as a database manager working indoors and earning a good living.

However, my interest in photography never waned. I shoot digital for my own enjoyment, but I still have a wet darkroom in the basement where I find the lingering smell of hypo nostalgic when I enter to occasionally process film.

The part Graflex cameras played in newspaper photography has always interested me. I have a modest collection of press cameras, mainly Graflex, from Top Handle Speed Graphics to a Super Graphic, a Press Graflex and a 5x7 Big Bertha. I prefer "experienced" gear, no pretty cameras still in the box for me, and I always wonder what those cameras "saw" during their working lives.

Some cameras in my collection.....



Pacemaker, Micro-Press, and Pacemaker



Busch

B & J

Besler



Super D



Big Bertha



Kalart



Omega 120



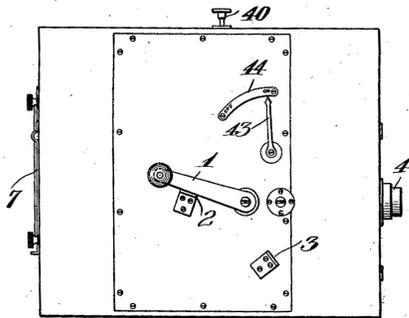
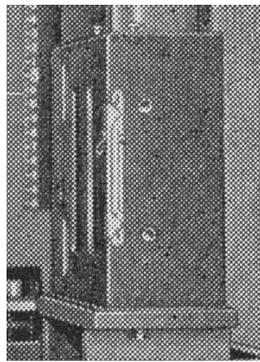
Rolleiflex



Nikon F



K-20



Clockwise from upper left: Puget Sound camera, scan of camera from 1917, and 1920 patent 1,335,728.

**F & S IDENTIFICATION CAMERA**  
(Serial number 182676, made in 1933)

Puget Sound Photographic Collector Society

In the second issue of the 2017 *Graflex Journal*, an article on Graflex cameras used with the F & S Identification Outfit, three pictures of the camera were shown. Unfortunately at the time, the pictures were unsourced and of limited value. Fortunately, the Puget Sound Photographic Collector Society obtained the camera from a donated estate.

Finding the serial number (182676) led to identifying the 1933 date of manufacture. Below is a possible production chart including this camera.

Order Date	Serial #	range	Produced	Description
NA	82882	82906	25	Identification Cameras
NA	85661	85710	50	F & S Identification Cameras
NA		104218	1	Experimental Dept Model
NA	111315	111344	30	Y&E Identification Cameras (probably mugging)
03/03/23	124360	124381	22	Y&E Identification (mugging)
08/09/33	182676	182685	10	F & S Identification <b>182676</b>

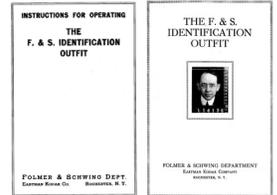


The name plate provided more information. The name Folmer Graflex Corporation was first used in 1926; however, the Identification Outfit (including camera) was still available by special order until 1940.\* The inventory number in the lower left corner (4656) was for a "target practice" camera. The Identification Outfit was replaced with a simpler outfit and a "mugging" camera (right), at least as early as 1923.



So why were 10 made 10 years later? Since no documentation was supplied with the camera, there is no definitive answer. Due to the special film requirement (film was available until at least 1940\*) and more economic alternatives, it may have been used as a replacement for worn-out cameras from an F & S Identification Outfit, or used, absent the rest of the outfit. It is, as a camera, unique in design and construction.

We are fortunate to have copies of the sales and operating brochures for the camera.



**SALES PITCH**

**The F. & S. Identification Outfit**

**T**HE positive identification of employees entering manufacturing plants, is highly essential under the prevailing conditions. Various means of identification, such as badges bearing numbers, insignia, or designs in color, have been employed by manufacturers with varying success. Such devices are not a reliable protection. Badges worn by employees may, either through accident or design, come into the possession of the very

A photographic likeness of each employee is now considered the most reliable means for positive identification. A photograph alone, however, although an excellent likeness of the subject, may not prove wholly adequate unless accompanied by other distinguishing factors which should be included when the photographs are made.

Many manufacturers have provided their employees, and all others entering the plant, with printed passes to which a photograph of the bearer is attached. This affords a much better protection than a badge, as the bearer can quickly be identified by comparison with his portrait.

The F. & S. Identification Outfit has been designed to meet these requirements. The outfit consists of the F. & S. Identification Camera, stand, light reflectors, numbering device, measuring scale and background. The entire outfit is self-contained and may readily be moved to the most suitable location, but there must be no illumination except that provided with the lamps specified for use with the outfit.



## OPERATION

**Operation** As the persons to be photographed approach the apparatus, the operator has an opportunity to quickly gauge their height, and to raise or lower the camera. As the subject steps into position before the camera, a polished rod is brought in contact with the top of the head, and the height is indicated by the position of the end of the rod on a vertical measuring scale. The numbering device, located in front of, and on a line with the shoulders of the subject, is properly set, and the lever actuating the film and shutter is drawn forward as far as it will go, and then returned to its normal position. This makes the exposure and the next subject may then step into position before the camera.

Actual tests have shown that 300 persons may be photographed in one hour. This time includes proper placing of the subject, adjustment of the height scale and numbering device. On this basis it will be seen that a very large number of employees may be properly photographed in a very short time, and the number and height of the subject will be included in one operation, an important factor, as all causes of error liable to occur in recording the photographs, are eliminated.

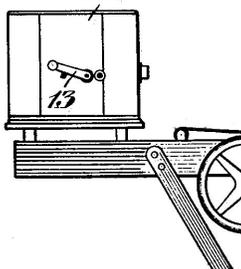
The pictures made with the F. & S. Identification Outfit are very suitable, both in size and character, for mounting in badges to be worn by employees. The metal part of the badge, containing the portrait, may be finished in colors designating the various departments, which will serve as a means for quickly detecting an employee in any department other than his own. The pictures for this purpose should be printed upon Single Weight Photographic Paper.

Where written records of all employees are filed for reference, the F. & S. Identification photographs will prove a valuable addition. If the photographs are printed upon light weight photographic paper, they can be very easily mounted upon the record cards.

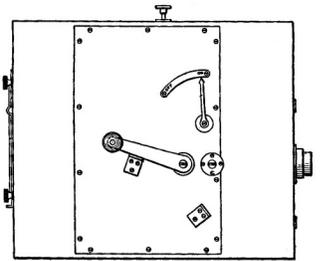
## THE CAMERA

In the original 1919 patent (1,324,887), the "suitable" camera was described as:

The adjustable support or table carries at one end the camera 12 of any suitable construction, but preferably of fixed focus and of a type embodying an oscillatory handle 13, which, when operated, will not only cause the exposure of the film or plate, but will feed a new sensitized surface into position, in order that photographs of the subject may be taken rapidly by comparatively few and simple operations.



The camera was refined in 1920 and 1921, as shown in patents 1,335,728 and 1,383,395.



**The Camera** The F. & S. Identification Camera is equipped with a Kodak Anastigmat Lens f.6.3, having a focal length of  $4\frac{1}{2}$  inches. The camera is provided with two magazines, one (A), accommodates 1500 exposures of Eastman Identification Film No. 65, the other (B), is a light tight, removable, receiving chamber for the exposed film. The film, and shutter for making the exposures, are both actuated by one forward movement of the exposing lever. The shutter is designed to operate at one speed, about  $\frac{1}{2}$  second, thereby insuring, with the uniform intensity of illumination, a uniform density and printing quality in the negatives, if properly and uniformly developed.

The Eastman Identification Film No. 65 is  $1\frac{1}{2}$  inches wide, and is supplied in rolls containing 150, 500, 1000 and 1500 exposures. The size of the negative and picture is  $1\frac{5}{8}$ " x  $1\frac{1}{8}$ "—seven exposures to a foot of film. The film passes from the magazine, through a cutting mechanism which permits cutting off any number of exposures for immediate development.

## FOLMER & SCHWING DEPARTMENT

EASTMAN KODAK COMPANY ROCHESTER, N. Y.

May 1918

### Prices

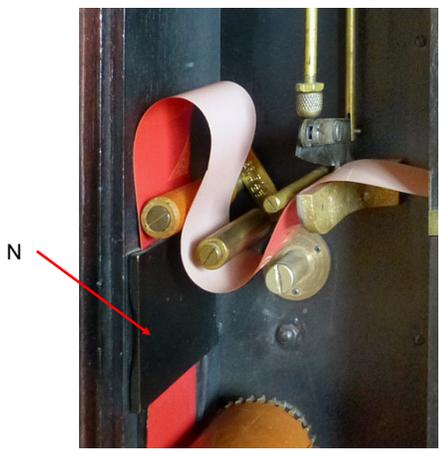
F. & S. Identification Outfit, complete, including camera, lens, two magazines A and B, stand, reflectors, numbering device, height scale and background, without lamps	\$375.00
F. & S. Identification Camera, including lens and two magazines A and B, without stand	215.00

\$215 in 1918 would be worth about \$3,600 in 2020, and a 4x5 R.B. Auto Graflex selling for \$143 in 1918 would be valued at about \$2,400 in 2020.

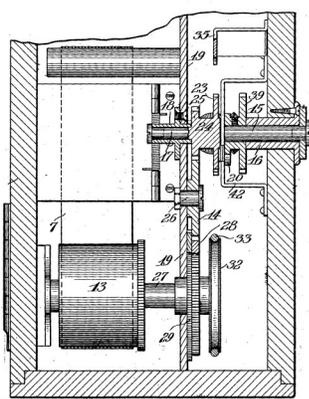
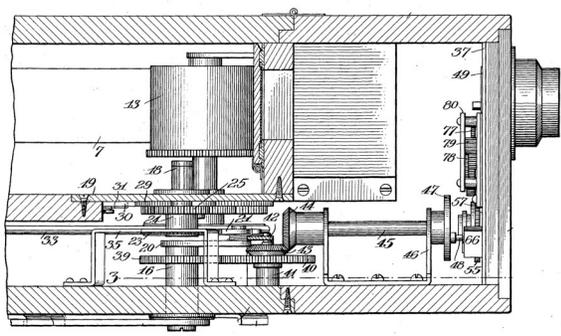
The following describes several of the noteworthy features of the camera.



First, an overview of the film loading side with the door open and magazines with their lids removed.



Cutting and nicking mechanism.



**LOADING THE CAMERA**

The door of the camera R is opened by pressing the catch and drawing down the sliding bar T. Unscrew the milled head V, and remove magazine A, which is then taken to the photographic dark room, and the light tight panelled door of the magazine is removed. With the aid of a safe dark room light, a roll of film is taken from its metal container, the black paper removed, and the wooden spool, upon which the film is wound, is placed on the central shaft of magazine A, so that the film will feed, emulsion or dull side **upward**, from the **bottom of the roll**. The film is then passed beneath the roller and through the slot at the bottom of the magazine. The panelled door is replaced and locked. The magazine is then placed in the camera, and fastened in position with the screw V. Raise the roller L until it rests against the front wall of the camera. Draw the film from the magazine straight forward through the cutting and nicking mechanism, and over the roller above the exposing aperture. Hold back the spring actuated pressure pad N, and draw the film straight down to the feed roller O, then release the pressure pad N. The film may then be fed through to magazine B, by turning the roller O by hand, or by actuating the exposing lever H. The film is securely attached to the winding spool P by slipping the end under the flat spring which will be found on the spool. The light tight panel of magazine B is replaced and locked. The roller L is allowed to rest on the top of the film, and the pointer M will indicate "ON". The door of the film chamber is closed and locked with an upward pressure at T. Unfogged film from magazine A is then drawn into exposing position, by **four complete operations** of the lever H.

**CUTTING THE FILM**

Should it be necessary to immediately develop a small number of exposures, the film is severed by pulling upward on rod J, and the exposed film is drawn into magazine B, with **seven complete** operations of the exposing lever H. If a large number of exposures are made, and it is inconvenient, through lack of proper facilities, to develop the entire roll at one time, the edge of the film may be nicked at intervals, by pressing rod K, after a certain number of exposures have been made. These nicks in the edge of the film may readily be detected in the dark room, and facilitate cutting the film in the required lengths without danger of mutilating negatives. Seven exposures can be made on a foot of film, and the film can be cut in lengths which may be most conveniently developed in a tray. After the film is nicked, the exposing lever H should be **operated three times**, in order to advance the nick in the film **beyond** the recording plane. This provides a blank portion at each end of film for finger or clip hold during development of the short strips. Where it is possible to develop the entire roll of exposures at one time, it should be done, as the pictures may be much more easily and quickly printed from the uncut roll of negatives.

After an entire roll of film or a portion of a roll has been exposed and the end of the film wound into magazine B with seven operations of the lever H, open the door R, unscrew the milled head U, and remove the magazine. The light tight door of the magazine **must not be removed** until the magazine has been taken to a dark room, where, under safe light conditions, it is opened and the spool of exposed film removed from the winding shaft and disc. An empty winding spool is then placed in the magazine and engaged with any of the series of holes in the winding disc.

# FOLMER & SCHWING DEPARTMENT

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

May 1918

## Eastman Identification Film No. 65

150 exposures . . . . .	\$ 1.40
500 " . . . . .	4.35
1000 " . . . . .	8.50
1500 " . . . . .	12.75

## Azo E Hard Double Weight Paper

Rolls 3" wide x 200' long . . . . . \$3.00

One roll of Azo Paper, 200 feet long and 3 inches wide, is sufficient for 528 passes trimmed to size, 2½ x 4⅛ inches.

## Azo E Hard Single Weight Paper

1 Gross, 4¾" wide, 18" long . . . . . \$4.75

1 Gross Azo E Hard Single Weight Paper, 4¾" wide, 18" long, is sufficient for 4320 identification pictures.

The Eastman Identification Film No. 65 is 1⅜ inches wide, and is supplied in rolls containing 150, 500, 1000 and 1500 exposures. The size of the negative and picture is 1⅝" x 1⅝"—seven exposures to a foot of film. The film passes from the magazine, through a cutting mechanism which permits cutting off any number of exposures for immediate development. Should it be inconvenient, through lack of proper facilities, to develop a large number of exposures at one time, the edge of the film may be nicked, after a certain number of exposures have been made, thereby facilitating the separation of the film at the proper point, after the entire roll, or any portion thereof, has been exposed and taken to the dark room.



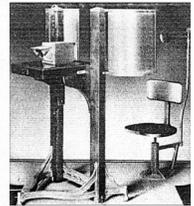
Film courtesy George Eastman Museum.

### COMMERCIAL CAMERAS AND OUTFITS, Cont'd

#### Graflex Identification Unit:

Complete with camera fitted with Anastigmat lens, one 4 x 5 Graflex cut film holder (plate holder optional) \* stand, two sheet steel reflectors with ground glass diffusing screens, adjustable revolving swivel chair, adjustable headrest, background curtain, connecting cord, necessary lamps for 110 volts:

*Discontinued  
3/1/40*



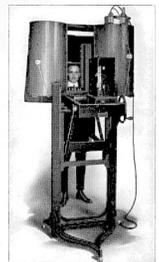
Including freight charges east of Mississippi..	MOS	198.75	265.00
Including freight charges west of Mississippi..	MOS	213.75	286.00

\* In ordering please state whether Plate or Film Holder is wanted. Film Holder will be supplied unless otherwise specified.

#### Folmer Identification Outfit:

Complete with specially designed camera, Anastigmat lens, two film magazines, stand with casters and jacks, two reflectors, numbering device or changeable indicia tablet, height scale, backdrop, connecting cable and necessary lamps for 110 volt.....

MOT	1125.00	1250.00
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#### Film for Folmer Identification Outfit:

150 exposure - per spool.....	MOU	.97	1.45
500 exposure - per spool.....	MOV	3.00	4.50
1000 exposure - per spool.....	MCW	5.87	8.80
1500 exposure - per spool.....	MOX	8.80	13.20

Note: Built as "Special Order" only.

## PHOTOGRAPHERS FROM THE FACEBOOK'S GRAFLEX CAMERA GROUP

### ANTHONY LEONG

I am just your average enthusiast who loves film photography and the developing processes that accompany it, especially the joy and frustration I get each time I remove a negative from the processing tank. Every picture is a learning process for me, especially large format with a Graflex Crown Graphic in tow. It is fitted with the standard Schneider-Kreuznach Xenar 135mm f4.7 lens.

HC-110 was what I used previously but have made the switch to replenished Xtol, which I really like. As for the developing tank, the Stearman Press SP-445 film developing tank is my choice. I have yet to learn darkroom printing, so scanning is my current option with an old Epson V4870 and Vuescan with no adjustments. Minor level adjustments are done with Affinity Photo.

Finally, thank you, Ken, for your lovely gesture to include my average pictures in the Graflex Journal. It is a privilege, and I look forward to learning more from the valuable experiences that all of you have.



Watercolour Artist Little India  
(f/5.6 1/100 sec.)



Kwan Im Thong Hood Cho Temple  
(shot at f5.6 1/250 sec)



Late Saturday Morning in Little India  
(f/5.6 1/125 sec.)

### HOWARD M. SANDLER



I have usually been reluctant to try front tilt (or rise) on my Crown Graphic, because my lens quickly runs out of coverage and vignettes the upper corners, but coverage increases when shooting close distances, and the corners are black here anyway. I have the front standard reversed, so I can tilt forward without dropping the bed. I used a lot of front tilt here. f/32 didn't hurt either. Crown Graphic 45, Schneider-Kreuznach Xenar 135mm f4.7, FP4 in XTOL 1:2 11 min at 21 C.



The building photo was shot with a WA Optar 90mm lens with front rise, but no front tilt. Library and Archives Canada. Crown Graphic 45. Optar WA 90mm f6.8 at f22. HP5.

#### Howard Sandler Photography

<https://www.facebook.com/howardsandlerphotography>



My 4x5 Crown Graphic  
with Heiland flash.

## FACTOGRAPH, FINGER PRINT & INSPECTOGRAPH

By Ken Metcalf

This article is based on information published in the GHQ in 2005 on the Graflex Finger Print Camera, two sister cameras, and contemporary source material. In addition to cameras for taking pictures of people (mug shots) and copying, Graflex made three cameras that were to be used placed against fingerprints and meters. The cameras were the Factograph of 1915, the Finger Print of 1917, and the Inspectograph of 1935 ("An Electrophotographic Inspector"). Emphasis will be on the earliest camera, the Factograph. A separate article will be on special automatic Factograph cameras used by the US Corps of Engineers and National Geographic in 1934-1935.



### FACTOGRAPH

Based on articles from 1915<sup>1</sup>, two sample cameras (50346 from the George Eastman Museum and 50537), both from a second batch of 300 cameras, on the first page of the serial number book (estimated to be from 1915); production and sales of this camera started in 1915. The last model (T-6) was listed in 1960. Total production for all models was about 1,320 units.

## The FACTOGRAPH CAMERA



"Click" and the meter is read

Here are models and "estimates" of the number produced and sources of dating estimates.

**No model name\*** 1915-ca.1925 From a sales brochure, from the Factograph Department of Eastman Kodak (The first time I have seen a "Department" for a single camera.), Estimated production - 345, Patents 1,139,022 1915; 1,139,023 1915; 1,266,443 1918; 1,270,280 1918 (last patent added a mirror to reverse the image).

**No. 1\*** A Folmer Graflex Corp. (incorporated in 1926) brochure was published using "No.1" on the price page. Estimated production - 306, Patents, same as above. "Sometime in the early or mid-1920s, around the time that the Eastman Kodak Co. was ordered to divest itself of its Folmer & Schwing Division, the camera was re-designated the No.1 Factograph. The Folmer Graflex Corp. continued to produce the camera into the 1930s."<sup>2</sup>

**No. 2** Notation in the serial number book "1926" and notation on GEM inventory tag prepared by Tim Holden: "The No. 2 was a telephone message register camera (10 at a time)." In 1931-2 the last batch of 11 were produced. Estimated production - 103.

**T-5** 1936-1950 From the serial number book. Estimated production -176, Patents from camera nameplate 1,260,356 (1918); 1,969,095 (1934); 1,963,312 (1934); 1,963,417 (1934).

**V-3** 1933-1956 Serial number book. A model was produced in 1933, with the bulk made in 1956 for Western Electric. Estimated total production - 355.

**T-6** 1950-1960 Serial number book. Estimated production - 40, Patent for film cartridge 2,702,673 (1955).

### Models Through No. 1

#### Sales Pitch<sup>2</sup>

"Only a slight change in office routine is necessary to put the Factograph system in immediate operation without added labor or cost. The fact that some meters are above sight level beyond the reach of the readers from the floor may seem an objection, but statistics show that the majority of mistakes in reading are made on these "skied" meters. The expense of dropping meters to eye level is approximately \$2.00 per meter, which pro-rated over a period of ten years and charged up monthly against the meter, makes its monthly cost negligible. Meters that it is impossible to lower or bring within range of the camera, can be read by the old method.

The cost of operating varies of course with the different companies, depending upon the number of meters read, the size of the reading force and the number of days consumed in reading. We will be pleased to furnish estimates covering the approximate cost of operating and the apparent expense eliminated. In the Trial Outfit listed below we furnish camera and complete equipment for the exposure and development of 900 readings. We give below a price list of Factograph cameras and supplies.

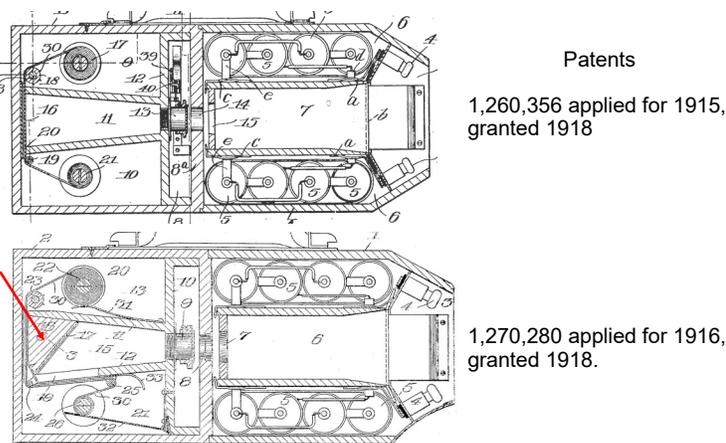
THE FACTOGRAPH CAMERA is the Eastman Kodak Company's meter reading camera. It is the direct result of the long felt necessity for reliable meter readings. It not only reads the meters with photographic fidelity but brings its indisputable record to the office files. In the case of a disputed reading the records are at hand, being the means of transporting monthly to the office shelves all the meters on the company's mains. Though true that all argument over the accuracy of meters cannot be satisfied with

a photographic record of the readings, still the photo relieves all doubt as to the reader's accuracy and puts the rest up to the meter department direct, thus saving considerable time in arriving at a proper adjustment of the complaint. The company is also assured that all its meters are visited regularly, and the possibility of estimated readings is eliminated. Considerable time is saved in the reading of large routes, as fully 15 seconds are saved at each meter. "

**Film and Pricing** "The Factograph differs from the ordinary camera in that the meter-reading is recorded upon a special sensitive emulsion coated on a paper support and by a reversing feature with the aid of a mirror within the camera. This mirror reverses the reading, so that the developed paper shows an exact reproduction of the dial. No prints are needed.

The film used in the Factograph comes in the familiar roll form. Each roll makes 75 exposures, i.e., 75 readings. Each exposure is 1½"x 2½" in size, which makes it easy to read after developing. When the last exposure has been made, the shutter, by a special cut in the film, remains locked until the film is wound off and a new spool has been inserted."<sup>3, 4</sup>

The mirror, used in Graflex-style cameras, was quickly adopted as shown in the two patents below.



**PRICE LIST**

	ca. 1917	
<b>FACTOGRAPH Camera complete with lens, shutter, batteries and lamps</b>	<b>\$28.50</b>	
<b>Film in spools of 75 readings per spool . . . . .</b>	<b>.25</b>	
	ca. 1926	
<b>No. 1 Factograph Camera complete with lens, shutter, batteries and lamps . . . . .</b>	<b>\$56.50</b>	
<b>No. 1 Factograph Film, carton of ten spools, 75 readings per spool . . . . .</b>	<b>.56</b>	

**Power supply**

"The light is furnished by two four-cell dry batteries stored in either side of the camera, supplying current to four 3.8-volt tungsten miniature lamps."<sup>5\*\*</sup>



"Factograph Dry Batteries" (Eveready No. 789) battery shown in 1917 brochure, and No. 789 that came with camera manufactured ca. 1915-1916.

**Operation**

"The reading is made by placing the front of the camera against the meter dial and pressing downward on the exposure lever. This action automatically turns on the light, opens and closes the shutter and turns off the light. The shutter, with each exposure, automatically locks until the film for the next exposure is wound into place. This prevents the possibility of a double exposure; that is, the superimposing of one exposure upon another. Likewise there are no blanks, for the film cannot be wound off until the exposure has been made. Winding reel and exposure lever are mutually interlocking, thus eliminating the possibility of error from forgetting to turn the key or from turning the key before the exposure has been made."<sup>3</sup>

Operation is continued from a ca.1926 brochure.<sup>4</sup>

"When the last exposure has been made, the shutter automatically locks, warning the operator to reload and preventing further use until this has been done. Factograph film, as has been said, comes in the familiar roll film. It is easy to hand load and can be

loaded and unloaded in daylight. As a further aid to the operator, the 'Factograph' can be converted into a flashlight for locating meters or finding one's way through dark cellars by merely pressing a small button just below the exposure lever."

**Product Review 1916** Rochester Railway & Light Company

"I would like to ask whether any of the replies he received indicated that the companies were using a device got out by the Eastman Kodak Company for photographing dial readings instead of taking the reading by the eye and reporting it by hand. We have a number of customers who are charged on a two-rate basis, that is, for demand and energy. We are using the camera method of reading their

meters and find it very satisfactory for this particular class of customers. The demand meters are set back to zero monthly after the reading and should a customer question his bill, it is a very easy matter to check the reading. In New York we have made a number of tests of this Factograph camera. The camera itself is a very good instrument, and various details are very cleverly worked out. It may be used to very good advantage in obtaining the reading of demand meters. For regular meter reading use, however, we have found it impracticable, as it no doubt considerably increases the expense of that branch of the work and also causes a considerable loss time.

The new method does not lessen the possibility of wrong readings for the reason that the clerk interpreting and transcribing the dial reading from the film is just as likely to make an error as the meter reader. Furthermore, the meter reader would have to be a **higher-class man**, one who would understand and know something about taking photographs. A man cannot go to the premises and simply stick the camera up to the meter and obtain a legible dial reading. Dirty dials, dirty dial glasses and all surrounding conditions must be studied and taken into consideration. As the capacity of the camera is limited to 75 exposures, it is necessary that the meter reader carry extra film rolls and recharge the camera at least twice during a day's work. The Factograph camera is a Rochester production, and as such the Eastman Kodak Company was naturally interested in getting the Rochester Lighting Company to adopt it. They felt that if they could say that the Rochester Railway & Light Company had installed their camera, they would be in a very much better position to sell to other lighting companies.

We have adopted the Factograph camera for demand meters. Some experimental work has been done in connection with reading the regular meters with this camera, but we have not found it practicable as yet. Before it could be put into general use, we should have to change the location of some of our meters. Those would, of course, have to be put in a place suitable for photographing. I think the Eastman Company has come to the conclusion that no money can be saved through the use of this device, and its chief talking point is that it is a great advantage to have a photograph of the dial at the time it is read, as that would be absolute proof to the consumer in case of complaint that the reading is correct. In the case of a demand meter this might be true, as the meter is turned back to zero, and the reading is therefore entirely gone, but it is not as essential in the regular kilowatt-hour meters. The Eastman Company places its emphasis on the good impression the photograph of the reading will create with the public, claiming that it will decrease the expense of re-reading and investigation and that from a public policy point of view the system is well worth the extra expense. The Eastman people have not even put a price on the equipment as yet, since the work has been purely experimental. We have not purchased any cameras, and I know of no lighting companies that have. It has been estimated, however, that materials, film and developing apparatus

would average about 50 cents per 100 meters. It is claimed for the Factograph camera that more meters would be read by it than by a meter reader with his book and pencil, that the camera would work more quickly than the pencil. I have not found this to be so.<sup>6</sup>

### Patents

From company records,<sup>7</sup> the Factograph received special attention with numerous domestic and 10 foreign patents, along with a trademark in the United Kingdom, that was active through 1958. Given the production records, it is unclear why this was done.

### 50537 (ca. 1915-18)

A sorry excuse for a camera, but it completes a set!

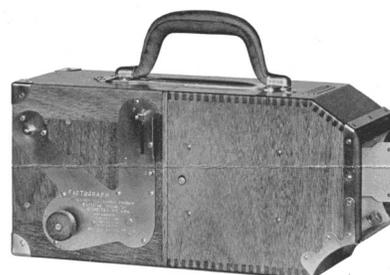


Left to right, camera insert, and body opened.



Back of camera insert, showing back of lens element reflected in mirror used to laterally correct image.

Name plates. Consolidated Gas, Electric Light, and Power Co. of Baltimore.

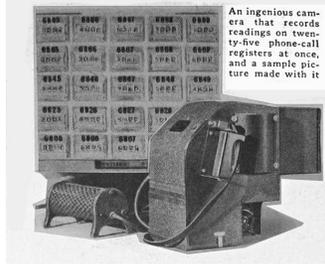


The Factograph Camera

**T-5**



No. 468341, 1949, courtesy Jim Chasse.



Popular Science magazine 1937.

**FINGER PRINT**



1936-1950 Serial number book. Estimated production – 176. According to Jim, his camera had 3 1/4 x 5 1/2" 122 Verichrome Pan in the camera.

The F & S (Graflex) Finger Print Camera first appeared in a 1917 Graflex retail catalog (although there is some evidence it may have been available as early as 1915), and the last large order was scheduled in 1948. The roll film mechanism was gone, and it now was fitted with a 2 1/4 x 3 1/4 Graflex back, and any attachment available for a Graflex Jr., such as a Graflex Double Glass Plate Holder, a Magazine Plate Holder, roll holder, or film pack could be used. Total production was about 4,000 cameras.



**V-3**

Ca. 1933-1956 sourced from the serial number book. A model was produced in 1933, with over 300 made in 1956 for Western Electric (the manufacturing subsidiary of AT&T). Estimated total production – 355. Unfortunately, a picture of this camera has not been found.

"There is often occasion for quickly obtaining a picture of a small pattern, signature, formula, label, photograph, or a portion of some printed or written matter."<sup>8</sup> By 1947, "While the Finger Print Camera is essentially what the name implies, it is particularly adapted to the photographing of signatures, or anything on a plane surface (actual size) that is within the limits of the film or plate used."<sup>9</sup>



**T-6**

Ca. 1950-1960 Serial number book. Estimated production – 40. No sample has yet been found.

According to Eaton Lothrop,<sup>2</sup> "This new camera used 16mm single perforated film on an area equal to 1 1/2 standard 16mm frames. Daylight loading magazines carried enough film for 1,000 exposures without reloading. The camera had an f/4.5 15mm lens and a shutter with variable speeds. The film was intended to be read through the kind of projection reader which magnified the image approximately 12 times." I have no clue as to which camera is described!



**Origin** Although there was no patent issued for a camera fitted with a Graflex-style back, Folmer left open his options in an early patent "... but such matters [of design], are incidental to the spirit of the invention concerned and can be modified according to the use to which the camera is to be put without departing from the main inventive idea." Either because the Factograph failed to garner sufficient business, or it was just a good idea, Graflex went from a volume oriented device to one meant for low volume and straight forward operation.

As late as 1948 in Graphic Graflex Photography, "It can be readily employed for photography of coins [because of touted 'considerable depth of focus'], stamps, small designs, jewelry, skin lesions, insects, and small pathological specimens."



1940 FBI outfit.





Finger Print Camera open to show built-in shutter, bulbs and battery compartments.

According to Bill Inman, shortly before the camera was discontinued, two manufacturers duplicated it: F. J. Sirchie Co. and Burke and James, who manufactured the Watson-Holmes Fingerprint Camera.

## INSPECTOGRAPH



In 1935 the Folmer Graflex Corp. introduced the Graflex Inspectograph Camera ("An Electro-photographic Inspector"), which was like the F & S Finger Print Camera, except it operated on an electric line current instead of batteries, and the four lamps were equipped with "shields." The camera came with an 8' detachable extension cord, and in a 1938 catalog, Graflex also sold a 25' extension cord for \$2.25. As suggested by the name, the camera was targeting a wider market, which included "institutional records." According to Tim Holden, the camera did not prove practical, as most subjects were too far from the source of electricity. He believes only one batch of these cameras was produced (78 cameras).



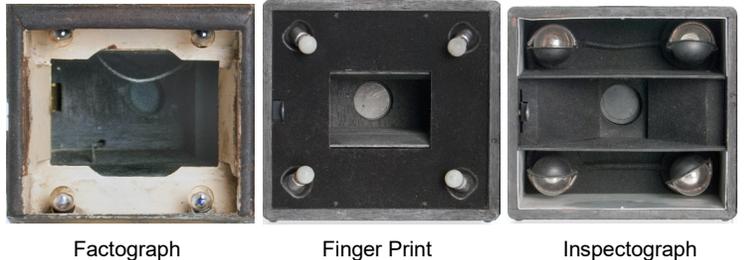
## Conclusions

As a testament to Folmer's design, the Finger Print Camera was sold for thirty-five years without any design changes.

Readers are encouraged to find the missing cameras and literature.

\* These cameras were relatively small at  $4\frac{1}{4} \times 5\frac{3}{4} \times 12\frac{3}{8}$ ".

\*\* "Note: The bulbs used in the Finger Print Camera are of special make and voltage, manufactured for the Folmer Graflex Corporation, for use in the above instrument, and can be procured from them only."<sup>9</sup>



<sup>1</sup> The Bulletin of Photography, 1915, p. 296; The Gas Recorder, 1915, p. 311.

<sup>2</sup> Lothrop, Eaton, A Century of Cameras, Morgan & Mogan, New York, pp. 147-148.

<sup>3</sup> Eastman Kodak, Factograph Department, The Factograph Camera, ca. 1917.

<sup>4</sup> Folmer Graflex Corporation, The Folmer Factograph Meter Reading Camera, 1926.

<sup>5</sup> Electrical Engineering Magazine, June 1916, A Monthly Review of New Apparatus, Equipment and Specialties of Known Value.

<sup>6</sup> National Electric Light Association, 1915-16 pp. 183-, Report Of Committee On Customers' Records & Rochester Railway & Light Company.

<sup>7</sup> Graflex, Inc., United States and Foreign Patents and Trade Marks, ca. 1960.

<sup>8</sup> Folmer & Schwing Department, Eastman Kodak Company, Graflex and Graphic Cameras, 1917, p. 39.

<sup>9</sup> Folmer Graflex Corp, 1947, Instructions for Operating The Graflex Finger Print Camera, p. 5.

## 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.



In the first issue for 2016 of the Graflex Journal, the author (of known mental limitations), neglected to explain synchronization for the model 1000 2B shutter for the Pacemaker Crown Graphic, with 135mm and 270mm lenses (the shutter used on the Model 1000 camera).

### SYNCHRONIZATION

**CLASS "M" BULBS.** The three flash contacts (located at the lower right corner of lens board) control flash synchronization. When a standard ASA bi-post sync shutter cord is connected to the top two posts, the shutter is automatically synchronized for "M" type bulbs (20ms delay) at all speeds from 1/2 second to 1/750 second.

NOTE: The 1/1000 sec. setting is not synchronized for Class "M" bulbs.

**ELECTRONIC FLASH (X)** Connect a standard ASA bi-post shutter cord to the lower two contact posts. Do not use a shutter speed faster than the flash duration of the unit being used. For instance, if the duration of the flash is 1/400 second, a shutter speed in excess of this will cut off part of the useful light output of the unit.

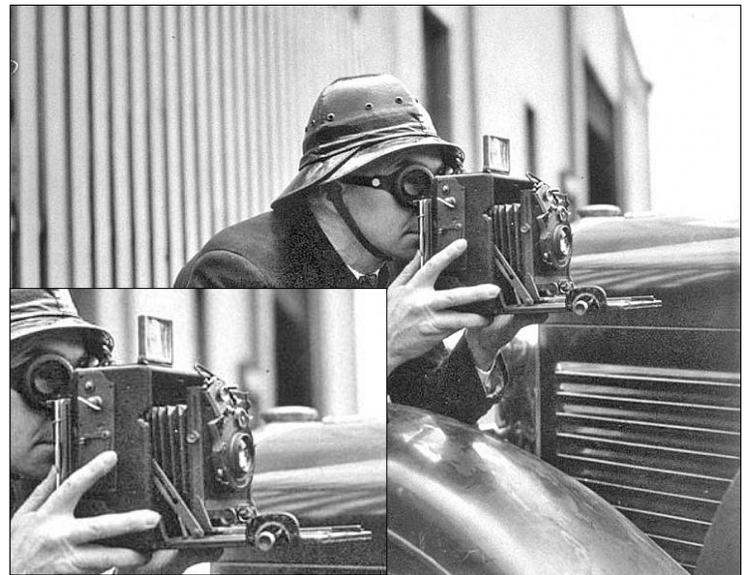
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Masthead picture from issue two of the 2015 issue of the Graflex Journal. Davis Strong concentrated on the picture, which he found shows a press photographer at a 1934 West Coast longshoreman's strike, and the camera is probably a pre-Anniversary Speed Graphic with a dial-set Compur front shutter fitted with an early Kalart flash synchronizer. That is definitely a Pre-Anniversary Speed Graphic. The focusing arrangement may be a way to quickly focus at pre-set distances.