

THE
MERCURY II
MANUAL

● YOUR GUIDE
TO BETTER
PICTURE-TAKING

YOUR MERCURY II



Before World War II, American inventive genius had already assumed the photographic leadership of the world. Universal Camera engineers had already designed and produced a challenge to the world's finest candid cameras with the Mercury I.

The advent of World War II created the need for optical and photographic instruments in quantities heretofore thought impossible. Once again American ingenuity rose to the fore and surmounted the seemingly impossible obstacles. Out of these herculean efforts, new skills were developed and advances that would have taken years in peacetime became accepted facts overnight.

During all these war years, Universal Camera Corporation devoted its entire facilities to the manufacture of optical instruments, in quantities never before dreamed of, and to precision standards and tolerances needed to meet the fighting requirements of our Army and Navy. Out of these years of experience in skilled and precise manufacturing has come the Mercury II.

When Universal Camera engineers were asked to design the first postwar candid camera, they took many of the features of the Mercury I and to them added the new knowledge gained during the war years and created the Mercury II — the *first minicamera especially designed for color films.*

Why is the Mercury II Especially Designed for Color?

Good color photography is dependent upon accuracy of shutter, correction of lens and sharpness of the negative. These three important factors were the prime considerations in designing the Mercury II.

The rotary focal plane shutter with its speeds up to 1/1000th of a second was designed to give accuracy and maximum efficiency. From Universal's experience

in the grinding and polishing of lenses and prisms for precision optical instruments, has come your color-corrected anastigmat Mercury II lens.

To assure the sharpness of negatives necessary for good color photography, the old-fashioned ideas of negative size had to be discarded. Universal engineers incorporated in the Mercury, the same size 35 mm. negative as is used for the projection of motion pictures shown in your local theatre.

By using the single-frame size of negative, two major advantages were added to the Mercury II. Because of the film size, it was possible to design a shorter focus lens that gave greater depth of focus at any given aperture, thus assuring sharpness of negative over a much greater area.

The second great advantage was the film economy. In the Mercury II, an 18 exposure roll of color film gives 32 color negatives. The fact that color film is grainless, plus the extreme depth of focus of the Mercury lens, assures excellent results for color projection or the making of enlarged color prints.

Thus, the Mercury II not only is built to give better results with color film but at only a fraction of the cost of the old-fashioned candid cameras.

Compare THESE FEATURES

All metal focal plane shutter.

Accurate shutter speeds to 1/1000th of a second.

Built-in photoflash synchronizer.

Automatic Film Transport,
preventing double exposures.

Tricolor and Hexar 35 mm. Lenses
with great depth of focus.

Interchangeable lenses.

Helical Focusing Mount, with graduations
from 18 inches to infinity.

Automatic exposure counter.

Built-in exposure calculator.

Centralized controls.

Extreme Depth of Focus.

Lightweight Aluminum case, leather covered.

Uses Standard 35 mm. Film Cartridges.

Film Economy — 32 pictures on a standard 18 exposure
roll; 65 pictures on a standard 36 exposure roll.

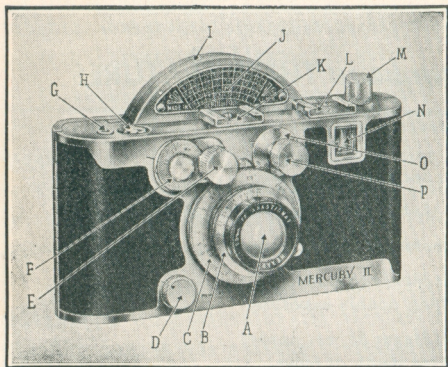


Fig. 1
Front
View

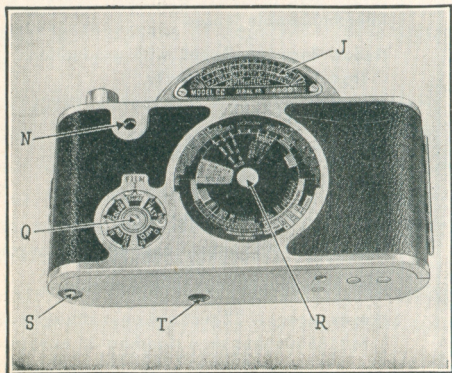


Fig. 2
Rear
View

Study Fig. 1 and Fig. 2 on the opposite page. Familiarize yourself thoroughly with all the features, controls and mechanical parts illustrated. Constant reference to these parts is made throughout the instructions.

- A. Lens.
- B. *f* stop scale.
- C. Focusing Distance Scale.
- D. Rewind Button.
- E. Shutter Wind Knob.
- F. Exposure Counter Dial.
- G. Socket For Cable Release.
- H. Shutter Release Button.
- I. Shutter Cover Housing.
- J. Depth of Focus Table.
- K. Built-in Photoflash Synchronizer Clip
for Photoflash Unit.
- L. Accessory Clip for Exposure Meter,
Range Finder, Telephoto View Finders.
- M. Transport Rewind Knob.
- N. Optical View Finder.
- O. Shutter Speed Dia.
- P. Shutter Speed Knob.
- Q. Filminder.
- R. Exposure Calculator.
- S. Lock Button.
- T. Tripod Socket.

Fig. 5

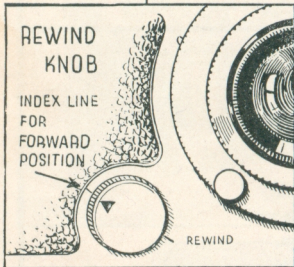
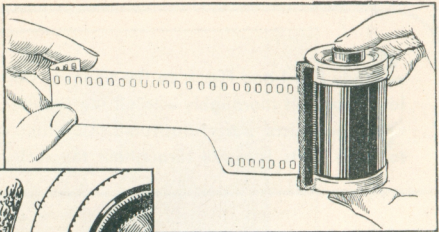
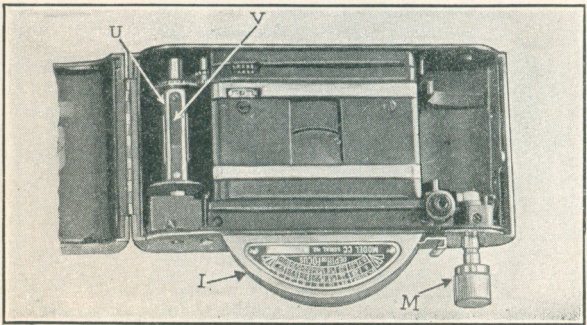


Fig. 3

Fig. 4



Loading

WHEN YOUR MERCURY II camera left the factory, it had already been thoroughly checked and inspected by Universal factory inspectors to the same high, rigid standards that have been maintained for precision war work.

TO PREPARE YOUR CAMERA FOR LOADING

1. Check the Rewind Button (D) to make sure that the arrow is in the forward position. (Fig. 3)
2. Check to make certain that the shutter is fully wound. Turn the shutter wind knob (E) to the right as far as it will go.
3. Set the shutter speed dial (O) to any numbered speed from 20 to 1000 BUT not T or B. The dial position is changed by pressing in and turning the shutter speed knob (P).

The camera is now ready for loading.

LOADING THE CAMERA

Your camera may be loaded with any standard 35 mm. film, color or black and white in 18 or 36 exposure cartridges. The Mercury II has been especially designed for film economy and precision results. Every 18 exposure

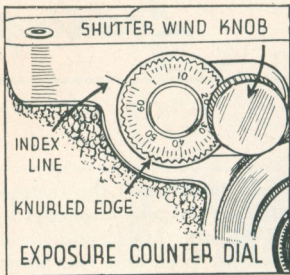


Fig. 8

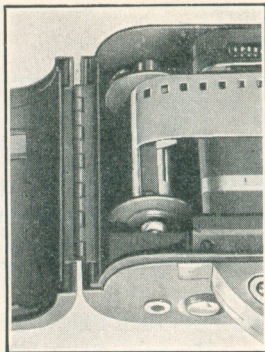
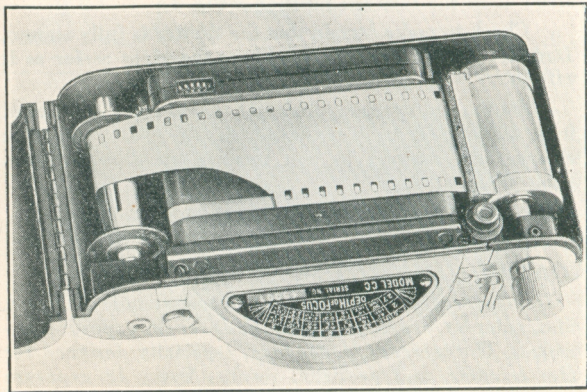


Fig. 6

Fig. 7



cartridge gives you 32 pictures and every 36 exposure cartridge gives you 65 pictures.

1. Open the camera by pressing the lock button (S) in the bottom of the case.

2. For ease in loading, place the camera on a flat surface with the lens down and the shutter cover housing (I) towards you. (Fig. 4)

3. Before inserting the film, turn the take-up spool (U) so that the spring clip (V) is ready to take the leading edge of the film. Fig. 4. (The take-up spool is securely mounted in the camera and cannot be removed but it will turn in either direction by gently rotating the edges.)

4. Withdraw the Rewind Knob (M). (Fig. 4)

5. Hold the film cartridge in the right hand and bend *under* $\frac{1}{2}$ inch of the narrow end of the film making a hook with the emulsion sides of the film facing each other. (Fig. 5).

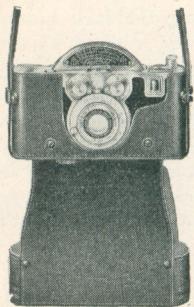
6. Insert the hook of the film under the spring clip of the take-up spool, (Fig. 6) and turn the spool one complete revolution to the left so that the film is securely fastened to the take-up spool. (Fig. 7).

7. Draw the film across the film track and place the cartridge into the chamber. (Fig. 7).

8. Engage the rewind knob (M) into the end of the cartridge by pushing the knob *all the way* in against the camera case. Do not force it in. If it does not go in freely rotate the knob until it goes in all the way.

9. Close the cover.

The film is now ready to be brought into position for the first exposure.



MERCURY II

Eveready Carrying Case

Designed especially for the Mercury II, to protect its mechanism and exterior finish. Permits picture-taking without removing the camera from the case.

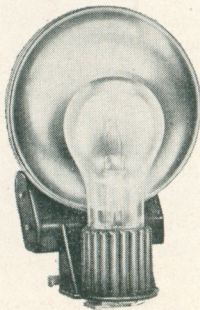
Cat. No. K-23

MERCURY II

Photoflash Unit

With the photoflash unit you can get those "impossible" pictures at night. Slips right on to the clip of the built-in photoflash synchronizer.

Cat. No. M-29



10. The exposure counter dial (F) should be set so that the 65 mark line is opposite the index line. (Fig. 8) If it is not at the 65 line, turn the exposure counter dial in either direction by the outer knurled edge until the desired setting is obtained.

11. Press the release button (H). Again wind the shutter and press the release. Do this four times until the indicator on the exposure counter dial reaches No. 1.

12. You are now ready to take pictures. It is strongly recommended that you read the sections headed "Taking The Picture" and "Know Your Camera" before attempting to take pictures.

UNLOADING

After the exposure counter dial has passed 32 for an eighteen exposure roll or 65 for a thirty six exposure roll, the film has been fully exposed. Turn the rewind button (D) to the right from its original position so that the arrow is now at the rewind position (Fig. 9). Turn the rewind knob (M) for transporting the film in the direction of the arrow until a decrease in tension is noticed and the rewind knob revolves freely. This indicates that the film is now in the original cartridge. Open the cover and withdraw the transport rewind knob (M) permitting the cartridge to be taken out of the camera.

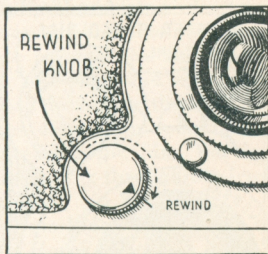


Fig. 9

Taking THE PICTURE

DETERMINING THE EXPOSURE

Good photographs depend upon the proper use of your camera and your understanding of the features that make the Mercury II superior. Proper exposure consists of a related combination of lens opening and shutter speed which are obtained from the exposure calculator, the use of which is explained on Page 17.

SHUTTER SPEED

For general all-round picture-taking a shutter speed of 1/100th of a second may be used. If a constant shutter speed is used, the only adjustment necessary, as light conditions

vary, is a change in the f openings of the lens.

Before setting the shutter speed dial, always have the shutter fully wound as though it were ready for the next picture. To change the setting push in the speed knob (P) and set the desired speed opposite the index line inscribed in the camera body. (Fig. 10 shows the

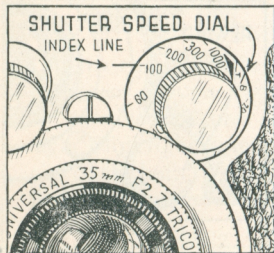


Fig. 10

scale set at 1/100th of a second.) For any speed setting from 1/20th of a second to 1/1000th push in the speed knob and turn in either direction. *CAUTION* — *The speed knob cannot be turned between T and 1/1000th.* The “T” and “B” settings are for longer exposures.

Bulb or “B” is used for exposures of short duration, i.e., from 1/5th second to five seconds. To operate, the shutter release button should be pressed down and held for the entire time of the exposure. Upon its release the shutter will close.

Time or “T” exposure is used for exposure of five seconds or longer. The shutter release button should be pressed once to open the shutter and again to close it. For both the time and bulb operation, the camera should be mounted on a tripod or other firm support. Otherwise movement will be apparent on the finished negative.

LENS SETTING

The Tricolor and Hexar lenses are color corrected anastigmat optical instruments and unless the proper exposure is used, their qualities cannot be fully appreciated.

The *f* opening on the camera may be likened to a window shade that you open and close to regulate the amount of light that reaches the film. As you open and close the lens diaphragm, you will note that the higher the number of the *f* stop used, the smaller the diaphragm opening becomes and therefore less light reaches the film. For instance, at *f*8 half as much light is passing through the lens as when *f*5.6 is used.

The front of the lens mount has markings engraved on it called “stops”. (Fig. 11 shows the Hexar *f*2 lens set at an *f* opening of 8.) The *f* stop scale (B) of the lens is turned in

either direction until the desired f stop opening is aligned with the nearest one of the three indicator lines on the lens dial. Do not try to force the ring beyond its limit of movement. (On the Tricolor $f2.7$ lens, the f stops and indicator are engraved and set at the top of the lens mount.)

FOCUSING

After the shutter speed and f opening have been determined by the use of the calculator, the distance from the camera to the subject being photographed is set on the focusing distance scale (C).

Only a fairly accurate estimate of the distance is required because of the tremendous depth of field obtained by the special construction of the Mercury II which automatically compensates for any slight error. (See depth of field instructions.)

Set the distance desired by turning the focusing distance scale (C) by its knob to line up with the index line on the camera. (Fig. 12 shows the camera set for the subject 25 ft. from the lens.)

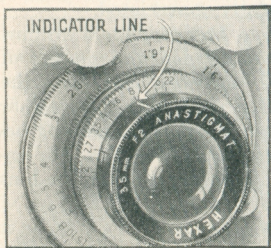


Fig. 11

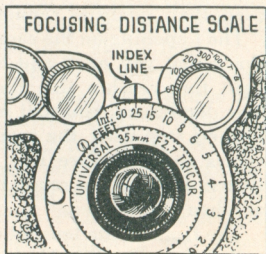


Fig. 12

Know Your Camera

To use the EXPOSURE CALCULATOR

The exposure calculator (R) provides a rapid means of computing proper exposure. It has been designed to integrate the numerous factors which affect exposure. These factors are:

1. Film speed
2. Season of the year
3. Type of Subject
4. Weather conditions
5. Time of day.

The calculator is composed of *three dials*. The bottom dial is fixed. The middle and top dials rotate.

FILM SPEED

Rotate the middle disc so that the Weston speed rating number of the film employed is opposite the letter "N" on the Filter Factor scale on the bottom or fixed disc. (Note setting in lower right hand corner Fig. 19). If a filter is being used, set the number opposite the proper filter factor, 2X or 4X, depending upon the rating of the filter. The Weston speed ratings of the films are available where purchased. This setting is not changed until another type of



FIG 13



FIG 14



FIG 15



FIG 16



FIG 17



FIG 18

film or filter is used. Fig. 19 shows a setting of a film speed of 24 without a filter. Note the same setting is employed for a film rating of 50 with a 2X filter or 100 with a 4X filter.

SEASON OF THE YEAR

Use the winter setting of the dial from October to April, the summer setting from May to September. Note in Fig. 19 that the white lettering on black background marked "Winter" on the top disc is matched to the white lettering for the type of subject on the bottom disc and is used for winter settings. For summer settings use the matched black lettering on the opposite side of the calculator.

TYPE OF SUBJECT

Sky—Sea—Snow

Marine and beach scenes, distant landscapes, snow scenes (Fig. 13)

Landscapes

Landscapes of open country, sport scenes, etc. (Fig. 14)

Street Scenes

The average scene on a street, in a backyard, and other places that

TYPE OF SUBJECT

are not open landscape (Fig. 15)

Close-ups

Portraits (Fig. 16)

Open Shade

Pictures in open shade, not the shade of a building, or tall trees, etc. (Fig. 17)

Deep Woods

Subjects under poor light, as in deep woods (Fig. 18)

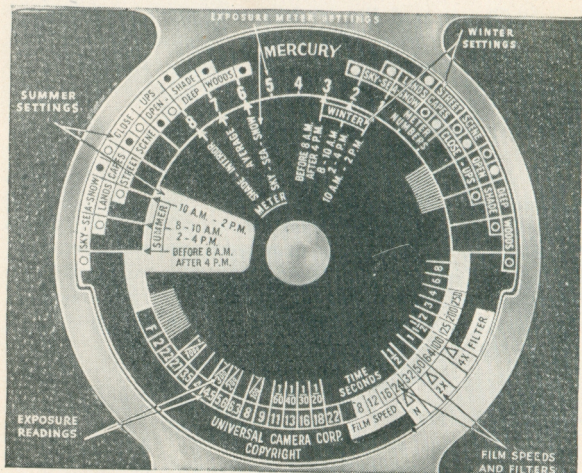


Fig. 19

WEATHER CONDITIONS

Each subject classification on the lower dial is bordered by a small white circle on the left, and a black one on the right. Each subject classification is sub-divided by three heavy lines. The line next to the white circle is used for clear sunlight, the middle one for hazy weather, and the one nearest the black circle, for cloudy weather.

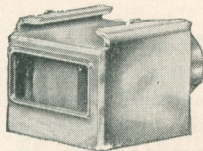
The upper dial should be rotated until the time of day arrow is directly on the heavy line denoting type of scene and weather conditions. (Fig. 19 shows a setting for a landscape on a hazy day in Summer between 10 A.M. and 2 P.M.)

All settings have now been made and the readings of shutter speeds and lens openings can now be obtained from the lower left portion of the calculator by reading the matched f opening on the middle scale and the shutter speeds on the upper scale. *All readings are correct exposures*, but the one for the type of subject to be taken is at the discretion of the photographer. An average speed for general all-round pictures is 1/100th of a second. (Fig. 19 shows an opening of $f8$ for 1/100th of a second.) For rapidly moving objects 1/1000th of a second shutter speed is used; the reading on the calculator (Fig. 19) shows that with this speed the correct lens opening is $f2.7$.

To make sure that you thoroughly understand the use of the calculator, let us consider another example of the operation of the calculator: a close-up on a cloudy day in winter using a film speed of 100, no filter, at 2 to 4 P.M. This may be a portrait of a baby, etc. Set the middle scale with #100 opposite "N". Set the upper scale so that the middle arrow of the winter scale is opposite the line nearest the black circle of close-up settings. The reading in lower left should then show a setting of $f2.7$ at 100 or $f5.6$ at 1/30th.

MERCURY II EXPOSURE METER

A highly accurate, easy to use, extinction type exposure meter. When used with the Mercury II calculator, it takes all the guesswork out of photography.



Cat. No. M-30

The Optical VIEW FINDER

The scene as observed through the optical view finder (N) is exactly the same as that which will appear on the negative. However, for close-ups (distances of 5 ft. or

closer) the object should not be centered but framed as shown in Fig. 20. The two arrows on the right and bottom of the view finder should point towards the center of subject. This will give perfect correc-

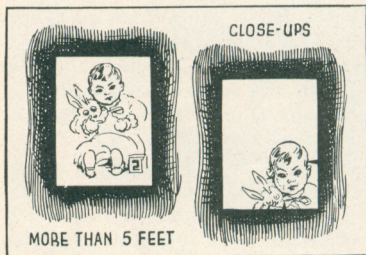


Fig. 20

tion for close-ups. It is necessary to make this correction because of the difference in view of the subject as seen by the taking lens and the view finder.

Shutter WINDING KNOB

The shutter winding knob (E) must be turned to the right as far as it will go after each exposure. This will automatically reset the shutter speed to the same setting as used for the previous exposure. It also transports the film, preventing double exposure; and automatically advances the exposure counter dial.

FILTERS

Add beauty and depth to your black and white pictures by the proper use of filters.

YELLOW 2X FILTER — A light yellow filter for true tonal rendition on panchromatic film. It reduces atmospheric haze slightly, bringing distant objects into sharper relief.

YELLOW 4X FILTER — The most popular filter available for general use because its adaptations are very broad. Gives natural relative tone values for all colors.

RED FILTER — For dramatic effects. Increases contrast in detail in subjects containing yellow or brown. Cuts haze. Improves modeling and texture of subjects under blue sky.

GREEN FILTER — Deepens contrast. For use where green colors are dominant in the subject, such as woods, groves, along streams, etc.

POLARIZED FILTER — Removes reflections and glare from shiny and glossy surfaces, such as plate glass windows or water. Deeper-hued skies than normally possible can be obtained on color film.

Available for f3.5, f2.7 and f2 lenses. Specify lens when ordering.

RELEASE BUTTON *and* CABLE RELEASE

During the actual picture-taking, the camera should be held steady and the shutter release button (H) squeezed gently. This will avoid movement of the camera during exposure period.

The release button will not operate unless the shutter winding knob is fully wound or if the rewind button is not in a forward position. The cable release should be employed when slow speeds are used, for example, below 1/100th of a second, and time and bulb. The standard Universal or square thread type release is recommended.

Rewind BUTTON

Except when actually rewinding film, the rewind button (D) should be in a forward position. (Fig. 3.) Otherwise it will not be possible to release the shutter.

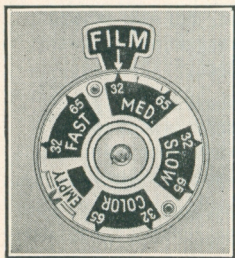


Fig. 21

Filminder

Turn the filminder (Q) by either of the two small knobs to the type and number of exposures of the film loaded in the camera. For example, the illustration (Fig. 21) shows the filminder set for a medium speed film of 32 exposures. This is a convenient check as to

whether there is film in the camera and the type when the camera has not been used for some time.

Tripod SOCKET

The tripod socket (T) has a standard $\frac{1}{4}$ -20 thread and may be used to mount the camera on any tripod or tilting head having this thread.

Depth of FOCUS

The advanced design of the Mercury II permits the use of 35 mm. focal length lenses which give much greater depth of field than the usual candid camera lenses.

On the back and front of the shutter housing, there are two tables (J) indicating the depth of focus as obtained with the Mercury Tricolor and Hexar lenses.

These scales show graphically the distances of sharp focus at various lens openings and distance settings. The f numbers of some of the lens openings are indicated in the first column on the left. Across the top of the scale are generally used distance settings.

For instance, for a lens setting of $f/5.6$ and a distance

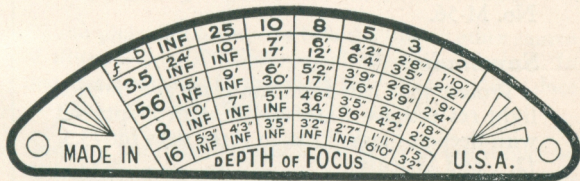


Fig. 22

setting of 10 feet, find the $f5.6$ setting in the first column to the left and read across the table until you come to the box under the distance setting of 10 ft. (in this case, the third one from the left — Fig. 22). The table shows that your picture is sharp for all objects from 6 ft. to 30 ft. from the camera lens. This wide latitude, an exclusive standard equipment feature with your Mercury II enables you to estimate your distance for focusing without the need for any supplementary attachments and assures you of “overall — sharp pictures.”

Accessories for the **MERCURY II**

Telephoto Lenses

Interchangeable telephoto lenses, . . . a “must” for thrilling long shots and sports events, ideal for portrait work. Send for catalog.

Masks

For mounting your color transparencies in standard 2" x 2" slides. 50 to a package. Cat. No. M-56.

Sunshades

Protect your lens from sun glare and interior light reflections. Carefully designed, sprayed with deepest black flock. In three sizes for $f3.5$, $f2.7$, and $f2$ lenses.

REMINDERS

1. Keep the lens and filters clean by wiping occasionally with lens tissue or a very soft lintless cloth.
2. Load and unload the film in subdued light.
3. Determine the proper exposure by the use of the exposure calculator, and set the lens, shutter speed, and distance before taking the picture.
4. Wind the shutter after each scene.
5. Hold the camera steady at all times. Use a tripod for slow shutter speeds.
6. Best results with color film will be obtained with the light coming directly from behind the camera.
7. In photographing fast action, it is best not to have the subject move directly across the field of view, but to approach or move away from the camera at an angle.
8. Do not photograph directly into the sun or other source of illumination UNLESS special effects are desired. In that case, care must be exercised that direct sunlight does not strike the lens itself.
9. Don't oil the camera. After a few years of use it may be desirable to return the camera to us for cleaning, inspection and oiling. This is done at a nominal charge.

Guarantee and Service POLICY

Your Mercury II is guaranteed against defects in workmanship and material for a period of one year, provided the guarantee card which accompanies the camera is filled out and mailed within 10 days after purchase.

After the expiration of the guarantee period or in the event that the camera has been mishandled during its guarantee period, a reasonable charge for parts and labor will be made.

If the camera is tampered with at any time, the guarantee becomes null and void.

Should you find, at any time, that your camera is not operating satisfactorily, refer to the instructions to be sure that you have followed them carefully. If you are certain that all instructions have been followed, pack your camera and lens carefully, and send them to our nearest Service Station. If a partly exposed film has any bearing on your problem, leave it in the camera. Developed film having any relation to your complaint should also be included in your shipment.

A letter fully describing the difficulty encountered should be fastened to the outside of the package, or sent separately to arrive ahead of the camera.

Your Mercury II is a precision instrument and should be handled accordingly. We designed and built it; let US make any adjustment that might be necessary.

THE GUARANTEE IS IN EFFECT ONLY IF REPAIRS ARE MADE BY OUR SERVICE STATION. UNDER NO CIRCUMSTANCES ATTEMPT TO REPAIR THE CAMERA YOURSELF OR ALLOW ANYONE ELSE TO DO SO.