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 too 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. These donations allow me to continue to buy new manuals and maintain these pages. It'll make you feel better, won't it?

If you use Pay Pal, use the link below. Use the above address for a check, M.O. or cash. Use the E-mail of butkusmi@ptd.net for PayPal.

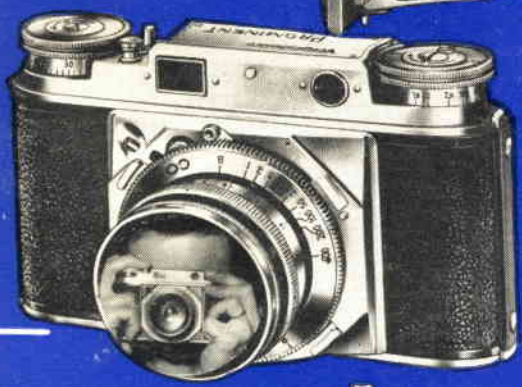
back to my “Orphancameras” manuals /flash and light meter site

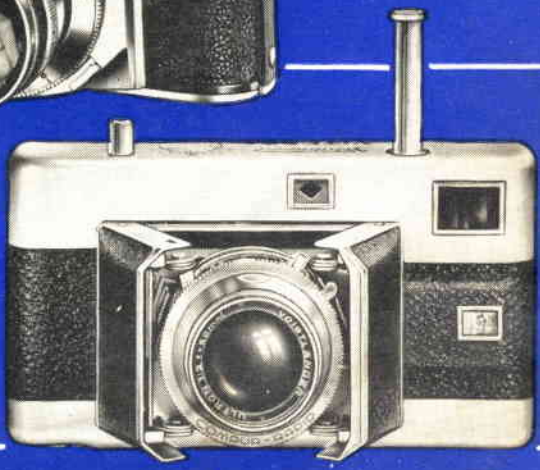
Only one “donation” needed per manual, not per multiple section of a manual !
The large manuals are split only for easy download size.

VOIGTLANDER 35mm

GUIDE

VITO II, VITO III, VITESSA, PROMINENT





with special **COLOR** section

Kenneth Tydings, S.P.E.

THE MODERN CAMERA GUIDE SERIES

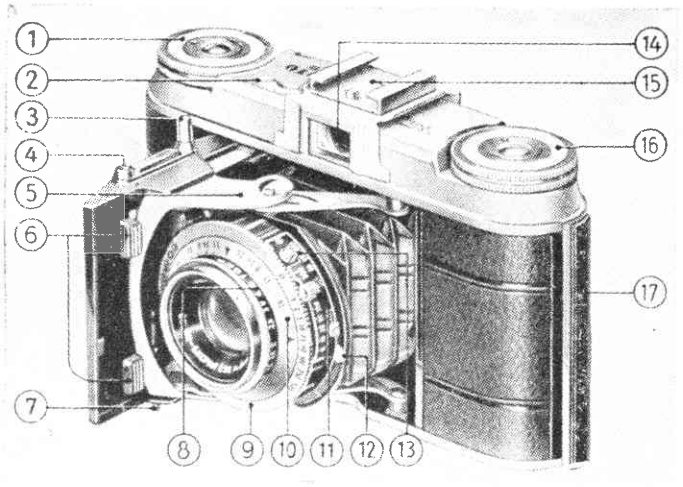
INTRODUCTION

The Voigtlander company has to its credit many firsts in the development of advanced lens designs of the finest quality. It was the first to manufacture, in 1840, the Petzval lens which was the optical phenomenon of its day because it reduced the exposure time for the sensitive film emulsions then used from many minutes to a few seconds. All Voigtlander lenses carry with them a surety of the highest degree of precision, standardization, and refinement possible in a manufactured lens.

Besides pioneering in the optical field, Voigtlander designed and produced many fine cameras in the miniature, reflex, stereo-reflex, and larger plate sizes which have had wide acceptance in both the professional and amateur fields.

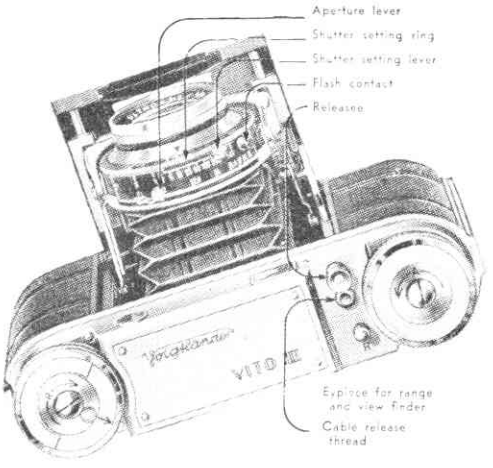
You can have the fullest confidence in your Voigtlander, but you must learn how to operate it efficiently to realize the fullest potentialities of each model. As the author is not affiliated in any way with the Voigtlander company, his descriptions of the various 35mm cameras are as objective as those of a disinterested person can be. Each model is described and discussed from the viewpoint of helping you to improve your pictures and to attain truly superior results. The author's Safe-Set Method to simplify camera handling for beginners will enable you to pre-set your camera controls for sure-fire pictures immediately. Sections on lighting, work with color, and such specialties as microfilming, stereo, and scientific photography will be of tremendous help to the advanced amateur and the professional.

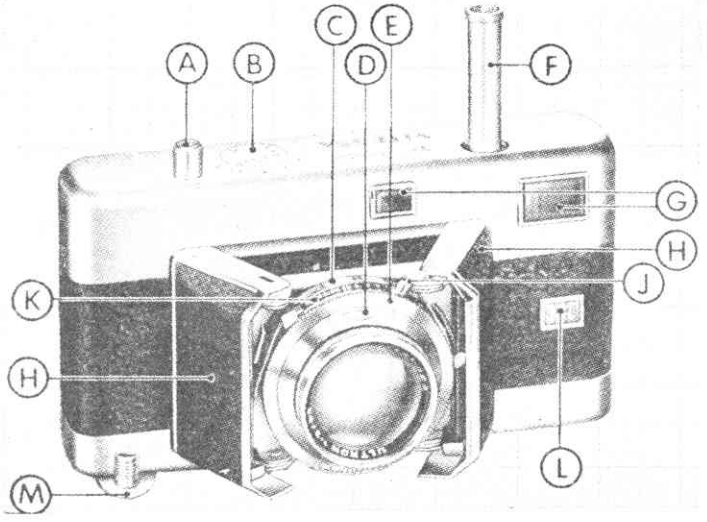
Your Voigtlander can give you many pleasurable hours if you learn to operate it correctly. This Guide will show you the way.



The Vito II Nomenclature

1 Film winder ("A knob")
2 Film counter window
3 Release
4 Cable release socket
5 Struts
6 Keys for closing camera front
7 Front support
8 Lens mount with distance scale
9 Speed setting ring
10 Front plate
11 Shutter tensioning lever
12 Aperture setting lever
13 Contact for flash equipment
14 Optical viewfinder
15 Accessory shoe
16 Rewinding knob ("R knob")
17 Locking ledge for camera back





A Release with socket for cable release
B Distance Scale with depth of field dial
C Aperture Scale
D Front Plate with red closing marks
E Shutter Setting Ring
F Transport Plunger tensions shutter and transports film
G Window of Viewfinder
H Front doors
J Synchron Flash Contact
K Speed Setting Scale
L Window of film counter and film selector
M Rewind Lever (also camera support)

CHAPTER 1 / RAPID RESULTS WITH YOUR VOIGTLANDER

There are many models of the Voigtlander camera. For convenience of description, they may be divided into two general classes —the rigid and the folding. Each class may be further sub-divided into those with and those without a rangefinder, and also models with interchangeable and models with non-interchangeable lenses.

Folding: Without Rangefinder: Vito I, II.
With single window rangefinder and viewfinder: Vito III, Vitessa.

Rigid: With single window rangefinder and viewfinder: Prominent
Interchangeable lenses: The Prominent is the only Voigtlander 35mm camera with interchangeable lenses.

All 35mm cameras use standard 20 or 36 exposure cartridges. The dimensions of the cartridges or color transparencies produced are the standard 24x36mm size (1x1½ in.).

These camera models meet the needs of photographers of varied ability. The beginner generally may start with the Vito II and proceed, when he discovers the limitations inherent in a low-priced camera design, to the more advanced Vito III, Vitessa or Prominent.

Whether you have purchased or have been presented with your Voigtlander, you are naturally interested in using it immediately and getting good results. The illustrations in this chapter will show you the simple mechanical camera adjustments that can be made to get pictures at once, even though you may have used only a box camera previously. In fact, to let you in on a little secret, these settings duplicate the controlled settings of a box camera. So, if you will forget for the moment that your Voigtlander is capable of many control variations and only think of it as a simple box camera with few adjustments, you will have the confidence of getting the same, sure results you got with "the old reliable box". The acknowledged versatility of the Voigtlander should not encourage you, at the beginning, to play around with the different controls until you are more familiar with the camera. By using your Voigtlander as illustrated, you cannot go wrong. Later, when you have learned the difference in the relationship of shutter speed to aperture opening, you can easily make the necessary changes of settings as subject or lighting conditions differ. But, for the time being, use the Safe-Set Method to improve your photography because of its tested, sure-fire simplicity.

1. Have a camera store clerk show you how to open and close the cameras that have a folding lens standard (Vito II, Vito III, Vitessa). Have him show you, in particular, how to pull the lens forward to its set (infinity) position so that the standard will be set rigidly and securely when it clicks into place.

2. Load the camera with daylight type color film following the instruction sheet, or have him load it for you.

3. Set your distance indicator knob at 18 feet for scenic pictures.

4. Set your aperture opening so that the space between 8 and 5.6 comes opposite the indicator mark.

5. Set your shutter speed so that the 50 is next to the marking point.

6. Cock your camera shutter. Do this gently. You will hear a click when the shutter is set.

7. Hold the camera correctly.

8. Look through the viewfinder window. Your subject will appear much smaller than it actually is, but whatever you do see in the viewfinder will be seen by the camera at most far and middle distances. For near close-ups, some correction is necessary because the window of the viewfinder is higher than the lens of your camera.

9. Wait for a bright, not too harsh, sunny day. Since you probably will be using color, it is desirable to wait for that type of day when colors will be most brilliant. If the sky is dull and overcast, the colors in your final picture will also be dull. You will find that the camera controls described here are correct for a bright day. For other light conditions, consult an exposure chart or use a meter.

To simplify the handling of the camera, the Safe-Set Chart (page 9) gives the beginner beforehand the distances for any particular picture that may be wanted. For example, a head-and-shoulders portrait should be taken at 3½ feet. The focusing scale is set at this distance, while the shutter speed and iris settings remain the same (outdoors only). Then, all you need to do is to approach within 3½ feet, checking your camera distance by an auxiliary rangefinder or by looking through the built-in rangefinder if your camera has one. With a rangefinder, your estimate of the distance is more accurate because the subject image will be razor sharp when in focus. Owners of cameras without rangefinders need not worry greatly because the depth of field permits a 5-inch allowance on either side of the focusing point. If you are within 5 inches of 3½ feet, your picture will still be sharp. When you are at the 3½-foot distance, you then shift your eye

to the viewfinder (the Prominent, the Vito III, and the Vitessa Models have a combined rangefinder and viewfinder so that no eye shift is necessary). When your subject is at the peak of action or expression, gently squeeze the shutter release.

If the weather is not ideal, you may use your camera indoors or outdoors with its accessory flash unit. You must remember that your flash synchronization takes place at certain specific speeds with 1/25 second a safe choice for most flashlamps and flashtubes. Here again, the Safe-Set Method simplifies your controls to the point of making indoor flash the nearest thing to "push-button photography". For indoor pictures with indoor Kodachrome Type A film, I suggest only an SM or SF flashlamp because with these lamps no color-balancing filter is necessary. For Ansco color, indoor type, any flashlamp can be used with its appropriate light-balancing filter.

The Safe-Set Method for indoor pictures differs slightly from the outdoor technique in that the exposure is dependent upon the flashlamp. As the distance of the lamp to the subject changes, so does the effective light intensity change. Therefore, for different distances, you must use different lens openings to compensate for the different light volumes. In order to eliminate any chance of error, the chart on page 8 has the pre-calculated openings for the set distances of the subject size. Using once again a distance of 3½ feet for a head and shoulders pose, you will find that an aperture of f/16 is needed. So, pre-set your rangefinder at 3½ feet, set the iris at f/16 and the shutter speed at 1/25 second. To get a perfectly exposed and perfectly sharp picture, all you need do is to approach your subject at approximately 3½ feet, using a rangefinder or simply guessing the distance. When the distance has been accurately checked and the subject viewed through the viewfinder at its peak of action or expression, you need only squeeze gently to release the shutter. By following the Safe-Set Method, you have pre-set and co-ordinated all your picture-taking factors. The only thing for you to do is to squeeze the shutter at the right moment for a successful picture.

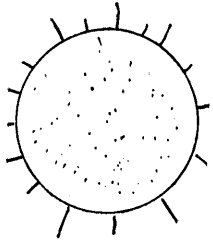
10. With a 35mm camera you must rewind the film back into its original cartridge and the roll is finished. Do not open the back of the camera until you have completely rewound the film.

11. 35mm Kodachrome or Ansco Color Cartridges should be carefully packaged in their shipping bags and mailed to the appropriate laboratory for processing.

12. The returned color transparencies may be viewed, enlarged or projected.

DR. TYDINGS' COLOR OUTDOOR SAFE-SET FORMULA

Lens - 2" Focal Length

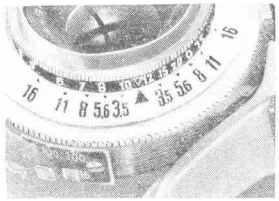


	Field Size in Inches Vertical	Approx. Distance
Child Head		
Head	22x15	2.5 feet (.75M)
Head & shoulders	32x21	3.5 feet (.96M)
Three-quarters	45x30	5.5 feet (1.7M)
	63x41	7 feet (2.13M)
Full body	90x60	10 feet (3.05M)
Horizontal-Full body	126x82	14 feet (4M)
	144x96	16 feet (4.6M)
For children: Use all settings for the previous size e.g. a child's full body, vertical equals an adult's three-quarter body size.		

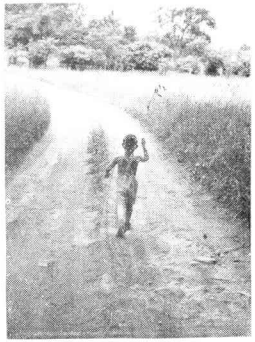
1. Film: Color daylight; Type A or Kodacolor A with No.85B; Ansco Color Indoor with Conv. No.11.
2. Light: Clear day; not harsh.
3. For scenics: Set focus at 18 feet; keep subject at least 10 feet away.
4. For portraits, etc.
   - A. Choose the subject distance from the chart.
   - B. Pre-set your rangefinder for your subject distance.
   - C. Look through the rangefinder or guess your distance, etc., then move back and forth until your image is complete.
   - D. View and compose your subject.
   - E. Gently squeeze the release at the peak-of-the-picture.
   - F. Wind for the next exposure.

S–Shutter

A–Aperture



F–Focus



E–Effect

DR. TYDINGS' OUTDOOR SAFE-SET FORMULA FOR COLOR FLASH

Code:- H - Handkerchief; Thin, white linen.
- Child's Head.
§ - Head.
† - Head and Shoulders.
‡ - Three Quarters.
+ - Full Body, Vertical.
¶ - Full Body, Horizontal.

f/16 = f/22+1H=f/32+2H=f/45+3H

2" (50mm) Lens:

1/50 Sec. 5B,25B	Outdoor Kodachrome	48	1'	#1'6"	§2'2"	3'	4'4"	‡6'	8'7"	+12'	¶15'
	Ansco Color	85	#2'	§2'7"	†3'10"	‡5'3"	7'8"	+10'	¶15'	20'	24'
	Kodacolor	55	1'3"	#1'8"	§2'6"	†3'6"	‡5'6"	7'	+10'	¶14'	16'

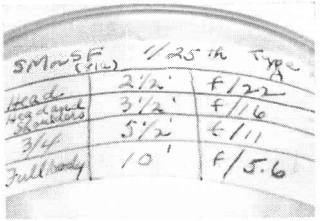
DR. TYDINGS' SAFE-SET FORMULA FOR INDOOR FLASH

2" (50mm) Lens:		Guide	2H+	1H+							
	ASA	No.	f/22	f/22	22	16	11	8	5.6	4	3.5
	ASA 80	200	†4'5"	‡6'3"	+9'6"	¶12'6"	18'	25'	36'	50'	
1/25 sec.	40	140	§3'	†4'5"	‡6'2"	+8'9"	¶13'	17'	24'	35'	
#5,25	32	110	§2'5"	†3'6"	‡5'4"	6'10"	+10'	¶13'6"	19'6"	27'6"	
81C 81D	Kodachrome A	90	#2'	§2'9"	†4'	‡5'7"	8'	+11'	¶16'	22'	25'
	Kodacolor A	95	#2'	§3'	†4'3"	‡5'9"	8'7"	+12'	¶17'	24'	27'
	Ansco Color Indoor	75	#1'6"	§2'4"	†3'4"	4'8"	‡6'9"	+9'4"	¶13'	18'	21'
SM SF	ASA 80	110	§2'5"	†3'6"	‡5'4"	6'10"	+10'	¶13'6"	19'6"	27'6"	
	40	75	#1'6"	§2'4"	†3'4"	4'8"	‡6'9"	+9'4"	¶13'	18'	21'
	32	60	1'3"	#2'	§2'8"	†3'8"	‡5'4"	7'6"	+10'6"	¶15'	17'
81A	Kodachrome A	56	1'3"	#1'8"	§2'6"	†3'6"	‡5'6"	7'	+10'	¶14'	16'
81A	Kodacolor A	56	1'3"	#1'8"	§2'6"	†3'6"	‡5'6"	7'	+10'	¶14'	16'
UV-16	Ansco Color Indoor	56	1'3"	#1'8"	§2'6"	†3'6"	‡5'6"	7'	+10'	¶14'	16'

FLOODLAMP GUIDE—LAMP BESIDE THE CAMERA

Lamp: Floodlamp 1 in suitable reflector or one RFL2
Film: Indoor Color, Type A

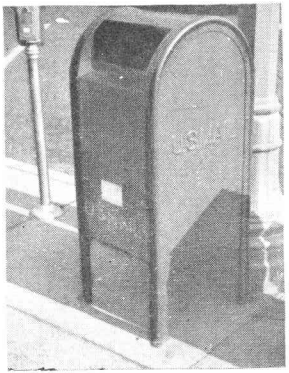
Shutter Speed:	*Opening*	*Lamp-to-Subject Distance*
1/25	f/2.8	4.6 feet
	f/3.5	3.7
	f/4	3.25
	f/5.6	2.3
1/5	f/2.8	10 feet
	f/3.5	8
	f/4	7
	f/5.6	5
	f/8	3.5

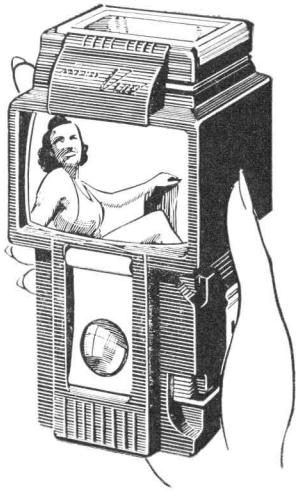


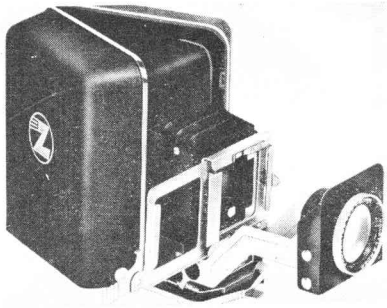
Back of flash reflector

Flash setting

Check your name, address and postage before mailing. The returned picture may be enjoyed by viewing, projection or enlargement.







To use the chart on page 8 to best advantage:

(1) Copy field sizes onto a piece of labeling tape.

(2) Standardize on one film, one flashlamp, etc. and copy this onto the tape. e.g.

Lens of 2″ focal length
SM or SF with Kodachrome Type A Shutter 1/25
UV-16 with Ansco Color Indoor Shutter 1/25

Vertical—Head		2.5 feet	f/22
	Head & Shoulders	3.5 feet	f/16
	¾	5.5 feet	f/11
	Full Body	10 feet	f/5.6

(3) Place it on your camera case or on the back of your flash reflector for easy reference.

(4) Pre-select and Safe-Set each exposure.

You can make out a chart for any flashlamp or flashtube and for different films or shutter speeds.

Once the chart is filled out, you have all the information for taking your picture. These apply for average subjects. For light subjects, pre-select all your factors and then narrow your opening one half stop. For dark subjects widen the opening one half stop. An opening is conveniently widened or narrowed one half stop by moving it one half the space between each stop. High efficiency reflectors are suggested. If your reflector is inefficient, make your preliminary settings and then widen or narrow your opening one half stop.

These instructions are simple and at a minimum. The only judgment required on your part is to wait outdoors for a bright, sunny day and, for scenic subjects only, to keep your subject at least 9 feet from the camera. For portraits and similar close-ups, the chart will give you the desirable pre-set distances. For indoor exposures, you pre-select your subject size, pre-set your camera, iris and shutter and wait for the peak of action or expression. If these elementary instructions are followed, you can be sure of fine results.

Your miniature camera may, however, be used under greatly differing conditions. The next four chapters will show you how to change the basic settings so that your camera will be truly flexible. The time to remember all these picture-taking factors is before the exposure has been made. As an aid to remembering these important points, always recall the word *SAFE* before you are ready to release the shutter.

S—Shutter; A—Aperture; F—Focus; E—Exposure.

COMPARISON OF VOIGTLANDER 35 mm CAMERAS

Camera	*Shutter Speed*	*Lens Opening*	*Focusing*	*Range-finder*	*Flash*	*Flash Connection*	*Filter Size*	*Type*	*Inter-changeable Lenses*	*Combined Film Advance and Shutter Set*	*Self-timer*
Vito I	Prontor S 1/300 Compur 1/300 Compur-Rapid 1/500	f/3.5 Skopar	Front Cell	–	– – –	To be added	29 mm	Bellows	–	–	Yes
Vito II	Prontor S 1/300 SV Compur-Rapid 1/500	f/3.5 Color Skopar	Front Cell	–	S - synch SV - MX X - synch	Compur	29 mm	Bellows	–	–	Yes
Vito III	Compur-Rapid 1/500	f/2 Ultron	Unit	Combined range and viewfinder	X - old M-X New model	Compur	37 mm	Bellows	–	Yes	–
Prominent	Compur Rapid 1/500	f/1.5 Nokton	Unit	Combined range and viewfinder	X - old M-X New model	Compur	47 mm	Rigid	Yes	Yes	Yes
Vitessa	Compur Rapid 1/500	f/2 Ultron	Rear film movement	Combined range and viewfinder	X - old M-X New model	Compur	32 mm	Bellows	–	Yes	–

CHAPTER 2 / S—THE SHUTTER

The shutter of your camera may be compared to a water faucet. When the faucet is open, water will flow. Similarly when the shutter is opened, light will enter your lens. If the shutter remains open a long time, more light will enter through the lens than if the shutter had remained open for only a short period of time. The volume of light that is available will determine whether it is necessary to leave the shutter open for a long or for a short time. When the light volume is very low, you may be required to leave the shutter open for as long as an hour at a time (time exposure). On the other hand, for sports or action spots a picture may have to be taken in as little as 1/500 second because of the fast action.

A simple rule for the beginner to remember is that still (inanimate) subjects can be taken with a slow shutter speed, while living active subjects can be taken with as rapid a shutter speed as the camera has available. But, as you will find later, a slower speed may permit a narrow iris opening with a gain in depth of field and over-all sharpness so that by choosing the correct shutter speed, you can still stop the motion of your subject while managing to retain the greatest amount of sharpness and depth. This choice may very often be an important point in making or breaking the effect of a picture. A simple way to remember what speed to use is to know the meaning of the series of numbers, 25,5,25. This basic number means that for a subject 25 feet away, moving at 5 miles an hour, with a line of motion directly toward or away from the camera position, the shutter speed need be only 1/25 second. With a 45-degree line of motion, the shutter speed is doubled, while with a 90-degree line of motion the shutter speed is three times the original 1/25 second. On the other hand, if the speed of the subject is increased to 10 miles per hour, then all numbers are doubled. As the subject speeds are increased, the shutter speeds must also be increased in direct proportion. If, on the other hand, the subject distance is increased to 50 feet, all numbers must be doubled. With a 100-foot distance the figures are quadrupled so that a moving subject at 20 miles per hour, 100 feet away, with a line of motion toward the camera will still require a 1/25 shutter speed.

So with the basic 25,5,25 you can readily figure out whatever shutter speed is needed by simple multiplication or division. If your highest shutter speed cannot stop the motion of a rapidly moving

SHUTTER SPEEDS FOR MOVING SUBJECTS

SUBJECT AT 25 FEET	LINE OF MOTION ↑↓	↖↘	↔
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(1/100x2 = 1/50).*
For 100 ft. subject distances, multiply all speeds by 4 (1/100 x 4 = 1/25).
**PAN to stop motion.*

object from a set position, then you may stop the subject motion on your film by "panning" your camera. That means that you swing or move the camera in line with the direction of motion of your subject. When you trip the shutter, the subject will be stopped and will be sharp, while the background will be blurred. While this is not always the best photography, the resulting sharp subject justifies the compromise.

The shutter speeds of your Voigtlander camera, depending on model, generally are T, B, 1, 1/2, 1/5, 1/10, 1/25, 1/50, 1/100, 1/150, 1/200, 1/300, 1/500 second. For simplicity of marking the speed indicator dial, only the last half of the number is engraved. For example, when 200 shows on the scale, 1/200 is meant. A large range of speeds, while important for specialized work, is not necessary for the beginner. A survey of most salon prize winners showed that their average setting for a picture had been made at a speed of 1/100 second. With this fact in mind the amateur can see that his present camera will suffice for even superior work.

Panning

If your highest shutter speed cannot stop the motion of a rapidly moving object from a set position, then the subject's motion may be stopped by "panning" your camera. This means that you swing or move the camera in line with the movement of your subject. When you snap your shutter, the object will be stopped in motion and will be sharp, while the background, of necessity, will be blurred. While this is not always the best photography, the resulting sharp subject justifies the compromise.

The shutter speeds of your Voigtlander "Compur" shutter, depending on the model, generally are T, B, 1, 2, 5, 10, 25, 50, 100, 250, and 500. These numbers refer to fractions of a second. The 50 means 1/50; the 2 means ½, etc.

Set your shutter speed at points directly opposite the engraved numbers. Delicate mechanisms revolve each time you change the shutter speed. After they have been set, the tension of turning the shutter-setting dial may strain the gears. The 1/500 setting must not be changed, ever.

Pre-Set Shutter Speeds

It is possible to pre-set and keep your shutter speed at 1/100 second and compensate for any light changes by varying the iris. If your subject is average (Class 3), on a sunny day your iris is set at 12, on a bright day at 9, etc. All factors with the exception of the iris opening remain the same.

1/100—f/12, sunny
f/9 , bright
f/6 , cloudy
f/3 , dull

For any marked speed interval, it is usually necessary to rotate a ring with the time numerals on it so that the desired setting is opposite an indicating dot. Once you have completed setting the shutter for the desired speed, the next step is to cock your shutter so that it may be released.

Once your shutter speed has been chosen and the shutter prepared for release, the next question which arises is whether the exposure shall be made with the camera hand-held or on a tripod. With shutter speeds slower than 1/50 second, the exposure should be made with the camera supported on a tripod. You may hold the camera in your hand if your shutter setting is 1/50 second or faster. You should try to minimize camera vibration because the finished pictures are mag-

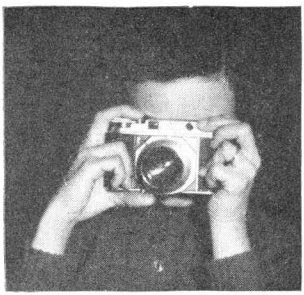
nified by enlarging, projection or viewing, and this magnification will show any body vibration as a blur. To limit the possibility of blurring with a hand-held camera at speeds of 1/50 second or faster, brace yourself in this fashion: Place your feet so that your toes are approximately four inches apart, your heels about six inches; hold your camera firmly, take a deep breath, exhale, and shortly after the exhalation (when you are at your steadiest), release the shutter. When no tripod is available, this method will yield good pictures even at 1/10 second. But at speeds slower than 1/50 second, it is far safer to use a tripod to provide a sturdy support. I suggest an easy height-changing type of tripod to minimize tripod manipulation.

Practice releasing or clocking and releasing the shutter (some release levers depress considerably before the shutter is actuated). Practice a number of times until you have the pressure and depth of release just right. Action pictures, baby portraits, etc. require split second exposures at the peak of action. The shutter must be released immediately, else you may lose in that split second the priceless once-in-a-lifetime expression or rare, never-to-be-repeated action. Practice releasing your shutter so that the camera will remain steady. No matter how steady you may think you are, you will always tend to push the camera slightly in the releasing direction. If you learn to release your shutter without vibration, your pictures at even 1/10 second will enlarge clean and not show any camera movement.

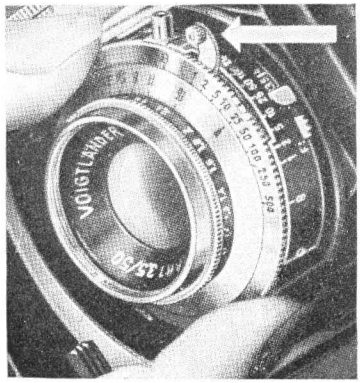
The best place to practice is in front of a large mirror. Stand fairly close, look through the viewfinder, and watch yourself in the mirror as you release the shutter. Any camera movement that you notice would have resulted in a blurred picture if you had had film in the camera. So learn to squeeze the release gently to reduce vibration or camera pushing while taking a picture.

Cable Release

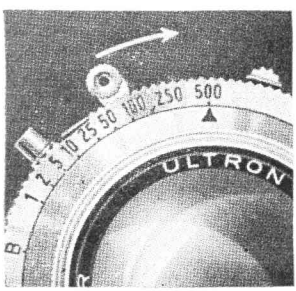
Adjacent to the shutter release, you will find a socket or threading to take a cable release. Your camera dealer will fit the correct cable release for your specific model. Caution: Use only the cable release that matches your shutter threading. If the wrong tip is used, there is a possibility of the plunger piercing the shutter housing and ruining the delicate parts. With a cable release, there should be no camera vibration. However, the release must be long enough to form an easy loop between your hand and the shutter. If your release is too short, the vibration of pushing the cable will transmit itself to your camera with poor picture results. With proper use, your pictures will improve through the use of a cable release.



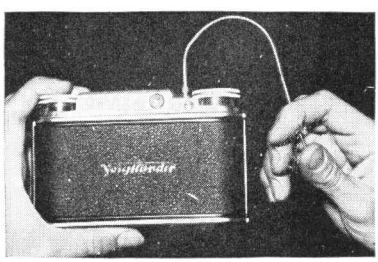
Holding the Prominent



Setting the shutter speed



Cocking the Shutter



Loose looped cable release

Self-Timer

There are a number of self-timers (delayed-action mechanisms) which may be used with your camera. A self-timer is particularly desirable whenever you wish to get yourself into the picture. With it, you can also take flash pictures of yourself. With a self-timer, you are able to add that necessary touch of human interest for any otherwise routine landscape, architectural study, etc. The self-timer can be used with the camera on a tripod when a cable release is not available and a slow speed is necessary for the picture. Since releasing a shutter, even on a tripod, may cause vibration, the use of the self-timer allows a lapse of approximately 15 seconds before the picture is taken. During this time interim, the vibration caused by the releasing action will have been dissipated.

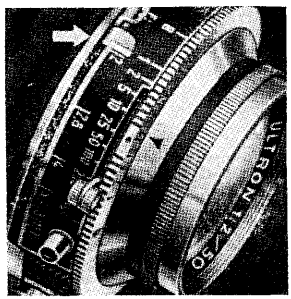
For best results, learn to use one shutter speed at the beginning. This is in line with the idea of keeping all variables to a minimum.

CHAPTER 3 / A—APERTURE (IRIS)

Opening a faucet allows water to flow through it for the length of time that the faucet remains open. However, an important item is the width of the faucet opening. If the faucet diameter is narrow, a small amount of water can come through. If the faucet diameter is large, then a greater amount of water will pour through for a stated interval of time. The relationship of the diameter of the faucet to the length of time that it remains open is similar to the relationship of the lens opening to the shutter speed. The shutter speed, in turn, determines the length of time that the lens will continue to remain open. The diameter of a faucet is measured in inches. Photographically, the lens opening diameter must be related to the focal length (lens-to-film distance), at which it forms an infinity image, and this ratio is usually shown as an f/number.

The f/number is the relationship of the size of the lens opening to the length or distance that the light rays must travel before they form a focused, sharp image on the film. A small number indicates a wide opening, whereas a high number indicates a narrow opening. The wider the opening the greater the amount of light that is admitted at a given interval of time. The narrower the opening, the smaller the quantity of light that enters the camera in the same time interval. For equal exposures you can have a large opening and a short shutter speed, or a narrow opening with a long exposure. There are different advantages to be derived from either choice. A wide opening will permit a short exposure such as is necessary for action pictures. A narrow opening will give increased sharpness over a larger area of the picture. When a sharp image is desirable but not always possible, you compromise by getting what you can with at least your main subject in sharp detail. Lenses narrow generally at full stop intervals to f 22. If intermediate settings are desired, the chart is useful in figuring out what compensation must be made for the difference in time when you make an opening larger for a shorter shutter speed or narrow your opening so as to require a longer exposure or an equivalent density of exposure.

The iris diaphragm of the lens regulates the size of the opening which admits light to the camera. The diaphragm is in many ways similar to the iris of the eye. Look into a mirror while bringing a light close to your eyes. As the light is brought closer, you will see that the iris opening narrows; as the light is moved away, the iris



Setting the aperture

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 ½ 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	1½	
f 4.5	2	
f 5.6	3	
f 6.3	4½	
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* ½ *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.

widens. You duplicate this narrowing and widening in the camera by moving the iris opening indicator from the lower to the higher numbers. Look through the back of your camera and you will see the similarity between the iris of your lens and the iris of your eye.

Remember that the narrower the opening of your lens, the greater will be the depth of field. Therefore, narrow stops give great depth and wide stops yield very shallow areas of sharpness.

A constant iris opening:

f/12(11)—1/100, sunny
1/50 , bright
1/25 , cloudy
1/10 , dull

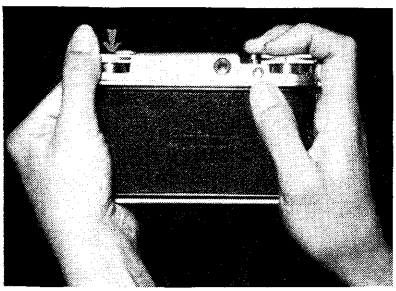
It is possible to pre-set and keep your iris opening constant by varying the shutter speed. This may become necessary if a certain depth of field is required. So by changing the shutter speed only, your depth of field is maintained and the speed varied to compensate for any changing light. As an example, if your subject is average (Class 3) and the iris is set for f/12, you use 1/100 second for a sunny day; 1/50 for a bright day, etc.

An inherent quality of a 2-inch lens of short focal length is its remarkable depth of field. A 2-inch lens at f/4 has the same depth of field as a 4-inch lens at f/8 or an 8-inch lens at f/16. In getting an equal depth of field for a given amount of light, this knowledge is very valuable. With a 2-inch lens set at f/4, you will be able to get a picture. At f/16 with a lens of longer focal length for the same depth of field, your picture will be hopelessly underexposed. In many cases, the depth of field possible with a lens of short focal length and a wide opening are the all-important differences which make a picture possible. With a fast shutter speed, your lens opening will have to be as wide as possible to admit more light (f/3.5 or even f/2, if available). When your shutter speeds are slow, you may narrow your opening so as to get an increase of your depth of field. So far you have learned to set your shutter and control the variable opening (iris) on your lens.

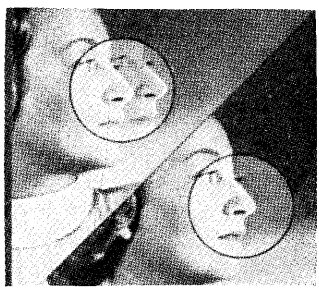
CHAPTER 4 / F—FOCUSING

Focusing is the process of insuring the maximum amount of image sharpness. To estimate the correct subject to camera distance,

you may use either a coupled rangefinder, an auxiliary rangefinder, a pre-measured string or tape measure, or simply guess the distance. To help you with your guess, you may take advantage of either the depth of field or hyper-focal distance settings of the lens of short focal length. Because of the tremendous depth of field of your lens of



Focusing the Prominent



Two images, out-of-focus; one image, in focus

Distance Focused on	f:3.5 Sharply Focused		f:4 Sharply Focused		f:5.6 Sharply Focused		f:8 Sharply Focused		f:11 Sharply Focused		f:16 Sharply Focused	
	From	To	From	To	From	To	From	To	From	To	From	To
3	2′ 11″	3′ 2″	2′ 10″	3′ 2″	2′ 9″	3′ 3″	2′ 8″	3′ 4″	2′ 7″	3′ 7″	2′ 5″	3′ 11″
3.5	3′ 4″	3′ 9″	3′ 4″	3′ 10″	3′ 2″	3′ 10″	3′ 1″	4′ 1″	3′	4′ 5″	2′ 9″	5′ 1″
4	3′ 9″	4′ 4″	3′ 9″	4′ 4″	3′ 7″	4′ 6″	3′ 6″	4′ 10″	3′ 3″	5′ 3″	3′	6′ 1″
5	4′ 7″	5′ 6″	4′ 6″	5′ 7″	4′ 4″	5′ 10″	4′ 2″	6′ 4″	3′ 11″	6′ 6″	3′ 6″	9′
6	5′ 5″	6′ 9″	5′ 3″	6′ 11″	5′ 1″	7′ 1″	4′ 9″	8′ 2″	4′ 5″	9′ 6″	4′	13′
8	6′ 11″	9′ 6″	6′ 10″	9′ 10″	6′ 5″	10′ 9″	5′ 10″	12′ 8″	5′ 4″	16′ 4″	4′ 8″	32′
10	8′ 4″	12′ 6″	8′ 2″	13′	7′ 6″	15′	6′ 9″	18′ 9″	6′ 3″	28′	5′ 3″	∞
15	11′ 6″	22′	11′	23′	10′	32′	8′ 9″	55′	7′ 9″	∞	6′ 2″	∞
25	16′ 6″	53′	15′ 8″	63′	13′ 9″	162′	11′ 6″	∞	9′ 6″	∞	7′ 6″	∞
50	24′	∞	23′	∞	19′	∞	15′	∞	11′ 9″	∞	8′ 9″	∞
100	32′ 2″	∞	29′ 6″	∞	23′	∞	17′ 4″	∞	13′ 2″	∞	9′ 5″	∞
∞	47′	∞	41′	∞	29′	∞	20′	∞	15′	∞	10′	∞

2-inch focal length, your images will be sharp from infinity to most middle distances without critical focusing. However, a rangefinder is valuable for focusing distances between 7 and 3 feet.

A rangefinder is a simple, triangulating device which estimates distances by forming a geometric pattern of your subject from two separated points of view. When the images which are seen from these different points of view are brought together by a movable mirror so as to form a single continuous image, you can read the subject distance because the amount of mirror movement is calibrated. The greater the distance the mirror must be moved the closer is your subject. The rangefinder is usually marked (calibrated) so that you may read the exact rangefinder-to-subject distance from the coordinated measurement scale. The Vito II does not have a rangefinder.

The Vito III, the Vitessa, and the Prominent cameras with rangefinder have a super-imposed image type of rangefinder. In the last mentioned type you see the whole subject at all times, but in the center tinted area you will see two duplicated images when the subject is out of focus. When the lighter image is brought over the darker image and the two form a continuous non-separable subject, then the lens is again in focus. These rangefinder cameras are unique in that the rangefinder and viewfinder are combined so that you look through only one eye-window for both focusing and composing. As with all new instruments it is advisable to practice using the rangefinder and/or the viewfinder of the camera without any film in it.

Since the Vito II does not have a coupled rangefinder, you may use an auxiliary (detachable) rangefinder for these cameras with excellent results. To do so you should purchase a pocket type rangefinder which is inexpensive and available at most stores. This type of rangefinder lends itself to a pre-set method which will produce excellent results. To use one by this method:

1. Set your detachable rangefinder at the distance of the expected action, e.g., 10 feet.
2. Set the focus of your camera lens at 10 feet.
3. Your shutter and iris settings must be ready for instant picture taking.
4. Place your detachable rangefinder over your camera.
5. Look through the rangefinder and walk forward or back until the rangefinder image window indicates that your subject is in sharp focus.
6. With your subject in focus, shift your eye to the viewfinder. When the subject reaches the peak of action or expression that you

think ideal, release the shutter. By this method your camera without a rangefinder attains the high accuracy of the built-in rangefinder models.

Focusing by Scale

If you must guess your distance because you may not have the time to use a rangefinder, it is a good idea to know something about depth of field and the hyper-focal distance. Your short focal length lens has a great depth of field which means that very large areas will be sharp even without accurate focusing. Sharpness in a photograph is a relative term based on the fact that the film image is composed of many fine silver grain dots. If the dots are close together so that the eye cannot distinguish them separately, the image appears smooth and continuous. If the dots are far apart and individually distinguishable, the image will appear granular, hazy and unsharp.

An unsharp image is distinctly different from the granularity produced by a high-speed coarse-grained developer. When you read in your distance table that everything is sharp from 21 feet to infinity, this does not mean that your subject abruptly becomes completely blurred at 18 or 19 feet. Rather, the 21 feet to infinity sharpness by definition usually means that at a 10-inch viewing distance, the eye will be unable to distinguish a separation of two image dots if they are 1/100 inch apart. When you can see the separation between the two dots of your image, it is no longer a smooth continuous picture but will be fuzzy or sandy. To the eye a fuzzy image does not appear sharp. To get back to the subject, at 18 or 19 feet you will just begin to see the beginning of the separation of the two dots of your film image. At 14 or 7 feet the dot separation will definitely be distinct. Usually there is no abrupt dividing line from a sharp to a granular image. Rather there is a gradual deterioration of sharpness depending upon your lens opening, development, exposure, etc.

The 35mm film must be enlarged from at least 5 to 10 times in order to be viewed easily. When the film is enlarged to 10 times, the 1/100 inch separation of the dots of the image will be pulled apart and the dots will now show as distinct points one-tenth inch apart ($100 \div 10 = 10$). Since we readily distinguish dots 1/10 inch apart, the image will be granular and hardly usable.

As all your film requires enlargement for viewing, pre-calculate your subject distances and iris openings and be sure that your picture is as sharp as possible. At close range, you must use your rangefinder for accurate distance measurement. A perfectly focused image will

24 mm LENS DEPTH OF FIELD

Scale Setting	f/5.8		f/8		f/11		f/16		f/22	
	from	to	from	to	from	to	from	to	from	to
3½'	2'10"	4'7"	2'7"	5'3"	2'5"	6'6"	2'1"	10'8"	1'10"	46'
5'	3'9"	7'6"	3'5"	9'7"	3'	14'3"	2'7"	130'	2'2"	∞
7'	4'9"	13'3"	4'2"	21'4"	3'8"	93'	3'	∞	2'6"	∞
10'	6'	30'9"	5'1"	277'	4'4"	∞	3'5"	∞	2'9"	∞
15'	7'6"	∞	6'3"	∞	5'	∞	3'10"	∞	3'	∞
30'	10'	∞	7'9"	∞	6'	∞	4'5"	∞	3'4"	∞
∞	14'	∞	10'	∞	7'4"	∞	5'1"	∞	3'8"	∞

N.B. ∞ = Infinity

100 mm LENS DEPTH OF FIELD

Scale Setting	f/5.5		f/8		f/11		f/16	
	from	to	from	to	from	to	from	to
3½'	3'4"	3'8"	3'4"	3'8"	3'3"	3'9"	3'2"	3'10"
5'	4'10"	5'3"	4'8"	5'4"	4'8"	5'6"	4'6"	5'9"
8'	7'4"	8'8"	7'2"	9'	7'	9'6"	6'6"	10'3"
10'	9'2"	11"	8'9"	11'6"	8'4"	12'6"	7'9"	14'
15'	13'	17'6"	12'6"	19'	11'9"	21'	10'6"	26'
25'	20'	33'	18'6"	38'	17'	48'	15'	83'
50'	34'	98'	29'	∞	25'	∞	21'	∞
100	51'	∞	42'	∞	34'	∞	26'	∞
∞	102'	∞	72'	∞	52'	∞	36'	∞

N.B. ∞ = Infinity

give you a resolution far beyond your required minimum tolerances so that you can easily produce a film image that will enlarge well.

The subject of the size of your image point formation is known as the "circle of confusion." When you know beforehand that your subject will need projection or enlargement to immense diameters, then stop down (narrow the opening) at least one or two stops in addition to secure greater sharpness than the table indicates. The depth-of-field table can be used if you can either accurately guess your distance or measure it. Once you have your subject distance, choose your surrounding areas of sharpness according to the iris opening.

Related to the depth of field is a table for your hyper-focal distance. When you set your distance (focusing scale) in co-ordination with certain aperture settings, everything will be in focus from half the set scale distance to infinity. This important table, which minimizes the need for extremely accurate focusing when certain light conditions permit, is available in this chapter. An easy way to remember the whole table is by the key number series, 2,4,42. This number

HYPERFOCAL DISTANCE CHART

f/opening	*24 mm*		*50 mm (2")*		*100 mm (4")*	
	Setting	*Sharp Focus*	*Setting*	*Sharp Focus*	*Setting*	*Sharp Focus*
f/4	21'	∞ to 10-1/2'	42'	∞ to 21'	84'	∞ to 42'
f/8	10-1/2'	∞ to 5-1/4'	21'	∞ to 10-1/2'	42'	∞ to 21'
f/11	8'	∞ to 4'	15-3/4'	∞ to 7-7/8'	31-1/2'	∞ to 15-3/4'
f/16	5-1/4'	∞ to 2-5/8'	10-1/2'	∞ to 5-1/4'	21'	∞ to 10-1/2'
f/22	4'	∞ to 2'	7-7/8'	∞ to 4'	15-3/4'	∞ to 7-7/8'

N.B. ∞ = Infinity

means that a 2 inch lens at f/4, focused for 42 feet, will produce an image that is sharp from 21 feet to infinity. At f/8, the setting of 21 feet will have everything in focus from 10½ feet to infinity, etc.

As the table indicates, an iris opening of f/16 with the distance set for 10½ feet will yield a sharp image if your subject is as close as 5¼ feet. You can see that this tremendous depth of field minimizes the need for exacting rangefinder focusing. However, if the subject is mostly at infinity (distant landscapes, etc), you may secure a sharper distance image by leaving the rangefinder setting at infinity. Since hyper-focal distance is based on the "circle of confusion," you can understand that when your rangefinder is focused at 10½ feet, your infinity distance will be sharp only within certain limits. As you enlarge your film, these limits are rapidly passed and the image will appear fuzzy. However, if you set the focus on infinity, then the image is focused exactly at the far distance focusing point and is not dependent upon the iris opening for its sharpness.

Pre-set action pictures call for setting your focus for either of the distances:

◯ 30 feet—f/8 for subject focus from 15 feet to infinity.

△ 10 feet—f/8 subject will be in focus from 7 to 15 feet.

The viewfinder is generally a reverse Galilean telescope and is adequate from infinity to most near middle distances. Parallax assumes great importance at close distances. Chapter 19, Close-ups and Parallax Control, describes in detail methods for correcting it.

For better subject composition, divide your viewfinder into thirds both horizontally and vertically and place four dots at the intersections of your lines using a sharp pen with India ink. While these dots will not interfere with your viewfinder, they will serve as excellent guide points for effective composition.

The Safe-Set Method for focusing is suggested because it has been my experience in teaching to find that when the beginner starts to focus, he rotates the focusing mount great distances before he finds the critical sharp point. A half turn of your focusing mount will change your distance setting from infinity to five feet, so you can see how much chance there is for visual error in trying to focus rapidly. Whereas when the distance is pre-set and you approach your subject with any checking method, a 5 per cent distance difference is the greatest error possible.

Make every effort to take sharp pictures. If desired, the sharpness may be later diffused for a softer effect. Remember that it is impossible to take an out-of-focus image and ever make it critically sharp.

CHAPTER 5 / E—EXPOSURE

Now that the mechanics of picture taking have been described, all that remains is for you to integrate this knowledge and prepare to take a picture.

You now know how to set your shutter and iris, but you must know which settings are to be used. There are three methods of determining the proper camera settings for normal lighting conditions.

1. Every package of film has an information sheet. On this sheet, you will find recommendations for shutter and iris settings for different light conditions. If you follow these recommendations, you will definitely get properly exposed pictures. Remember that the manufacturers take great pains to insure the accuracy of their published information.

2. There are always three factors in determining your camera settings: Film, shutter speed and iris. The exposure chart in this chapter standardizes the setting procedure so that the only variable will be your iris opening. And, to make your choice easy, the different iris openings are derived by the use of simple arithmetic. First choose the number for the correct light conditions and multiply it by the suitable subject classification number. The product of the multiplication will be your iris setting. For example, if you are using film with an ASA 50 and a shutter speed of 1/100 second, then when your subject is average (Class 3) and multiplied by hazy sky lighting (Class 2), the result will be 6. If you set your iris at 6.3, your exposure will be

"on the button." Practice a number of times for different subjects and lighting conditions until you have mastered the chart. While this chart gives you iris openings for set shutter speeds only, you can change the settings at will since you can increase your shutter speed by opening your iris in proportion so as to maintain the same volume-time relationship of light. The f/number chart of Chapter 4 will show you the different shutter speeds for proportionate iris opening changes. If you know what speed is needed, then you can open and close the iris from the table number and still maintain the correct exposure.

3. The photo-electric meter is an accepted standard for accurate measurements in indicating correct exposure. While a chart may be used for outdoor settings, only the photo-electric meter is recommended for use with artificial lighting or even outdoors where extreme accuracy is needed for color work.

There are two types of photo-electric meters.

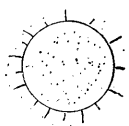
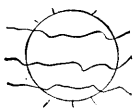
a. *The incident light type.* This meter measures the light that is falling on a scene or a subject. The incident type generally has a collecting sphere (like half a table tennis ball), light masks or great teen type hoods which take a reading by pointing these collecting devices at the camera. The collectors are used to integrate any varied strengths of light reaching them so that the readings are very accurate and are set at the mid-point of a gray scale. The sphere also minimizes the possibility of too high readings when a spotlight or any other intense light source shines directly on the subject.

b. *The reflection type.* The reflection type measures the amount of light reflected from the subject. It is pointed at the subject for an intensity reading. However, a gray card must be used with this type of meter for accurate results. Because gray is a neutral tone, you will automatically photograph your blacks and whites in their correct tonal differences. If a gray card is not used, then you can see that different reflected readings will result from dark or light subjects. Since both readings cannot be correct, you must do some mental calculation to figure out a new middle value that you hope will give the correct result. The only precaution when using a gray card is to be certain that it is large enough for a reading (point the meter at the card from at least a ten-inch distance) and so be assured that only the reflection

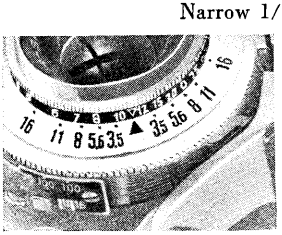
SIMPLIFIED OUTDOOR EXPOSURE CHART

Film: Outdoor Color—A. S. A. 10 B & W—A. S. A. 50
#85 Filter with Indoor Color Shutter Speed 1/100

Shutter Speed—1/25th

45° Light Angle to Subject	 4—Sunny Strong shadows	 3—Bright Soft shadows	 2—Cloudy	 1—Dull
4 - Wide, clear open spaces	16	12	8	4
3 - People, trees, architecture in outdoor middle distances	12	f/9 or **COLOR Basic recommended setting 1/50th at 6.3**	6	3
2 - Average subjects; open street, near distances	8	6	4	2
1 - Shaded street	4	3	2	1

For normal subjects, normal conditions, normal areas.
Use 1/2 stop wider for dark subjects, etc.
Narrow 1/2 stop for light subjects, etc.



Built-in depth-of-field scale: Look at the same f/opening number on either side of the distance indicator to read the limits of focus directly. At f 5.6 everything is in focus from 8 to 20 feet.

from the gray card will influence the meter. In addition, be sure that your body is not blocking any light from its source. Bend your body away or take a knee bend so that your hand is holding the meter free and clear. With these precautions your meter readings can yield excellent results.

With both types of meter there is still some judgment required on your part. For dark subjects the iris may be opened a half stop, while with very light subjects the iris may be closed one half stop below the indicated scale readings.

In actual use, both types must be used for an ideal exposure. The balancing of light ratios is best performed with a reflection type meter, while the overall exposure may best be taken with the incident light type. The manufacturers have realized this because they have produced attachments or built-in masking devices for changing the function of their meters from one form to another.

Exposure for Flash

The exposure factors for flashlamp and flashtube are quite different from those determined by either of the above-mentioned methods. Every flashlamp or flashtube is supplied with an exposure guide number chart by the manufacturer. This chart provides you with a guide number to be used with certain speed films at definite shutter speeds. Since you know your film and shutter speeds, the only remaining unknown is again the iris opening. The iris opening is found by simply dividing the subject distance into the specific guide number. If, for example, your flashlamp has a guide number of 110 with an ASA 40 film at 1/100 of a second when your subject distance is 10 feet, then you divide 110 by 10 to get an answer of 11. The iris opening of your lens is now set at f/11. If a subject is 20 feet away, then the iris opening will be f/5.5. If your guide number is 56 and your flashlamp-to-subject distance is 6 inches (½ foot), then divide the ½ into the 56 and the indicated opening will be f/112. Since your camera iris generally is narrow only to f/22, then you must use a number of layers of handkerchiefs or white linen cloth to reduce the light intensity of your flash so that it will be correct for your minimum lens opening. This is further explained in Chapter 17.

Standardize with one flashlamp so that you know its characteristics well. With standardization will come a uniformity of results so that you will be able to concentrate on your subject. Finally, I should caution you again to hold your camera firmly and learn to push the shutter release lever gently so that you will not jar the camera.

ANALYSIS CHART

1. Camera & Lens	2. Film & #	3. Illumination	4. Angle	5. Gradation	6. Angle	7. Accentuation	8. Angle	9. Separation	10. Angle	11. Filter	12. Exposure	13. Negative Development Time	14. Paper & Grade	15. Paper Developer	16- Remarks
	PX	#2F	45°	#1F	camera	spot	one	#2F	45°	K-2	f/8	D-76	VanGam	D-72	
	#1	H	45°	1	height	8	hair	2	up		1/25	14	#5		
	#2														
	#3														
	#4														
	etc.														

Using the Analysis Chart: List only factors that are important.

1. List the camera and lens.
2. Name of Film and the number of the exposure.
3. In the Illumination box, top half names the lamp used, the bottom half the ratio of light balance.
4. Record the angles of your light to the subject.
5. Gradation box: top half for the lamp used, bottom half for the ratio of light balance.
6. Angles of the Gradation light.
7. Accentuation: top half for the lamp, bottom half for the light ratio.
8. Angles of Accentuation light.
9. Separation light: top half for the lamp, bottom half for the light ratio.
10. Angles of the Separation light.
11. Filter
12. Exposure used, etc.

The analysis chart is a positive record of what you did for your exposure. The final print will show wherein any faults may be. From this information you can improve your pictures. Use it!

CHAPTER 6 / LOADING AND UNLOADING THE CAMERA

Loading a camera means preparing it for picture taking with fresh film. This operation is very simple with all Voigtlander 35mm

cameras. Practice loading and unloading your camera a number of times until you can do it perfectly.

The film which is to be loaded in the camera is packaged in standard 35mm cartridges which are made to uniform dimensions and may be purchased anywhere in the world. These cartridges were designed for loading in your camera in full daylight. However, I do recommend that the loading procedure take place in subdued light. If no subdued light is available, turn your body so that when the camera is in front of you it will be away from the light source and then you can finish your loading operation in this position. The illustrations demonstrate methods for loading the different cameras.

1. When you thread the end of the film into the take-up spool be sure that your leader is secure. If it is not, you may find that at some time during the course of winding the film, the insecurity of the leader upon the spindle may cause it to slip.

2. The important point in loading is to be sure that the perforations engage the sprockets. If this is done, the film automatically aligns itself properly on the take-up spool. It is only necessary to see that the perforations engage the sprockets and the film is centered over the back frame.

3. As most negatives or transparencies exposed in miniature cameras are enlarged for viewing, every precaution must be taken to safeguard the negative from the slightest scratch or pin marks. Even the slightest scratch becomes noticeable and distracting in an enlargement. Since your negatives require such careful treatment, you must start at the beginning by loading the camera correctly.

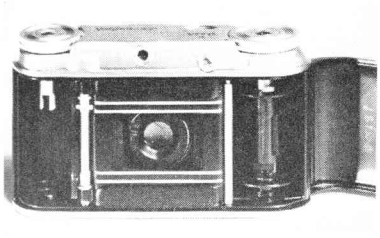
4. To minimize film handling, I recommend that you first place the end of the leader in the take-up spool and then move the magazine back as film is paid out to its place in the take-up chamber. In the Vito II, III and Prominent, the film is wound from left to right; in the Vitessa, from right to left.

5. Be sure that the locking catch of your camera back is fastened securely. If this is not done, your camera back may suddenly fly open at the most inopportune time and spoil all the film which you have exposed with such great pains and considerable expense.

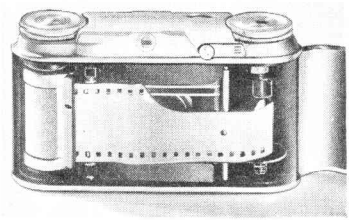
6. After closing the back of your Voigtlander 35mm camera, the equivalent of three frames should be wound off before you start to take pictures. This is done by winding the film until the exposure counter moves to the next number and stops turning. If there is an interlock. an exposure should be made in order to release it. The set and release routine is repeated twice, but instead of releasing the

interlock after the third winding, set your exposure counter at ✳1. The first frame of film is now in picture-taking position.

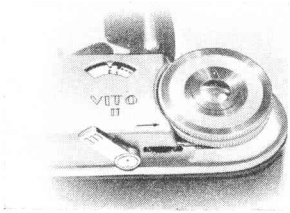
All the Voigtlander 35's feature an automatic double interlock. After the exposure has been made, the shutter release cannot be depressed until the film has been wound to the next exposure. This procedure definitely prevents any unintentional double exposure.



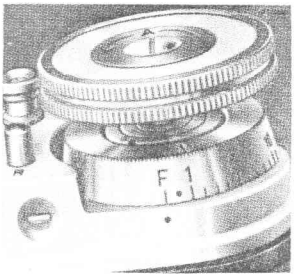
The Vito II open



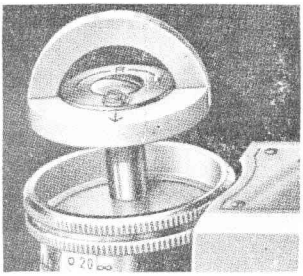
The film inserted



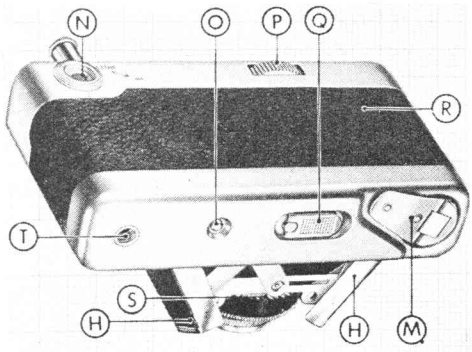
Exposure counter and release lever



Pull up A-knob then set counting drum to "F"



Pull up rewind key to load film



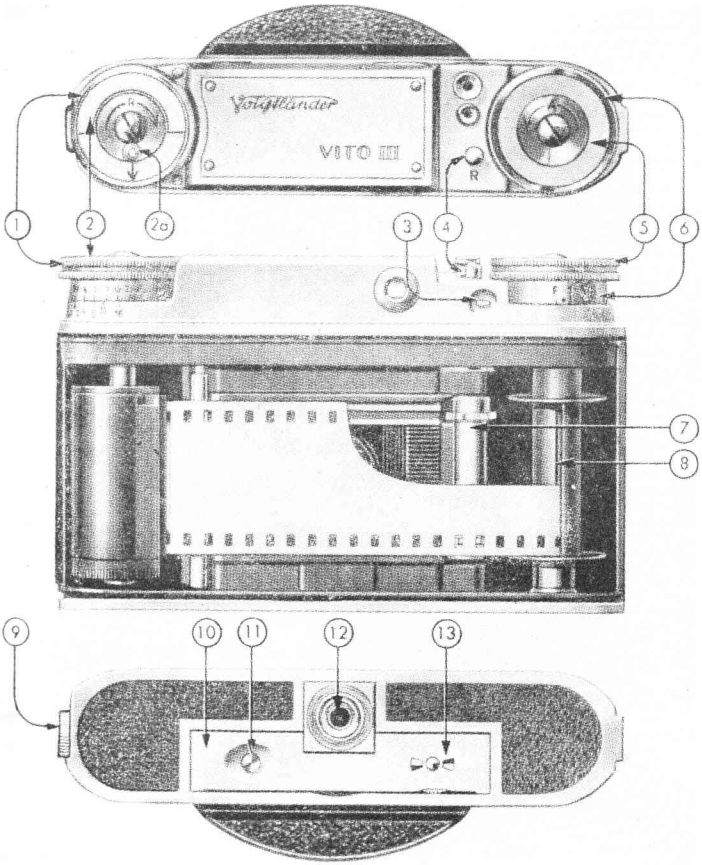
H Front Doors
M Rewind Lever
N Eyepiece of View and Rangefinder with parallax compensation
O Rewind Button
P Milled wheel to set distance
Q Body latch to open camera back
R Camera back
S Sprocket Wheel to set "stops"
T Tripod Bushing

Unloading

You will know that you have made all your exposures when your exposure counter indicates that the last film number has been reached. 35mm film is different from the usual paper-backed roll film spool. There is no paper backing because the extra thickness would add a tremendous bulk to the cartridge. Instead, there is a light trapped cartridge which permits the winding of your film back into the original cartridge after all the exposures have been made so that you may safely take your rewound film out of the camera in daylight.

When you have turned the rewind knob in the indicated direction for some time, you will find that there is some loss of tension and you will hear or feel the end of the film leaving the take-up spool and sliding across the film aperture into the magazine. Another simple way to determine when the film is completely rewound is to observe a moving part on the outside of the camera. For example, on most cameras the winding knob will turn backward while the film is being rewound and will stop turning completely when the end of the film comes off the spool. At this point, you may open the camera safely. If you have torn the film from the spool by winding with too great an effort at the end of the roll, then it will be necessary to go into a dark room, open your camera, remove the cartridge and take it apart so that you can re-secure the last portion of your film to the center core with scotch tape. Then, replace the core in the outer shell of the cartridge and finally snap on both sides. (A similar procedure is used in winding bulk film.) You can then rewind your film by hand, or by replacing and winding the cartridge in the camera. Be sure to wind

or re-wind smoothly. A jerky motion will produce friction, scratches, and cinch marks.



1 Focusing knob
2 Rewind key 2a. Spring release
3 Locking lever
4 Rewind release button
5 Advance knob
6 Exposure counter
7 Counting shaft
8 Take-up spool
9 Camera-back lock
10 Camera stay
11 Press-button to open camera front
12 Tripod socket
13 Indicator for film material.

LOADING:

VITO II

1. Turn winding key until counter locks.
2. Open camera back.
3. Thread film into the slit of the take-up spool.
4. Pay out film, then drop in cartridge chamber.
5. Push back rewind knob.
6. Close chamber back securely.
7. Lift and hold film counter lock release while
8. Turning film counter index to F; then release film, lock. Turn film until it stops.
9. Lift lock lever up and release.
10. Turn winding knob till it stops. Film counter now shows #1.

VITO III and PROMINENT

1. Turn winding key until counter locks.
2. Open camera back.
3. Move knob (2a) on rewind; key springs up.
4. Pull up R-key.
5. Clip film end into take-up spool.
6. Pay out film and drop into cartridge chamber.
7. Give full turn to film transporter to start and wind film. Premature locking of the A key is released by a short pressure on the locking lever.
8. Close camera back.
9. Pull A knob up and turn counting drum to F.
10. Push A knob back and turn it as far as it will go.
11. Depress lock lever and turn A knob. If it stops at 1, you are ready.

11(a) If a red dot shows, then locking lever has to be pressed and the A knob turned to the next stop.

UNLOADING:

1. Set camera for rewinding
   (a) Vito II — Lift and maintain pressure on lock lever; turn R key in direction of the arrow.
   (b) Vito III and Prominent — Press R knob and turn R key.
   (c) Vitessa — Press R knob, at the same time depressing the transport completely. Fold up rewind lever and turn it in the direction of the arrow.
2. Slowly rewind film back into the cartridge.
3. Open back.
4. Remove cartridge.
5. Replace back or prepare for reloading by winding until the exposure counter stops.

VITESSA

1. Push winder down so shutter sets counter lock.
2. Hold camera in left hand and open camera back with your right hand by giving body latch (Q) a quarter turn so that it points to "off" and then pull latch. It will pull the back away from the rest of the body.
3. Move take-up spool until slot appears if it is not in place.
4. Push film end into slot.
5. Lift pressure plate, pay out and place film straight and flat across the film mask, then drop cartridge in its chamber. Fold down pressure plate.
6. Hold pressure plate and cartridge in your left hand and then rotate your hand so that the front (lens side) of the camera faces you.
7. Set film counter on the diamond indicator; set film speed selector.
8. Push camera and body together.
9. Adjust latch or, if necessary, the rewind lever for final fitting together of body and back
10. When closed, turn latch and fold it.
11. Press down and release the transport plunger. Press down and keep pressed down the shutter release with your right hand.
12. Press down and release transport.
13. Let go the shutter release.
14. Press down and release the transport.
15. Pointer of counter is at 0.

UNLOADING

1. Set camera for rewinding
   (a) Vito II — Lift and maintain pressure on lock lever; turn R key in direction of the arrow.
   (b) Vito III and Prominent — Press R knob and turn R key.
   (c) Vitessa — Press R knob, at the same time depressing the transport completely. Fold up rewind lever and turn it in the direction of the arrow.
2. Slowly rewind film back into the cartridge
3. Open back.
4. Remove cartridge.
5. Replace back or prepare for reloading by winding until the exposure counter stops.

Intentional double exposures may be made by pressing the rewind lever while advancing the film transport or winding the R key.

Film Type Indicator Dial

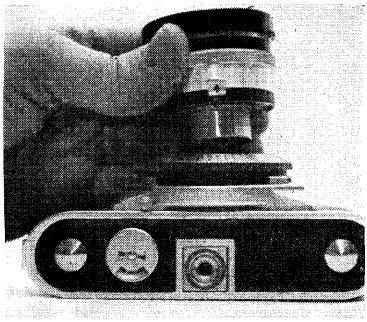
The Vitessa, the Vito III, and the Prominent have a Film Type Indicator Dial. Set this dial for the type of film that is in the camera. It is startling to find out how poor your memory is from week to week and unless you set the indicator, you may be guessing about the film speed or type of film that is currently in your camera. The Vito II does not have a film type indicator, but you can help your memory by tearing the film name from the cartridge carton and placing it inside your carrying case. This will serve as a reminder.

CHAPTER 7 / WIDE-ANGLE AND TELEPHOTO LENSES

Your regular camera lens is known as a prime lens. The lenses of the Vito II, III, and the Vitessa miniature cameras are non-removable and non-interchangeable. A change in focal length is often desirable to produce a change of perspective and a change of pace in your pictures. A wide-angle picture shows a wider area from the same viewpoint than does the prime lens. A telephoto lens on the other hand, while it covers a smaller area, enlarges the size of the subject image. So that while you see less with a telephoto lens, the subject is much larger than usual. The illustrations demonstrate the effects of a wide-angle and a telephoto lens as compared to the area covered by the regular lens.

Although you cannot substitute a different lens for the one that is regularly fixed to these cameras, you may alter its focal length by the use of an auxiliary compound lens. Such a lens is placed over your regular camera lens in order to alter the present focal length for a shorter (wide-angle) or longer (telephoto) effect. These lenses are most effective with any model that has an f/3.5 lens or narrower.

Auxiliary Wide-Angle Lenses. When a multi-element auxiliary lens is placed over your regular lens, there is a considerable increase in the angle of view. While this increase is only moderate, it is at the moment the best that is currently available. Since color transparency film requires exact total film area composition because of the difficulty of enlarging or cropping, this small increase may "tighten" your composition for the exact effect that you want. For color the larger area that can be taken with the wide-angle lens will help the over-all compositional effect. A co-ordinated viewfinder is available and must be



Press button, twist carefully, and lift to remove the Prominent's lens.

used with the wide-angle lens because of the change of view. Instructions for focusing the lens should be typed on a slip of paper and cemented directly to the lens barrel for easy reference.

Auxiliary Telephoto Lenses. It is possible to emphasize the subject by the use of a telephoto lens. It enlarges your subject with the Vito II, III, and the Vitessa but only a small area is included in the picture. The enlargement ratio is approximately 30 per cent which is not a very material increase in image size, but it is the only type of telephoto lens available at the moment. Very often, this slight enlargement will mean the difference that can make a picture unusual. A coordinated telephoto viewfinder mask is available and must be used for your telephoto lens because of the change in the subject size. The construction of the auxiliary compound telephoto or wide-angle lenses is such that your exposure remains the same as if no addition had been made to your regular lens. While no exposure increase is necessary with either lens, it is best to stop down to f/5.6 or f/8 for satisfactory definition and resolution. Within their limitations, these auxiliary compound lenses will definitely alter the focal length of your lens. While these effects are not overpowering, they are helpful because they aid exact composition by efficiently filling the film area with your subject. There remains a definite need for more auxiliary compound lenses which will materially increase the angles over any that are now available.

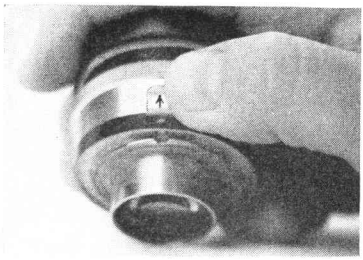
For the best method of taking a series of pictures with these lenses, observe the technique of the motion picture when you next see a movie or are watching television. You will see how the first scene of a play generally establishes the locale. This is usually done with a wide-angle or long distance shot. Once the setting has been established, the atten-

PHOTOGRAPHIC EFFECTS OF	
Wide-angle Lens	*Telephoto Lens*
1. Increases the angle-of-view from the same camera position.	1. Decreases the angle-of-view from the same camera position.
2. Shows a larger amount of total background; each background subject is much smaller.	2. Decreases the total background area but increases the size of each individual subject.
3. Increases the apparent size of foreground subjects; increases the apparent depth of the foreground.	3. Increases the subject size in relationship to the proportions of the background.
4. Shorter focal length increases the depth-of-field at equivalent openings.	4. Increases the working distance separating the subject from the camera.
5. A large image requires a short camera to subject distance.	5. Longer focal length decreases the depth-of-field.
6. Increased depth-of-field allows the use of wider openings for poor light color exposures.	6. Narrow lens openings necessary for increased depth-of-field.
7. Necessary for interiors; or where space is cramped.	7. Needed to bridge space where a camera cannot be set up, e.g. sports, rivers, mountains, etc.

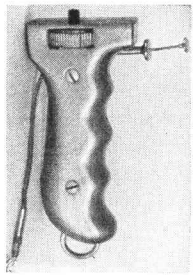
tion is drawn to an area or a group of individuals. For most middle distances, your regular lens may be used. Finally, the center of interest in the scene is established with the use of a close-up or with a telephoto lens. This intermixing of wide-angle, normal and telephoto shots provides the variety and change of pace which make for a story of continuing interest. If you wish to do a story on your town, your industry, or your family, write a short scenario of the important points to be photographed. Then to guide yourself when on location, break down each scene into long distance, medium and close-up shots so that your story will have both direction and pace.

Prime Interchangeable Lens

The Prominent differs from the other Voigtlander 35's in that the lenses are interchangeable. An interchangeable lens is always desirable because a prime lens can generally be better corrected than an auxiliary lens. Two lenses are available, at the moment, with a whole group undergoing design and testing. The two immediately available are the 24mm wide-angle with a phenomenal angle of 87° and the 100mm telephoto with an angle of acceptance of approximately 24°.

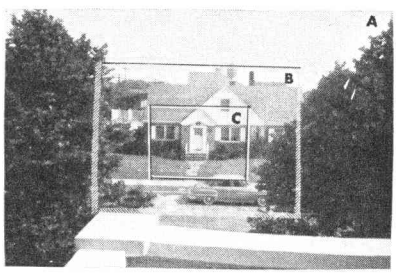


The Prominent's lens removed.



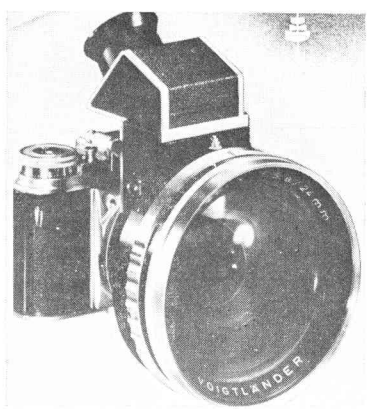
Pistol Grip Release for extension flash.

An auxiliary telephoto lens.



Field of view of the 24, 50, and 100 mm lenses.

The Telemar with the convertible ground-glass focusing eye-piece and Kontur e-type Sportsfinder



The Ultragon with the ortho prism that permits correct vertical and lateral image viewing