



KODAK REFLEX





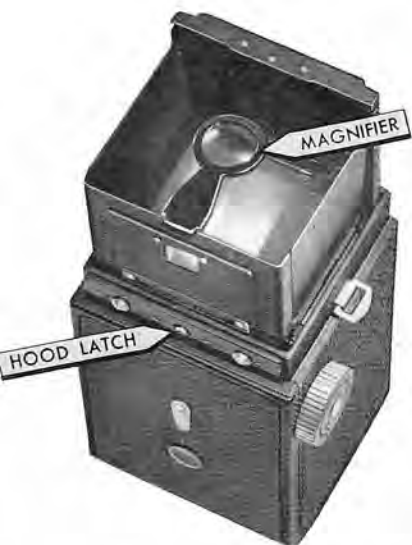
You will enjoy photography with your Kodak Reflex . . . The full-size image of the subject you see in the finder makes it easy to include just what you want in the picture . . . And flash synchronization is built into the shutter . . . Your photofinisher makes standard enlargements from the $2\frac{1}{4} \times 2\frac{1}{4}$ -inch negatives at a cost little more than that of contact prints.

Get acquainted

- Picture-taking with the Kodak Reflex is easy. But if you would like to make sure of getting good results every time, right from the start, spend a few minutes getting acquainted with your camera before you load it with film.
- Read the first few pages of the manual with special care—they tell you how to operate your camera, and why. The “why” is important because once you really understand the fundamentals, you can devote more of your attention to making interesting pictures, pictures that tell a story.
- The rest of the booklet is planned to help you realize the full capabilities of your Kodak Reflex. When you see how easy it is to take pictures under all sorts of lighting conditions, you will make more and better pictures than ever before.

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The Finder

Probably the first thing you'll want to do is open the finder hood and look through the finder. Just press the HOOD LATCH and the panels of the hood will spring into position. When the camera is not in use, they are easily folded up, first the sides, then the back and front.

To bring the image into focus, turn the focusing ring on either of the twin lenses until the subject seen in the finder is sharp. A flick of your thumb brings the MAGNIFIER into place over the center of the image; with it you can focus critically on the finest detail.

For most pictures you will want to use the reflex finder because it is so easy to compose your picture on, the ground glass, including just what you want on the negative. But sometimes, for example when you're taking

pictures of sports, you will want to use the camera at eye level. To do this, first open the hood; then swing the magnifier up out of the way and push in the center part of the front panel. Now the front and back panels of the hood form an open-frame direct view finder.

When you use the camera at eye level, you can hold it either as shown in the lower illustration, or if you want the taking lens to be still higher, you can hold it upside down. In either case, hold the camera close enough to your eye so that you can see the entire front frame of the finder.

Good results can also be obtained by holding the camera upside down over your head, using the reflex finder. In this way you can take pictures over the heads of people in a crowd.



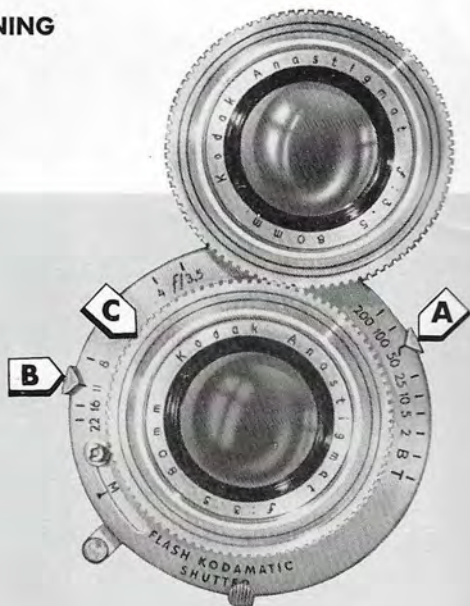
FOR ANY PICTURE

You adjust only...

A SHUTTER SPEED

B LENS OPENING

C FOCUS



A

SHUTTER SPEED

The length of time the shutter is open to admit light to the film is controlled by setting the SHUTTER SPEED POINTER A. Any one of seven shutter speeds, $1/200$, $1/100$, $1/50$, $1/25$, $1/10$, $1/5$, and $1/2$ second can be selected. Note that each setting gives an exposure time about twice as long—and therefore lets in about twice as much light—as the one preceding it.

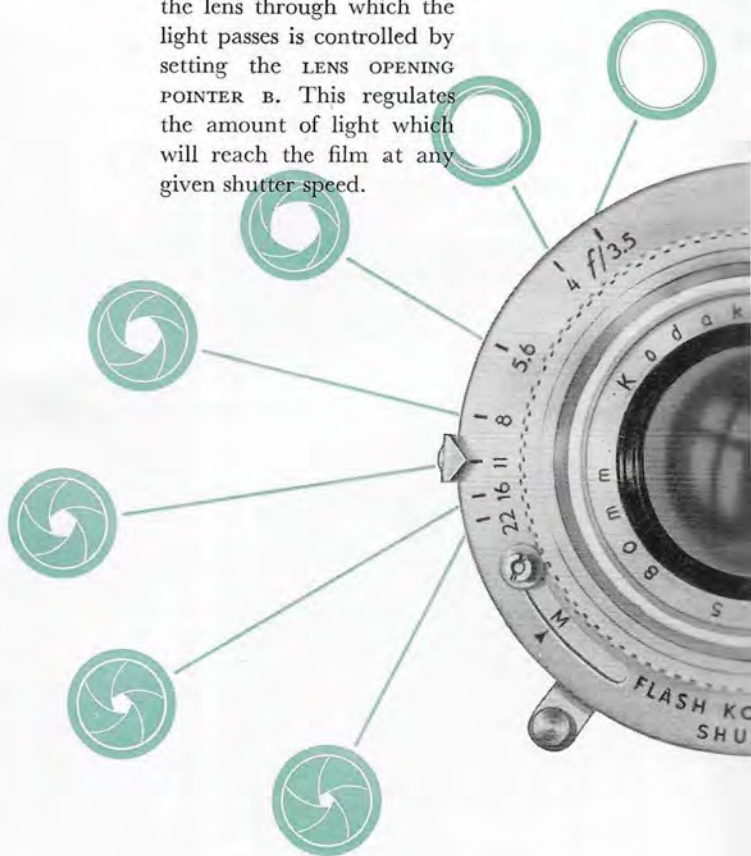
The “T” and “B” settings permit you to keep the shutter open for much longer times. You’ll find more about them on page 29.

You can hold the camera in your hands for exposures of $1/200$, $1/100$, $1/50$, or $1/25$ second. For longer exposures, the camera must be placed on a tripod or some other firm support.

B

LENS OPENING

The size of the opening in the lens through which the light passes is controlled by setting the **LENS OPENING POINTER B**. This regulates the amount of light which will reach the film at any given shutter speed.



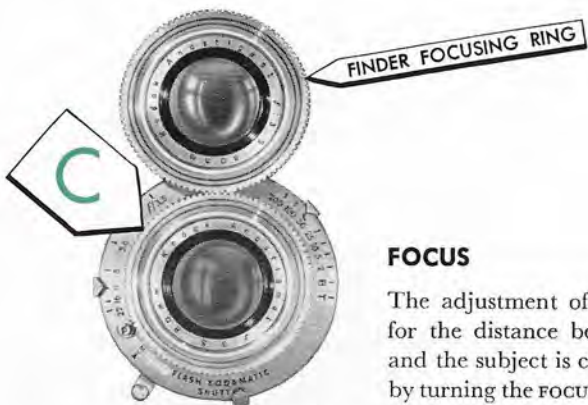
The opening is largest when the pointer is at $f/3.5$. This opening allows about one third more light to enter the lens than $f/4$. From $f/4$ to $f/22$, each smaller opening (larger number) admits half as much light as the preceding opening. Thus, if the correct exposure is $1/50$ second at $f/11$, then the exposure for $f/8$ should be $1/100$ second, and for $f/16$, $1/25$ second.

The exposure for the average outdoor subject, when the sun is shining, is $f/11$ and $1/50$ second with Kodak Plus-X Panchromatic or Verichrome Film. Remember this basic exposure—many of your pictures will fit this situation. See pages 20 and 21.

LENS COATING

The taking lens on this camera is Lumenized, that is, a special hard coating has been applied to all of the air-glass surfaces. The tinted appearance of the lens is due to this treatment, which increases light transmission and decreases internal reflections, thus improving the brilliance of black-and-white pictures and the color purity of full-color pictures.

Like any fine lens, the lens on your Kodak Reflex should be cleaned with care. If either the front or back surface requires cleaning, first brush away any grit or dust. Then wipe the surface gently with Kodak Lens Cleaning Paper or a soft, lintless cloth, if necessary using Kodak Lens Cleaner or moisture from the breath.



FOCUS

The adjustment of the lens for the distance between it and the subject is controlled by turning the FOCUSING RING c. Turn the ring until the

image of the subject in the finder is sharp. The image formed on the film will automatically be in perfect focus. To make sure that you've focused the camera correctly, bring the magnifier into place over the center of the finder image.

10

If you are using the direct view finder, estimate the camera-to-subject distance as closely as possible and turn the FINDER FOCUSING RING until this distance is at the index mark. In some cases you may be able to pre-focus on the ground glass and then use the eye-level finder to catch the action at the proper instant.

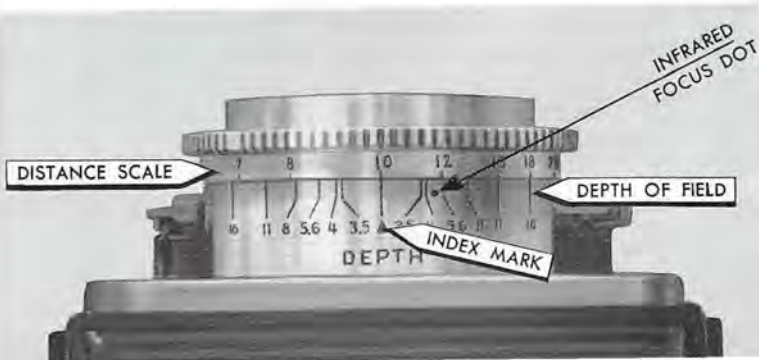
Depth of Field

The stationary part of the finder lens mount is engraved with a depth of field scale which shows you at a glance the range of camera-to-subject distances which will be sharp at any given lens opening. The finder lens is always wide open to insure a brilliant image on the ground glass, but the depth of field obtained with the taking lens varies with the size of the lens opening used.

The smaller the opening, the greater the range of sharpness in the negative. For example, if the camera is focused for 10 feet and $f/3.5$ is used, everything from about 9 feet to 11 feet will be sharp. At $f/11$, however, everything from about $7\frac{1}{2}$ feet to 15 feet will be sharp.

Focusing with Infrared Film—If you are using Kodak Infrared Film, first determine the distance between the subject and the Kodak. Then turn the FINDER FOCUSING RING to bring the figure representing the distance for which the lens is focused to the *red dot* on the stationary part of the lens mount.

11



Loading and Unloading

- 1** To open the back of the camera, push the two knurled buttons at the top of the back toward each other and swing the back outward.



- 2** Insert the roll of film in the recess at the lower front of the camera. The spool must be inserted so that when the protective paper is drawn off toward the top of the camera, the colored side of the paper will be turned toward you and the black side toward the lens.

LOAD IN SUBDUED LIGHT ONLY

USE ONE OF THE KODAK 620 ROLL FILMS

Pages 16 to 19 will help you decide which one.

Break the seal and pass the paper *over* the rollers. Thread the end into the longer slot in the empty spool as far as it will go.


3



Turn the winding knob once or twice to bind the paper on the spool, making sure it is started straight. Then close the back by pushing it in until the latch buttons snap outward. Set the dial on the winding knob to show the kind of film with which the Kodak is loaded.

4

—NEVER IN STRONG, DIRECT LIGHT

- 5 To wind the first section of film into place, first draw back the slide which covers the red window on the back of the Kodak. This is a spring slide and must be held while the winding knob is turned. Turn the knob until a small hand  appears in the red window; then continue winding slowly until the figure "1" is centered in the window.
- 6 After each picture, turn a new number into place in the window. Form the habit of doing this immediately in order to avoid the possibility of making double exposures. When the last picture on the roll has been taken, wind until the end of the protective paper passes the window.



To Unload

In subdued light, open the back of the camera. To remove the exposed roll, press the end of the spool opposite the winding knob outward toward the side of the camera. Fold the end of the protective paper under and fasten it with the sticker.

Remove the empty spool and place it in the winding end of the Kodak. Turn the winding knob until the key engages the slot in the end of the spool. The camera is now ready for reloading.



IMPORTANT

When you are handling the roll of film in unloading, never wind it tightly with a twisting motion, because scratches on the film may result.

What film shall I use?

The type of film to use will depend on the kinds of subjects you intend to photograph, the light conditions under which you will work, and, in many cases, the particular effect you may desire. The various types of Kodak Films described on these pages cover any picture-taking situation you will encounter.





Kodak Verichrome Film

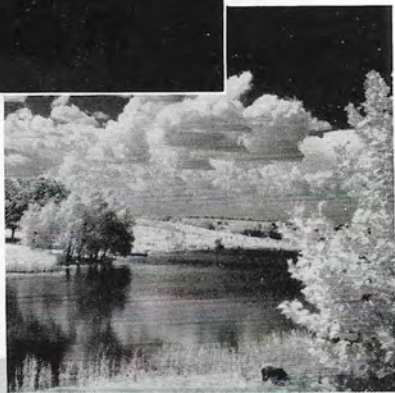
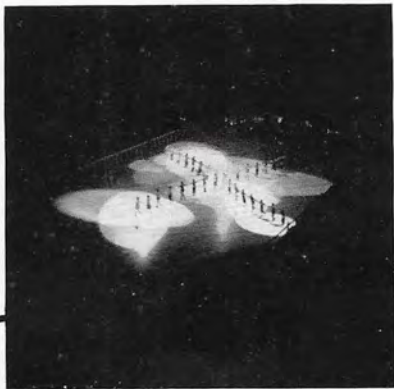
An all-purpose film, suitable for general outdoor use. High in speed, it has excellent latitude to help you get a good negative even if you misjudge the exposure slightly. Orthochromatic sensitivity makes this film especially suitable for Photoflash pictures of near-by people. 12 exposures. V620.

Kodak Plus-X Panchromatic Film

Combined high speed and fine grain make Plus-X ideal for general outdoor work and for well-lighted indoor subjects. The low graininess permits considerable enlargement and balanced panchromatic sensitivity assures good rendering of colors in tones of black and white. 12 exposures. PX620.



FILMS



Kodak Super-XX Panchromatic Film

Because of its very high speed, particularly under artificial light, this film is the logical choice for making snapshots with Photoflood Lamps. Indoors or out, it's the film to use when the light is poor or you need a high shutter speed to stop fast action. Fully panchromatic. 12 exposures. XX620.

Kodak Infrared Film

With a Wratten A (No. 25) Filter to absorb blue light, this film records the subject by invisible infrared radiation. Thus it brings out detail through the haze in distant landscapes. It can also be used to produce striking results with other subjects, including realistic night effects. 9 exposures. IR620.

Kodacolor Film — **FOR FULL-COLOR PRINTS**

Exposed outdoors in sunlight, Kodacolor Film yields negatives in colors complementary to those of the original subjects. From these, Kodacolor Prints can be ordered through Kodak dealers. Black-and-white contact prints and enlargements can also be made from the negatives. 9 exposures. C620.

What exposure shall I use?

Here is a question you'll ask yourself every time you take a picture. The answer is made easy by the fact that most common subjects can be classified into one



Brilliant Subject

Beach, marine, and snow scenes; distant landscapes and mountains without prominent objects in the foreground. With bright sun and Plus-X or Verichrome Film, the exposure is:

1/50



f/22

Bright Subject

Near-by people in marine, beach, or snow scenes; scenics with foreground objects. With bright sun and Kodak Plus-X Panchromatic or Verichrome Film, the exposure is:

1/50



f/16

of the four basic groups described below. The exposures given are for Kodak Plus-X Panchromatic or Verichrome Film under bright sun conditions; information on the exposures for other light conditions is given in convenient form in the table on page 36 and on the Snapshot Kodaguide.



Average Subject

Near-by people, gardens, houses, and scenes, *not in shade*. Use this classification if in doubt. With bright sun and Kodak Plus-X Panchromatic or Verichrome Film, the exposure is:

1/50  f/11



Shaded Subject

People, gardens, and other subjects, in *open shade* (lighted by open sky—not under trees, porch roof, etc.). With bright sun and Kodak Plus-X or Verichrome Film, the exposure is:

1/50  f/8

Taking the Picture

1 Set Shutter Speed

See page 7

2 Set Lens Opening

See page 8

3 Locate the Subject in the Finder

See page 4

4 Focus

See page 10

**These combine to
give the
correct exposure**

**The Reflex Finder
does both
at the same time**



**Both are done
with the
same lever**

Cock the Shutter 5

Move the SHUTTER LEVER upward.

Release Shutter 6

Move the SHUTTER LEVER downward.

Hold your breath when you press* the lever to take the picture. If the Kodak is moved during the exposure, the picture will be blurred. After taking a picture, immediately wind the next number to the center of the red window.

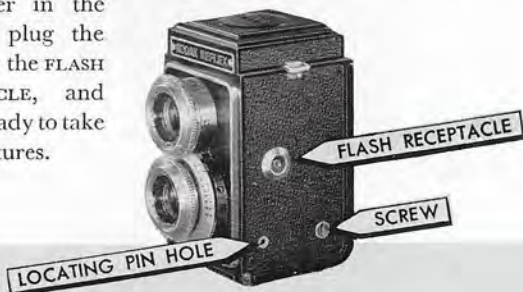
*By using your left hand as shown on page 5, you can get a "squeeze" action on the lever which prevents jarring the camera.



Photoflash

No synchronizer is needed to make Photoflash pictures with the Kodak Reflex. All that is necessary is a Kodak Flashholder, an accessory which consists of a battery case and a re-

flector. The synchronization built into the shutter assures that it will be open when the flash of the lamp is brightest. The Flashholder comes with a special bracket for the Kodak Reflex. To attach the bracket to the camera, remove the SCREW on the side of the camera. Insert the pin on the bracket in the LOCATING PIN HOLE and screw the large thumbscrew into the threaded hole. Mount the Flashholder in the bracket, plug the cord into the FLASH RECEPTACLE, and you're ready to take flash pictures.



Because of an improvement in the shutter, these instructions supersede those on page 25.



KODAK REFLEX

With Class F lamps such as the **SM Photoflash Lamp**:

1. Insert the flash lamp into the reflector.
2. Cock the shutter in the usual manner.
3. Release the shutter. *Do not use the Synchronizer Lever.*

With Class M lamps such as the **No. 5 Photoflash Lamp**:

1. Insert the flash lamp into the reflector.
2. Cock the shutter in the usual manner.
3. Push the Synchronizer Lever towards the Shutter Lever as far as it will go.
4. Release the shutter.

Complete exposure information is given in the instructions packed with the Kodak Flashholder and in the table on page 37.

Caution: Do not insert a flash lamp in the reflector if the shutter is set for "T" and the shutter blades are open. The lamp will flash on contact and a serious burn may result.

EASTMAN KODAK COMPANY

Photoflood Pictures

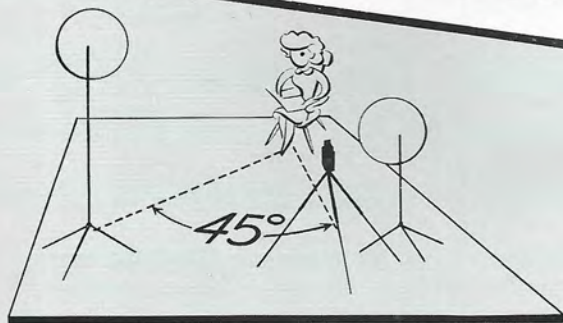
Besides making pictures at night with Photoflash Lamps, you can easily make snapshots and other indoor pictures at night with two Photoflood Lamps and reflectors for them.

A good basic lighting arrangement for two lamps is shown in the diagram. One light is placed close to the camera at about the level of the lens; the other is placed at the same distance from the subject on the other side of the camera, but 2 to 4 feet higher and at an angle of about 45° from the camera axis. Use a No. 1 Photoflood at the camera and a No. 2 as the side light.

If you can, select a background that is plain and fairly light in tone. If you keep the subject within 2 feet of it, no separate illumination is necessary. However, if the subject is farther away, the result will usually be more pleasing if you direct a third light on the background to brighten it up. This will not affect the exposure or the placement of the lights in front of the subject.

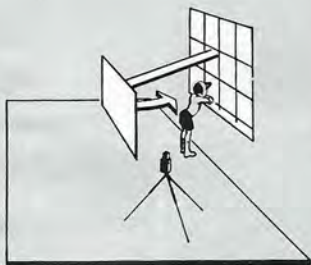
The exposures for various lamp-to-subject distances are given on the Snapshot Kodaguide and in the table on page 37.

The picture at the right was made with a No. 1 Photoflood Lamp at the camera and a No. 2 Photoflood as the side light, both 5½ feet from the subject. The exposure was 1/50 second at f/5.6.



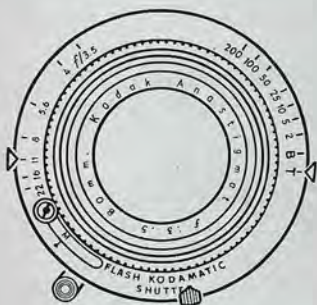
When the Light is Poor

Don't lay your camera aside just because the light is not strong enough for snapshots. With longer exposures, you can make many excellent pictures inside or in deep shade in the daytime, or of such subjects as floodlighted buildings or fires at night. *Be sure to place the camera on a firm support for exposures longer than $1/25$ second.*



A shot like this is easily made near a brightly lighted window. Place a large white card or photographic blotter where it will reflect light from the window to the shadow side of the subject.

A night scene like the picture below requires a much longer exposure than any of the measured intervals provided on the shutter. For short time exposures, set the shutter speed pointer at "B;" then press the shutter lever down and hold it. The shutter will remain open as long as the lever is held down. For exposures longer than 10 seconds, set the pointer at "T;" then press the shutter lever down and immediately release it. The shutter will remain open until the lever is again pressed.



Street scenes at night require a little care to prevent streaks in the picture from moving bright lights. Close the shutter or put your hand momentarily in front of the lens when an automobile approaches.

Suggestions



Tell a Story

The best pictures are those which tell a simple story and tell it at a glance. This is true whether you are making an informal portrait or capturing the beauty of a landscape scene, and it is this quality which makes pictures of general appeal.

Pictures of children, for example, are usually better if they show the child doing something, not just looking toward the camera. With grown-ups as well, the inclusion of some accessory to engage the subject's interest is very often a help in getting a natural, unposed look.

You'll treasure pictures of day-to-day activities around the home, perhaps including some entirely unposed ones. But whatever the subject, a moment spent in expressing an idea will repay you many times in satisfaction with your finished prints.

Cropping

With the Kodak Reflex, you don't have to stop and decide whether you're going to make a horizontal picture or a vertical one. It's easy to compose pleasing pictures in the square format. Later, when you're making enlargements, you may feel that the subject would appear to better advantage in a print of different proportions. When this happens, you'll find the square negatives ideally suited to cropping just as you want them, either vertically or horizontally. And most photofinishers will make enlargements from the particular area of the negative you select.





Side and Back Lighting

Side-lighted pictures, in which the light comes from the side of the scene, frequently have an illusion of depth which is very difficult to obtain in a front-lighted picture. The shadows, thrown across the picture, give a third-dimensional effect which makes you feel you are looking into the picture rather than at a flat piece of paper with an image on it.

Back-lighted scenes, too, are often more interesting than pictures taken of the same subject with the light behind you. Back lighting outlines foreground objects, adding life and brilliance to them.

With either side or back lighting, it is important to shield the camera lens from direct light. Keep the lens in shade, or use the Kodak Lens Hood of the Kodak Combination Lens Attachments; see page 38.

The exposure for a back-lighted subject must be increased to secure detail in the shadows. Use the next larger lens opening or the next slower shutter speed.

In general, side lighting or back lighting must be used with great care when Kodacolor pictures are made. For close-ups of people with Kodacolor Film, avoid side or back lighting unless a reflector such as a large white card or photographic blotter is used to fill in the shaded areas and thus soften harsh facial shadows.

Action Pictures

When you photograph a moving subject, the total amount of light required is the same as that for a stationary subject, but you can make sharp pictures by combining a high shutter speed with a correspondingly larger lens opening. Whenever possible, use 1/200 second; the Snapshot Kodaguide will tell you in a moment what the lens opening should be. Children and pets should be classified as moving subjects, because there's always the possibility of sudden motion.

An occasional subject, such as a runner or a train, moves so rapidly that sharp pictures require a bit of skill in addition to the highest shutter speed. Movement directly toward the camera is much easier to "stop" than movement at right angles to the camera, because the image is changing in size rather than moving across the film. The most pleasing picture is frequently obtained when the subject is moving diagonally across the field

of view at somewhere near a 45° angle, and it is comparatively easy to arrest the motion at this angle.

In various sports and games, the subjects periodically slow up, or stop momentarily in positions that suggest action. Watch for such pauses. If you release the shutter at the right instant, you can capture a world of implied action in your pictures.

Look Beyond the Subject

The full-size finder of your Kodak Reflex makes it easy to compose each picture to best advantage and choose an angle of view which eliminates distracting elements in the background. For example, you can see at a glance a tree which might appear in the print to be growing out of the subject's head. You can see, too, prominent horizontal or vertical lines, such as clapboards on the side of a house or an uncovered trellis or arbor, which might detract from the principal point of interest in the finished picture.

The possibility of choosing a low point of view and using the sky for a background should not be overlooked, especially with Kodacolor Film. The sky, by its very simplicity, concentrates interest on the subject; many of the most pleasing informal portraits are made in this way.

Whatever the background, make sure that it is a setting or frame for your picture, not an intruding element in the composition. Look beyond the subject; your camera most certainly will.



An action shot and
an informal por-
trait—each has a
simple, yet effec-
tive background.

DAYLIGHT EXPOSURE TABLE

This table applies to Plus-X or Verichrome Film. With Super-XX Film, give one-half the recommended exposure. For Kodacolor Film, follow the instructions packed with the film.

<i>Type of Subject*</i>	<i>Bright Sun</i>	<i>Hazy Sun</i>	<i>* Cloudy-Bright</i>	<i>Cloudy-Dull</i>
Brilliant	<i>f/22 and 1/50</i>	<i>f/16 and 1/50</i>	<i>f/11 and 1/50</i>	<i>f/8 and 1/50</i>
Bright	<i>f/16 and 1/50</i>	<i>f/11 and 1/50</i>	<i>f/8 and 1/50</i>	<i>f/5.6 and 1/50</i>
Average	<i>f/11 and 1/50</i>	<i>f/8 and 1/50</i>	<i>f/5.6 and 1/50</i>	<i>f/4 and 1/50</i>
Shaded	<i>f/8 and 1/50</i>	<i>f/5.6 and 1/50</i>	<i>f/4 and 1/50</i>	<i>f/4 and 1/25</i>

*Examples of these common subject groups are given on pages 20 and 21.

Give *twice the exposure* for: pictures during the hour after sunrise or the hour before sunset, winter scenes without snow, or back-lighted subjects.

PHOTOFLOOD

For one No. 1 and one No. 2 Photoflood Lamp in average reflectors. These exposures are for light-colored rooms. In public halls, or in dark-colored rooms, give twice the recommended exposure.

This table applies to Super-XX Film. With Plus-X or Verichrome Film, give twice the recommended exposure.

Shutter Speed	Distance in feet from Lamps to Subject				
	f/3.5	f/4	f/5.6	f/8	f/11
1/100	6½	5½	3½	—	—
1/50	9	8	5½	3½	—
1/25	12½	11	8	5½	3½

PHOTOFLASH

These guide exposure numbers apply to average subjects in average rooms with light-colored walls and ceilings. For dark subjects in dark-colored surroundings, or outdoors at night, divide the number by 2.

GUIDE EXPOSURE NUMBERS: Divide the number by the distance in feet from lamp to subject to find f/ number.

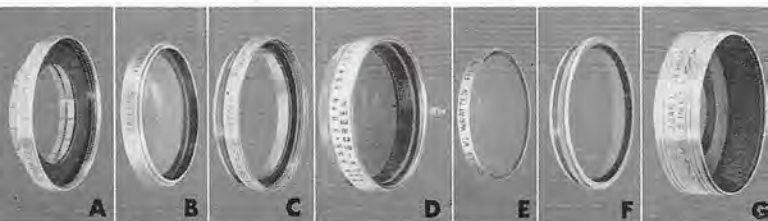
Lamp	SM			No. 5		
Shutter Speed	Open*	1/100	1/200	Open*	1/100	1/200
Verichrome	80	80	65	155	130	110
Plus-X	85	85	70	165	140	115
Super-XX	140	140	115	270	225	190

*Shutter speed 1/50 second or longer, Bulb, or Time.

CAUTION: Since lamps may shatter when flashed, the use of a transparent protective screen over the reflector is recommended. Do not flash the lamps in an explosive atmosphere.

Accessories

Kodak Combination Lens Attachments



A—Adapter Ring D—Kodak Pola-Screen F—Adapter Ring Insert
B—Portra Lens E—Wratten Filter G—Lens Hood
C—Retaining Ring

The Kodak Combination Lens Attachments permit the use of a supplementary lens, a Wratten Filter, a Kodak Pola-Screen, or a Kodak Lens Hood—either singly or together. For the Kodak Reflex, the basis of the combination is the 1½-inch Series VI Kodak Adapter Ring with its Adapter Ring Insert. The filter or supplementary lens is held in the Adapter Ring by either the Adapter Ring Insert or a Kodak Lens Hood. If both a Portra Lens (three are available, 1 +, 2 +, and 3 +) and a filter are to be used, a Kodak Retaining Ring is also necessary. All attachments must be Series VI.

Filters

No accessory for outdoor photography with black-and-white films is more useful than a filter to darken the sky and make white clouds stand out or to penetrate atmospheric haze in landscapes. Three Wratten Filters, the K2, G, and A, are recommended.

With a panchromatic film like Kodak Plus-X, the K2 filter (yellow) gives tone rendering of colors which closely approximates what is seen by the eye. The G filter (deep yellow) accentuates the contrast between clouds and sky and is especially useful with architectural subjects against a blue sky. The A filter (red) gives an even stronger effect than the G, frequently producing spectacular results; it should be used only with panchromatic films.

Since a filter absorbs some of the light which would otherwise reach the film, its use requires an increase in exposure. The filter factor is the number of times the exposure must be increased.

FILTER FACTORS FOR DAYLIGHT			
FILM	K2	G	A
Kodak Verichrome Film	2½	5	—
Kodak Plus-X Panchromatic Film	2	3	8
Kodak Super-XX Panchromatic Film	2	2½	4

Kodak Cable Release No. 2. Convenient for releasing the shutter with the camera on a tripod. Screws into the threaded hole in the left side of the shutter.

Useful Books. Two good books on basic photography are (1) "How To Make Good Pictures," the classic which has introduced millions to the fundamentals of picture making and processing, and (2) "This Is Photography," a specific, enjoyable, and comprehensive guide to full photographic enjoyment. Both books are sold by Kodak dealers.

Kodak Precision Enlarger A. The A Assembly of the Kodak Precision Enlarger, consisting of the Stand Assem-



bly and the Enlarging Head A, will accept negatives up to $2\frac{1}{4} \times 3\frac{1}{4}$ inches in size. For enlarging negatives of the size made with the Kodak Reflex, a 3-inch lens should be used, either the Kodak Projection Anastigmat or the fully color-corrected Kodak Projection Ektar. The range of magnification at the baseboard is 1.6 to 10 times.

• This instruction manual was prepared in order to help you make good pictures with your Kodak Reflex, and consequently get more enjoyment from photography. There are many Kodak publications on various phases of photography available at your Kodak dealer's—some free and some at a nominal price. Ask for them.

Any comments or questions concerning your results with this camera or your interests in picture making will be welcome.

Sales Service Division

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PRINTED IN THE UNITED STATES OF AMERICA

A KODAK FILM

for every picture-taking need

- **KODAK VERICHROME**

The Every-Day Favorite

- **KODAK PLUS-X**

High Speed, Fine Grain

- **KODAK SUPER-XX**

Exceptionally High Speed

- **KODAK INFRARED**

For Striking Results

- **KODACOLOR**

For Snapshots In Color

