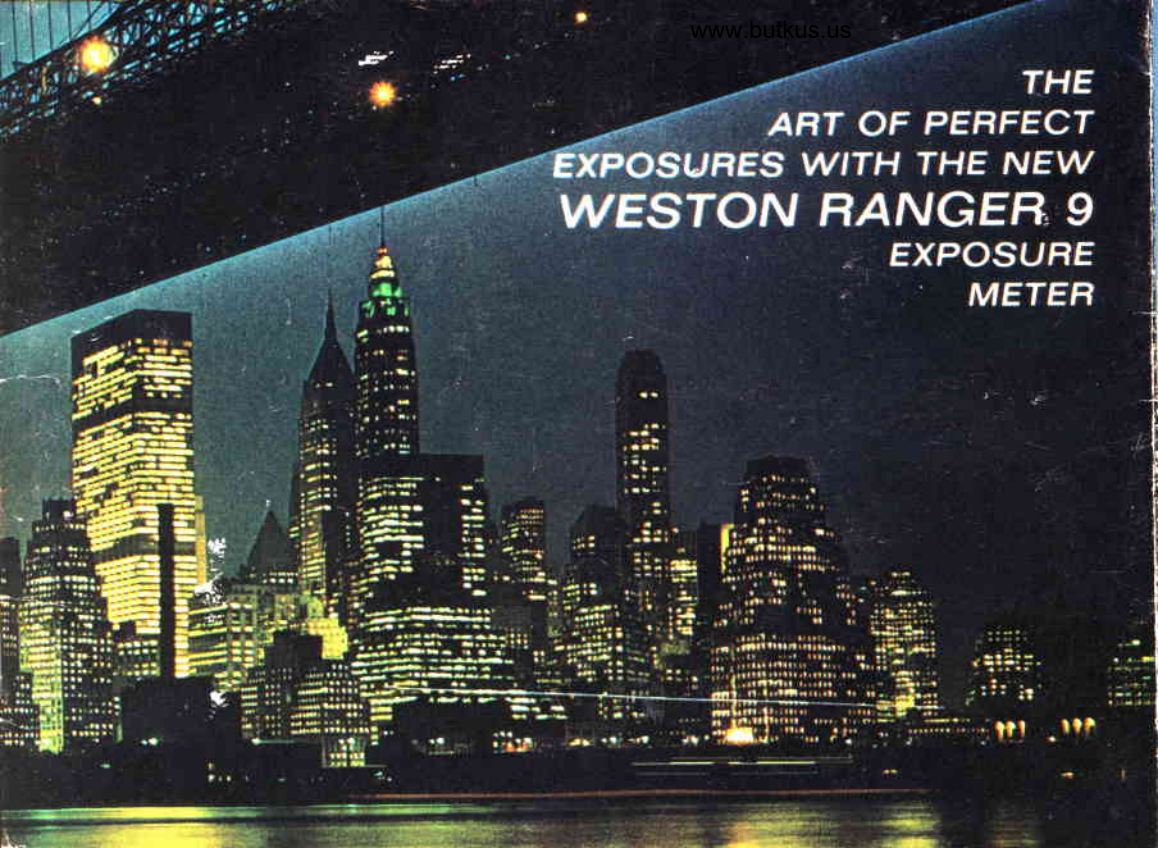
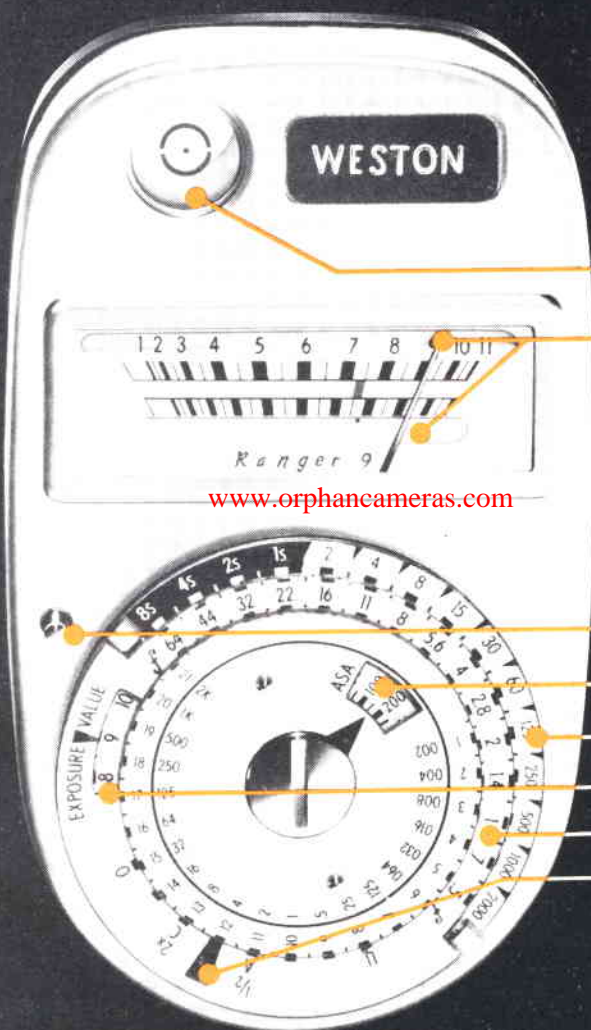


THE
ART OF PERFECT
EXPOSURES WITH THE NEW
WESTON RANGER 9
EXPOSURE
METER



always tell the meter what film speed you are using. Simply note the ASA number of the film, depress the ASA LOCK BUTTON, set the appropriate number in the ASA window and release the button. You are now ready to take readings and you can forget this setting until you change to a film with a different ASA rating.



www.orphancameras.com

VIEWFINDER

LIGHT SCALES

ON-OFF BUTTON

RANGE SELECTOR

Notice that your Ranger 9 has two light scales. The RANGE SELECTOR enables you to move quickly from one range to the other.

ASA LOCK BUTTON

ASA SETTINGS

SHUTTER SPEEDS

EXPOSURE VALUE SETTINGS

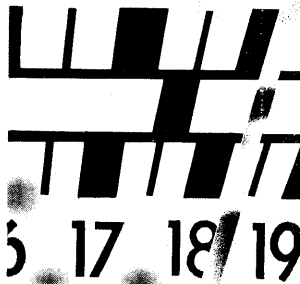
f/STOPS

ARROW

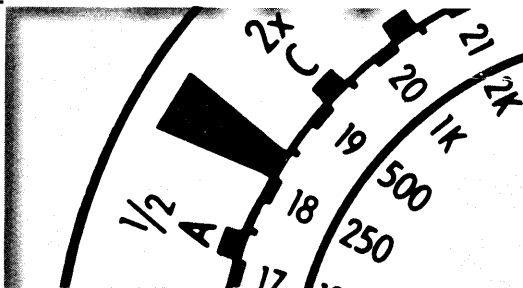
you

need not have a photographic memory to use the new Weston Ranger 9. Remember one simple word and you will unerringly cover ninety per cent of the situations you are apt to encounter. The word is ART. Now open this flap, and see how easy it is to use the Ranger 9, best exposure meter Weston ever made.

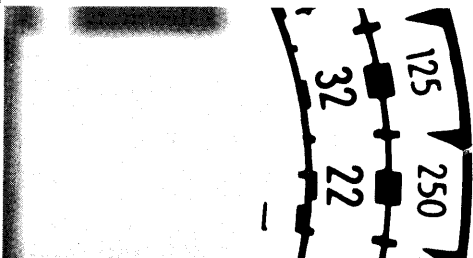
1. aim the meter



2. rotate the arrow



3. transfer the settings
to your camera



a


When you look through the viewfinder, you will see the subject as shown here. The meter "sees" exactly what you see inside that circular area. Now, firmly press the ON-OFF POINTER BUTTON. This permits the pointer to swing to the correct light reading. Release the button and the pointer will remain locked at that position.

r

Rotate the arrow until it is aligned with the same number indicated by the pointer—in this case, slightly over 18.

t

Use any combination of speed and f-stop values required by prevailing circumstances. For example, if you must stop action at a sporting event, you may decide to shoot at 1/1000 second; the corresponding f-stop in this instance, is f-11. Or, if the scene requires a maximum depth of focus, you may use f-22 at 1/250 second. It's that easy! For the fine points, see page 22.



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I have no connection with any camera company

On-line camera manual library

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technique

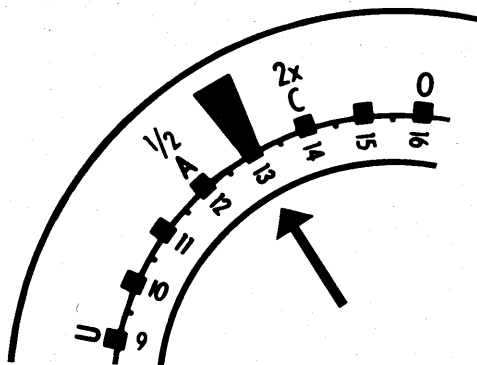
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brightness range technique

This is the most useful method for scenes which have a wide range of light values, as for example, in this scene. Take two readings. One for the high value, the other for the low value. Pick a value half way between the two, and proceed with your exposure in the normal manner. For example, if the two readings are 10 and 16, rotate the arrow to 13.

substitute readings

Quite often you will want to make a portrait or candid shot without disturbing the subject. Use the palm of your hand as a substitute for the subject's face. This method is also useful if, for any reason, the subject is not accessible. Similarly, you can use nearby trees as a substitute for distant trees, etc. To get the correct reading, use the ART procedure except when working with flesh tones. In that case, use the C position on the dial instead of the arrow.

INTERCHANGEABLE CALCULATORS—permit easy replacement with Ansel Adams Zone Dial.

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Ranger 9 features

Ranger 9 features

POINTER LOCK ON-OFF BUTTON—gives meter a photographic memory, locks pointer at correct light reading without necessity of holding finger on button.

EITHER REFLECTED OR INCIDENT LIGHT MEASUREMENTS—converter available for incident light measurements.

ASA FILM SPEED LOCK—prevents accidental change in ASA setting.

BATTERY CHECK—if pointer fails to reach red line, replace batteries. For your convenience, Ranger 9 is designed to take either of two major types of batteries.

COIN SLOTS—for convenience in replacing batteries and calculator.

AMERICAN MADE FOR QUALITY AND DEPENDABILITY



density control—U and O black and white film

Black and white film has a range within which it reproduces the brightness of objects in tones of grey from white to black. If you know these limits you can expose so that the negative has the desired over-all density. The U and O positions on the Ranger 9 control dial show the limits for correct exposure of black and white film. When a meter reading is taken from the camera position, the reading obtained is the average brightness of the whole scene. In this illustration, the reading is 13, but close-up readings will produce 10 and 16. When we set the arrow at 13, it becomes evident that the 10 and 16 values are well within the U and O positions. Objects having a brightness value outside of U and O positions will be under or over exposed.



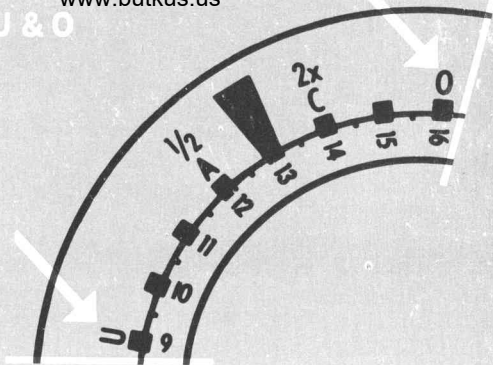
working in extremely low light levels

The O position is ideal for black and white pictures taken in extremely low light. By taking a close-up reading of the brightest object in the scene, and setting the O position at the corresponding value on the light scale of the exposure control dial, correct exposure will be given to all areas in the scene which have brightness values corresponding to the range covered by the U and O positions. Occasionally, a backlighted or contrasty scene exceeds even the wide acceptance range of black and white film. In this event, the exposure can be keyed to that portion of the scene—either the shadows or highlights, whichever are most important—by placing the U or O opposite the darkest or brightest reading respectively.

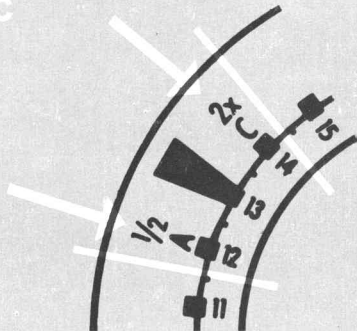
density control—A and C color film

The A and C positions on the exposure control dial represent a brightness ratio of 4 to 1 and can be of great value in color work. Attempt to have the colors of interest fall between the A and C positions for most faithful rendering. Although most color films have a range or latitude which exceeds this ratio, if these colors fall within this range, you can be assured that the remainder of the scene will be properly exposed. When using black and white film, the A is used to indicate absence of contrast, and C to indicate contrast. The A provides a convenient way of halving normal exposure for flat scenes such as landscapes in which there is poor contrast between high-lights and shadows. The C provides double normal exposure as indicated by the 2X, and is used for scenes of very high contrast such as back-lighted subjects.

U & O



A & C

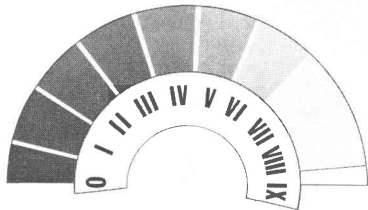


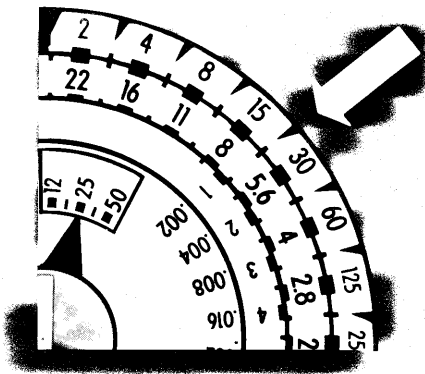
Incident light readings

Incident light is the light which falls on the subject—as opposed to reflected light which arrives at the camera's lens. The Ranger 9 takes both types of readings, although reflected light is preferable in the majority of cases. For certain types of photography such as copy work, incident light readings may be found convenient.

The Ranger 9 is converted to incident light readings by attaching the Weston Invercone as shown. With the Invercone in place, stand at the subject to be photographed and point the meter at the camera. Otherwise the procedure is the same as with reflected light readings.

Ansel Adams Zone System-Special calculator for the Ansel Adams famous zone system will be available as an accessory.





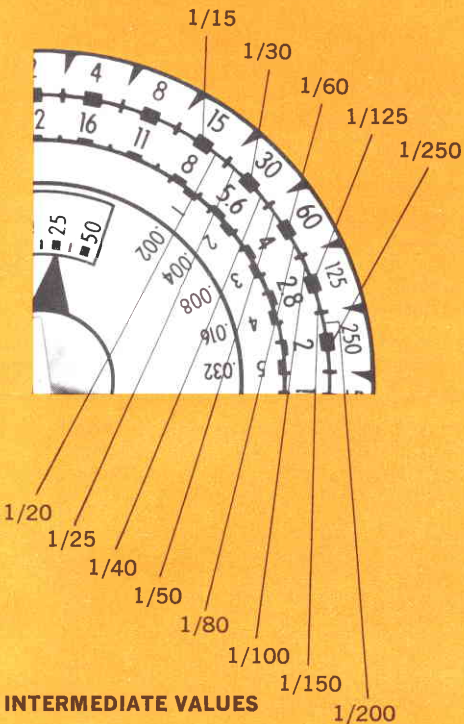
FPS SHUTTER SPEEDS IN SECONDS

	(1)	(2)	(3)
8	1/15	1/20	1/25
12	1/20	1/30	1/40
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24	1/40	1/60	1/80
32	1/60	1/80	1/100
48	1/100	1/125	1/150
64	1/125	1/150	1/200

movies

Any of the techniques described for determining exposures on still subjects can also be used for movies. First, determine the exposure index of the film to be used from the manufacturer's data sheet and set this number in the EXPOSURE INDEX WINDOW. From your camera booklet determine your camera's shutter speed which, for the purpose of illustration, we will assume to be 1/30 second. Having made your exposure reading in the customary manner, you will find the correct f-stop opposite the 1/30 second value (in this case, f 5.6). If your camera shoots at 16 frames per second, no further adjustments are required. For cameras which operate at other frame speeds, consult table.

For example, find the shutter speed at 16 FPS for your camera from your camera instruction book—say, for example, 1/30 at 16 FPS as underlined. The required shutter speed for different FPS speeds will be found in the same column.

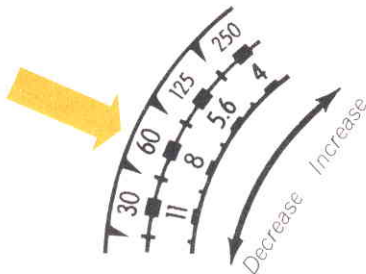


increasing or decreasing exposure

For special effects, or under unusual lighting conditions, it may be desirable to increase or decrease the indicated exposure. Since the *f*-stop scale markings are one full *f*-stop apart, the exposure can be increased one full *f*-stop by turning the outer control dial to the next lower number. To decrease the exposure, turn the dial to the next higher number. For example:

Increase one *f*-stop, 1/60 sec., *f*/5.6

Decrease one *f*-stop, 1/60 sec., *f*/11



exposure for special effects

SNOW, BEACH AND WATER SCENES—Take readings of the brightest and darkest objects and use the f /stop midway between or take a reading from the palm of your hand and use the "C" position. Most appealing snow textures occur when the scene is back-lighted or cross-lighted.

COPY WORK—When copying pages of a book or photographs in black and white or color, take a reading from a white card placed over the subject. Divide the exposure index by five and set this value in the Exposure Index window. Point the arrow at the light reading obtained and select the camera settings as usual.

TELEVISION—Adjust the television screen for contrasty black and whites. Place the camera on a tripod, set the shutter at $1/25$ second and focus on the lines across the screen. Dim the room lights. Take a close-up average reading holding the meter about six inches from the screen. Set the meter arrow at this reading and select the camera settings in the usual manner.

AERIAL PICTURES—To prevent the sky from inflating the reading, aim the meter downward toward the ground. In general, below 1,000 feet use the meter reading indicated; from 1,000 to 2,000 feet stop down $1/3$ f /stop; from 2,000 to 4,000 feet close down $1/2$ f /stop; above 4,000 feet close the camera aperture one full stop from the reading. Use a Skylight Filter with daylight color film (no exposure correction).

OVERCAST SCENES frequently lack contrast due to diffused light and absence of shadows. In such situations, black and white pictures can be improved by using the "A" position on the meter rather than the arrow when scene brightness is measured from the camera.

KEY AND FILL LIGHTS—For normal results in studio photography, the lighting contrast range should be limited to 8:1 for color, and 64:1 for black and white. This means that the key light for color should produce no more than 8 times the light falling on the subject from the fill lights, and for black and white the key light should be less than 64 times the fill light.

CONTRASTY SCENES—Occasionally, scenes metered from the camera position will be exces-

sively contrasty. Exposure for black and white pictures can be improved by doubling the exposure indicated by placing the "C" position opposite the brightness reading. Remember, "C" stands for contrast, so use the "C" position for contrasty pictures.

ABSENCE OF CONTRAST—For black and white scenes with little or no contrast, set the "A" on the meter at the reading obtained. This will halve the exposure, give a better print. Remember, "A" stands for absence of contrast.

FLASH OUTDOORS can be used to illuminate shadows, especially of backlighted subjects. For best results, use the flash as a fill-in, secondary source only! Use blue bulbs with daylight color film. Check the flash lamp carton and find the guide number. Aim the meter at the scene and

determine the f /stop. Now divide the flash guide number by the f /stop number to get the proper flash distance from the subject. This will provide a 2 to 1 ratio, with the sunlight being twice as strong as the flash.

EXTENDED BELLOWS—Where the subject-to-lens distance is less than 8 times the focal length of the lens, a corrective shutter speed must be computed. In this computation, if the focal length of the lens is given in millimeters, convert it to inches by dividing the focal length by 25 (1 inch = 25mm).

EXAMPLE: Assume your lens has a focal length of 8", and you are shooting at a shutter speed of 1/100 second at f /5.6. Using the f /stop numbers as focal length numbers (take f /8 to be a focal length of 8"), place the 8 on the f /stop scale above the 1/100 second shutter speed.

Measure the distance of the bellows extension (lens-to-film distance). Assume this distance to be 16". Now look on the f /stop scale and find the number 16 and directly below on the shutter speed scale will be found 1/25 second. The new shutter speed (1/25) should be used with the f /stop selected previously (f /5.6). Align these two values on the meter dial and any of the exposure combinations aligned may be used, i.e., 1/50 sec., f /4; 1/100 sec., f /2.8, etc.

MEASURING ROOM ILLUMINATION—To determine the footcandles of light falling on any surface such as a writing desk or work bench, take a reading from a piece of white paper lying on the surface you want to measure. Move red arrow to that light reading. The candles per square foot measurement will be found opposite that number. For example, if the light reading is 11, move red arrow to 11 on the

calculator dial. The candles per square foot equivalent will be found opposite this number. Multiplying the candles per square foot by 4 gives approximate footcandles; when the Invercone is used the multiplying factor is 25.

a working team

It is possible that slight errors in camera shutter speeds, lens calibrations as well as exposure meters may be additive and result in consistently over- or under-exposure.

Your camera and exposure meter should be tested together as a working team by making trial exposures of the same scene at different exposure indexes to determine if any compensation is necessary.

If your pictures indicate equipment errors change the listed exposure indexes, lowering them if consistently underexposed, and raising them if overexposed.

zero corrector

Check the position of the meter pointer occasionally to be sure it returns to zero when all light is excluded from the photo-conductive cell. Using the high scale, cover cell completely and turn the zero corrector until the pointer is directly over zero on the light scale.

care of your meter

Normal temperatures and humidity will not harm the meter but temperatures in excess of 130°F (which you may find in the glove compartment of a car) may affect the meter's accuracy.



when you change your battery

When replacing the battery, keep plus (+) terminal down, negative (-) terminal uppermost . . . as shown here. Use battery type PX 14 or two PX 13's, available from any camera dealer. Type PX 13's require use of fiber adapter ring as shown to prevent excessive play in chamber.

LEATHER CASE—equipped with snaps to permit easy removal of flaps.

repair services

Your Ranger 9 meter is ruggedized to give you many years of accurate and dependable service. However, should it be damaged and fail to operate, return it to your dealer or, if not convenient, send it directly to:

*WESTON INSTRUMENTS, INC.,
EXPOSURE METER SERVICE DIVISION
614 FRELINGHUYSEN AVE.
NEWARK, N.J. 07114*

Attach an identification tag clearly showing your name and address. Careful packing is important to prevent further damage during shipment. To avoid delays in handling please do not send instruction books, carrying cases and other accessories with the meter.

CELL

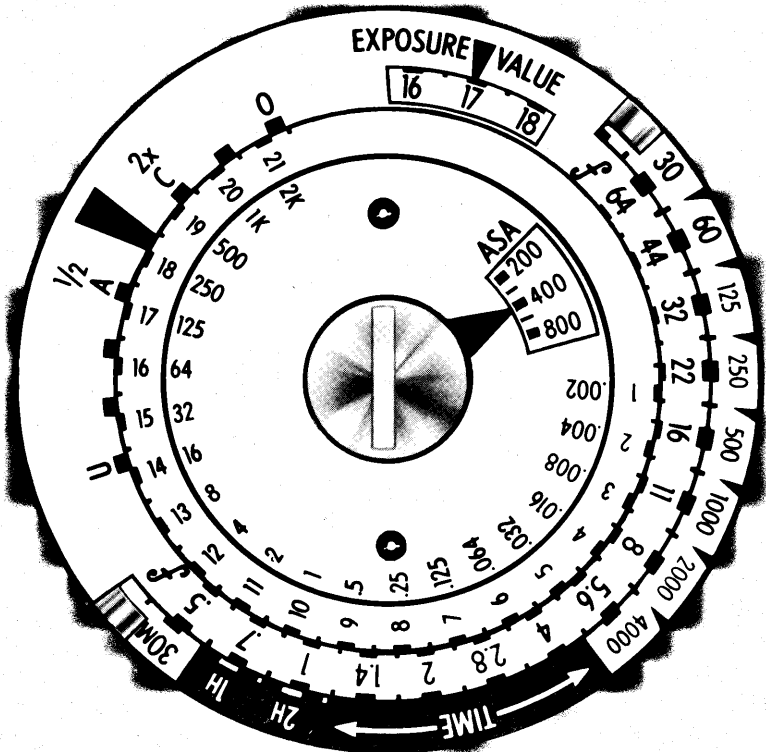
BATTERY CHECK

ZERO CORRECTOR

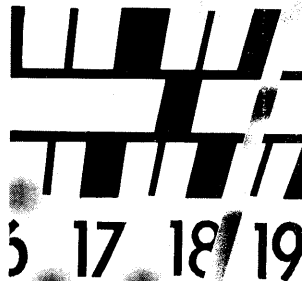
BATTERY CHAMBER COVER

NECK STRAP ATTACHMENT

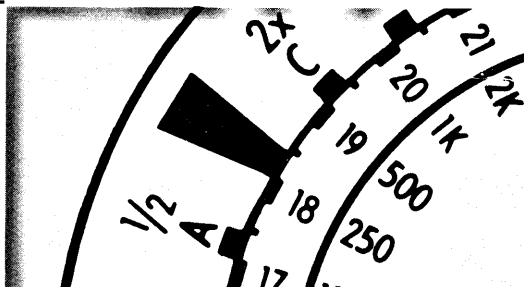




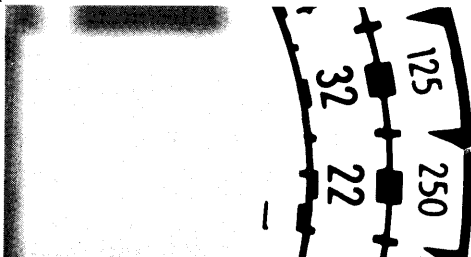
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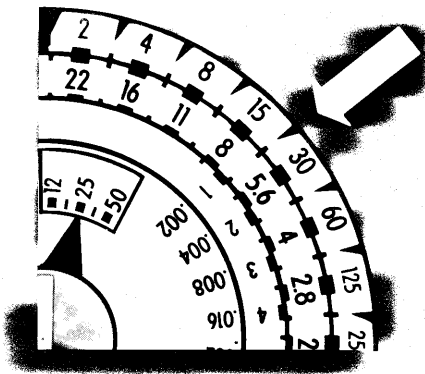
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