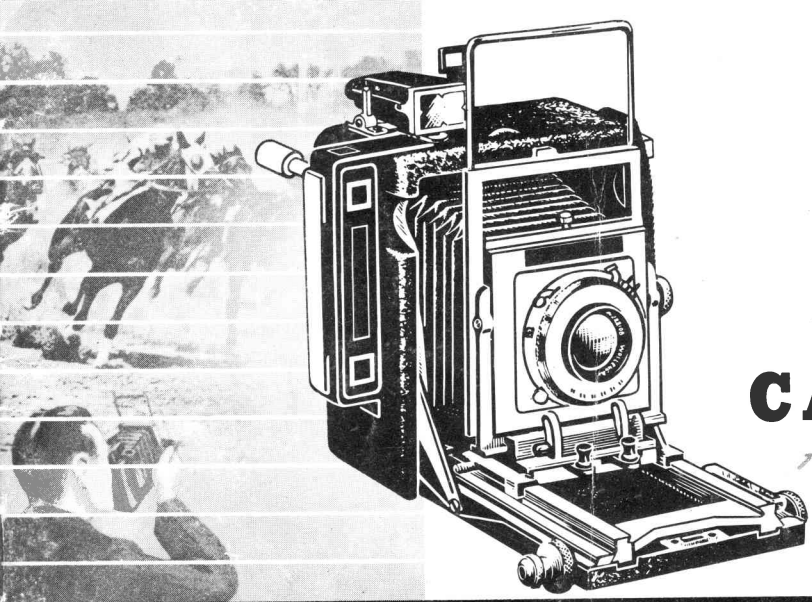
This manual is for reference and historical purposes, all rights reserved.
This page is copyright© by M. Butkus, NJ.
This page may not be sold or distributed without the expressed permission of the producer
I have no connection with any camera company

On-line camera manual library
This is the full text and images from the manual. This may take 3 full minutes for the PDF file to download.

If you find this manual useful, how about a donation of $3 to: M. Butkus, 29 Lake Ave., High Bridge, NJ 08829-1701 and send your e-mail address so I can thank you. Most other places would charge you $7.50 for a electronic copy or $18.00 for a hard to read Xerox copy.

**This will allow me to continue to buy new manuals and pay their shipping costs.
It'll make you feel better, won't it?
If you use Pay Pal or wish to use your credit card,
click on the secure site on my main page.**



TOWER
OUR OWN TRADE MARK
2¼ x 3¼

PRESS CAMERA

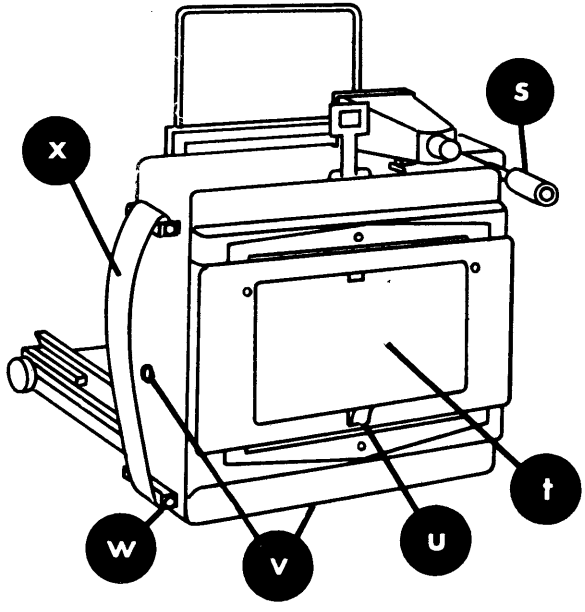
TOWER # 11007
STEINHEIL # 140190

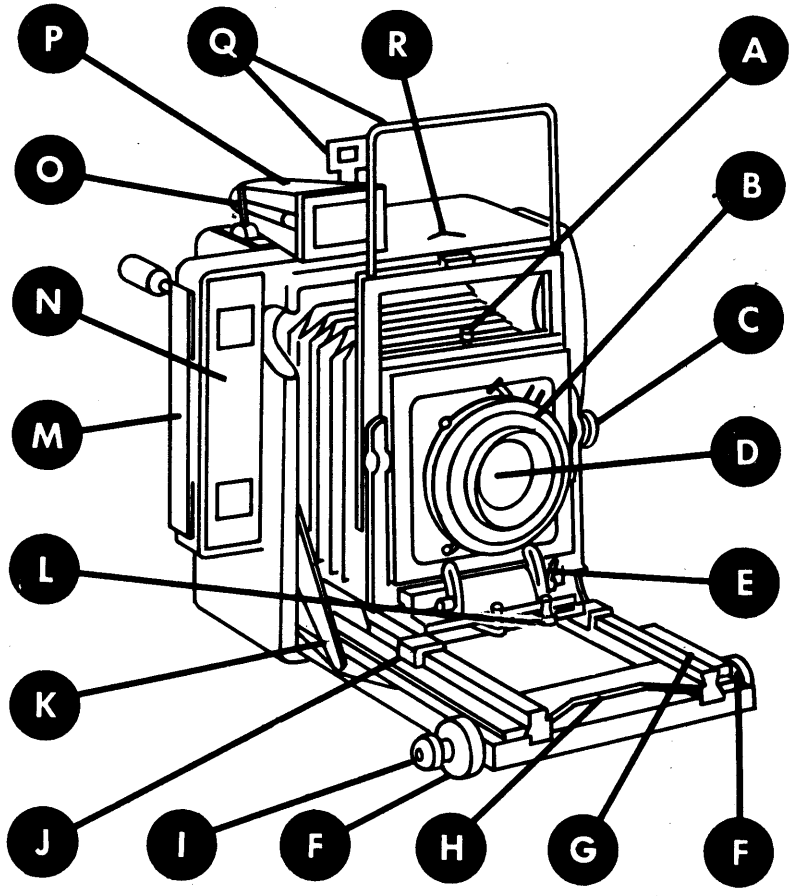
A MANUAL OF CARE AND OPERATION

www.orphancameras.com

BACK VIEW

- Ⓢ Rangefinder Eyepiece
- Ⓣ Focusing Hood
- Ⓤ Focusing Hood Release
- Ⓥ Tripod Sockets
- Ⓦ Handle Strap Stud
- Ⓧ Handle





FRONT VIEW

The letter-tagged illustration of the camera at left, together with the corresponding explanatory data below, will enable you to follow the material in this booklet and to become more quickly familiar with it. Refer to this page often while reading this booklet, and for the first few days you use the camera.

Ⓐ Lens Board Lock Screw
Ⓑ Shutter Assembly
Ⓒ Rising Front Lock
Ⓓ Lens
Ⓔ Tilt Control
Ⓕ Focusing Knob
Ⓖ Focusing Scale
Ⓗ Focusing Rack
Ⓘ Focusing Lock Knob
Ⓙ Infinity Stop
Ⓚ Focusing Bed Brace
Ⓛ Locking Pull-out Knob
Ⓜ Flashgun Mounting Plate
Ⓝ Rangefinder
Ⓞ Parallax Control
Ⓟ Optical Viewfinder
Ⓠ Sports Finder
Ⓡ Opening Latch

www.orphancameras.com

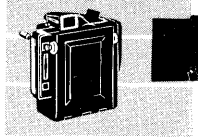
TABLE OF CONTENTS

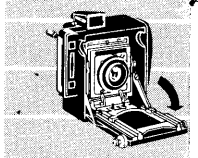
FOREWORD . . . . .

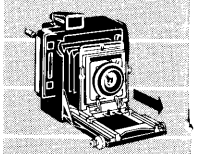
Your 2¼ x 3¼ camera is an entirely new and modern concept of the scope of amateur and professional photography involving the use of the tremendously popular negative size of 2¼ x 3¼ inches.

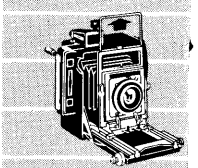
This fine camera is not "just another 2¼ x 3¼ camera" . . . it embodies new materials, new engineering, new features and new possibilities. It is a camera with all the flexibility and versatility demanded by the advanced amateur and the discriminating professional, yet it is sufficiently simple and fool-proof to enable the beginner to obtain good pictures right from the start.

Those familiar with photography and photographic equipment will have no difficulty in understanding the operation. But the beginner is urged to read the following pages carefully so he may gain confidence and skill in handling his new camera. The manufacturer and user share the responsibility of its perfect function and operation.









SEQUENCE OF OPERATIONS . .

- **PRESS DOWN LATCH BUTTON**

  This will release the door assembly permitting the fingers to grasp the edge of the door.

- **DRAW DOOR DOWNWARD**

  When the side braces click into position the door will be at 90° to the film plane.

- **PULL LENS MOUNT OUT**

  With focusing rack in rearmost position pull the lens mount firmly against the infinity stops while grasping the pull-out knobs. Lock by pushing movable knob to the right.

- **LIFT SPORTS FINDER**

  and rear finder erect. Or, draw out eye tube of optical view finder and adjust parallax control.

- **INSERT FILM PACK**

  or cut film holder.

- **REMOVE SLIDE**

  Be sure the shutter is closed.

- **COMPOSE SCENE IN FINDER**

  Move toward or away from subject for desired result.

- **SET SHUTTER**

  Set speed dial of shutter and aperture of lens to correct exposure. Cock shutter.

- **FOCUS**

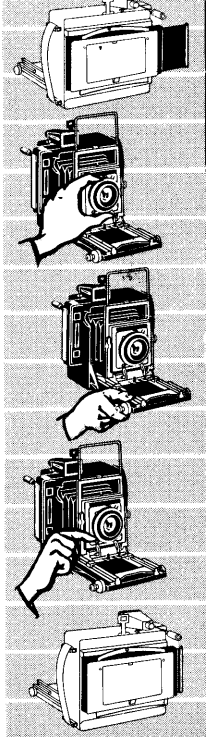
  Use range finder or focusing scale to determine correct footage. Consult depth of field chart if necessary.

- **TRIP SHUTTER**

  while observing scene through finder.

- **REPLACE SLIDE**

  If using film pack pull tab immediately.



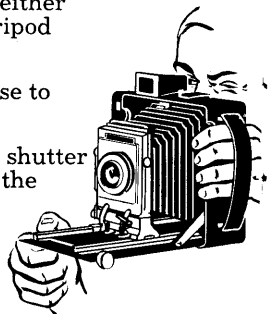
www.orphancameras.com

HOLDING THE CAMERA

One of the most important points to observe when hand-holding a camera is steadiness. To achieve this, the following rules should be noted:

(a) Avoid using shutter speeds slower than 1/50th of a second. While it is possible to get needle-sharp negatives at even 1/10 of a second, it is only due to good luck or extremely steady hands. For consistent sharpness, use 1/50th of a second or faster.

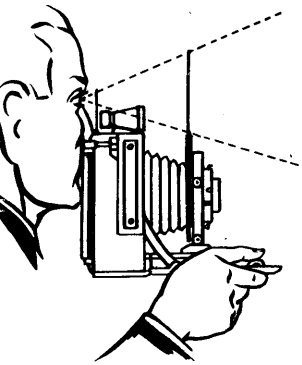
(b) Cradle camera in both hands. Press the fore-arms against sides of the body for added rigidity. Keep elbows in. Slip the hand through the strap and curl fingers around the edge of the case. The handle strap **(X)** can be detached at either end by grasping the knurled head of either handle stud **(W)** and unscrewing it. This uncovers the side tripod socket **(V)** which is used for vertical composition.



(c) Brace back of camera against the face with the eye close to the rear section of the view-finder **(P)**.

(d) Squeeze, do not jab the shutter release. Jerking the shutter release increases the probability of moving the camera while the film is exposed. Use a cable release for hand-held pictures.

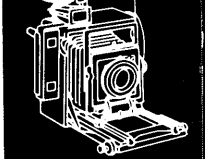
Follow these simple directions for hand-held shots and your pictures will be consistently clear and sharp.

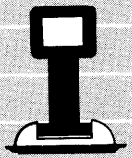


SPORTS FINDER

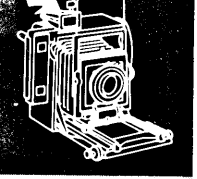
An *accurate* "open type" non-optical frame sports finder (**Q**) is furnished as regular equipment on the camera. The front section is of polished metal which, when not in use, slides into the front plate supporting the lens. By pulling the front section upward to its extreme limit, you *frame* the accurate field of view covered by the lens.

The hinged rear peep sight of the finder is fitted to the rear of the camera top and folds forward when not in use. When using the sports finder, keep the eye as close to the rear peep sight as possible. This enables you to see the field of view as it will appear on the film. This type of view finder is extremely valuable in sports and fast-action photography. Its design permits more rapid framing for such subject matter.





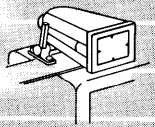
www.orphancameras.com



OPTICAL VIEWFINDER

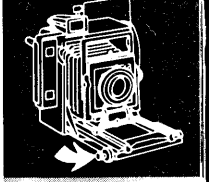
The optical viewfinder as mounted on your camera is ready to use. It is equipped with means for correcting parallax. (Since the camera lens does not occupy the same position as the viewfinder a means of compensating to show the same field of view is provided).

Parallax correction on Viewfinder is accomplished by moving a lever (**O**) forward or back until the lever is adjacent to the footage from camera film plane to subject.



MASKS—Masks with a variety of openings are stocked for use with lenses of different focal length. We cannot furnish masks for wide angle lenses because the size and optical system of these finders do not cover the extremely large field of such special lenses. In such instances the photographer should resort to the ground glass for 100% accuracy when framing and composing. The mask lugs simply snap over two studs protruding from the body of the finder (**P**). The small pointers in the field of the mask will assist in centering the subject matter.

FOCUSING THE CAMERA



Two generous-sized, knurled focusing knobs **(F)**, are provided on the camera . . . one at each side of the drop bed. This enables you to focus with either hand—a decided advantage in many picture taking situations. The rack-and-pinion gears of the focusing knobs are so adjusted that just the proper degree of tension is provided, preventing any possibility of accidentally jogging or shifting the lens out of focus once it has been adjusted. The focusing knob at the right side of the camera (as you hold the camera with lens facing away from you) has a smaller, secondary knob which is the lock-knob **(I)**. By tightening this knob, after you have established sharp, critical focus, the rack is locked securely so it can not slip or be jostled out of position. A mere twist of the lock-knob **(I)** locks or unlocks the focusing rack **(H)**. Focusing is the first and most important step in the photographic process. Your camera offers three different methods of focusing: (1) the scale **(G)**; (2) the ground glass; (3) range finder **(N)**. The operation of each is described in detail on the following pages.

www.orphancameras.com

FOCUSING SCALE

A focusing scale (**G**) is located near the front edge of the drop bed. This scale consists of two sets of figures—the upper etched in transparent plastic. In use, the focusing knob (**F**) is rotated to focus the lens and the scale is set by super-imposing the desired distance figures. To illustrate: if the focus is to be set for 8 feet, the lens is focused back or forth until the figure "8" on the transparent upper scale is superimposed directly over and coinciding with the figure "8" of the lower scale. (Estimated distances are never exactly accurate. Depth of field will compensate for minor errors in judgment, but do not rely too much upon depth of field to correct your errors and give clear, sharp pictures. For needle-sharp pictures, the focus must be critically established. The scale is accurate, but it cannot overcome a glaring error in judgment. For perfectly focused pictures every time, determine footage as accurately as you possibly can.)

Remember—distances are measured from the *film plane to the subject, not lens to subject.*

CLOSE-UP PHOTOGRAPHY

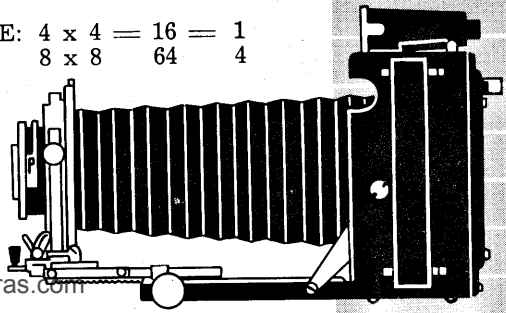
The extra long bellows extension provided in your camera facilitates photographing small objects at close range. A normal lens can be used at double its focal length, giving a film image equal in size to the actual subject. Focusing must be confined to the ground glass. The scale **(G)** and the range finder **(N)** do not operate at close quarters. With the ground glass, the photographer can determine focus, coverage, composition and depth of field at the same time . . . with great accuracy. When used beyond normal focusing range, *f* values change, and some compensation must be made in exposure. Generally, doubling the focal length requires an increase of four times normal exposure using any one diaphragm setting. Extension should be measured from the shutter to the ground glass.

FL = Focal Length
V = Lens to Film Distance

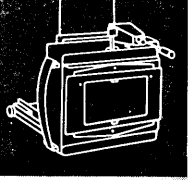
$$\frac{FL \times FL}{V \times V} = \text{Increase in Exposure}$$

EXAMPLE: $\frac{4 \times 4}{8 \times 8} = \frac{16}{64} = \frac{1}{4}$

For maximum extension, slip lens upright off rear of rack and insert at forward end of rack. The use of a magnifier on the ground glass will greatly assist accurate focusing.

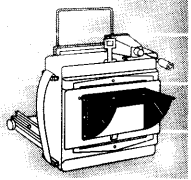


www.orphancameras.com



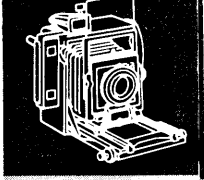
GROUND GLASS SCREEN

Open the shutter **(B)** and expose the ground glass to view by pressing catch **(U)** at bottom. The hood shields the glass from reflections. Turn the focusing knobs **(F)** forward or backward to locate the plane of maximum sharpness.



The ground-glass focusing screen may be used with the camera hand-held or tripod supported. After sliding the holder or adapter between the camera back and the spring-back unit which contains the ground glass, the film automatically lies accurately in the focal plane and occupies the same position as the ground-glass focusing screen. The ground-glass shows the image projected by the lens in full negative size, in color, and up-side-down, (because lenses invert images). With a little practice you will be able to study a picture in this inverted position and determine critical focus and depth of field. Use the lens at its maximum aperture. After focusing, the lens must be stopped down to the desired aperture. The actual depth of field you can anticipate at a given lens opening can be determined by observing the screen image while operating the shutter aperture lever to the desired *f* stop. Your subject should be brightly lighted. A focusing cloth will exclude unwanted reflections. Close the shutter before withdrawing the dark slide from your film carrier.

COLOR PHOTOGRAPHY



The 2¼" x 3¼" camera is ideally suited for color. It uses the smallest size color *cut* film available, for economy. The transparency is large enough for publishing and printing concerns in the professional field.

Film manufacturers accept film for processing in quantities smaller than contained in the original package. Thus you have the convenience of taking a few exposures and showing results without delay. Copying, portraiture, architectural and sports color photography are easy without costly accessories.

When using the double extension bellows feature be particularly certain to compensate for changes in aperture value. Color emulsions are relatively insensitive. Not only will incorrect exposure affect brilliance but color values and balance will also be impaired; a factor absent in black and white photography.

Take exposure data from the pamphlet enclosed with each package of film. On important exposures take several pictures, varying the exposure with each, both over and under the indicated setting. Keep lighting fairly flat. Let color provide the contrast. Heavy shadows, unless used with considerable technical skill, should be avoided. This is particularly true when flash is the sole light source. Most fine quality flash exposures are made with several lamps, lighting background and principal subject.

www.orphancameras.com

RANGE FINDER

Designed to show the exact focus of the lens at various distances by superimposing two images in the eye-piece **(S)**, the rangefinder **(N)** enables the photographer to establish sharp focus in a minimum of time by adjusting focusing knobs until both images are superimposed.

Rangefinders are synchronized to each individual lens. The rangefinder must be re-set if the lens is to be changed, even though focal lengths may be identically marked. Rangefinders are of particular help where the need for rapid focusing is felt: Sports . . . animal . . . child photography.

Cameras equipped with rangefinders are accompanied by additional explanatory literature.

Your range finder should be checked periodically to insure accuracy.

FILM HOLDERS AND ADAPTERS

HOLDERS and ADAPTERS—Film pack adapters are manufactured especially for use with the 2¼ x 3¼ camera. No matter what make of film carriers you have, the following precautions should be taken when using them: (a) be sure holder is seated firmly in camera back before pulling

FILM HOLDERS AND ADAPTERS (cont.)

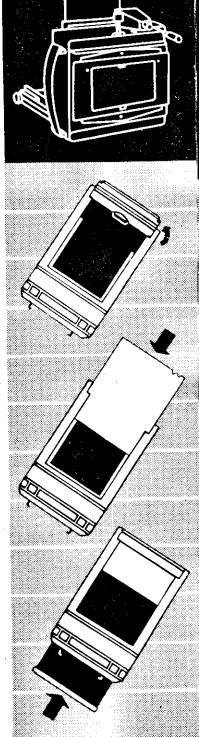
slide. (b) when holders are not in use, pull slides out to relieve pressure on light traps. (c) practice loading until you can do it quickly and accurately.

2¼ x 3¼ FILM PACK ADAPTER—Open by pushing knurled chrome knob at top sideways. Film pack is loaded as usual. Snaps shut and locks automatically.

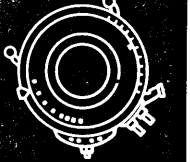
Each package of film pack is accompanied by an instruction sheet from the film manufacturer. These should be consulted for procedure and exposure information.

CUT FILM HOLDERS—Use standard cut film holders. To load, remove the dark slide and open the hinged end of the holder. Open the film in total darkness. Handling by the edges only, locate the notch on one of the short dimensions of the sheet of film. When this notch is on the top edge and towards the right the emulsion side is facing you. Slip the film into the two channels of the holder and slide into place, emulsion side facing you. Close the hinge and replace the dark slide.

Film carriers of all types should be periodically dusted. A suction cleaner will assist.



www.orphancameras.com



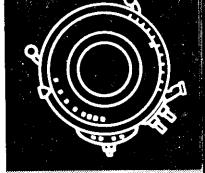
THE RAPAX SHUTTER

This shutter is available in three basic types—the standard (non-flash), the "X" (for instantaneous repeating electronic flash), and the Full Synchromatic (for all types of delay and flash equipment).

TO PRE-SET THE SHUTTER—The Full synchromatic RAPAX Shutter is a pre-setting type of shutter; before exposure can be made, the shutter must be set or "cocked". This is accomplished by moving the setting lever, extending from the top of the shutter, *to the right* (with lens facing you)—the full length of the slot. The shutter is now set, and ready for making the exposure by pressure on the cable release, or by pressing on the release lever located on the left-hand side of the shutter.

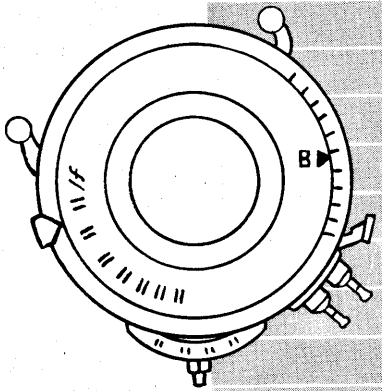
FOR TIME EXPOSURES—"T" or *Time Exposure* is used for exposures of long duration. Turn the speed cam (the outside knurled disc) until the letter "T" is at the indicating line on the shutter. Set the shutter with the lever on the top, and release by pressure on the lever on the left-hand side of the shutter, (with lens facing you) or by cable release. This action will cause the blades to open and remain open until the release lever is again tripped (in the same direction) to close the blades. ***NEVER* reset the shutter when the blades are open; damage to the shutter may result.**

RAPAX SHUTTER (cont.)

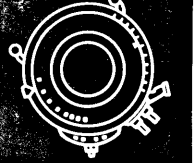


FOR BULB EXPOSURES—"B" or *Bulb Exposure* is used also for making prolonged exposures. Set the speed indicator to "B" and set the shutter as outlined above; then trip the release lever or press on the cable release. This will open the shutter and keep it open as long as pressure is maintained. As soon as pressure is released, the shutter will close.

FOR INSTANTANEOUS EXPOSURES — Turn the speed cam to the exposure desired, and set the shutter. (When setting to 1/400 sec., a slight additional pressure is required to overcome the resistance of the booster spring). To release, just press the cable release or release lever on the left side of the shutter. No harm will befall the shutter if the speed indicator is set between any two given markings; but for correct exposures, it is more satisfactory to set the indicator accurately at the desired exposure. Speed of the shutter, if used at intermediate settings, is not guaranteed at those settings.



www.orphancameras.com



RAPAX SHUTTER (cont.)

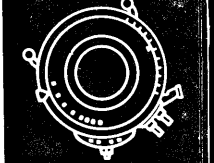
FOR QUICK GROUND-GLASS FOCUSING—Leave the speed ring set at the selected speed (any speed from Bulb to 1/400 sec.), merely cock the shutter and depress the Press-focus lever **(BB)** clockwise. This action will open the blades and keep them open until you have focused. To close the blades, just lift the Press-focus lever counterclockwise to its original position. Since the shutter has already been cocked, you are ready to trip the release lever for an exposure. Although the shutter *must* be cocked using the Press-focus lever it is *not* necessary to recock the shutter before exposing.

TO OPERATE THE SHUTTER FOR SYNCHRONIZED FLASH

To connect the shutter with the flash gun or unit, fasten the end of electrical connecting cord to the connector posts projecting from the lower right-hand side of the shutter, and to the other end of the synchro outlet in the battery case. Use cord #4400. (twin post.) It is not necessary to observe polarity when connecting a high speed electronic flash unit to the shutter. The connector cord may be plugged into the shutter either way.

The Synchromatic-Rapax has the synchronizer delay mechanism adjustable for synchronization with a given class of lamp by setting the indicator lever in the notched position opposite the appropriate marking on the

RAPAX SHUTTER (cont.)

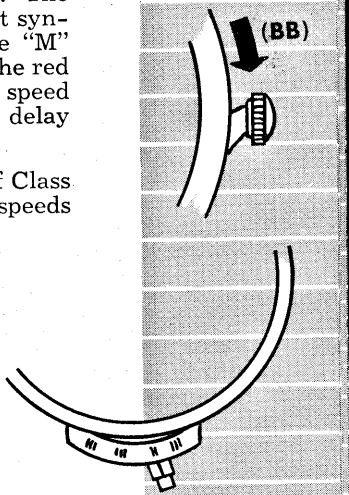


delay scale. Note these markings. From left to right on the scale they are: the white "M", the red "M", the white "X", and the white "Off." Also note that the speed markings are in black for 400, 200, and 100. The markings 50 and down through B & T are in red. For most efficient synchronization with Class M (20 milliseconds) lamps use the white "M" setting of the synchronizer for the speeds marked in black and use the red "M" setting for the speeds marked in red. If an electronic high speed flash unit of the Class "X" type is to be used, set the synchronizer delay lever at "X".

This gives excellent synchronization at *all* shutter speed settings. If Class F lamps are to be used, they will be in synchronization at the red speeds of 50 and slower when the synchronizer is set at the red "F".

COCKING THE SHUTTER AUTOMATICALLY COCKS THE SYNCHRONIZER AT ALL SETTINGS OF THE DELAY INDICATOR EXCEPT IN THE "OFF" POSITION.

If you wish to operate the Press-focus lever at this point, with the lamp connected to the synchronizer, you may do so without danger of setting off the lamp.



www.orphancameras.com

RAPAX SHUTTER (cont.)

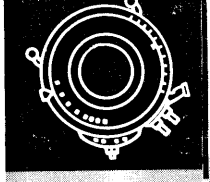
The shutter is hand-tripped or released, and automatically synchronizes the peak flash of the lamp with the maximum shutter opening.

CAUTION: THE TIME DELAY INDICATOR SHOULD BE SET TO THE DESIRED POSITION BEFORE SETTING THE SHUTTER; IF THE SHUTTER IS ALREADY COCKED BEFORE MOVING THE MILLISECOND INDICATOR FROM "OFF" POSITION TO ANY OTHER POSITION, THE SYNCHRONIZATION MECHANISM WILL NOT BE COCKED. In such cases, simply release and then re-cock the shutter.

Should the shutter be cocked with the lamp in place, the time-delay indicator may, if necessary, be moved from Red "M" to White "M" or White "M" to Red "M" but not to the OFF position. IF IT IS MOVED TO AN "OFF" POSITION WITH THE SHUTTER COCKED AND THE LAMP IN PLACE, THE LAMP WILL FLASH. To make this change in setting, simply remove the lamp from the battery case and then set time-delay indicator to the desired position. If the time-delay lever is at a given setting, it does not require re-setting after each exposure as long as the same type of flash lamp is used.

With the time-delay indicator in the OFF position, *no electrical contact is made.*

RAPAX SHUTTER (cont.)



The shutter speeds may be re-set at any time after the shutter is cocked without firing the lamp.

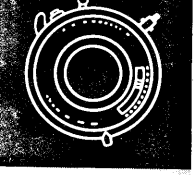
BEFORE PUTTING YOUR CAMERA AWAY, IT IS RECOMMENDED THAT YOU RELIEVE THE TENSION ON THE CONTROLLING SPRINGS OF THE SHUTTER BY SETTING THE SHUTTER AT A SLOW SPEED AND TRIPPING.

HERE IS WHAT IS MEANT BY "M", "F", & "X"—There are in common use for between-the-lens shutters three general types of flashlamps classified according to their "time-to-peak" ratings as follows:

TYPE	TIME-TO PEAK	TYPICAL EXAMPLES
Class M	**20 milliseconds**	**Westinghouse No. 5, 11, 22. G.E. No. 5, 11, 22. Sylvania 25, 0, 40 etc.**
Class F	**5 milliseconds**	**Westinghouse SM G.E. SM Sylvania SF**
Class X	**0 milliseconds**	**Electronic high speed: Kodatron, etc.**

DON'T use oil on the shutter. Special greases have been applied, making it unnecessary to use any additional lubricants. *Oil will ruin the shutter.* On larger shutters black M—F and X markings replace the white settings described in the text.

www.orphancameras.com



KODAK SYNCHRO-RAPID 800 SHUTTER

OPERATING THE SHUTTER—Select the shutter speed by turning the SPEED CONTROL RING to bring the SPEED INDEX mark to the desired shutter speed dot. A little more effort is required to set the speed index opposite the 800 dot. Select the lens opening by moving the LENS OPENING LEVER across the *f*-number scale at the bottom of the shutter to bring the pointer opposite the *f*-number desired. The shutter must be cocked for all shutter speeds by pushing the COCKING LEVER to the end of its slot. Make the exposure for any speed from 1 to 1/800 by pressing the shutter RELEASE carefully, without jarring the camera. For a "B" exposure hold the release down for the length of the exposure. A cable release can be screwed into the shutter rim in place of the CABLE RELEASE SCREW.

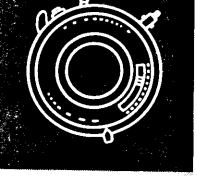
THE SYNCHRONIZER SELECTOR—The synchronizer selector varies the timing of the electrical contact for flashing the lamps. This adjustment enables you to use the peak light output of class F and M Flash lamps and

KODAK SYNCHRO-RAPID 800 SHUTTER (cont.)

Speed lamps. When the selector is set at X, there is no delay. The shutter blades open immediately to catch the light of the speed flash. When the selector is set at F, the blades open a little later to catch the peak of first class F lamps. As you move the selector toward the M setting, you further delay the opening of the shutter blades to match the delay of the slower peaking class M lamps. When the selector is set at the end of the scale, two dots beyond M, the synchronization is set for the longest delay.

SPECIFICALLY—Class F lamps can be used up to and including 1/400 second; set the synchronizer SELECTOR on F. Class M lamps can be used on all shutter speeds; set the synchronizer selector on M. Cock and release the shutter as usual. At shutter speeds slower than 1/100 second with the M-type lamps, fuller exposures will result if the selector is set one or two dots toward the F setting. At 1/800 second with the M-type lamps, set the selector one or two dots beyond M (at the end of the scale). Since B-C (battery capacitor) flash units in general produce the flash peak slightly earlier than regular battery-type flash units, the selector

www.orphancameras.com

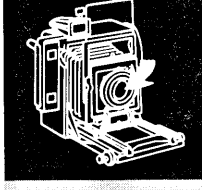


KODAK SYNCHRO-RAPID 800 SHUTTER (cont.)

should be moved toward the X setting a dot or two from the normal settings. CAUTION: DO NOT INSERT A LAMP IN THE REFLECTOR IF THE SHUTTER BLADES ARE OPEN. THE LAMP WILL FLASH AND A SERIOUS BURN MAY RESULT.

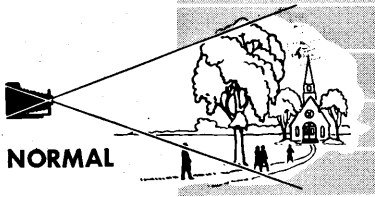
USING SPEED LAMPS—Speed lamps which contain no delay in the trip circuit can be used with this shutter. With the synchronizer selector on X, connecting the cord from the speed lamps to the flash post cock and releasing the shutter in the regular way, the normal action of the shutter blades actuates and synchronizes the flash discharge of the speed lamps. Flash units which use heavy duty relays or solenoids should be carefully checked to avoid damage to, or improper operation of the shutter. Not more than 15 amperes at 25 volts should be allowed to pass through the shutter.

TYPES OF LENSES



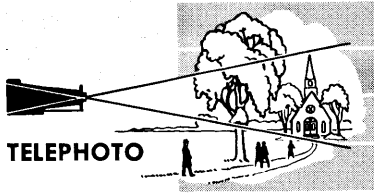
A variety of lenses are available for use with your camera. Request a price listing of recent date for lenses currently available. All lenses are mounted in shutters on the interchangeable lens board. The 101mm. lens is most commonly used with the 2¼ x 3¼ camera. For portraiture you might prefer a somewhat longer focal length.

Generally the *actual* focal length should not exceed 5½ inches for the 2¼ x 3¼. Beyond this the amount of bellows extension available will limit focusing on near objects.

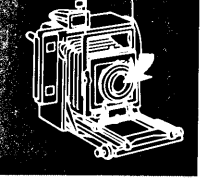


TELEPHOTO LENSES—If a very long focal length must be used, the photographer should acquire a *true* telephoto lens. These lenses operate at their marked focal length, as far as subject and image size is concerned, but have an actual focal length about half the marked length. The bellows extension is thus enough to cover a full range of focus.

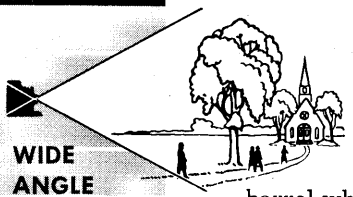
The lens standard should be slipped off the rear of the focusing rack and inserted at the front, thus by-passing the infinity stops (**J**).



www.orphancameras.com



TYPES OF LENSES (cont.)



Telephoto and wide angle lenses should be focused by means of the ground glass screen. Re-setting the range finder for these lenses is too elaborate a process for the temporary use of such objectives.

IMPORTANT—In fitting lenses other than those recommended note these points:

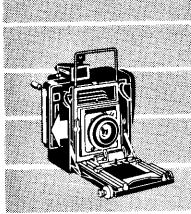
Aside from the requirements regarding focal length (mentioned elsewhere) remember that the physical size of the lens and shutter must be considered. The diameter of the threaded barrel which passes through the lens board should be checked.

If the lens is to remain in the camera when the focusing bed is closed, clearance must be present between the lens-shutter assembly and the focusing rack. Otherwise damage can occur to shutter control levers, flash contacts, etc. The lens mount itself may also be thrown out of alignment. THIS ALSO APPLIES TO IMPROPERLY MOUNTED SOLENOIDS FOR FLASH WORK.

As a general rule telephoto lenses should be used with a tripod. The extreme magnification tends to exaggerate any slight camera movement. Higher shutter speeds are also helpful.

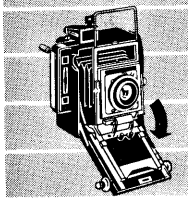
REMOVABLE LENS BOARD — To remove the lens board simply loosen lock screw **(A)** at top of lens mount. Board and lens will tilt forward out of mount. Be sure to grip securely before loosening screw. When inserting lens and board, be sure that right angle piece (at rear of board) is uppermost.

LENS MOVEMENTS

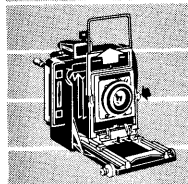


LATERAL or SLIDING MOVEMENT—For use when you want to include objects on either side of composition without disturbing set of tripod. Check ground glass screen carefully before shooting. This feature is a friction fit and is pushed in either direction—resting the thumbs on the edge of the lens mount. A "click stop" indicates the center position.

DROP BED—to drop bed draw lens standard out to normal position, then depress bed braces **(K)** with thumbs until last notch on braces clicks into place. Before returning drop bed to normal position, move the focusing rack **(H)** to a forward position. This will permit proper contact with the range-finder coupling arm.



THE RISING FRONT—Loosen lock screw **(C)** at sides and draw lens mount upward. Check for desired effect in ground glass. Lock in position by tightening screws. When photographing tall buildings, tilting of the camera to include top of structure in the picture will cause convergence of vertical lines. By keeping camera level and employing the rising front to include top of building, this distortion is avoided. However, when moving the lens on its standard, you must study the ground glass focusing screen. CAUTION: Whenever the lens is moved from its normal position on the camera, be sure that it is returned to that normal position before the camera is closed.



www.orphancameras.com

LENS MOVEMENTS (cont.)

TILTING LENS MOUNT—Merely loosen the locking lever (**E**) under the lens. This permits the standard to be tilted backwards to any desired position. When lens is tilted back to position desired, tighten locking lever and standard will be locked in position.

This movement can be used to improve depth of field conditions. Subject matter which lies in an oblique plane from front to rear can be brought into sharp focus by tilting the lens mount while observing the results on the ground glass. This is particularly valuable where the possibility of "stopping down" is limited by lack of illumination, or, movement.

DEPTH OF FIELD

Photographic lenses have a characteristic which includes more or less area in acceptable sharpness of focus, over and above that distance actually focused upon. Emphasis can be placed on one particular portion of the picture by permitting the area before and behind the subject to fall out of focus. See tables on following page for area of sharpness covered by the lenses for a given *f* stop and distance.

Several factors influence the depth of field present in a given picture:

DEPTH OF FIELD (cont.)

These factors increase depth of field.

An increase in distance from camera to subject.
A lens of shorter focal length.
A smaller lens opening.

These factors produce a shallow depth of field.

A shorter distance from camera to subject.
A lens of longer focal length.
A larger lens opening.

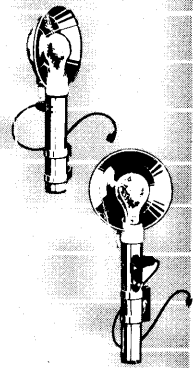
In all cases the depth of field *behind* the subject is greater than in front of it. When deliberate use of shallow depth of field is contemplated (to accentuate the subject) remember that, while out-of-focus backgrounds for sharply focused subjects produce attractive results, prominent objects in the *foreground,* when out of focus, are to be avoided.

DEPTH OF FIELD TABLE FOR 101 mm. LENSES BASED ON CIRCLE OF CONFUSION OF 0.004-INCH

Lens Opening	Distance in Feet					
	Inf.	50	15	10	6	4 ft.
f:4.5	146—Inf.	37—75	13—16	9.5—10	5.5—6	3.9—4.1
f:5.6	118—Inf.	35—86	13—17	9—11	5.7—6.3	3.9—4.1
f:8	82—Inf.	31—126	13—18	8.5—11	5.6—6.4	3.8—4.2
f:11	58—Inf.	27—321	12—20	8.5—12	5.5—6.6	3.8—4.3
f:16	41—Inf.	22—Inf.	11—23	8—13	5.3—7	3.7—4.4
f:22	29—Inf.	18—Inf.	10—30	7.5—15	5—7.4	3.6—4.6

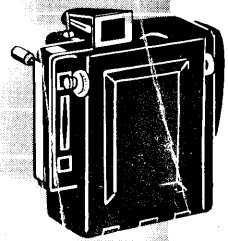
EXAMPLE OF USE: With the camera focused at 50 feet, using diaphragm stop of F:22, area of sharp focus starts 18 feet in front of camera and continues to infinity.

www.orphancameras.com



FLASH EQUIPMENT

The photographer cannot function in the wide range of modern photography without the aid of flash equipment to produce adequate light independent of all other sources. This subject is too large to be covered fully here. You are referred to various data in photographic text books. The B-C Synchronizer (and solenoid) or The B-C Flashing Unit are particularly suitable for use on your camera. The solenoid can be installed at the factory or by a competent service station.
The B-C Flashing Unit is somewhat smaller and can be used with shutters containing contacts for 5 to 20 millisecond bulbs (F or M). Additional information is available on request.



CARE OF THE CAMERA

Your camera is constructed to withstand considerable hard usage, but it should be accorded the treatment you would give any expensive optical instrument. Keep it free of dust and moisture. When cleaning the lens, use lens tissue.

If repairs are required, return it via railway express, insured. If you cannot return the camera, be sure to put it in the hands of a *skilled* repairman.

.....IN CONCLUSION

While your camera has been designed and built with the requirements of the most skillful professional in mind, the beginner will find no difficulty in learning how to get the utmost in performance if he bears in mind the points discussed in this manual.

Reading the various books and magazines of the photographic world will lead to increasing understanding of the many possibilities of this fine instrument. When sending correspondence be sure to mention the following facts:

Complete serial number and model of camera. Type of lens, shutter and range finder plus any serial numbers on these articles. Also, where and when purchased. This particularly applies to correspondence on adjustments and repairs.
Kinds of holders and adapters used as well as samples of negatives and prints for reference are also helpful.

Glance through this booklet whenever the thought occurs to you. Certain things may be overlooked in the first reading. Others may be forgotten. You will find your camera to be the finest you have ever owned.

SEARS, ROEBUCK AND CO.

www.orphancameras.com

SEARS, ROEBUCK AND CO.