

www.orphancameras.com

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.**

a guide to the ★ IKOFLEX ★



with special COLOR section

by KENNETH S. TYDINGS, S.P.

THE MODERN CAMERA GUIDE SERIES

Introduction

The photographic world always buzzes with excitement when Carl Zeiss introduces a new camera. From past experience we have learned that if the name of Carl Zeiss is on a camera, it is good. The Ikonflex cameras are Carl Zeiss' very own—and they are good!

Carl Zeiss Ikon has lavished the finest optical and engineering brains on this line so that they are models of mechanical perfection with lenses that are optical achievement.

Mechanically, the film is transported and automatically locks at the end of the frame. Double exposures are prevented because the shutter lock is released only when the film is advanced. A red signal shows whether an exposure has been made. The automatic shutter wind of the Ikonflex IIa advances the film and cocks the shutter at the same time. The film channel and mask prevent film scratching and assure absolutely correct film positioning. The flash synchronization socket accepts a standardized compur tip and both the Ikonflex Ia and IIa synchronize with any flashlamps or speedlights. Three viewfinders—the ground-glass, the direct-vision open-frame finder, and the prismatic viewer—afford the variety necessary to meet every possible shooting condition. The depth of field scale is built around the focusing knob for instant reference. The camera back is sturdy and bolted securely to the camera body so that light leaks are impossible. The body is light for portability and rugged for durability.

Optically, the superb Tessar and Novar lenses have earned worldwide reputation because they cut sharply from corner to corner, illuminate the film uniformly from edge to edge, and provide a contrast crispness for the highest visual acuity. The focusing screen is brilliant because of the fresnel lens and extra-bright ground glass. The magnifier in the finder hood is large enough for the eye to see the entire screen in its magnified rendition. Finally, the precision of the optical and mechanical assembly allows each to work at its finest advantage, yet the Ikonflex is so simple in design that one is able to produce fine results from the first roll of film. It is an ideal camera for beginner, artist, or even the most critical scientist. Learning to use the Ikonflex is the most inexpensive down-payment for photographic enjoyment. Our book will show you how to both operate and enjoy your Ikonflex. Let's get started!

Preface

There are two basic picture taking problems—controlling the subject and recording it. Before you can record a picture with your camera, you must learn to operate the camera's controls. If you don't, you'll be in the same boat as the artist who has a number of paints but cannot use them since he never learned to mix colors and wield a paint brush. You must, therefore, learn to use your camera so well that operating it will be second nature.

The author's system for making all camera manipulations a matter of second nature is called the **SAFE-SET SYSTEM**. It has been developed from extensive experience in lecturing, writing, and teaching beginners to use their camera expertly in a very short time. It is founded on two simple principles: **STANDARDIZATION, AND PRE-SETTING OF BOTH MATERIALS AND CAMERA CONTROLS:**

1. Standardization is essential. It alone will give you the confidence to make perfect pictures. This will involve using one film, one developer, one flashlamp, etc., of known and tested performance.

2. Pre-setting is the second half of the **SAFE-SET METHOD**. Just as equipment must be standardized, so must be the procedure of actually taking the picture. The many variables of shutter speed aperture, focus, and effect can be pre-set and completely controlled by you. You simply pick your subject size beforehand, select the proper setting from tables and, at the peak of effect, snap the picture. The knowledge that your picture will be perfect enables you to devote your entire attention to your subject. You needn't worry about changes of aperture, shutter, speed, etc., if your subject changes position.

HOW THE SAFE-SET METHOD HELPS YOU

The use of this method helps you additionally because:

1. All troublesome camera changes and variables are eliminated. Every picture-taking factor is pre-set. Last minute fumbblings and delays are completely eliminated.

2. Each frame is completely filled with subject matter. All black and white negatives on a roll can be enlarged to a uniform size during picture processing after the first basic dimension has been chosen. There's no need to raise or lower the enlarger housing.

3. All color exposures are so uniform that they project with equal quality, should you wish to make black and white prints from them the uniform size will enable you to enlarge every frame with the same exposure time.

4. Flash shots can easily be taken with the SAFE-SET METHOD. Your exposure is directly related to the flash-to-subject distance. A perfect picture can be gotten each time if the controls are safe-set and your camera-to-subject distance is kept constant by moving back and forth as the subject moves.

THE SAFE-SET CHART

The SAFE-SET CHART is the heart of the method because it gives you all the information you need quickly. With a SAFE-SET CHART, the necessity for memorizing or calculating the aperture opening for flash pictures is completely eliminated. For example, let's work out a chart step by step for the use of SM or SF flashlamps with ASA 50 black and white film. The chart should be written on a piece of tape or some similar permanent material so it can be pasted on the back of your flash reflector or camera carrying case. For the purpose of this example, first check the following:

IKOFLEX SAFE-SET CHART

Lens	Film, B&W	Shutter Speed	Flashlamp
3-inch focal length	A.S.A. 50	1/25	SM (General Electric) or SF (Sylvania)

Then add four lines for the four most frequently used subject sizes. Each line is divided into focusing distance for that size and for the lens iris opening required with the flashlamp for that particular distance. The chart should look like this:

SAFE-SET CHART UNFILLED

Subject size	Distance	Iris (f/) opening
Full body		
Three-quarter body		
Head and shoulders		
Head		

Now find the flash exposure guide number recommended with an SM or SF lamp for an ASA 50 film at 1/25 shutter speed. This information can be found on the outside wrapper of the flashlamp package. If the guide number suggested is 140, then consult the chart on page 76 which has all the distance and iris openings calculated for you for this number and fill in the empty boxes so that the chart will now look like this:

Camera Set at:		Film: 120 Size, Color, Tungsten	Film: Black-and-White, A.S.A. 40
Shutter - 1/25 second		Kodak Ektachrome, Type B + 81EF Light Balancing Filter	Kodak Plus-x, Ansco Superpan Supreme
Lamps - #5 or #25*		Ansco Color, Tungsten Type + UV16	
Subject Size	Focusing Distance		
Head -	2½ feet	f/22 + 1H*	f/22 + 3H
Head and Shoulders -	3½ feet	f/22	f 22 + 2H
¾ Body -	5½ feet	f-16	f/22 + 1H
Full Body -	10 feet	f/8	f/16

*H - Clean, thin white handkerchief

When the chart is completed and has been pasted onto your flash reflector, this is how it should be used for flash: If you want to take a full-length picture of a group of people, scan your chart for the full body line. From it you will learn that for black and white film with a shutter speed of 1/25 (this is an excellent speed to use with all flash lamps and flashtubes), a 10-foot setting must be used. So set your camera's focusing scale at ten feet. This scale must never be moved, a quarter turn of the Ikoflex's focusing knob will change the focus from infinity (as far as the eye can see) to as little as 3 feet. If you leave the knob alone, you will be sure that your distance is correctly set for the group shot that you plan to take. With the SM or SF lamps, the lens opening for 10-feet is between f/8 and f/11. Rotate the right aperture setting gear of the Ikoflex to 8 or rotate the gear at the bottom of the shutter for the Ikoflex Ia so that this setting is opposite the proper index marks. Now everything has been safe-set. After you have checked to make sure the Ikoflex Ia shutter is cocked or the knob has been turned with the Ikoflex IIa, automatically setting the shutter, walk toward the subject while looking at the ground glass. When the image seen on it is short, stop walking, stand still, compose your picture, and release the shutter. The photograph will be technically perfect.

SERIES OF PICTURES FROM THE DIFFERENT SAFE-SET SIZES

Taking pictures by flash is an excellent starting point for all beginners. The modern flashlamps and flashtubes are examples of high precision manufacture which will perform uniformly every hour and every day.

THE SAFE-SET CHART OUTDOORS

When outdoor illumination is uniform and constant, your basic exposure—1/50 at f/16, for example—will remain pretty much the same whether you are taking a landscape or posing a friend for a

portrait. Disregard the flash factors and keep your outdoor settings unchanged, only alter your focusing distance with the focusing knob. Once the focused setting has been made for any particular size of your chart, leave the focusing knob alone. Merely move forward or backward until your subject is sharp on the ground glass; then release the shutter.

TYDINGS SAFE-SET METHOD

OUTDOORS

Light: Clear day, not harsh, sunlight. *Film:* Daylight color, Type A with No. 85 conversion filter, Type B with a No. 85B; or Ansco Color, tungsten type, with conversion filter No. 11.

Safe-Settings

Type B film with No. 85B filter:

S—Shutter: 1/25 second

A—Aperture: Color f/9; black and white f/22

F—Focus: 30 feet for sharpness from infinity to 15 feet
12 feet for sharpness from 15 feet to 9 feet

E—Effect: Release shutter at peak of action or expression

2¼-inch square frame

Bantam 1x1½-inch frame

<i>Subject</i>	<i>Code</i>	<i>Distance</i>	<i>Field Size, inches</i>	<i>Subject</i>	<i>Code</i>	<i>Distance</i>	<i>Field Size</i>
Head	§	2'8" (0.8M)	21x21	Child's Head	⌘	2'8"	17x11
Head & Shoulders	†	3'6" (.96M)	28x28	Head	§	3'5"	21x14
¾	‡	5' (1.52M)	40x40	Head & Shoulders	†	5'	30x20
		7' (2.13M)	56x56	¾	‡	7'	42x28
Full body	+	10' (3.05M)	80x80	Full body	+	14'	90x60

WHAT IF YOU ARE SLIGHTLY OUT OF POSITION?

The depth of field (depth of sharpness) of the 3-inch Ikoflex lens is so great that should your focus be slightly off, the picture will still be sharp if the iris opening is narrow. That's because your top *viewing* lens shows less depth than the bottom *taking* lens records. At this

point it is wise to review the advantages of the Ikoflex Twin-lens system.

1. A twin lens reflex camera, as the name implies, is really two cameras in one. One camera is used to take the picture while the second coordinated camera is used to show focus and composition. The top (viewing) lens is always open at its widest aperture even when the bottom (taking) lens is stepped down. Because the viewing lens is always open, you can see the picture before, during, and after the exposure, so that you can know definitely whether the picture was taken correctly. With single lens reflexes where viewing is done through the taking lens, the image gets darker as the lens is stopped down and disappears completely during the exposure, leaving the photographer with an eternal uncertainty as to whether the picture has been taken at the right moment or focus.

2. The twin lens reflex camera represents an efficient combination of adequate film size and portability. The pictures are sufficiently large ($2\frac{1}{4} \times 2\frac{1}{4}$ inches) and a standard roll of black and white or color film can be bought anywhere in the world. The film size is called No. 120 or B2.

3. The camera is small and light. Even a child can use it. It's easy to carry and always ready for instant use.

4. The ground glass acts as a combined rangefinder and viewfinder. You will quickly find yourself focusing and composing your picture simultaneously with the complete elimination of the time loss that occurs when a separate rangefinder and viewfinder must be used.

5. A black and white 8 x 10 picture requires a moderate (4x) enlargement from the full frame as contrasted with an immense (8x) enlargement frame of a miniature (35mm) negative size; because the enlargement is so moderate, grain, which so often plagues the 35mm camera user, is seldom seen on a print from a twin lens roll film reflex camera.

6. The f/3.5 lens, whether it be the Tessar of the Ikoflex IIa or the Novar of the Ikoflex Ia, is amazingly sharp to the very edges and color corrected for the finest results.

7. The Ikoflex's viewing lenses have a special condensing lens called "Extrabrite" to gather up every bit of light for a brighter viewing image. Brilliance is increased about ten times at the corners.

8. The square format permits composition in any one of three pleasing patterns: square, vertical, or horizontal. This choice allows you to present your subject in its most favorable pattern with less need for dark room cropping.

9. The 3-inch Tessar or Novar has a great depth of sharpness, especially when a hyper-focal distance table is used. Slight focusing errors will not ruin a picture's sharpness.

10. The Synchro-Compur shutter of the Ikoflex IIa and the Prontor SV of the Ia each has built-in-M-X synchronization. All flash-lamps and all flashtubes can be synchronized to them without additional and often expensive synchronizers.

11. The automatic exposure stops eliminate the need for a constant reference to a red counting window found in many cameras. This need for locating the next exposure number can be a real nuisance if you're taking action pictures or working in poor light.

12. The Ikoflex IIa winds the film and tensions the shutter simultaneously so that it is possible to take a picture per second.

13. The camera is equally suitable for studio, portraiture, copying, or medical and scientific photography.

14. The shutter release is conveniently located. You can use the sports finder or prismatic focuser at eye level and release the shutter easily without jarring the camera. The convenience of the release button allows you to wind the camera while holding it against your face at eye level for uninterrupted picture taking. The wind and release of the Ikoflex IIa and the wind, set, and release of the Ikoflex Ia can be operated very rapidly after a little practice.

15. Contact prints are of an adequate size, you don't need to enlarge them for viewing.

Since the square area of the $2\frac{1}{4}$ -inch size is almost three times greater than the $1\frac{1}{2}$ -inch size, the Ikoflex size is preferred over the 35mm frame whenever a great amount of detail is required in the final print. The Ikoflex size is the one chosen by engineers in micro-filming blueprints, etc. These then constitute the advantages of the Ikoflex Twin Lens Reflex system.

Comparison Chart of the Ikoflex Cameras

Now that we have some knowledge of how the Ikoflex is to be used, let's examine the two models that are in current production. Incidentally, many of the older models are similar in appearance and design but may lack such desirable features as built-in flash, the "Extrabrite" viewing ground glass and field lens, etc. While these features are desirable, it is still the basic camera which must take the picture, and the countless Ikoflexes of past years have produced innumerable great pictures. Right now they are still doing so throughout the world.

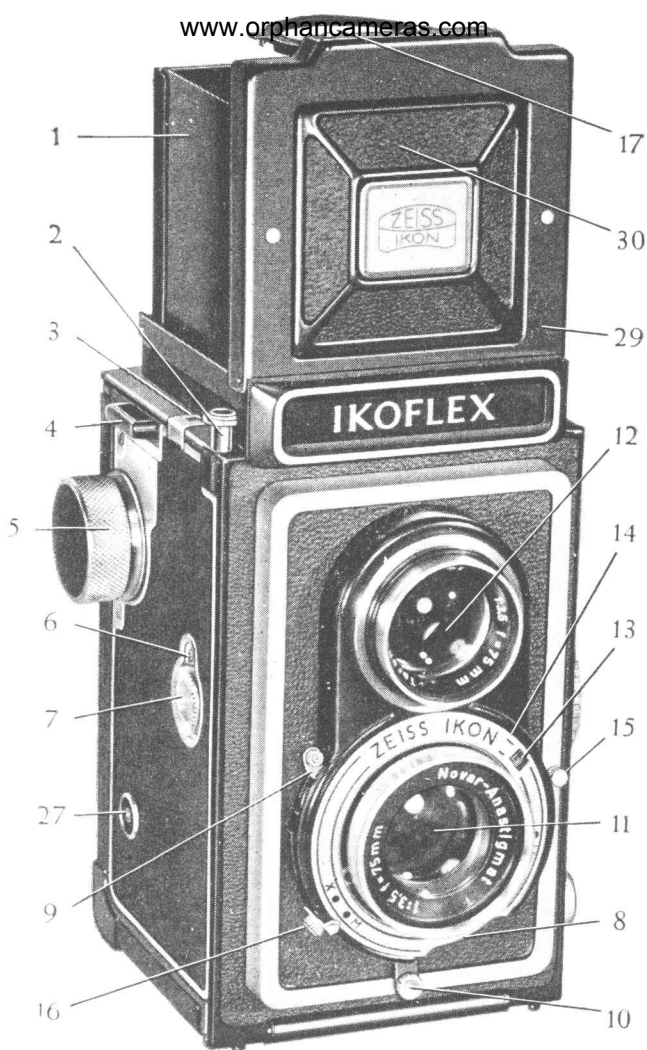
Lens Opening	Shutter	Shutter Speeds	Separate Shutter Cocking	Automatic Counter After 1	Combined Film Advance and Shutter Cocking	Double Exposure Prevention	Self-timer	M-X Flash	Separate X-Leaf Cocking	Filter size, Slip-on	Filter size, Screw-in
Ikoflex Ia	Prontor SV	1/300 to 1 second	X	X	—	X	X	X	X	36	34
Ikoflex IIa	Synchro- compur	1/500 to 1 second	—	X	X	X	—	X	—	36	34

AN IKOFLEX OUTDOOR ASSIGNMENT

An outdoor picture is usually the easiest to take because light is often constant throughout the entire landscape, seascape, or general outdoor scene since the sun provides the dominating single source of light. At the start, use a daylight type color film (the manufacturer or a professional laboratory will process it for you) so that you will avoid dark room work until you have had some picture taking experience. Daylight color film will also eliminate the need for color conversion filters (Chapter 7). Later you will learn how to use one type of color film for both indoors and outdoors.

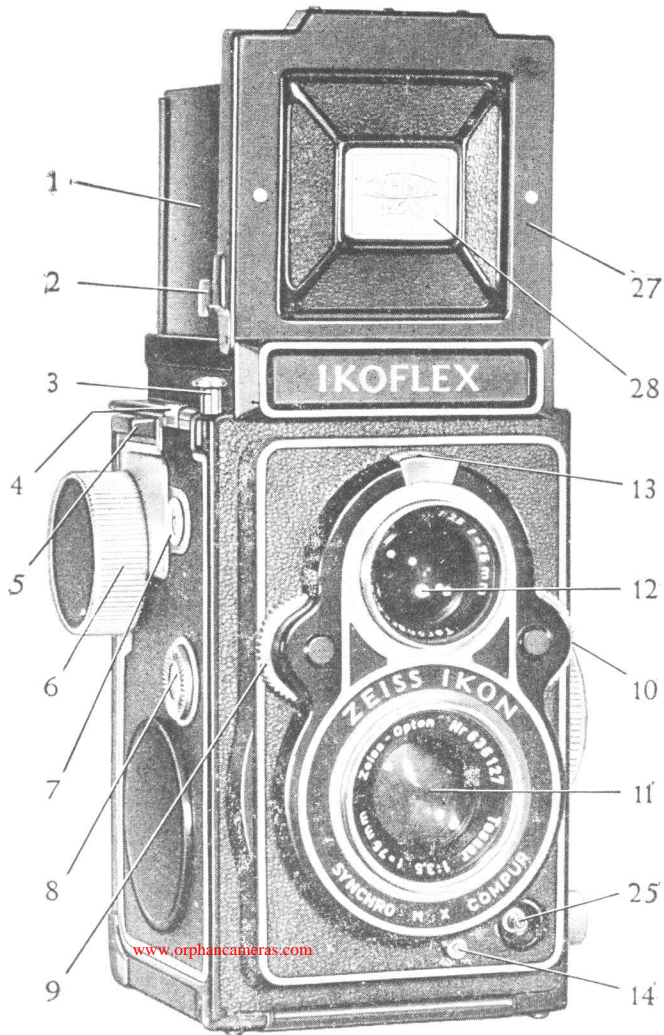
Daylight color film will produce proper results only if it is used outdoors in sunlight. Daylight film must not be used indoors with artificial illumination such as spotlights, home lamps, or floodlights; nor can indoor color film be used outdoors with natural light unless color conversion filters are used. If you would feel safer using black and white film, however, pick one with an A.S.A. exposure index of 50 or so, such as Verichrome, Plenachrome, Plus-X, or Supreme.

1. Load your IkoFlex with film, following the instruction booklet that came with the camera or have the camera store salesman assist you. *Note:* Your instruction booklet has been meticulously prepared.



THE PARTS OF THE IKOFLEX Ia

- | | |
|---|---|
| 1 Right side of finder hood | 19 Frame-type sports finder eyepiece |
| 2 Body shutter release threaded for fitting cable release | 20 Bolt for closing finder hood |
| 3 Signal window of double exposure prevention device | 21 Bolt for closing camera back |
| 4 Eyelet for carrying strap | 22 Upper film spool holder |
| 5 Film transport knob | 23 Depth of field scale |
| 6 Automatic picture counter | 24 Focusing knob |
| 7 Setting wheel of automatic frame counter | 25 Lower film spool holder |
| 8 Exposure time setting ring | 26 Film window |
| 9 Shutter winding lever | 27 Contact nipple |
| 10 Diaphragm setting lever | 28 Tripod thread |
| 11 Taking lens | 29 Sports finder frame in front side of finder hood |
| 12 Viewing lens | 30 Plate covering front side of finder hood from the inside |
| 13 Window for verifying exposure time setting | |
| 14 Window for verifying diaphragm setting | |
| 15 Lever for winding delayed action release and flash synchronization mechanism | |
| 16 Synchro-switch | |
| 17 Focusing magnifier | |
| 18 Right side of finder hood with exposure table | |



THE PARTS OF THE IKOFLEX IIa

- | | |
|--|---|
| 1 Right side of finder hood | 14 Flash synchronization switch |
| 2 Double exposure prevention | 15 Focusing magnifier |
| 3 Body shutter release threaded to fit cable release | 16 Left side of finder hood with exposure table |
| 4 Signal window of double exposure prevention | 17 Eyepiece of frame-type sports finder |
| 5 Eyelet for carrying strap | 18 Bolt for closing finder hood |
| 6 Knob for advancing film and winding shutter | 19 Bolt for closing camera back |
| 7 Automatic picture counter | 20 Upper spool chamber |
| 8 Setting wheel of picture counter | 21 Depth-of-field scale |
| 9 Shutter speed setting wheel | 22 Focusing knob with distance scale |
| 10 Diaphragm setting wheel | 23 Lower spool chamber |
| 11 Taking lens | 24 Film window |
| 12 Viewing lens | 25 Contact nipple |
| 13 Window for verifying shutter speed and diaphragm settings | 26 Tripod thread |
| | 27 Sports finder frame in front side of finder hood |
| | 28 Plate closing finder hood from inside |

Read it carefully. The valuable information in it will not be repeated here. Keep your instruction booklet with your Guide. Each will complement the information in the other.

2. Set the distance scale on your camera's focusing knob to thirty feet for landscapes or far distant areas or to twelve feet for medium close-ups.

3. Set the shutter speed to 50, meaning 1/50 second.

4. Set the aperture at f/6.3. In the window on the Ikoflex this is the space between 8 and 5.6 (f/6.3). If you've used black and white film, however, set the aperture at f/11.

5. Hold the camera correctly and firmly at waist level or use the Ikoflex prismatic viewfinder for eye-level shots. Keep your eyes focused on the ground glass and look at it, not through it. What you see there is what you will get on your negative. With your camera set at thirty feet and f/6.3 everything will be in sharp focus from fifteen feet to as far as the eye can see. If the focusing knob is set at a twelve-foot distance, the subject can be between nine and fifteen feet and will still be recorded sharply. In this way you have a two-stage system of focus. Two distance settings provide a line of continuous focus from nine feet to as far as the eye can see (called infinity). Thus you will not need to focus on each object you wish to photograph. *Important note:* The top viewing lens is always wide open, since it does not always show the full area of sharpness the ground glass should be used carefully. Even though the ground glass of the viewing lens can show the subject out of focus, it may still be in focus because of the narrow lens aperture of the taking lens. (Chapter 7).

OUTDOOR SUBJECTS OF DEFINITE SIZE

6. The setting for pictures of subjects having a definite size such as a full body, head and shoulders, or head only, differs from the usual thirty- or twelve-foot settings used for landscapes. The chart on page 8 shows the various field sizes for these distances. You select the desired size, pre-set the distance that will produce it, and walk toward the subject until the ground glass image appears sharp. Then you trip the shutter and get a technically perfect picture.

7. At the moment of best composition, height of action, peak of expression, or point of interest, press the shutter release down gently. Squeeze it rather than punch it. Your Synchro-Compur shutter will do the rest.

The film should not be wound to the next exposure until you are certain that other pictures will be taken. There are two reasons: the

shutter should not be left cocked for long periods of time (winding the film cocks the Ikoflex IIa shutter) ; second, the film has a tendency to change its position slightly (buckle) if it is left in one position for long periods. If a number of pictures are to be taken in quick succession, you can naturally wind the film immediately. It is normally impossible to take a double exposure with either Ikoflex.

In order to use your color film most efficiently, wait for a clear, sunny day when colors will be most brilliant. If the sky is dull and overcast, your final pictures will also be dull and overcast. For other lighting conditions, use an exposure chart or an exposure meter. Exposure estimation under these conditions without these aids can become quite tricky.

OUTDOOR FLASH SAFE-SET

If you're a beginner, you may naturally think that it is silly to use a flashlamp or a flashtube outdoors when the sun is shining brilliantly. Actually, however, a brilliant day has many photographic shortcomings. Near-distant subjects such as heads, flowers, parts of houses, etc., may have inky-black shadows produced when the sun is shining brightly. A portrait taken under these conditions may show a sunlit nose and two black holes where the eyes should be. To eliminate the black shadows, use a supplementary flash. As the color film being used is of the outdoor type, the supplementary (fill-in) light provided must be blue. Use either blue flashlamps of the 5B or 25B type or electronic flashtubes (speedlights) which are generally balanced for daylight-type color film.

FLASH WITH COLOR FILM—A.S.A. 10

1. The Shutter Speed— $1/25$ th second. When flash is used with the Synchro-Compur the shutter speed should be set at $1/25$ second, the flash setting of the shutter at X.
2. The aperture at $f/9$ for the color film; B&W A.S.A. 50 at $f/16$.
3. Focus at thirty feet or at twelve feet, depending on your subject, close or distant.
4. If the subject is six feet from the camera and a number 5B lamp is used in a polished, efficient reflector, the lamp should be placed at the camera for a 1:1 fill-in ratio. A 1:1 ratio means that the highlight and the shadow side receive an equal amount of light. The figure 2:1 means that the highlight or brighter side is twice as brilliant as the shadow. A 3:1 ratio would indicate that the highlight is

three times the shadow's intensity. The first number always provides the strength of the highlight while the second number after the colon tells us what the strength of the shadow side is to be.

If our camera is set to twelve feet for B&W (or four feet for color), then we should use one thin perfectly white handkerchief over our flashlamp to reduce the intensity of the light, because the nearer we are to our subject, the greater is the strength of light that reaches it. However, as our outdoor lighting generally is the same wherever we are, approaching closely with the flashlamp would burn up (over-expose) our subject. Therefore, we can reduce the intensity of the lamp by covering it with a thin white handkerchief. When we reach a camera-to-subject distance of eight feet for B&W or three feet for color, then two thicknesses of handkerchief are required. And, when we are at six feet for B&W or two feet for color, three thicknesses should be used. Other effects that can be gotten with a blue lamp on the camera will be discussed in Chapter 11. So if you think that you will be using blue or regular flashlamps or flashtubes for a fill-in, make up a standardized chart so that you will know just how many handkerchiefs to use for the correct fill-in effects. If the lamps are used without handkerchiefs, the flashlamp or flashtube will act as the dominant or main light and the sunlight then becomes your fill-in light (see Chapter 11—Flash).

Ikoflex Safe-set Indoor Flash

Since the sun doesn't shine strongly inside every part of our houses and not at all during the night, we must provide artificial illumination to see. This lighting is seldom uniform and never as strong as the sun. If we want to take pictures, we must either take great care in illuminating the rooms or use flashlamps or flashtubes. Flash is simple to use but its functions must be outlined so that it can be used to best advantage. With flash, you must remember that the ignition of the lamp and the opening of the shutter must be matched. The flashlamp may reach peak illumination for 1/50, 1/200, or 1/1000 of a second or less. One shutter speed works well with all types of flashlamps or flashtubes—1/25 second. If you set your shutter speed at 1/25 you can always be certain that you are prepared for any form of flash photography that you may need to use. Don't be afraid to take action shots. The slowness of the 1/25 second is usually meaningless. The speed of the flash itself—whether it be 1/50 (Class M), 1/200 (Class F), or 1/1000 as with a flashtube—actually stops the motion. The 1/25 second only allows the shutter synchron-

ization to take place during its open time while the actual picture is made by the flash itself.

Procedure for Indoor Flash Pictures

Here is the simple procedure for making an Ikoflex flash picture:

1. Refer to the SAFE-SET CHART, pre-select your film. Then make your equipment adjustment. If you still have outdoor color film in your camera, use blue lamps or a speed light. Otherwise, load your camera with indoor color film. Use the clear white flashlamp and its color correction filter if one is needed. As an example, if indoor Ektachrome is used, an 81EF filter must be used over the camera lens. Otherwise the result will be too blue. Check Chapter 3 to see that flash and film will match correctly.

2. From the chart, pre-select a subject size and subject distance.

3. Set your distance scale.

4. Choose the aperture for this distance and set it.

5. Looking at your ground glass, move back and forth until your subject is sharp. Do not touch the focusing knob. If you do, you will find that you have turned your scale a considerable distance because the Ikoflex's focusing knob is very sensitive to change. A quarter turn is sufficient to shift it from infinity to three feet. So leave your focusing control alone and, instead, walk towards your subject until it is sharp.

6. Even if you are a few inches in front of or behind your actual distance setting when the peak of action occurs and you take the picture, the image will still be sharp. The depth of sharpness adequately compensates for slight variations or errors in camera-to-subject distances. (See Chapter 4)

7. When you are satisfied with the ground glass sharpness, compose your picture (you can learn to do this while focusing) and at the peak of action or expression press the release downward gently. A click of the shutter, a flash of the lamp, and you have taken a successful indoor picture. Then wind your film if you are going to take another picture within a short time.

THE KEY TO SAFE PICTURES

The instructions given for using the SAFE-SET METHOD are simple and will produce a technically perfect picture each time. Check on yourself each time you take a picture by using the letters in the word S-A-F-E to remind you of the four vital factors in taking a picture:

S—SHUTTER; A—APERTURE; F—FOCUS; E—EXPOSURE

The Ikoflex is a truly flexible instrument, capable of many technical uses under varying light, shutter speed, and distance settings. It is possible to alter the shutter speeds, the iris openings, and the focus through close-up devices so that you can derive the full benefits of its technical and scientific possibilities. Chapter 2 will further elaborate the S—Shutter, A—Aperture, F—Focus, and E—Exposure. You will learn how to change your camera with the **SAFE-SET METHOD** so that a never-ending array of subjects can be recorded with your Ikoflex.

4. Loading and Unloading the Ikoflex

If your camera is new to you, or if it has been loaded by your camera store clerk, wait until you hear the end of the paper backing flapping in the take-up spool chamber, after you have wound the film past the twelfth exposure. Now:

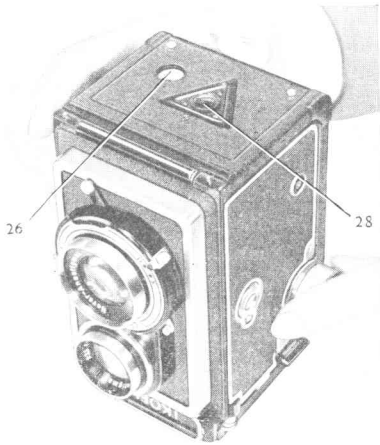
1. Open the back by pulling the locking bolt down.
2. Pull out the take-up spool film retainer from the outside of the camera and turn it so that it remains in the expanded position.
3. Take out the exposed roll, hold the paper firmly, and then seal the spool. Place the empty spool in the take-up chamber and fit the slot so that it engages the winding knob. Then pull up and turn the spool holder so the spool drops into position. Turn take-up spool film retainer until it snaps back into closed position, thus holding spool in place.
4. Pull out the unexposed film spool holder and turn it so that it, too, remains in the extended position. Remove any spools that may be there. Place an unexposed film roll in the chamber so that one camera prong engages the right side of the spool. Then press down the lip side of the spool as you simultaneously release the unexposed spool holder so that it slips in and holds the other side of the unexposed film spool. The Ikoflex springs will now hold the film firmly so the paper leader cannot unravel.
5. Gently pull out about five inches of the paper leader and insert the tongue into the large slit of the take-up spool. Turn the winding knob one or two turns to fix the tongue in and on the spool.
6. Close the back and engage the lock by pressing back bolt up.
7. Open the film window on the bottom of the camera and look into it as you turn the winding knob slowly until the number 1 appears in the center of the window.
8. Close the window. Turn the exposure number setting knob by pressing it and turning it counterclockwise (or follow the direction arrow on the knob of the IIa) until it catches and the window beside the winding knob shows the numeral 1. Now your shutter is set, your counter is at 1, and the safety window beside the shutter release, next to the focusing hood, is red, indicating that an exposure can be made. The exposure can only be made when the focusing hood is opened. After the release is pressed, the exposure safety window will be silver in color. Turn the winding knob until you feel a slight resistance; then slowly continue winding until the knob can turn no further. These safety features prevent double exposures and blanks.



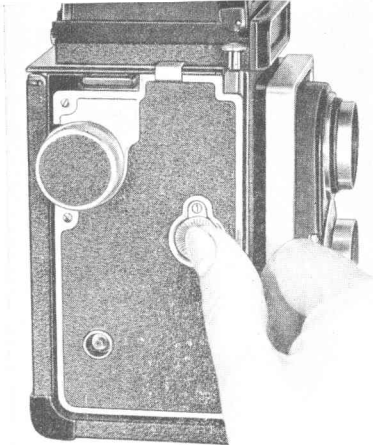
Insert the empty spool into the upper spool chamber.



Insert the paper leader into the wide slit in the spool.



Open the film window to wind the film to 1. The film window must then be closed.



Set the film counter to 1.

IKOFLEX IA LOADING

The Ikoflex Ia differs from the Ikoflex IIa in that once the winding knob can turn no further, the shutter must be cocked for an exposure to be made. The shutter is not cocked automatically. The red color in the exposure safety window indicates that an exposure can be made, while a silver color indicates that an exposure has been made and that the camera should be wound to the next film frame. The Ikoflex IIa winds the film and cocks the shutter simultaneously so that it is ready immediately for the next picture.

WINDING FILM

Film should be wound to the next exposure only if it is to be used immediately. Otherwise the film will not lie properly in the focal frame and parts of it, if exposed, may be blurred. So it is best to wind the film only when a picture is to be taken.

The exposure counter ceases to operate after the twelfth exposure and you should continue winding until you hear the end flapping in the take-up chamber.

CLEARING THE EXPOSURE COUNTER BEFORE LOADING

If the exposure counter has been set in error, it must be cleared before fresh film is loaded; otherwise you will be unable to count your exposures. The exposure counter is cleared by first opening the focusing hood, pressing the shutter release, and then winding the film so it is automatically set with the Ikoflex IIa or by hand cocking the shutter of the Ikoflex Ia and repeating this sequence until the exposure counter passes 12. Only now should the film be loaded into the camera.

5. S: The Shutter

HOW THE CAMERA SHUTTER WORKS

The shutter controls the flow of light through the lens of your camera. The iris diaphragm controls the intensity of light seen through it. The shutter controls the length of time the light is permitted to strike the film. An exposure is the product of the iris opening and the shutter speed. The longer the shutter remains open, the more light will enter through the lens. The iris opening controls the depth of sharpness as well as the volume of light admitted to the film's surface. This volume of available light determines whether it will be necessary to leave the shutter open for a long or for a short time. When the volume of light is very low, you may be required to leave the shutter open for as long as an hour or more. Exposures so made are called time exposures and are designated by the letter T. If, on the other hand, a large amount of light is available, then an exposure can be made in as little time as 1/500 second. A short exposure is used to stop the fast motion of moving objects.

SHUTTER SPEEDS FOR MOVING SUBJECTS

LINE OF MOTION

SUBJECT AT 25 FEET	↑↓	↘	↔
Walking at 5 miles per hour	1/50	1/100	1/150
Children playing	1/100	1/200	1/300
Street activity	1/100	1/200	1/300
Swimmers, skaters	1/100	1/200	1/300
Vehicles at 20 m.p.h.	1/200	1/400	*1/500
Football, running	1/200	1/400	*1/500
Vehicles at 40 m.p.h.	1/400	1/500	*1/500
Tennis	*1/500	1/500	*1/500
Horse race	*1/500	*1/500	*1/500
Airplanes	*1/500	*1/500	*1/500

N.B. When your subject is at 50 ft., multiply all speeds by 2 ($1/100 \times 2 = 1/50$).

For 100 ft. subject distances, multiply all speeds by 4 ($1/100 \times 4 = 1/25$).

*PAN to stop motion.



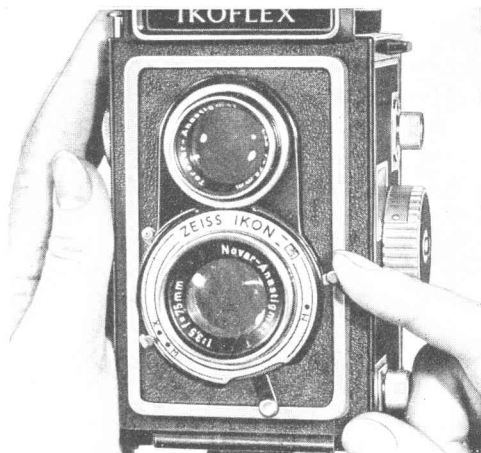
The IkoFlex IIa's shutter speed can be seen from above in the window. Changing the speeds of the IkoFlex Ia.

CHOOSING THE BEST SHUTTER SPEED

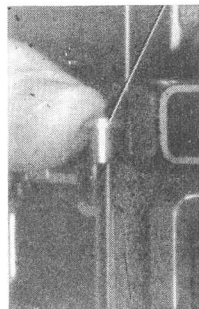
From the motion chart, you can choose the correct shutter speed which will stop action and thus prevent the image from becoming blurred. You will find that slow-moving objects do not require fast speeds. Slow speeds generally allow you to use a narrow iris opening which will produce a gain in overall sharpness. A faster shutter speed requires a wider iris opening. Consequently, the depth of sharpness will be very shallow. The choice of iris opening can produce an overall sharpness or an out-of-focus background. As an example, landscapes with trees or people in the foreground usually require a narrow opening and thus a slow shutter speed to produce an overall depth of sharpness. A portrait, on the other hand, may look better with an out-of-focus background. The wide opening needed to produce this out-of-focus background must be coordinated with a rapid shutter speed so that the lens opening-shutter speed relationship will remain correct.

Action pictures may require the fastest speed of your IkoFlex Synchrono-Compur shutter (1/500 second) to stop the motion.

Your IkoFlex is equipped with a Synchrono-Compur shutter. The shutter is universally famous for its accuracy. The built-in flash enables the shutter to be synchronized successfully with all forms of flashlamps or flashtubes.



The winding lever for the Ia's delayed-action release can be set only if the synchro-switch is on X.



The shutter release will operate only if the finder hood is open.

SYNCHRO-COMPUR SHUTTER SPEEDS

Your Ikonoflex IIa Synchro-Compur shutter has speeds of B, 1, 2, 5, 10, 50, 100, 250, and 500. The Ikonoflex Ia has a Prontor-SV shutter with a top speed of 300. The numbers are actually fractions referring to parts of a second. For instance the 5 means $1/5$ second, the 25 means $1/25$ second, the 500 means $1/500$ second.

Both the Synchro-Compur and the Prontor-SV shutters have only a B setting. The B means that when the shutter release is pressed, the shutter mechanism will open and remain open only as long as pressure is maintained. As soon as the pressure is released, the shutter will close. The B, also known as "Bulb," setting is used for short exposures up to three or four seconds.

Time Exposures (T) can be made with either shutter, using a special self-locking cable release which has a set screw to hold the cable release plunger down. When the set screw is released, the shutter will close.

Bulb and Time exposures are a valuable aid in scientific photography where long exposures must be made. They are also useful for photographing fireworks where the shutter remains open for a longer period to catch the whole action of a skyrocket.

6. A: The Aperture

What the Aperture Does

When a water faucet is opened, water flows through it. A narrow faucet opening lets a small amount of water come through, while a large opening admits a greater volume. The diameter of the faucet is similar to the size of a lens opening. In one case water is flowing through the opening; in the other, light. This comparison of water to light is made because you should realize that light has substance as does water.

In order to distinguish one lens opening from another, a number is assigned to various lens apertures. This number is derived by dividing the diameter of the lens opening into the lens-to-film distance required to form an infinity image. If the lens forms an infinity image at three inches distance from the film and the opening is one-half inch wide, the lens will be marked $f/4$ for that diameter. If the opening is one inch wide, then three divided by one will yield an $f/3$ lens. A small number indicates a wider opening than a large number. A large opening will admit a greater amount of light than a small one. Conversely, a narrow opening will admit a smaller volume of light, so for completely equal exposures you can choose a large opening and a fast shutter speed or a narrow opening with a slow shutter speed. Each combination offers different advantages. A wide opening permits short exposures such as are necessary for action pictures, or where a slow emulsion film speed requires large amounts of light for an exposure (this is the usual rule with color film). With a wide opening the subject will usually be sharp within a shallow front-to-back depth. A narrow opening, on the other hand, will produce subject sharpness in far deeper areas of the picture, but the amount of light admitted is proportionately less. Therefore longer shutter speeds are needed. When a sharp overall image is desirable but not possible, compromise by getting at least your main subject in absolute sharpness.

The iris that controls the size of the lens opening is similar in many ways to the iris of the human eye. You can observe this similarity by looking into a mirror as a light is brought close to your eye. As the light is moved toward the eye, the opening narrows; and it will widen when the light is moved away. You duplicate the narrowing and widening of the diaphragm of the lens by moving the iris opening indicator of the Ikoflex Ia with the lever, or the Ikoflex Ua's iris control knob. If you will look through the lens through the



A narrow iris opening assures sharpness in a large zone.



A wide iris opening and/or focus set at infinity will render the foreground out of focus.

back of your open camera, you will see the similarity to your eye as you narrow and widen your lens opening. The numerals $f/4$, $f/5.6$, $f/8$ represent a 100% difference in light admittance; $f/4$ to $f/5.6$ represents a 100% light reduction, whereas $f/5.6$ widened to $f/4$ represents a 100% light increase. So, if you decrease your shutter speed from $1/50$ to $1/100$ second, then the iris must be opened 100% more to secure an equivalent exposure. If the shutter speed is changed from $1/2$ second to 1 second, then the iris must be narrowed one stop to produce an equivalent exposure. A difference in light volume of 100% is called a stop, while a 50% difference is called a half-stop.

Note: The dot between $f/11$ and $f/22$ is setting point for $f/16$.

Remember: The narrower the opening of your lens, the greater will be the depth of sharpness. Narrow stops produce greater depth of sharpness, while wide stops yield very shallow sharpness areas.

The Constant Safe-set Iris Opening

If the depth of your subject remains constant, regardless of the volume of light, then it's wise to SAFE-SET your iris opening and keep it at that setting while varying the exposure by changing shutter speeds. To use the IRIS SAFE-SET METHOD for an average subject (Class 2 on the Exposure Chart on page 68), iris opening is set for:

- f/11—sunny day $1/100$
- f/11—bright day $1/50$
- f/11—cloudy day $1/25$
- f/11—dull day $1/10$

ADVANTAGES OF LENSES OF SHORT FOCAL LENGTH

One of the inherent optical qualities of a three-inch lens of short focal length is its remarkably great depth of field (area of sharpness) even when the iris is open wide to $f/3.5$. The short focal length at $f/4$ has the same depth of sharpness as a six-inch lens at $f/8$ or a twelve-inch lens at $f/16$. This advantage of a great depth of field even at wide apertures is important. Although your Ikoflex can make a $1/25$ second exposure at $f/4$, a large camera to achieve the same depth would need to use $f/16$. The necessary exposure at $f/16$ would be $1/2$ second. As the $1/2$ second exposure cannot stop any motion, your Ikoflex, hand-held, would be able to take the picture, whereas the camera with the twelve-inch lens would have to "sit the picture out" or confine its activities to shooting motionless objects while fastened to a tripod.

FULL-STOP MARKING		RELATIVE LIGHT INCREASE, IF ONLY THE IRIS IS WIDENED
$f/1$	1	These are full stop openings with a 100% difference in light transmission between two adjoining stops. If the indicator is moved approximately half way between the two markings, the iris is opened $1/2$ stop and the difference in light transmission is increased 50%. Half way between $f/5.6$ and $f/8$ produces $f/6.3$, between $f/8$ and $f/11$ is $f/9$.
$f/1.4$	2	
$f/2$	4	
$f/2.3$	8	
$f/4$	16	
$f/5.6$	32	
$f/8$	64	
$f/11$	128	
$f/16$	256	

HALF-STOP OPENINGS

$f/3.5$	1	These specific numbers produce a difference in light transmission of 50% from one mark to another.
$f/4$	$1\frac{1}{2}$	
$f/4.5$	2	
$f/5.6$	3	
$f/6.3$	$4\frac{1}{2}$	
$f/8$	6	
$f/9$	9	
$f/11$	12	
$f/12.5$	18	
$f/16$	24	
$f/18$	36	
$f/22$	48	

N.B. *Everything being equal, if the shutter speed is changed from $1/100$ to $1/200$, the iris must be widened one stop.*

If the shutter speed is changed from $1/100$ to $1/50$, the iris is narrowed one stop.

If the shutter speed is changed from $1/100$ to $1/75$, the shutter is narrowed by $1/2$ stop.

If the shutter is narrowed from $f/8$ to $f/16$, the shutter speed is lengthened four times so that $1/100$ will be re-set to $1/25$.



The neck strap steadies the camera for waist-level picture taking.



The eye level open finder is most useful for action shots.

DEPTH-OF-FIELD TABLE

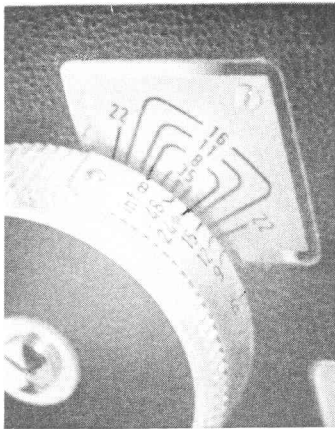
focal length = 75 mm

Lens setting	D I A P H R A G M			
	3.5	4.0	5.6	
inf.	70' 8" — ∞	61' 8" — ∞	44' 4" — ∞	
48'	28' 8" — 147' 8"	27' 4" — 210' 0"	23' 4" — ∞	
24'	18' 0" — 36' 0"	17' 4" — 38' 8"	15' 8" — 51' 4"	
15'	12' 8" — 19' 0"	12' 4" — 19' 8"	11' 4" — 22' 4"	
12'	10' 4" — 14' 4"	10' 4" — 14' 8"	9' 8" — 16' 4"	
9'	8' 0" — 10' 4"	8' 0" — 10' 4"	7' 8" — 11' 0"	
6'	5' 6" — 6' 6"	5' 6" — 6' 6"	5' 4" — 6' 10"	
5'	4' 8.5" — 5' 4"	4' 8" — 5' 4"	4' 7" — 5' 6"	
4'	3' 10" — 4' 2.5"	3' 9.5" — 4' 3"	3' 9" — 4' 4"	
3' 6"	3' 5.5" — 3' 8.5"	3' 5" — 3' 9"	3' 4.5" — 3' 10"	

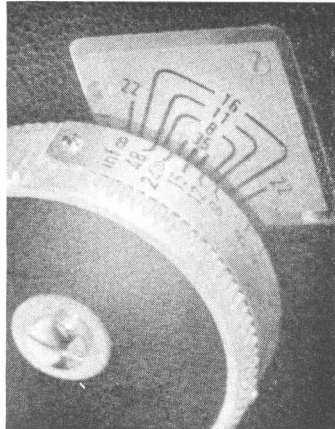
Lens setting	D I A P H R A G M			
	8	11	16	22
inf.	31' 0" — ∞	22' 8" — ∞	15' 8" — ∞	11' 4" — ∞
48'	19' 0" — ∞	15' 8" — ∞	12' 0" — ∞	9' 4" — ∞
24'	13' 8" — 101' 0"	11' 8" — ∞	9' 8" — ∞	8' 0" — ∞
15'	10' 4" — 28' 0"	9' 4" — 42' 4"	8' 0" — 265' 4"	6' 8" — ∞
12'	8' 8" — 19' 0"	8' 0" — 24' 4"	7' 0" — 47' 0"	6' 0" — ∞
9'	7' 0" — 12' 4"	6' 6" — 14' 4"	5' 10" — 19' 8"	5' 2" — 35' 8"
6'	5' 2" — 7' 4"	4' 10" — 8' 0"	4' 6" — 9' 4"	4' 1" — 11' 8"
5'	4' 4.5" — 5' 10"	4' 2.5" — 6' 2"	3' 11" — 7' 0"	3' 7.5" — 8' 4"
4'	3' 7.5" — 4' 6"	3' 5.5" — 4' 8.5"	3' 3.5" — 5' 1.5"	3' 1.5" — 5' 8.5"
3' 6"	3' 3.5" — 3' 11.5"	3' 2.5" — 4' 1"	3' 0.5" — 4' 4.5"	2' 10.5" — 4' 9.5"

HYPERFOCAL DISTANCE (FOR QUICK) FOCUSING

When large areas must be in focus, as for example with outdoor scenic shots with foreground objects, depth of field is so great that it's difficult to know where to focus. By using a hyperfocal distance table, however, large overall areas can be made sharp easily.



Bring the infinity mark to f/8 and read the near point of focus on the f/8 marking on the other side of the scale.



Infinity mark at f/22 brings the near point of focus to approximately 7'. This quick method sets the hyperfocal distance accurately.

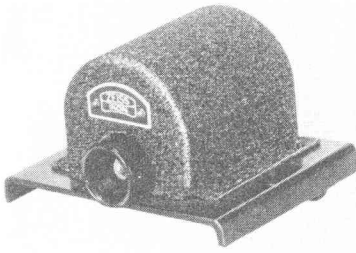
A hyperfocal distance table will tell you how to set your camera so everything will be in focus from a certain distance from your camera to as far as the eye can see. If by following the table you set the iris at f/8, for example, and your focus at approximately 31½ feet, then everything from 15¾ feet to infinity (as far as the eye can see) will be adequately sharp. As you can see, the hyperfocal distance scale gives you a means of sharply recording great depths. The shutter speed, naturally, will depend upon the amount of light that is available. The focus, once the hyperfocal distance scale has been set, must not be touched. Use the ground glass for composing, not focusing. The ground glass, once again, cannot be used to judge the full depth because its lens is always wide open. However, have faith in the hyperfocal distance scale even if your ground glass does not show it.

DEPTH OF FIELD TABLE FOR THE THREE-INCH LENS

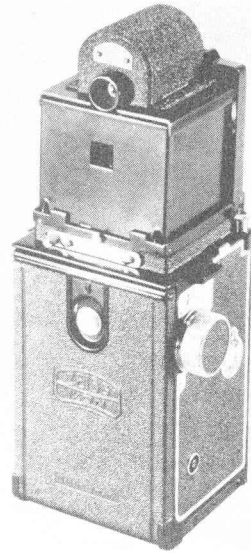
The hyperfocal distance is most practical outdoors where large volumes of light are available, for action or sports events where focusing is impossible because of the constantly changing camera-to-subject distance.

OPEN FRAME SPORTSFINDER—PRISMATIC VIEWFINDER

Since you shouldn't turn the focusing knob when the hyperfocal



The Prismatic Finder produces an upright image that is correct from left to right. It makes simultaneous focusing and composition possible and is ideal for medical and close-up action pictures.



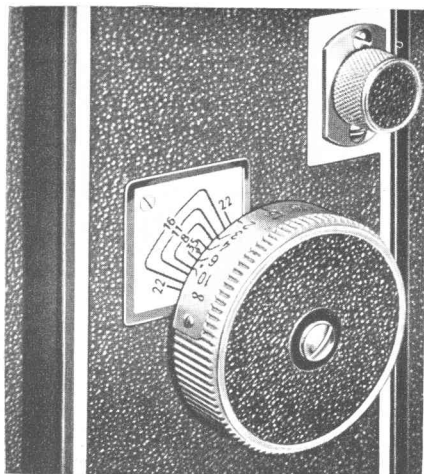
The Prismatic Finder is neat and compact. The wide-open viewing lens always assures a bright image.

distance scale is used, the built-in open frame sportsfinder of your Ikoflex or the accessory prismatic viewer can be used to follow your subject at all times.

Practical Hints: In using this scale, know the near points that must be in focus, set your distance based on this opening information. leave your focusing knob alone, and follow your subject without worrying about focusing sharpness because you now know that under the mentioned conditions your subject will be sharp.

SECTIONAL SHARPNESS WITH THE DEPTH OF FIELD TABLE

There are times when the hyperfocal distance table won't be practical, however. In your house the furthest object may be only twenty or so feet from the camera instead of at infinity. Then you need a new method of insuring sharpness. A depth of field table performs this function. For example, if everything in a room must be sharp from six to twenty-four feet, the depth of field table engraved around the focusing knob tells you that your focus should be set at ten feet and your iris narrowed to at least f/16. Everything now will be in acceptable sharpness well within the six- to twenty-four-foot limitation. The exposure is made by taking your light reading and then finding the shutter speed needed at f/16.



The depth-of-field scale shows the zones of limited sharpness at any opening. Its use will obviate the need for the depth-of-field charts.

The depth of field table is most often used for interiors which require careful adjustment of focus to insure sharpness throughout the area to be recorded.

RAZOR SHARP FOCUS WITH YOUR GROUND GLASS

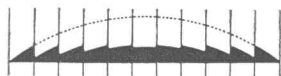
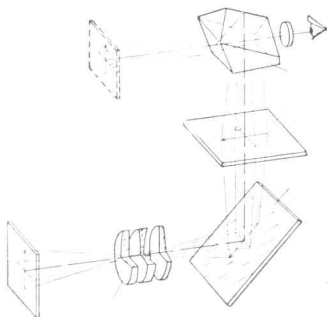
When an image must be at razor sharp focus (this generally occurs at the shorter distances), the ground glass must be used. The Ikoflex's ground glass shows a brilliant image. It incorporates a condensing "field" lens which gathers every available bit of light and concentrates it on the ground glass so that the image is brilliant. This "extra brite" collecting lens adds to the brilliance of the ground glass image, especially in the corners. The condensing "field" lenses are factory installed to insure sharp focus. The Zeiss factory tests each one before releasing it for sale.

When focusing on a definite object, pick out a detailed part of it such as an eye-glass frame, a lace pattern, a window sill, a pole to focus upon. The Ikoflex focuses from three feet to infinity with an approximate quarter turn of your focusing knob. Little effort is required to move the lenses in or out of focus. The finger-tip control permits you to change the focus quickly if your subject is moving about. However, it is easier if you have your own freedom of motion to set your focus at any point, e.g., five and one-half feet for a head and shoulders and then move with your subject so that the razor sharp depth is maintained.



(left) The ordinary ground-glass has more illumination in the center.

(right) The Zeiss "Extrabrite" screen illuminates the entire screen uniformly, increasing edge brilliance as much as 10 times.



The "Extrabrite" screen is a cleverly flattened condenser lens. The magnification effect is maintained while avoiding the weight and the bulk of glass.

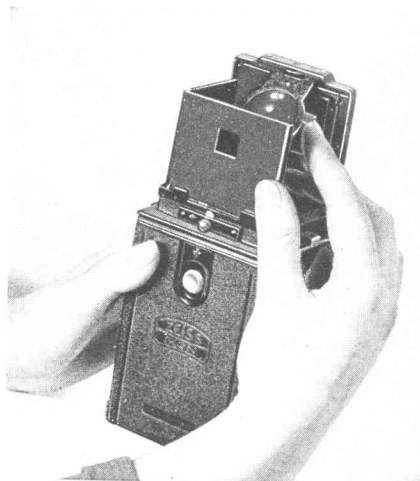
The path of light rays through the "Extrabrite" system with the Prismatic Finder.

THE HOOD MAGNIFYING LENS

Each Ikoflex is provided with a folding magnifying lens in the hood which enlarges the ground glass image for extremely critical focusing. The magnifying glass is of excellent design. It covers the entire field so you can both focus and compose the picture while looking through it. All four sides of the ground glass can be seen through it.

THE PRISMATIC FOCUSER FOR EYE-LEVEL VIEWING

While the camera alone will be sufficient for most work, the prismatic focuser accessory for the Ikoflex is of immeasurable help in focusing because it blocks stray light from hitting the ground glass, and it produces an upright unreversed image so that the subject moves on the ground glass in the same direction as your subject. The waist-level ground glass image appears to move in an opposite direction to the actual line of subject motion. The advantages of the prismatic viewer are also evident for medical photography or for high angle shots which would otherwise require your standing on a chair.



The hood magnifier is over-sized to allow a clear, enlarged view of the entire ground-glass.

OUT-OF-FOCUS BACKGROUND

Portraits often appear best when the background is out of focus. Since the wide open setting of the top viewing lens generally shows the background to be out of focus, you can duplicate the exact effect by opening your taking lens at $f/3.5$ so that it matches the opening of your viewing lens.

FLASH FOCUSING

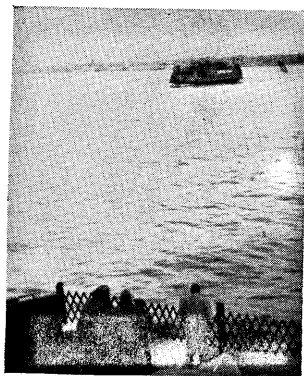
Interior pictures made with flash differ from those taken outdoors because they are totally dependent on the flash. Flash-to-subject distance is critical and determines the iris opening. If this distance changes, then your exposure must change. Therefore the hyperfocal distance and depth of field settings are rarely used with flash. Flash photography and flash focusing will be further discussed in Chapter 11.

OVERHEAD FOCUSING

Your Ikoflex waist-level finder will still produce an image that is right side up if you hold the camera above your head and look onto the ground glass. With this method, you can focus and compose your picture over high walls or above the heads of a crowd. It is also possible to hold the camera sideways so that the lens points around the corner of a building. You can thus focus, compose, and



A sharp picture is the foundation for a good picture.



Over-all sharpness indicates mastery of depth of field problems.

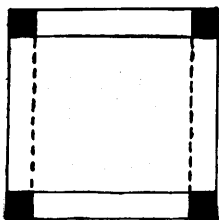
shoot without being seen by your subject. When the camera is held in this way to the side, the images are upside down. It will take a little experience but you can learn to both focus and compose the picture in this manner.

SAFE-SET FOCUSING TECHNIQUE

SAFE-SET action shots require that you pre-set your focus for the distance at which the intended action is to take place. SAFE-SET FOCUS is all-important if you want to produce pictures of rapidly moving subjects. For example, if you are to photograph a wedding procession, you must decide where your picture will be taken. Study the line of march and set your focus at one of the pews, aisle plants, etc.; then pre-set your iris opening for the flashlamp or flashtube that will be used. When the bride and groom reach the area on which you have focused, take the picture. It will be sharp because it has been SAFE-SET.

Picture Composition

The square Iko-flex focusing screen allows composition in three proportions: namely, vertical, horizontal, and square. For better composition in vertical or horizontal format, place one-quarter-inch squares of black masking tape in each corner of your ground glass. If your composition is placed vertically inside the top and bottom portions of the masking square, you will have the proportions for an 8 x 10 vertical enlargement. When your composition is horizontally inside



Composition within the dotted lines produces an 8"x10" enlargement in exact proportions. Pictures composed horizontally between the straight thin lines will produce the same size in the horizontal format.

the black masking squares, the proportions are perfect for a horizontal 8 x 10. If in addition you will divide your ground glass into one-third sections and place four dots (with India ink) at the intersections, you will have a number of interesting reference points for composing your subject in a square format that will maintain a dynamic off-center arrangement.

IKOFLEX FOCUSING AND COMPOSING ADVANTAGES

Since you will learn to focus and compose your subject simultaneously on your ground glass, you have all the advantages of a combined rangefinder and viewfinder system. The ground glass portion acts as a rangefinder while the compositional aids on your ground glass show the exact arrangement of the subject in the field of view. In addition, you see your subject in the exact size it will appear on your film.

VIEWFINDING PARALLAX

You probably have noticed that there is approximately 1½-inch difference in vertical placement between the viewing and taking lens. Consequently, the top viewing lens sees a slightly different view than the bottom (taking) lens. This error becomes more evident at short camera-to-subject distances. The error is known as parallax. It generally becomes important at camera-to-subject distances of less than seven feet. However, your Ikoflex has a built-in masking system under the ground glass which compensates for the difference in view. You need never worry about parallax when the Ikoflex is used without closeup devices.

WHEN TO PRE-SET

Pre-setting has its limitations. By studying the indications for its proper use you will be able to use it efficiently for pictures with greater variety and interest. Pre-set under the following conditions:

1. Flashlamp, flashtube, and floodlight exposures must be pre-

set because an accurate exposure is possible only when the lamp-to-subject distance is exact.

2. Rapidly moving subjects preclude fast focusing. Pre-set for an area where the action will occur and wait until the subject moves into that position.

3. Pre-set the camera when your picture must show a fixed ratio of reduction or enlargement, as for medical photography. Once the setting is made, move the camera back and forth for correct focus rather than by moving the focus scale.

DO NOT PRE-SET

1. If your subject moves so slowly that follow-focus is possible. Follow-focusing increases picture interest because the subject may be taken wherever it may be throughout its movement.

2. A wide-open lens requires continuous sharp focusing because of the shallow depth-of-field.

REVIEW YOUR SAFE

We now have a systematic method of focusing for all distances. Remember:

A hyperfocal distance table is used outdoors where great depths must be sharp.

A depth of field scale is used indoors or outdoors to insure sharpness of depths where the furthest distance to be recorded is not infinity.

The ground glass is used for razor-sharp precision focusing where the subjects have little depth or when the lens is used wide open at $f/3.5$. Whatever focusing method you use, your subject must always be sharp. A sharp picture is a sign of photographic craftsmanship.

You have now learned SAF points of the SAFE method of picture taking. Take time to review the highlights of each of the letters. If you have not as yet made a chart, do so before proceeding further.