

HOW TO USE YOUR

KODAK BANTAM

Kodak Anastigmat Special Lens $f/4.5$



THERE ARE

7 Easy Steps

**TO GOOD PICTURES WITH
THE KODAK BANTAM**

WITH the Kodak Bantam equipped with the Kodak Anastigmat Special Lens $f/4.5$, clear, sharp pictures can be made right from the start, outdoors or indoors, in the daytime or at night.

The seven easy steps to make good pictures with your Kodak are given on the following pages. They are simple, and very easily memorized.

You will find many illustrations which will give you suggestions for making similar pictures.

The negatives made with your Kodak Bantam can be enlarged many diameters.

1

LOADING

KEEP the protective paper wound tightly around the film to prevent light from striking it. The camera should be loaded or unloaded in subdued light.

Push the knurled slide 1 on the end of the camera to OPEN (in the direction of the arrow) and lift the back.

Place the film in the end opposite the winding knob 2. The film must be placed in the camera so that when the paper is unwound, the green side of the paper is up and the black side is towards the lens.



Thread the paper through the longer slit in the reel as far as it will go (see illustration).

Turn the winding knob 2 once or twice to bind the paper on the reel, and be sure that the paper is started straight. Should it be impossible to turn the

winding knob, press the lever 3 to release it.

Close the back and push the knurled slide 1, page 2, on the end of the Kodak to LOCK (in the direction of the arrow).

Turn the winding knob 2 until it locks. The first frame of film is now in position.

After making the exposure, press the button 4 while turning the winding knob about a half turn; then *release the button 4 and continue*



winding until the knob locks. The winding knob is locked every time a new frame of film is wound into position. Successive frames are brought to position automatically by perforations on the film. The number of exposures made can be checked in the green window.

2

OPENING FRONT

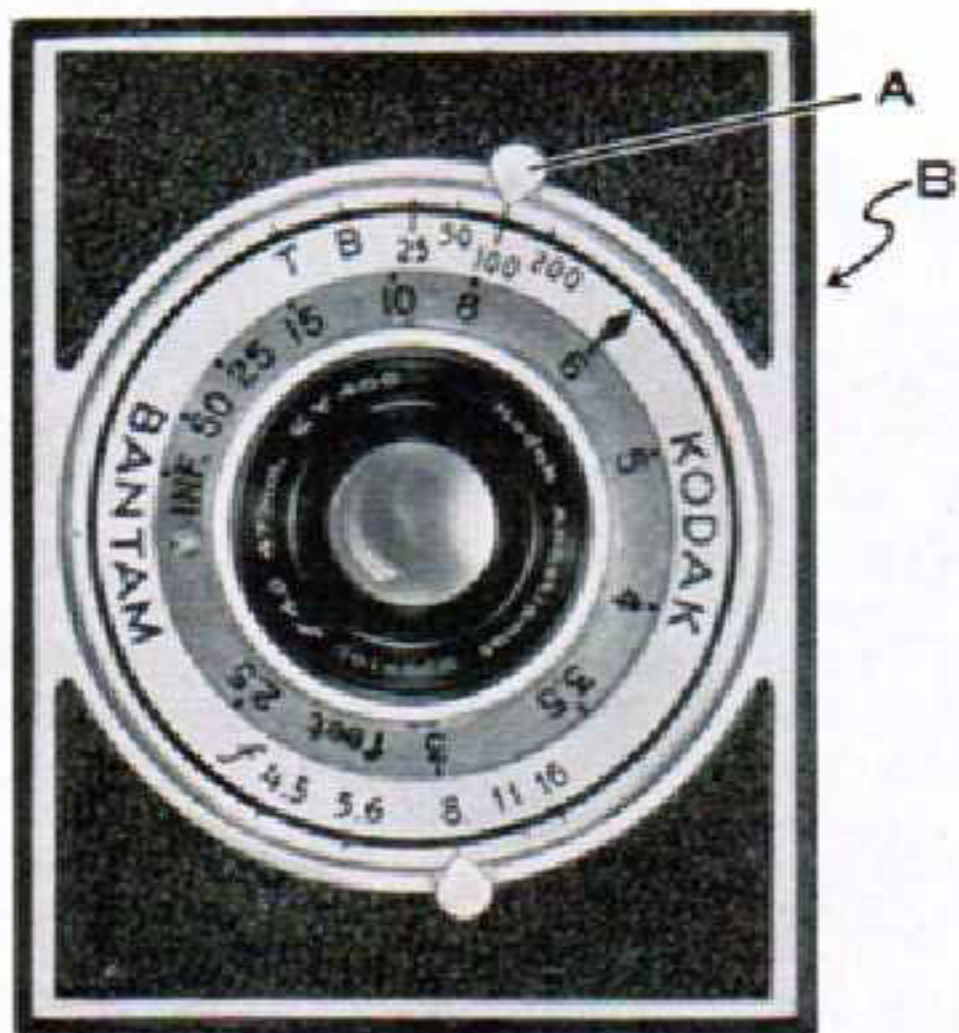
PRESS the button 5, next to the winding knob. The front plate will automatically spring into position.

As the spring is very strong, it is advisable to check it by holding the thumb lightly against the front as shown in illustration.

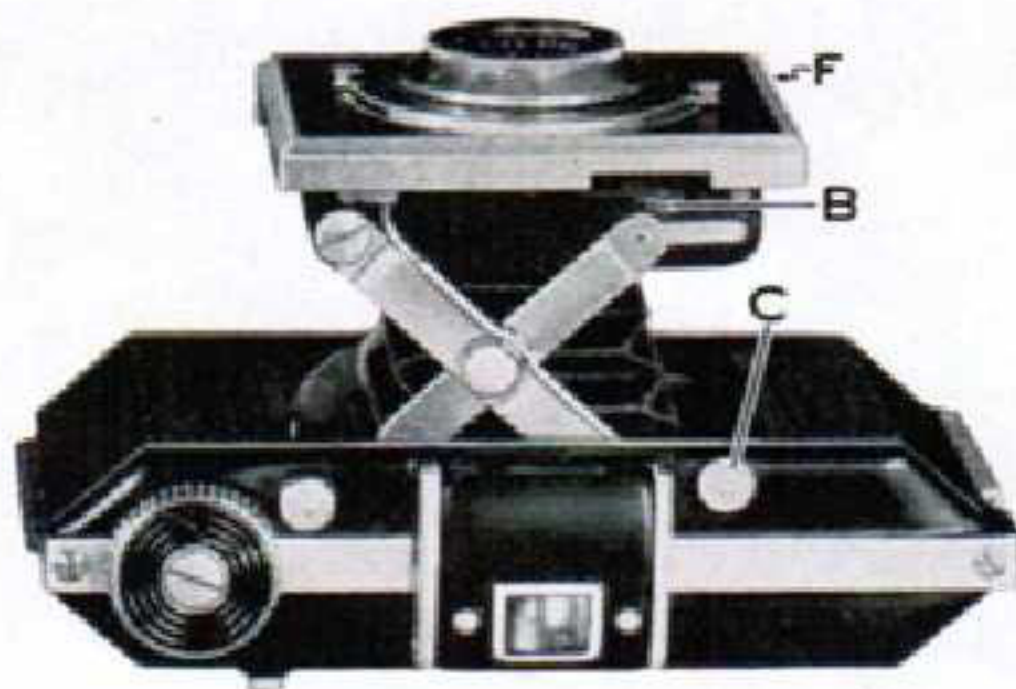


3

SHUTTER SPEEDS



THE shutter on your camera has four snapshot speeds, $1/25$, $1/50$, $1/100$, and $1/200$ second. For average subjects move the lever

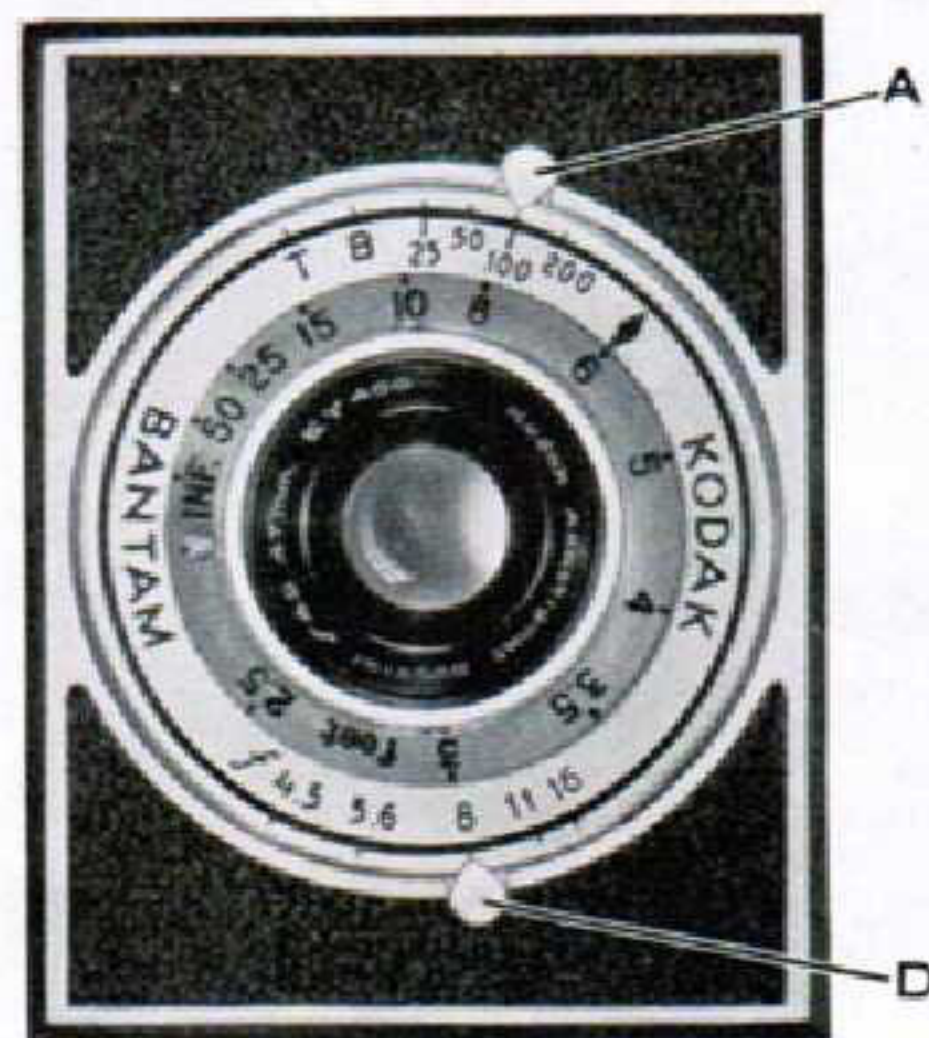


A to 100. For time or "bulb" exposures the lever A must be at "T" or "B" (see page 20).

After the lever A is brought to the proper speed, $1/25$, $1/50$, $1/100$, or $1/200$ second, or to "T" or "B," it is necessary to set the shutter by pushing the setting lever B as far as it will go. The exposure is then made with the exposure button C.

4

STOP OPENINGS

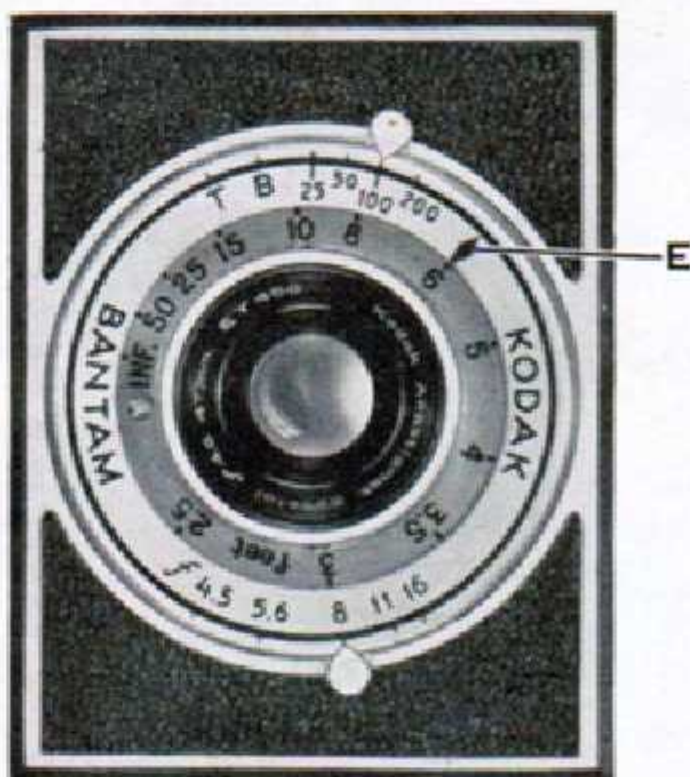


THE stop openings regulate the amount of light passing through the lens. The openings are enlarged or reduced by moving the lever D at bottom of shutter.

For average subjects outdoors when the sun is shining, move lever D to $f/8$, and lever A to $1/100$ second, when using Kodak Plus-X Panchromatic Film. See table on pages 18 and 19 for complete exposure data.

5

FOCUSING



REVOLVE the lens mount until the figure representing the distance between the subject and camera is at the focus pointer E. The lens mount is engraved for the following distances: $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, 5, 6, 8, 10, 15, 25, and 50 feet, and INF. (infinity).

For ordinary street pictures, turn lens

mount to 15 feet; if the *principal object* is nearer or farther, change the focus accordingly.

When making pictures of subjects that are closer to the camera than ten feet, be sure to measure the distances.

The proper distance from $2\frac{1}{2}$ feet to infinity can be determined by using a Kodak Service Range Finder which can be attached to the Kodak Bantam with a Universal Range Finder Clip, see page 36.

6

THE FINDER

THE finder is brought into position by lifting the front frame. It shows what will appear in the picture, but on a much reduced scale. When viewing, hold the Kodak at a distance from the eye which will make the edges of

HOLD THE KODAK STEADY

Holding the Kodak for a vertical picture.

Holding the Kodak for a horizontal picture.



the rear opening appear superimposed on the edges of the front opening. This will insure proper aiming of the Kodak. When the exposure is made, hold the Kodak steady by pressing the hand supporting it against the face. All vertical lines in the subject should appear parallel with the vertical sides of the front frame of the finder, when holding the Kodak either in the vertical or horizontal position. Unusual effects can be obtained by tilting the Kodak.

After composing the picture in the finder of a subject ten feet or nearer to the Kodak, it will be necessary to move the Kodak a *little* to the right if making vertical pictures, or tilt it up a trifle for horizontal pictures. This procedure brings the Kodak to the proper position to include in the picture what is seen in the finder.

7

SNAP THE PICTURE

HOLD the Kodak Bantam in either the vertical or horizontal position as shown on page 7. After pushing the setting lever B as far as it will go (see pages 4 and 5), press the exposure button C. When pressing the button, hold the breath for the instant. If the Kodak is moved during the exposure,



the picture will be blurred. *Hold the Kodak steady.*

Cable Release: A cable release (No. 30) can be used with this Kodak if you wish to use the Kodak Self Timer to include yourself in a group picture. The front of the camera cannot be closed without first removing the cable release.

To attach the cable release, remove the screw F, page 4, and replace it with the cable release.

The Kodak should be held level if it is desired to have the vertical lines of the subject parallel with the sides of the picture.

If the subject is below the normal height, like a small child or a dog, the Kodak should be held down level with the center of the subject.



The exceptionally fine grain of Kodak Panatomic-X Film insures satisfactory enlargements of almost any size.

Prints of the standard size shown above (2 $\frac{3}{4}$ x 4 inches) are being offered at reasonable prices, and it is recommended that only prints of this size or larger be ordered from Kodak Bantam negatives.

REMOVING THE FILM

AFTER the eighth frame of film has been exposed, the button 4, page 3, must be pressed while the winding knob 2 is being turned.

Give the winding knob two complete turns after the end of the paper has passed the green window; then open the back of the Kodak in a subdued light. Unless the film and protective paper are completely wound on the spool before the back of the camera is opened, the spool will not be completely sealed.

Remove the spool of film by grasping the flange opposite the winding knob and drawing the spool away from the post of the winding knob.

Important: If the above procedure is followed, the spool of film, when removed from the camera, will be fully wound, and sealed by the special spring flanges of the spool. The protective paper should not be pulled tight or sealed with a sticker or rubber band.

Important: Film should be developed as soon as possible after exposure. The quality of the image on all sensitized products is retained by prompt development after exposure.

Remove the empty spool and place it in the winding end of the camera, fitting the hole in the end of the spool over the post of winding knob. Now reload the Kodak.

GOOD PICTURES REQUIRE ACCURATE FOCUSING

THE various distances at which the Kodak may be focused are engraved on the edge of the lens mount. The scale on the Kodak Bantam with Kodak Anastigmat Special Lens $f/4.5$ is marked for $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, 5, 6, 8, 10, 15, 25, and 50 feet, and INF. (infinity).

To focus the Kodak, revolve the lens mount until the figure representing the distance *from the subject to lens* is at the focus pointer E, page 6.

The distance between the subject and Kodak can be estimated without measuring, when the subject is *beyond ten feet*; for instance, if the focus is set at 15 feet (the usual distance for ordinary street scenes) the sharpest part of the picture will be the objects at that distance from the camera, but everything from about 10 to about 28 feet will be in good focus when using stop $f/4.5$, with smaller stop openings the range will be greater, see table on page 22.

For *distant* views turn the lens mount until INF. (infinity) is at the focus pointer.

With the aid of the Kodak Service Range Finder the Kodak can be focused easily and accurately on subjects as close as $2\frac{1}{2}$ feet, to infinity, see page 36.

For portraits, the subjects should be fairly close to the lens, and the focus should be adjusted accordingly.



For a picture of this kind, set the focus at 15 feet.



For distant subjects, the focus should be set at INF. (infinity).



SUGGESTIONS ON EXPOSURE

INSTANTANEOUS EXPOSURES

WHEN the sun is shining, it should be behind your back or over the shoulder; if it shines directly into the lens, it will blur and fog the picture. However, beautiful effects can be obtained by back- or side-lighting. When pointing the Kodak towards the sun, the lens must be shaded so that the direct sunlight will not strike it. For the best results, use the Series V Kodak Lens Hood of the Kodak Combination Lens Attachments; see page 26.

Instantaneous exposures can be made indoors with Kodak Plus-X Panchromatic Film or with Kodak Super-XX Panchromatic Film, provided the sun is shining and the subject is receiving the direct illumination from a window. Pictures similar to that on the opposite page can be made with an exposure of $f/5.6$ and $1/25$ second with the Kodak Plus-X Panchromatic Film, and $f/5.6$ and $1/50$ second with Kodak Super-XX Panchromatic Film.

Snapshots should be made during the hours from one hour after sunrise until one



For a moving object use $1/100$ or $1/200$ second with the proper stop opening.

For an average subject use $f/8$ and $1/100$ second with Kodak Plus-X Pan Film.



For portraits indoors and daylight illumination use $f/5.6$ and $1/25$ second.



Daylight Exposure Table

FOR KODAK PANATOMIC-X, KODAK PLUS-X PANCHROMATIC, AND
KODAK SUPER-XX PANCHROMATIC FILMS

Kind of Film	Brilliant ¹ Subjects	Bright ² Subjects	Average ³ Subjects	Shaded ⁴ Subjects	Light Condition
Panatomic-X Plus-X Super-XX	$f/11$ and $1/100$ $f/16$ " " $f/16$ " $1/200$	$f/8$ and $1/100$ $f/11$ " " $f/16$ " "	$f/5.6$ and $1/100$ $f/8$ " " $f/11$ " "	$f/4.5$ and $1/100$ $f/5.6$ " " $f/8$ " "	Bright Sun
Panatomic-X Plus-X Super-XX	$f/8$ and $1/100$ $f/11$ " " $f/16$ " "	$f/5.6$ and $1/100$ $f/8$ " " $f/11$ " "	$f/4.5$ and $1/100$ $f/5.6$ " " $f/8$ " "	$f/4.5$ and $1/50$ $f/4.5$ " $1/100$ $f/5.6$ " "	Hazy Sun
Panatomic-X Plus-X Super-XX	$f/5.6$ and $1/100$ $f/8$ " " $f/11$ " "	$f/4.5$ and $1/100$ $f/5.6$ " " $f/8$ " "	$f/4.5$ and $1/50$ $f/4.5$ " $1/100$ $f/5.6$ " "	$f/4.5$ and $1/25$ $f/4.5$ " $1/50$ $f/4.5$ " $1/100$	Cloudy-Bright
Panatomic-X Plus-X Super-XX	$f/4.5$ and $1/100$ $f/5.6$ " " $f/8$ " "	$f/4.5$ and $1/50$ $f/4.5$ " $1/100$ $f/5.6$ " "	$f/4.5$ and $1/25$ $f/4.5$ " $1/50$ $f/4.5$ " $1/100$	— $f/4.5$ and $1/25$ $f/4.5$ " $1/50$	Cloudy-Dull

¹**Brilliant Subjects:** Beach, marine and snow scenes, distant landscapes and mountains without prominent dark objects in the foreground.

²**Bright Subjects:** Near-by people in marine, beach or snow scenes; scenics with foreground objects.

³**Average Subjects:** Near-by people, gardens, houses and scenes, *not in the shade*. Use this classification if in doubt.

⁴**Shaded Subjects:** People, gardens, and other subjects in the *open shade* (lighted by open sky—not under trees, porch roof, etc.).

hour before sunset. If earlier or later, the exposures must be longer.

TIME AND "BULB" EXPOSURES

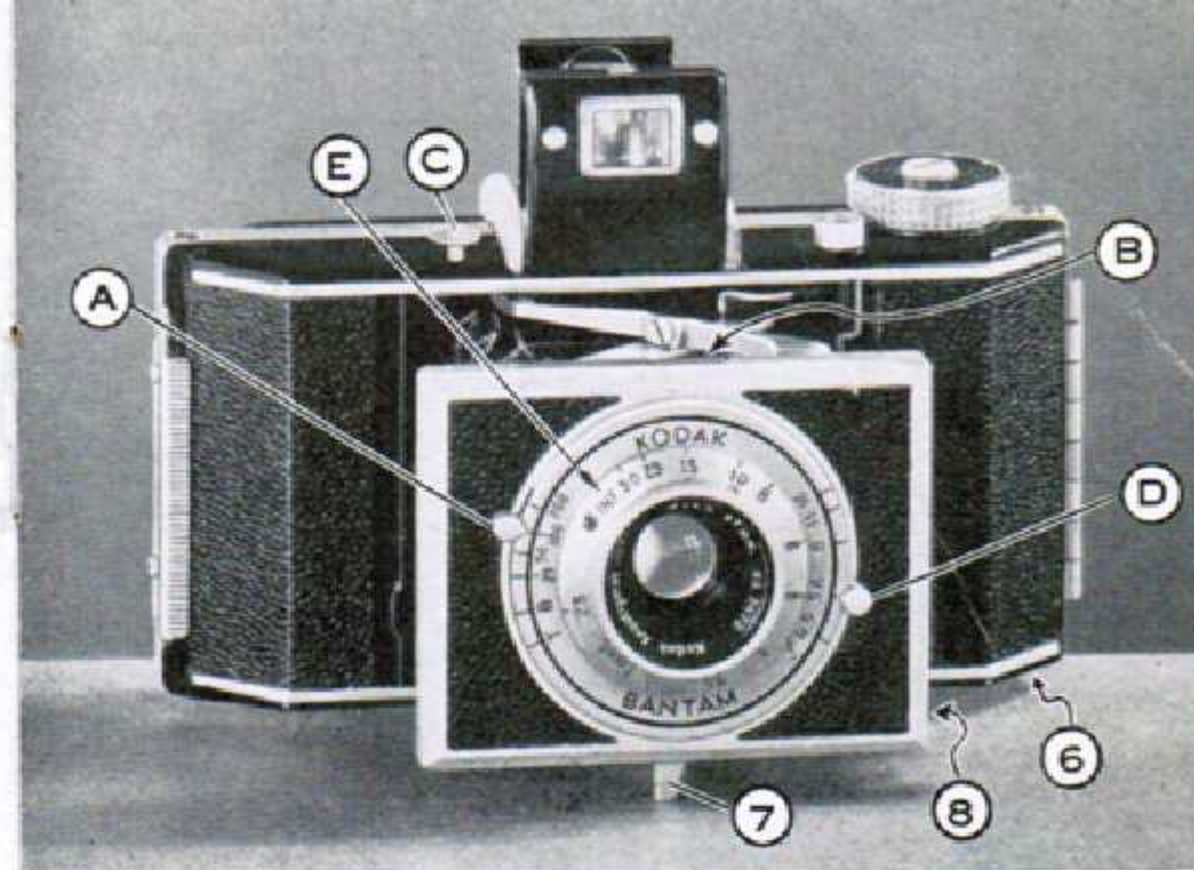
For all time or "bulb" exposures the Kodak must be placed on a tripod or some other steady, firm support—*do not hold it in the hands* or the picture will be blurred. Before the camera can be attached to a tripod, the screw 6 must be removed.

A Kodak Tilt-a-pod or an Optipod will be necessary for using the camera on a tripod, with the camera in the vertical position.

When making a horizontal picture without a tripod, use the standard 7, for a support; for a vertical picture swing out the standard 8, and place the camera on its end. The camera must not be more than two or three inches from the edge of the table.

For short time exposures from one-half second to ten seconds, "bulb" exposures are recommended.

To make a time exposure, move the lever A to the letter "T," push the setting lever B; then press the exposure button C, once to open the shutter and again to close it. For a "bulb" exposure, move the lever A to the letter "B," push the setting lever B; then press the exposure button C; the shutter will remain open as long as button C is held down.



After making an exposure, press the button 4, page 3, and turn the winding knob about a half turn; then release the button and turn the winding knob until it locks.

STOP OPENINGS

STOP OPENINGS regulate the amount of light passing through the lens. These openings are enlarged or reduced by moving the lever D, see the illustration above.

A knowledge of the comparative values of the stop openings is necessary for correctly timing exposures.

The stop openings are marked $f/4.5$, 5.6, 8, 11, and 16.

THE DEPTH OF FIELD OR RANGE OF SHARPNESS FOR DIFFERENT STOP OPENINGS

By "depth of field" is meant the range of sharpness in front of and behind the subject focused on, within which details in the picture will be sharp and distinct.

Distance Focused Upon	$f/4.5$	$f/5.6$	$f/8$	$f/11$	$f/16$
2½ feet	2' 4" to 8½"	2' 3¼" to 9½"	2' 2½" to 3'	2' 1½" to 3'	2' 1½" to 3'
3 "	2' 9" to 4"	2' 8½" to 3'	2' 7" to 3' 7½"	2' 5¼" to 4'	2' 3¼" to 4'
3½ "	3' 2" to 3' 11½"	3' 11" to 4' 11"	2' 11" to 4' 4½"	2' 9¼" to 4' 10½"	2' 6½" to 5' 11"
4 "	3' 6¼" to 4' 7"	3' 5¾" to 4' 9½"	3' 3" to 5' 2½"	3' 1" to 5' 10½"	2' 9½" to 7' 6"
5 "	4' 4" to 6'	4' 2¼" to 6' 3"	3' 11" to 7'	3' 8" to 8'	3' 3" to 11' 10"
6 "	5' to 7' 5"	4' 10" to 7' 11"	4' 6" to 9' 2"	4' 1" to 11' 5"	3' 7" to 19' 6"
8 "	6' 5" to 10' 9"	6' 1" to 11' 9"	5' 6" to 14' 9"	5' to 21' 6"	4' 3" to 95'
10 "	7' 7" to 14' 7"	7' 3" to 16' 6"	6' 5" to 22' 9"	5' 8" to 44'	4' 8" to inf.
15 "	10' 2" to 28' 6"	9' 6" to 36' 6"	8' 2" to 95'	7' to inf.	5' 6" to inf.
25 "	14' to 120'	12' 6" to inf.	10' 4" to inf.	8' 6" to inf.	6' 6" to inf.
50 "	19½' to inf.	17' to inf.	13' to inf.	10' 3" to inf.	7' 6" to inf.
INF.	31½' to inf.	25½' to inf.	17½' to inf.	13' to inf.	8' 9" to inf.

"Inf." is the abbreviation for Infinity—meaning an unlimited distance from the lens.

The largest stop opening is $f/4.5$. This opening allows approximately fifty per cent more light to enter than $f/5.6$. From $f/5.6$ to $f/16$ each smaller opening (larger number) admits half the light of the preceding larger stop opening. Thus, if the correct exposure is $1/100$ second at $f/5.6$, then the exposure for $f/8$ should be $1/50$ second, and for $f/11$, $1/25$ second. The exposure for the average outdoor subject, when the sun is shining, is $f/8$ and $1/100$ second when using Kodak Plus-X Panchromatic Film. If the day is exceptionally brilliant, use the next smaller stop to $f/8$, that is, $f/11$ and $1/100$ second. *The important thing to remember is the average exposure of $f/8$ and $1/100$ second.* When the light conditions differ from the average, change the aperture, keeping in mind the basic exposure $f/8$ and $1/100$ second. See the exposure guide on pages 18 and 19. (For Kodachrome Film follow the guide included in the instructions packed with the film.)

The smaller the stop opening the greater is the range of sharpness.

EXPOSURES FOR INTERIORS BY DAYLIGHT

It is easy to make pictures of interiors by daylight where the windows get direct light from the sky.

To make a picture of a room interior by

daylight, adjust the shutter for a "bulb" or time exposure by moving the lever A, page 21, to the letter "B" or "T." Set the stop opening lever D at $f/11$; this opening gives the best average results, see Depth of Field Table on page 22.

When the Kodak is on a table, do not place it more than two or three inches from the edge, or the table will show in the picture.

Compose your subject in the finder, including more of the floor of the room than of the ceiling. Leave the furniture in the room in its usual place, as far as possible, but be sure there are no pieces close to the camera lens.

Focus the Kodak by revolving the lens until the figure corresponding with the average distance between the objects in the room and the lens is at the focus pointer E, page 21.

For an interior with medium-colored walls and furnishings and two windows, with the sun shining—make an exposure of about 2 seconds, with stop $f/11$ and Kodak Plus-X Panchromatic Film. With one window, double the exposure, and if there are more than two windows, halve the exposure.

If the day is cloudy, make an exposure of 4 seconds to 8 seconds.

No definite rule can be given for all in-



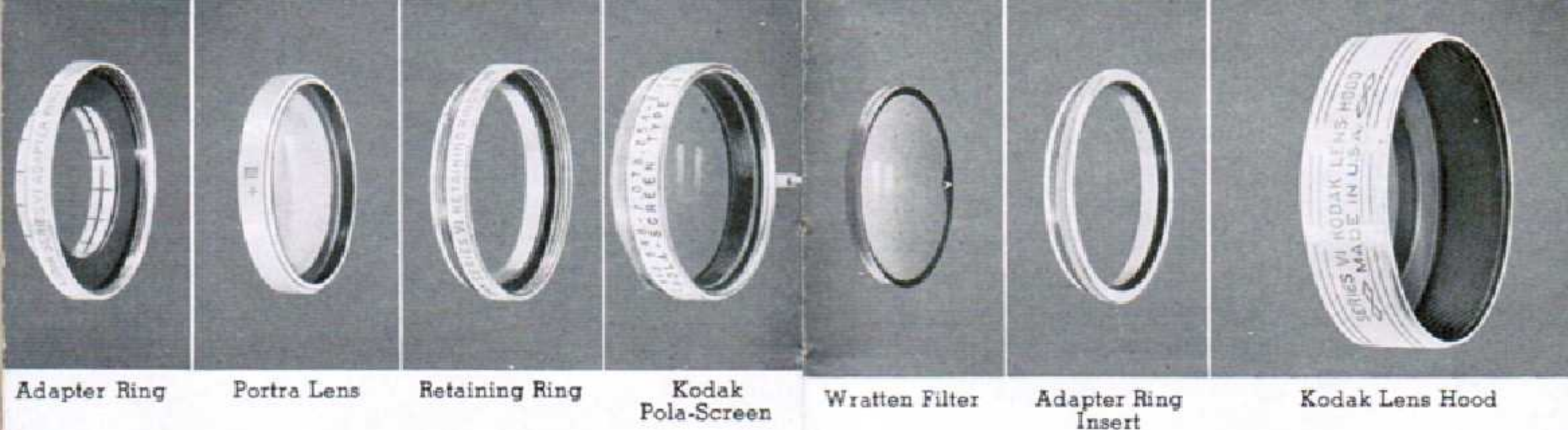
teriors because of the great variety of light conditions. It is suggested that a series of exposures be made from about 1 second to 8 seconds, using stop $f/11$, making each exposure double the previous one.

With Kodak Panatomic-X Film give double the exposures recommended above, and with Super-XX Panchromatic Film give one-half the exposures.

Stop $f/11$ gives the best average results. Double the exposures with stop $f/16$, and halve the exposures with each larger stop.

Interiors by daylight should be made from three hours after sunrise until three hours before sunset; if earlier or later the exposures must be longer.

If no more time exposures are to be made, adjust the shutter for an instantaneous exposure, moving the lever A to 100, see page 21.



KODAK COMBINATION

THE Kodak Combination Lens Attachments permit using in combination an unmounted Wratten Filter, one of the Kodak Supplementary Lenses such as the Portra Lenses and Kodak Portrait Diffusion Disk for close-ups, the Kodak Pola-Screen and the Kodak Lens Hood.

The basis of the combination is the Kodak Adapter Ring with its Adapter Ring Insert. The Adapter Ring must be of the proper Series and size to fit your lens.

The Series V Lens Attachments are used with the Kodak Bantam with Kodak Anastigmat Special Lens $f/4.5$. The Kodak Adapter Ring must be $\frac{1}{8}$ inch in diameter. All Wratten Filters, supplementary lenses, Pola-Screen and Lens Hood must be Series V.

The Adapter Ring Insert, which is a re-

LENS ATTACHMENTS

taining collar, is first unscrewed from the Adapter Ring. The Adapter Ring is then slipped over the lens mount, and an unmounted Wratten Filter Series V or Portra Lens Series V (convex side up) inserted in the Adapter Ring and held in place by screwing in the Adapter Ring Insert.

If it is desired to use a Kodak Pola-Screen with a supplementary lens *or* a filter, the Pola-Screen is first screwed into the Adapter Ring, and then the filter *or* supplementary lens is placed in front of the Pola-Screen and it is held in place by the Adapter Ring Insert. If you wish to use a Kodak Lens Hood in this combination, the Adapter Ring Insert is omitted and the Lens Hood is used to hold the filter or supplementary lens in front of the Pola-Screen.

To use a Portra Lens with a filter it will be necessary to obtain a double threaded Kodak Retaining Ring, Series V. The Portra Lens (convex side up) is placed in the Adapter Ring and then the double threaded Retaining Ring is screwed into the Adapter Ring. The filter is inserted into the Retaining Ring and held in place either with the Adapter Ring Insert or Kodak Lens Hood. If a Kodak Pola-Screen is used in this combination, the Portra Lens (convex side up) is put into the Adapter Ring. Then the double threaded Retaining Ring is screwed into the Adapter Ring, which in turn takes the Pola-Screen. The Wratten Filter is placed in front of the Pola-Screen and held in place either with the Adapter Ring Insert or Kodak Lens Hood.

KODAK PORTRA LENSES 1+, 2+, AND 3+

WHILE the Kodak Bantam can be focused for subjects as close as $2\frac{1}{2}$ feet (close enough for head and shoulder portraits), it can be focused for even closer distances with one of the Kodak Portra Lenses.

By using a Kodak Portra Lens, large images of flowers and similar "still life" subjects can be obtained.

Compose the picture in the finder. When you are making vertical pictures and holding

your camera with the finder to the right, turn the Kodak just a *little* to the right, and for horizontal pictures tilt it up a trifle, as the short distances at which the subject must be from the lens make it necessary to center the subject by eye.

The subject must be at one of the distances from the lens given in the table below or one of the tables on page 30. Measure the distance carefully from the lens to the subject, and revolve the lens mount until the correct figure is at the pointer E, see page 21.

The same exposure is required as without the Kodak Portra Lens.

Kodak Portra Lens 1 +		
With the Focus Set at	Distance Subject to Lens	Approximate Field Size
INF.	$38\frac{3}{4}$ in.	$21\frac{7}{8} \times 31\frac{1}{4}$ in.
50 ft.	37 in.	$20\frac{1}{2} \times 29\frac{1}{4}$ in.
25 ft.	$34\frac{3}{4}$ in.	$19\frac{1}{4} \times 27\frac{1}{2}$ in.
15 ft.	$32\frac{3}{8}$ in.	$17\frac{7}{8} \times 25\frac{1}{2}$ in.
10 ft.	$29\frac{5}{8}$ in.	$16\frac{1}{8} \times 23\frac{1}{8}$ in.
8 ft.	$27\frac{7}{8}$ in.	$15\frac{1}{8} \times 21\frac{5}{8}$ in.
6 ft.	$25\frac{1}{2}$ in.	$13\frac{3}{4} \times 19\frac{5}{8}$ in.
5 ft.	$23\frac{3}{4}$ in.	$12\frac{3}{4} \times 18\frac{1}{4}$ in.
4 ft.	$21\frac{5}{8}$ in.	$11\frac{1}{2} \times 16\frac{1}{2}$ in.
$3\frac{1}{2}$ ft.	$20\frac{3}{8}$ in.	$10\frac{3}{4} \times 15\frac{3}{8}$ in.
3 ft.	$18\frac{3}{4}$ in.	$10 \times 14\frac{1}{4}$ in.
$2\frac{1}{2}$ ft.	17 in.	$8\frac{7}{8} \times 12\frac{3}{4}$ in.

Kodak Portra Lens 2 +

With the Focus Set at	Distance Subject to Lens	Approximate Field Size
INF.	19 1/2 in.	10 7/8 x 15 1/2 in.
50 ft.	19 1/8 in.	10 1/2 x 15 1/8 in.
25 ft.	18 1/2 in.	10 1/4 x 14 5/8 in.
15 ft.	17 3/4 in.	9 7/8 x 14 in.
10 ft.	16 7/8 in.	9 1/4 x 13 1/4 in.
8 ft.	16 3/8 in.	8 7/8 x 12 3/4 in.
6 ft.	15 1/2 in.	8 3/8 x 12 in.
5 ft.	14 7/8 in.	8 x 11 1/2 in.
4 ft.	14 in.	7 1/2 x 10 3/4 in.
3 1/2 ft.	13 3/8 in.	7 1/8 x 10 1/8 in.
3 ft.	12 3/4 in.	6 3/4 x 9 5/8 in.
2 1/2 ft.	11 7/8 in.	6 1/4 x 8 7/8 in.

Kodak Porta Lens 3 +

With the Focus Set at	Distance Subject to Lens	Approximate Field Size
INF.	13 in.	7 1/4 x 10 3/8 in.
50 ft.	12 7/8 in.	7 1/8 x 10 1/4 in.
25 ft.	12 1/2 in.	6 7/8 x 9 7/8 in.
15 ft.	12 1/4 in.	6 3/4 x 9 5/8 in.
10 ft.	11 7/8 in.	6 1/2 x 9 1/4 in.
8 ft.	11 1/2 in.	6 1/4 x 8 7/8 in.
6 ft.	11 1/8 in.	6 x 8 5/8 in.
5 ft.	10 3/4 in.	5 3/4 x 8 1/4 in.
4 ft.	10 3/8 in.	5 1/2 x 7 7/8 in.
3 1/2 ft.	10 in.	5 1/4 x 7 1/2 in.
3 ft.	9 5/8 in.	5 1/8 x 7 1/4 in.
2 1/2 ft.	9 1/8 in.	4 3/4 x 6 7/8 in.

INDOOR PICTURES AT NIGHT WITH PHOTOFLOOD LAMPS

TO TAKE snapshots or other indoor pictures at night, you need only a roll of Kodak Film, two reflectors, and Photoflood Lamps.

Photoflood Lamps give a steady light of great brilliance. They come in two sizes for the amateur, No. 1 and No. 2. The No. 2 bulb gives twice the light and lasts about twice as long. Either size can be screwed into all regular lamp sockets.

For snapshots, place the two Photoflood Lamps, in reflectors, at any of the distances from the subject given in the exposure table on the following page. Measure the distance between the camera and subject and adjust the focus accordingly.

CAUTION: Photoflood Lamps become quite hot and should not be kept burning any longer than necessary. They should never be allowed to come in contact with other objects while they are in use.

KODAK DIRECT POSITIVE PANCHROMATIC FILM DP828

THIS is a fast panchromatic film of low graininess which gives black-and-white slide transparencies of the highest quality directly on the material exposed in the camera. It is developed by a special reversal process, for which chemicals are available in package

PHOTOFLOOD EXPOSURE TABLE

Lens apertures to use with 1/25 second—two No. 2 Photoflood Lamps in average reflectors, for average subject in room with light-colored walls.

Lamp Distance	4 ft.	6 ft.	9 ft.	12 ft.
Panatomic-X	$f/5.6$ 8 11	$f/4.5$ 5.6 8	$f/4.5$ 5.6	$f/4.5$
Plus-X				
Super-XX				

For two No. 1 Photoflood Lamps double the above exposures. For example, if the table calls for an exposure of $f/8$ and 1/25 second, give an exposure of 1/25 second and $f/5.6$. See pages 21 and 23 for a comparison of stop openings.

form. Fewer operations and less time are necessary to make slides in this manner than are required to make negatives and prints from the negatives. The transparencies can be tinted and toned like other slide materials.

Direct Positive Panchromatic Film is suitable for photographing all ordinary subjects, such as people, landscapes, buildings, etc. It is also adapted to making 2 x 2-inch slides by copying methods and by reduction from 3¼ x 4-inch slides. The originals can be black-and-white or colored, and filters can be used. The film is not, however, designed to yield the extreme contrast required for best results in line copying.

KODAK INFRARED FILM IR828

THIS film reaches into that portion of the spectrum beyond the visible red. The most common use for the Kodak Infrared Film is distant landscape photography, though it is also very useful for scientific, medical, and criminological photography.

When a distant landscape is photographed on an ordinary film, the distance often lacks detail on account of the haze. This is because violet and blue light, to which an ordinary film is sensitive, are scattered by atmospheric haze. The longer wave lengths of the visible light and particularly the in-



Landscape made on Kodak Infrared material with No. 25 (A) Wratten Filter. Exposure: $f/5.6$ and $1/25$ second.



Landscape made on panchromatic film without a filter.

visible infrared, however, are freely transmitted by the haze. A photograph made on infrared film with a deep yellow or red filter over the lens, to absorb the violet and blue light, will often (depending on atmospheric conditions) show distant objects very clearly even if the haze makes them invisible to the eye.

Landscape photographs taken on infrared film, outdoors in sunlight, frequently have the appearance of pictures taken by moonlight.

While several Wratten Filters can be used, we recommend the Wratten Filter No. 25 (A) (red) and an average exposure with bright sunlight of about $f/5.6$ and $1/25$ second. Use a Wratten Filter No. 25 (A) Series V with the Kodak Combination Lens Attachments, see pages 26 to 28.

Instructions for developing the film are enclosed with each roll of Kodak Infrared Film IR828. For more detailed information, refer to the Kodak Data Book: *Infrared and Ultraviolet Photography*, sold by Kodak dealers.

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