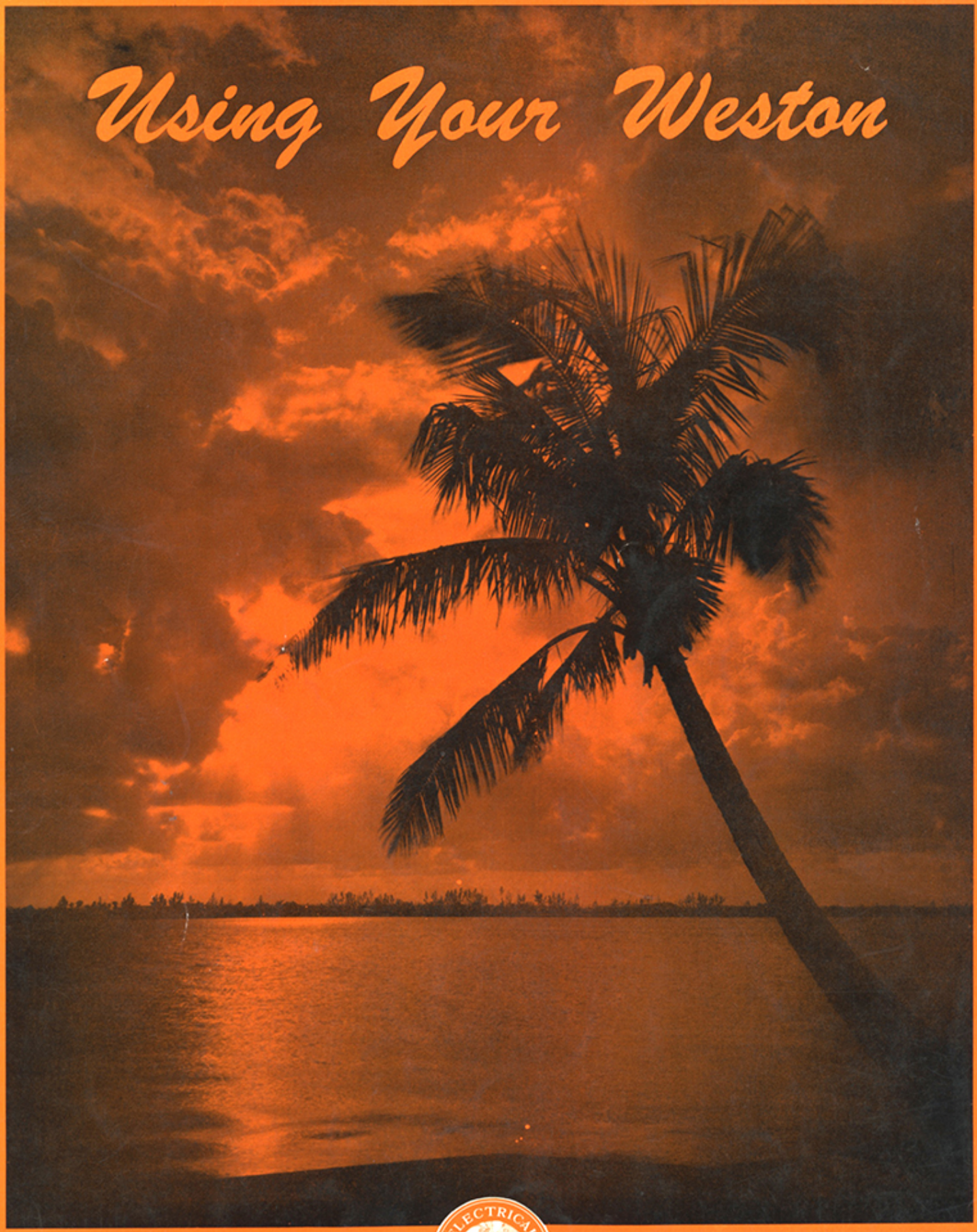
Using Your Weston



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Using Your Weston

WESTON ELECTRICAL INSTRUMENT CORPORATION
NEWARK 5, NEW JERSEY

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CHAPTER I

Whatever the photograph; be it an artistic salon print or a snapshot of son, Joe; the picture is the product of the photographic process. This process involves a number of steps exposure development and printing. Good pictures result only when all of these steps are done correctly. Exposure alone does not make the picture any more than development or printing alone can do it. Some correction can be made if the negative is developed incorrectly, and if the printing is bad, it can be repeated until the desired result is attained. But exposure is irreparable, either it's right the first time, or—no picture!

What is exposure? What makes it such a critical thing? And how is the problem of correct exposure solved? Well, exposure is the amount of light which falls on the sensitive film multiplied by the length of time the light acts on the film. When this product is correct for the particular film in use, correct exposure occurs. That is, all objects in the scene are reproduced on the film in varying tones and the various objects of different brightness have different tones. Two very dark objects of different brightness will be rendered as two different tones just as two different bright ones will be different on the negative. And all those between will also be rendered differently In other words, correct exposure results in a separation of the different objects in the scene when reproduced on film.

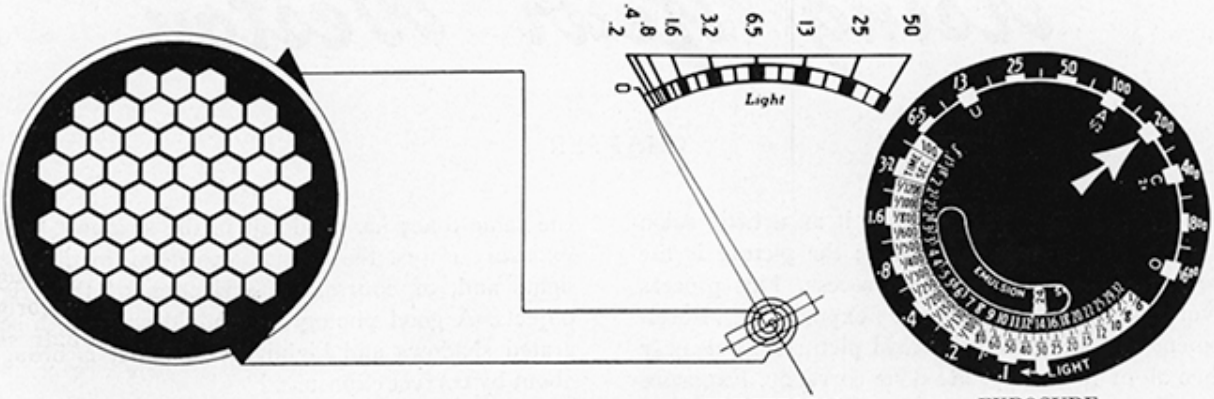
When the film is underexposed there will be no separation of the dark objects, and they will all be the same tone; i.e. no detail in the shadows. Overexposure is just the reverse—no detail in the highlights and, of course, no separation of the bright objects. A good photograph should show both separated shadows and highlights and that is brought about by correct exposure.

It is perfectly obvious to even the non-photographer that light varies both indoors and out. Some days are dark, some bright; some rooms are brilliantly illuminated while others are dark enough to enable everyone to bark their shins on Junior's toys. Since the light reflected from the scene is the light which will fall on the film, some camera control is necessary to compensate for changing scene light. This camera control is found in the f/stop and shutter speed settings the former controls the amount of light, and the latter the length of time the light acts on the film. The product of the two is exposure.

So it is easily possible to obtain correct exposure even though scene light intensities are not always the same. The choice of the proper f/stop and shutter speed will essentially compensate for any light condition. But which f/stop, which shutter speed for a given scene? If we wish to be accurate in this important step of exposure, we must measure the light reflected from the scene, for this is the light for which we are to compensate. And this is where the exposure meter comes in. The exposure meter is essentially a light measuring instrument, a device to measure reflected light or brightness. By adding an exposure guide dial to convert light values to camera settings, the light meter becomes an Exposure Meter

The Weston Junior Meter

The Weston Universal Meter



The Elements of a Universal Meter

The use of an exposure meter is no more a guarantee of magnificent photographs than the use of a good camera or good film. These things are the tools which the photographer uses, and when he uses them correctly he obtains correspondingly good results. Now, what is the meter and how should it be used?

How the Meter Is Constructed

An Exposure Meter is composed of three main assemblies the photoelectric cell the electrical measuring instrument and the exposure guide dial. The cell is merely a coated metal disc of such a composition and so treated that it transforms light energy directly into electrical energy. In front of the cell is a limiting baffle which controls the angle of view through which light will fall on the cell. This angle is known as the "acceptance angle"

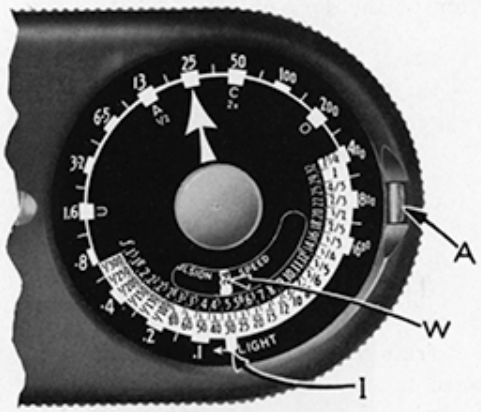
Connected electrically to the cell is an electrical instrument which measures the current generated by the cell. The scale of the instrument is marked in light values for light is the thing in which the photographer is interested, and that is what is really measured. The exposure guide dial is a sort of simplified circular slide rule for converting the light measured into the camera settings which should be used. Provision is also made to use different films through the medium of a film speed scale.

Film Speeds

The first step in using the meter is to set the film speed rating in the Exposure Guide Dial window provided for that purpose. The inner dial should be rotated until the proper speed number appears depress the lever or button when turning the dial. There are two numbers for each film, one for daylight and the other for tungsten. Daylight means daylight and nothing else. Tungsten lighting includes all artificial light whether it is used indoors or out. Daylight fluorescent tubes require the use of a speed halfway between the daylight and tungsten value.

The film speeds determined and published by Weston are the result of extensive, impartial testing in the laboratory and field. They are correct when the processing methods recommended by the manufacturer of the film are used. If a developer other than that recommended is used, the film speed may change, for there is considerable correlation between developer and speed.

Fine grain developers frequently reduce the film speed materially and if one is used, it is suggested that the listed speed be cut in half. Incidentally, none but high energy high contrast developers will increase film speed. And these are undesirable for general use.



Setting for Film Speed—Depress Button "A" and turn inner dial with Tab "I" until the desired film speed appears in window "W"

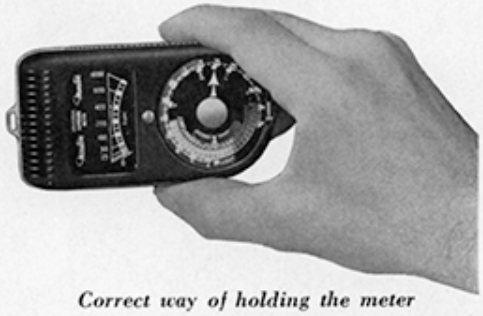
View in Weston Film Speed Laboratory

Holding the Meter and What It Sees

The illustration shows better than words how the meter is held. Care should be observed not to obstruct the cell of the meter with the fingers.

The exposure meter can be compared roughly to a flashlight in reverse. The flashlight sends out a cone of light, the apex of which is at the bulb and the base is the circle of light it throws. The meter on the other hand, receives light in a cone with its apex at the photoelectric cell and the light coming from a circular area in the scene.

It is quite apparent that the area viewed by the meter will depend upon how the meter is held. Point the meter upward, and the light will come from the sky, or point it downward and the light will come from the ground. The closer the meter is held to the scene or object, the smaller the area viewed. One can measure the light from the scene as a whole, or by going close, he can measure the light from but a single small object.



Correct way of holding the meter

The Camera Position Method

The simplest method of using the Exposure Meter is from the position of the camera. The meter is pointed at the scene so that its angle of view is aimed distinctly downward. This downward aim is necessary so that the light from the landscape only is measured. If the light were to come from the bright sky, underexposure of the darker parts of the landscape would result.

If one should point the meter directly at the sky, a high reading would be shown (around 400-500) but by slowly and gradually tipping the meter downward a spot will be reached where the pointer becomes fairly steady When this occurs one can be sure that his meter then "sees" only the foreground and not the sky

The wrong way to aim the meter

The right way to aim the meter

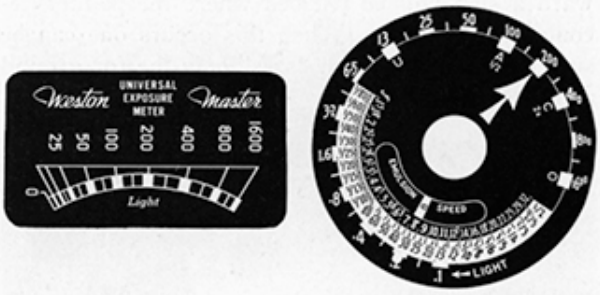
Setting the Exposure Guide Dial

After taking the reading from the camera position, the normal arrow on the exposure guide dial should then be set opposite the light value corresponding to that read from the meter scale. Proper f/stop and shutter speed combinations for that particular scene will then be found at the bottom of the dial, directly opposite each other

It will be seen that each number on the scale of the meter is repeated on the exposure guide dial. Some blocks of both the scale and the dial are unnumbered these can be used most conveniently by considering them as plus or minus a block that is numbered. For example, the pointer may come to rest in the block below 400. This could be considered 400—. Or, if it fell on the block above 400, consider it 400+.

The Weston MASTER Exposure Meter has two scales, 0/50 and 0/1600. If the light intensity in the scene is less than 25, the baffle on the rear of the meter should be opened and the low scale will come into view This enables the photographer to read the

instrument more accurately for low light levels. It is usually desirable to use the high scale (0/1600) when possible because of the narrower acceptance angle resulting from the extra baffling of the cell.



The same light values appear on both scale and dial

Choosing the f/stop

After setting the exposure guide dial, any one of the f/stop-shutter speed combinations shown at the bottom of the dial is correct. The one chosen will depend upon both the camera and the scene itself. Obviously it would not be possible to choose a combination involving shutter speeds not marked on the camera. The f/stop can be approximated if the chosen one is not marked on the camera, but the shutter speed must be one with which the camera is equipped. Approximation of the f/stop is easy. For example f/9 is about halfway between f/8 and f/11.

The scene determines the f/stop-shutter speed combination so far as the necessity for depth of field or the stopping of action. A still life would require maximum depth of field, so a small f/stop (large f: number) would be chosen and the f/stop would determine the shutter speed. On the other hand, if action were to be stopped, a fast shutter speed would be chosen and the shutter speed would determine the f/stop. Usually a medium combination is used. If possible, a miniature camera should be used at a minimum speed of 1/100th of a second if hand held a folding Kodak at 1/50th of a second.

Exposure Meters Other than the Universal Type

All information in this booklet applies to the Junior and Ciné type Exposure Meters as well as to the Universal one. The latter is chosen as an example because it seems to be the most popular. The only difference among the various Weston Exposure Meters as to their use, is the manner in which the guide dials are set. Their actual use and methods are practically identical.

A number of methods of using the Exposure Meter will be described in the following pages, one method may be more suitable for one type of scene than another, *BUT ALL, WHEN DONE PROPERLY, WILL RESULT IN CORRECT EXPOSURE!*

Focal Length of Lens

The focal length of a lens has a decided influence on the speed of a lens, and hence the f/stop. But since the focal length is considered when the lens is calibrated, no further compensation is necessary. The f/stops indicated by the exposure meter should be used irrespective of the focal length of the lens with which the camera is equipped.

Scene as viewed by a camera of usual focal length

Scene as viewed by a camera with telephoto lens

CHAPTER II

The Camera Position Method

The Camera Position Method is particularly adapted to landscapes, street scenes, distant views and other types of scenes where there is no one subject of outstanding interest, and each part of the scene is of equal interest. For an example, the accompanying landscape will be used.

The first step for correct exposure is to stand at the position of the camera, holding the Exposure Meter so that the photoelectric cell is unobstructed by fingers and pointing it downward at the scene. The meter will indicate a light value. In the illustration this value is 200. Then the normal arrow is set opposite this number and a suitable shutter speed-f/stop combination chosen. These three steps are all that is needed for correct exposure aiming the meter setting the light value and choosing the camera settings for your particular camera.

Other examples of scenes to which the camera position is particularly adapted are as follows.

Mountain scenes and distant views are most conveniently exposed for by using the Exposure Meter from the camera position. The meter should be tilted downward to exclude all sky light, and the normal arrow used to set the guide dial. For scenes of this character use the smallest f/stop feasible under the conditions present. There will be little or no motion in the scene, hence make use of the increased depth of field resulting from the small stop.

Many photographs are made of street scenes which also can be correctly exposed by using the camera position method. Tilt the meter downward and set the normal arrow to the resultant light value. Use a shutter speed not slower than 1/50th of a second if there are people in the scene.

"Portraits" of the photographer's home, lakes, streams, practically all types of landscapes, are well adapted to this camera position method. Just be sure to tilt the meter downward sufficiently so that there will be less influence from the sky

Distant views use camera position reading

Nearby landscapes use camera position reading

Taking a reading from the camera position

Homes use camera position reading

CHAPTER III

The Close-Up Method

Where the whole scene is of interest, such as a landscape, the whole scene is measured with the camera position reading described in the last chapter But frequently there will be but one subject of importance, the rest of the scene merely serving as a background. For these pictures, the meter is used so that only the light from the principal subject is measured and that used as a criterion of exposure. In other words, the photographer exposes particularly for the object of interest and disregards the rest of the scene. This method of using the meter is known as the "close-up method" and is well adapted to pictures of people, pets, flowers, and other single object subjects. In other words, the close-up method might be thought of as the way to use the meter for close-up pictures of a single subject.

In this method, the meter is held close to the subject, the distance it is held away being about the same as the object's smallest dimension. Then the normal arrow is set opposite the light reading and a suitable f/stop, shutter speed combination chosen.

As an example, consider the accompanying picture of a dog. There is but one object in the scene, hence a reading is made close-up to the dog, the normal arrow set at the resultant light value and a convenient f/stop, shutter speed combination chosen. Again, three simple steps.

There are many subjects to which this method of using the meter is adapted. The few shown will serve to illustrate the types of scenes for which the close-up method is recommended.

Taking a close-up reading of the Baby's face

Flower pictures, particularly when only a single bloom is to be shown, are well exposed when the close-up reading method is used. Make the reading quite close to the flower possibly it may be necessary to hold the meter so that it is at an angle to the direction from which the light is coming. Thus, casting a shadow of the meter onto the flower will be avoided. After the normal arrow is set opposite the resultant light value, a wide choice of camera settings will be available. Choose a small stop so that

Taking a close-up reading of the Dog

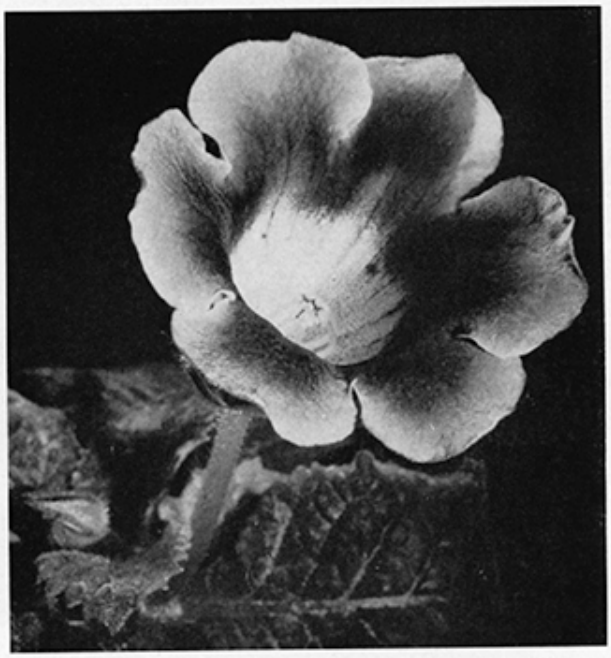
Do not cast a shadow when taking a close-up reading

the picture will have as great a depth of field as possible.

Portraits are another class of pictures for which the close-up method should be used, particularly for the informal sort. The accompanying illustration shows one that could have been made by almost anyone. The little girl's face is certainly the object of principal interest, hence the meter reading is made close to her face, the normal arrow set at the light value, and a medium exposure setting chosen.

And for the same reason, pictures of animals and pets also require the close-up method. Wherever there is but one object of interest, the exposure should be specifically for that object by using this method.

For Portraits take a close-up reading



For Flowers take a close-up reading

CHAPTER IV

The Brightness Range Method

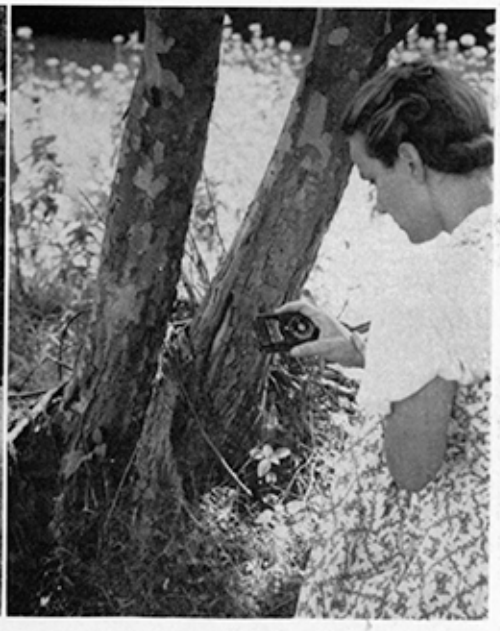
The two methods previously described are quite sufficient for the general run of photographs. But frequently the photographer is more interested in the production of salon pictures. For him, there is a third method of using the meter considerably more accurate than either of the former two and possible of closer control. This method is known as the "Brightness Range Method" so called because the exposure is determined by the two brightness extremes in the scene.

Consider a typical scene. Each object reflects a different amount of light and each will result in a different density in the negative bright objects will be dense and dark ones thin. In the scene there will be of interest to the photographer one object brighter than all others, the "brightest object", and another darker than all others, the "darkest object" Correct exposure will be obtained by setting the normal arrow midway between these two extreme light readings. Thus the two extremes, as well as all objects in between, will be correctly exposed.

A typical scene to which this brightness range method is particularly adapted is the accompanying landscape. This scene is one we hope will end in a salon somewhere, hence particular care will be taken in exposing for it. It is easy to make close-up measurements of the brightest object—the object yielding the greatest pointer deflection and the darkest object—the object yielding the lowest pointer deflection. When the normal arrow is set midway between these two values the exposure will then be correct for the entire scene.

Remember that a close-up reading is made by holding the exposure meter approximately the same distance away from the object being measured as the object's smallest dimension. In the scene used as an example, the *sunlit grass* was the brightest object with a light value of *200* and the shadowed tree base the darkest object with a light value of 13. By setting the normal arrow midway between these two

A typical scene in which the brightest and darkest objects should be measured.



Measuring the darkest object

Exposure Guide Dial with normal arrow set midway between the brightness values of 13 and 200.

readings, the best possible exposure will be given for the scene.

With Junior and Ciné meters, the same technique can be followed, but the two extreme light values should be averaged and the average value used to set the meter For example, a Junior meter might indicate a value of 20 for the brightest object, and 10 for the darkest. The average value is 15 $\left\{\frac{20 + 10}{2}\right\}$ and that number used to set the meter

Sometimes it may be impossible or undesirable to measure the actual objects in the scene. Perhaps they are not readily accessible, or perhaps a candid picture is being made and close-up readings would not be convenient. In these cases substituted readings can be made close-up readings of convenient and similar objects near at hand can be substituted for those in the distance. Be sure, however that these substituted objects are lighted the same as the original ones. If the latter are in full sunlight, the substituted objects should be in full sunlight if shaded, then the substituted objects should be shaded.

Practically every type of scene can be exposed for correctly by using the brightness range method either by the measurement of the actual objects, or by substitutions. A few of many types will be discussed.

While the camera position method is usually satisfactory for street scenes, better control and more accurate exposure will result by making two readings, one of the darkest object, and one of the brightest. In the street scene at the right, the darkest object was the shadow in the doorway, and the brightest, the sunlighted pavement. The normal arrow was set halfway between and the f/stop opposite 1/50th of a second used.

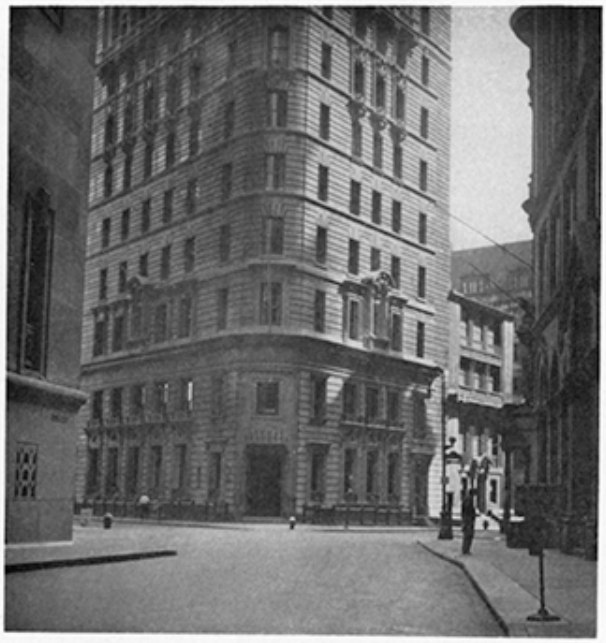
For the more serious portraiture the brightness range method is recommended. Usually the face is the brightest object and the hair or costume the darkest. The normal arrow should be set halfway between these two extremes.

And thus, for any scene, two readings can be made instead of one for greater accuracy. If a snapshot is to be made in a hurry and interest in the scene is largely from a record viewpoint, the camera position or close-up methods are quite sufficient. But where the photograph is important perhaps for salon exhibition, and the best possible exposure is desired, the brightness range method is recommended.

Scene in which close-up readings are not convenient take readings of nearby substituted objects

Taking a reading of a substituted object

Back lighted portraits are best exposed when using the Brightness Range or two reading method



Some street scenes should be exposed for by the two reading method

CHAPTER V

Kodachrome and Kodacolor

Kodachrome and Kodacolor provide easy media for photographs in full color Thousands have found a new fascination through using these two films. Unfortunately many people have more trouble with color than with black and white photography But this difficulty can be readily overcome simply by exposing the film correctly To obtain this correct exposure, the Meter must be used properly.

The correct method of using the Exposure Meter for color is the Brightness Range Method described in Chapter IV where two readings are made instead of one. But for color we disregard all black and white objects and measure only the colored ones. Color film has a much greater latitude to error for black and white objects than it does to colored objects, so only the colored objects should be considered—if they are correctly exposed, the blacks and whites will take care of themselves.

The accompanying illustration is a scene which lends itself excellently to color photography. The girl's colorful costume, the brilliant day, the dog, all contribute to a lovely picture. For correct exposure, take close-up readings the girl's face is the brightest color and the dog's fur the darkest. With the Universal type of meter the light values are 400 and 80 respectively and the exposure guide dial is set at a value halfway between the two extremes. If a Junior or Ciné type of meter were used, the two light values would be averaged and the average value used to set the exposure meter

A typical scene suitable for color take readings of the brightest and darkest colors

Color film has a very short latitude to errors in exposure, that is a fact known by most photographers. As a matter of fact, the average range of the film is approximately 4 to 1. This range is about $\frac{1}{25}$th that of black and white film. Precise and accurate exposures can be given only by considering this range of color film. The Universal types of Weston meters show this range by the "A" and "C" positions on the dial. The "A" Marking indicates the lower limit of the film range, and the "C" the upper limit, the range between the two being 4 to 1 These two positions can be used advantageously in exposure for color as will be discovered.

The Exposure Guide Dial showing the color range of the film between positions "A" and "C"

For such scenes substituted objects can be measured instead of the actual ones

In the winter time, snow scenes, despite their whiteness, make lovely color subjects. A camera position reading for a snow scene in color will lead to badly underexposed pictures. it would be better to

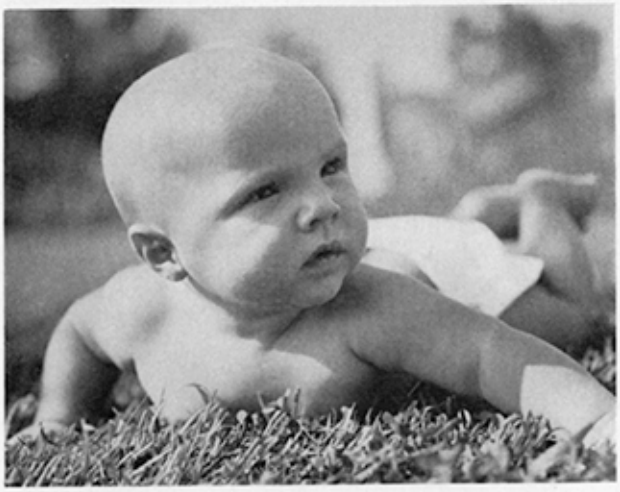
guess. But instead of a camera position reading, take close-up readings, one of the darkest color in the scene and one of the brightest. Then set the normal arrow halfway between. Remember, black and white are not considered to be colors and are disregarded—only colors should be measured.

Among many scenes frequently photographed are stream and water pictures. In the example shown, the brightest color is obviously the sunlighted rock and the green leaves the darkest. Close-up readings showed them to have values of 350 and 65. So the normal arrow is set halfway between. If a Ciné or Junior meter is being used, the meter is set at the average value of the two readings.

As described in the section on the Brightness Range Method for convenience, readings can be made from substituted objects instead of the actual ones. In this stream picture, the rocks close at hand will have the same light values as those in the distance, and the leaves on the near side of the stream will have the same values as those on the far side.

In general, if the contrast range of the scene is greater than that of the film (4 to 1) best results will be obtained if we expose particularly for the brightest color That is, we set the "C" position opposite the light value measured from the brightest color As a matter of fact, almost all scenes for color photography can be exposed for quite successfully by setting the "C" position opposite the brightest color light value—here's a short cut.

For example, in the foregoing illustration, the brightest color is the girl's sunlighted face with a light value of 400. The "C" position should be set opposite 400, and a convenient camera setting chosen. If this were to be a "sneak" shot, and the photographer did not want to give himself away by making a meter reading, the reading could be made from the palm of his sunlighted hand, and the "C" position set opposite that light value.



For subjects like this take readings of the darkest and brightest colors

This palm of the hand reading provides a convenient and accurate index of exposure for all color photography when the principal subject is a person. The brightest color of importance is generally the highlight on the subject's face and the palm of the hand can be measured as a substitute. Naturally, the hand should be sunlighted and care be observed not to cast a shadow of the meter onto the hand. The picture of the baby was made very easily through the use of this method. The brighest color was the highlight on his face, so the "C" position was set opposite the light value for the face, and a suitable f/stop, shutter speed combination chosen.

The hand can be substituted for a person's face

Of course, if our meter is of the Junior or Ciné type, two readings must be made, one of the brightest, and one of the darkest color Then the two values are averaged and the averaged value used. Remember too, that the fundamental method of using any Weston Exposure Meter for color is by making two readings. The use of the "C" position on the Universal meter is a short cut particularly recommended for color portraiture, and can be used for other scenes where the range of the scene is greater than the 4 to 1 range of the film.

Sunsets are excellent subjects for color photography Here the brightest color is the setting sun. The darkest colors will be found on the ground, but the range between the sun and the dark ground is much too great to be handled by the film, so the ground is disregarded, and the sky directly opposite from the sun considered the darkest color This means that the objects on the ground, buildings, trees, and others will be underexposed and therefore black, but this is effective and quite desirable. For this particu-

Aim the meter at the setting sun and at the zenith for the two color readings

lar sunset, the brightest color is the sinking sun—the darkest, the opposite sky With the Universal type of meter the normal arrow is set halfway between the two light readings. With the Junior or Ciné type the two readings are averaged and the averaged value used to set the meter

Several other things should be watched in making good color photographs. They concern themselves with the quality of the light illuminating the scene. On grey days, the light falling on the earth is distinctly blue, and if we make color pictures with this light, they too will be blue. The best exposure in the world won't eliminate this excessive blueness. This is not the fault of the film, camera or meter It's merely a fault of the weather man if you must make pictures on grey days, complain to him about those blue pictures, not the film, camera, or meter maker

And blue pictures will also result from pictures made in the shade. When an object is in the shade, it is illuminated by the sky, not the sun. The sky is blue, therefore the light from the sky is blue and it colors objects illuminated by it with blue. Pictures made in the shade will not be satisfactory and, rather than make them, get your subjects out in the open sunlight.

Frequently unsatisfactory color pictures result because they are made at the wrong time of day Early in the morning and late in the afternoon, sunlight is distinctly yellow-red and, of course, any pictures made with this light will be reddish. This is particularly noticeable in portraits. Pictures of people made early or late in the day will show anything from sunburnt to Indian faces because of the light. Again this is not a fault of the film, camera, or meter—but a function of color of sunlight. Of course, sunrises and sunsets will be yellow-red, but that is perfectly satisfactory because that is what is expected of them. For other scenes, choose clear, sunny days and take pictures in the open sunlight only between the hours of ten and four

To repeat, the fundamental method of using an exposure meter for color—take two readings, either close-up to the actual objects, or close-up to substituted ones, and set the normal arrow halfway between. A short cut variation on this method is the use of the "C" position. Set it opposite the brightest color light value and quite frequently this quick method will be entirely satisfactory particularly for long range scenes or portraits. This will yield the best possible exposure. With the Junior or Ciné type of meters, the two readings should be averaged and the average value used.

Sometimes, camera equipment does not operate at the precise settings to which it is adjusted. Usually the various small errors cancel themselves and the proper use of an exposure meter results in correct exposure. But when they do not cancel out, they show up in color pictures as apparent incorrect exposure. A simple way of compensating for equipment errors is to change the film speed when setting the exposure meter If your color pictures are consistently underexposed, use a lower film speed, and if overexposed, use a higher speed.

Do not measure black or white objects in color photography even though the principal object is white

CHAPTER VI

Applications

Ciné Photography

A Ciné camera essentially is the same as a still camera, but it exposes many more pictures in a given interval (usually 16 a second) and it has a fixed shutter speed. Hence only one exposure combination is usually correct for a given scene rather than the large number as in the case of the still camera.

The standard number of pictures (or "frames") exposed by the Ciné camera is 16 per second, and at that rate, the shutter speed will be 1/30th, 1/40th, or 1/50th of a second, depending upon the particular camera in use. A Universal exposure meter would, therefore, be used in the same manner as for still photography and, after setting the exposure guide dial, the correct f/stop will be found opposite the shutter speed at which the camera operates.

For example, the accompanying scene was metered from the camera position. The meter was aimed downward at the middle of the scene, and the normal arrow set to its light reading of 200. If a still picture were to be made, a number of exposure settings could be used but for ciné pictures, only the f/stop opposite the camera's shutter speed would do. If the particular camera in use had a speed of 1/30th of a second at 16 frames per second, the correct f/stop for this scene would be f/14, which is opposite f/stop 1/30th of a second.

Collecting Maple Sap . Exposure technique for ciné photography is the same as for stills

Some cameras can operate at other frames per second than 16. With these, the actual shutter speed is in proportion. For example, if the camera had a shutter speed of 1/30th of a second at 16 frames, it would have the following speeds at other frames per second

8—1/15th
16—1/30th
24—1/45th
32—1/60th
48—1/90th (use 1/100th)
64—1/120th (use 1/130th)

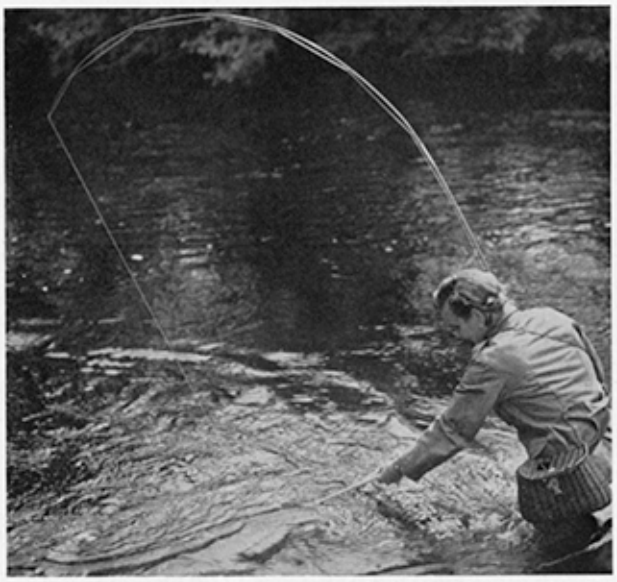
Then, of course, if this camera were exposing 32 frames per second instead of 16, the exposure for the above scene would have been f/10 because that is the stop opposite the shutter speed of 1/60th of a second. This same information applies to the Junior Universal meter as well as to the Master type.

When Ciné exposure meters are used, the exposure guide dial is pre-set to the camera type frames per second and film speed. Then, after the light value is obtained, the correct f/stop will be found opposite the corresponding value on the guide dial. Ciné meters are used in the same manner as still ones but for the brightness range method and for color the two close-up readings are averaged and the average value used to determine the correct f/stop.

When panning the camera for a scene made up of brightly illuminated and shadowed parts, the correct exposure setting should be determined for each part of the scene and the f/stop setting changed when the scene viewed by the camera changes from bright areas to shadowed areas.

Sports

Many pictures made of sporting events require great speed in the taking. For example, the principals in a track meet or horse race do not wait for exposure meter readings—but a split second is available for the exposure. Therefore, the reading should be made before the action occurs, then the camera can be set and ready when the picture presents itself. Either a camera position reading of the general scene can be used, or substituted readings taken from convenient objects that will remain obligingly motionless—the palm of a hand for a racer's face, for example.



Fishing use the meter before the action occurs

Beach Scenes

Best results will be obtained for beach scenes by making the close-up readings suggested in Chapters III and IV Sand is a specular surface, that is, it reflects light in bright sparkles like a mirror rather than diffusely as most other surfaces. These specular sparkles, if measured with the meter would inflate the reading and result in under-exposure because of their great intensity Therefore, if sand is backlighted, the photographer should turn around and make the reading so that the sun is in back, rather than in front of him. This does not mean that the picture must be made with this lighting, but the meter reading should. Pictures of people on the beach are best made by making close-up readings.

For good beach pictures use the close-up or brightness range method

This underexposed beach shot is the result of a camera position reading

Snow Scenes

Snow acts just like sand and the same information applies. Best snow texture will be shown when the snow is back or cross lighted. Therefore, great care must be exercised in making the meter reading to be sure that no specular surfaces are measured.

The brightness range method is best for snow scenes

When making a close-up reading of snow, do not have the sun in front of you

Make snow readings with the sun over your shoulder

Water Scenes

Water too, acts specularly when back-lighted. Here again, care must be observed not to measure the bright sparkles, for underexposure will result. Sometimes this underexposure can be used to make rather striking silhouettes. In the following illustration the reading was made from the camera position so as to include the direct reflections from the water This underexposed the surrounding landscape and the result is rather effective.

Of course, if water is not sparkling to the eye (as when it is front lighted) then there is no problem presented, for it is reflecting diffused light and acts as any other normal object. Sometimes the principal subject in the water scene is inaccessible for measurement, such as a boat or distant island. For these scenes, readings can be made of convenient near-by objects substituted for the distant ones.

For intentional underexposure aim the meter directly at the sparkling water

Filters

Many landscapes and sunsets are greatly enhanced through the use of color filters. These filters cut out a certain amount of light available to the film when the exposure is made. Therefore it is necessary to compensate by increasing the time or f/stop. The amount of increase is determined by the color and intensity of the filter and by the film in use. The manufacturer of the film states this increase as a "factor" A filter factor for a certain film filter combination of 2 means that the exposure must be increased two times.

The easiest method of making this increase when using an Exposure Meter is to divide the filter factor into the Weston speed of the film, and set the exposure guide dial with the resultant value. For example, a K_2 filter with a certain panchromatic film might have a factor of 2, and the film a speed of 100. Dividing 100 by 2, the result, 50, is used to set the film speed on the guide dial.

Divide the Filter Factor into the Weston Film Speed use this number as the film speed

Interiors

Exposure Meter technique for indoor scenes is the same as for scenes outside. It is best to use the brightness range method where close-up readings are made of the brightest and darkest objects and the exposure centered between the two. If the actual objects are inaccessible, then substituted ones will do.

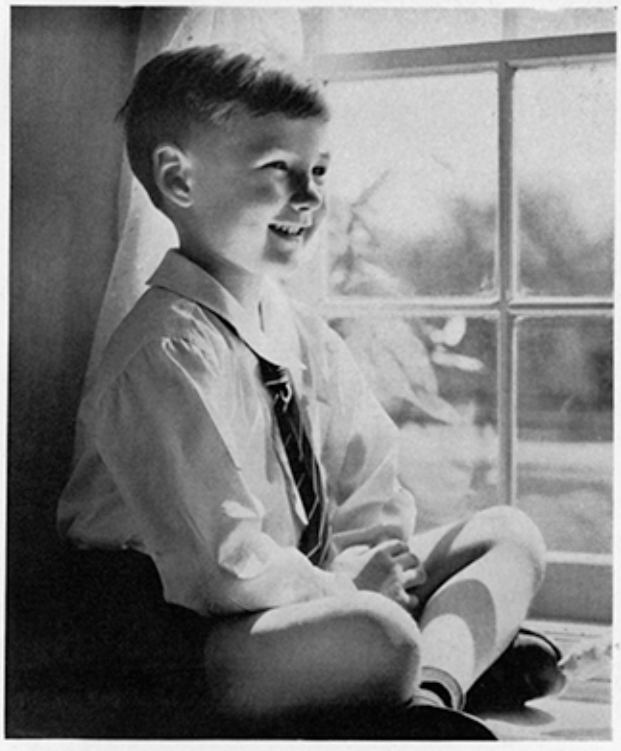
Sometimes interiors are so dimly lighted that a reading of the darkest object is impossible. Under these dark conditions, a close-up reading of the brightest object in the room can be made, and the "O" position on the exposure guide dial used to set the light value. If there is no bright object, the reading could be made from a white handkerchief or a piece of white paper Obviously this technique cannot be applied to Junior or Ciné meters, for they have no "O" position.

The Brightness Range Method is best for interiors

Portraits

Of all types of pictures made by photographers, pictures of people are the most frequent. Many of these portraits are done indoors, using either daylight or illumination from photo floods and spot lights. If the location in which the picture is to be made is brightly illuminated with daylight, excellent snapshots can be made without further lighting equipment. The accompanying portrait was made with daylight plus a white cardboard used as a reflector This cardboard reflected the light from the window back to the shadow side of the face to reduce the contrast. The Exposure Meter was used by taking two readings, one of the brightest, and one of the darkest object. The normal arrow was then set midway between the two values. Since the illumination was daylight, the daylight Weston rating was used.

The brightness range method is also best for portraits made with artificial illumination. The brightest object will usually be the subject's face, and the darkest, the hair or costume. By exposing carefully it is a simple matter to avoid the chalky white faces so often shown by beginners as their examples of portraiture. Correct light is naturally very important for good portraiture, but even excellent lighting will go for naught if the film is over or underexposed.



Make two light readings to insure correct exposure

An indoor portrait made by the two reading method

Still Life

The photographing of Still Life subjects is a fascinating hobby and has the advantage of being possible irrespective of the weather or the time of day. Usually these still life set-ups are composed of small objects, rather difficult to measure with a meter But it is an easy matter to substitute larger objects of similar material by placing them temporarily in the scene long enough to make a reading. The brightness-range method is again the recommended way of using the meter In the illustration, two objects were used as substitutes a black plate holder was substituted for the small darkest object and a piece of white cardboard for the brightest. The normal arrow was then set halfway between the two light values. Junior or Ciné meters can be used in the same fashion, but the two readings should be averaged and the average value used to set the meter

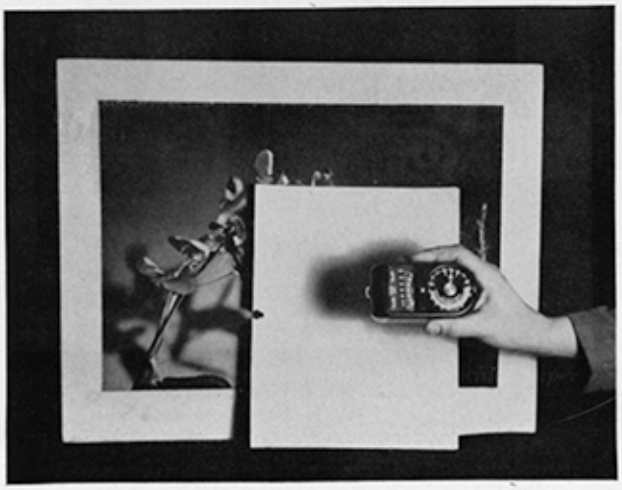
Large objects substituted for smaller ones make the use of the meter easy

Copying and Titling

These two subjects require exactly the same technique, there being no difference except the cameras used—copying usually being a function of a still camera, and titling of a Ciné camera. In both cases, the copy or title material is replaced by a piece of white paper, a close-up reading made of the paper and the normal arrow used to set the guide dial. Take care not to cast a shadow of the meter onto the paper for this would yield an incorrect reading.

When using a still camera, the bellows will probably be considerably extended, changing the effective f/stop. Compensation should be made for this the easiest way being through the use of an "Effective f/stop" guide. This guide is obtainable at any photographic shop for a dime. The increase factor obtained from this guide can be multiplied by a shutter speed shown by the meter and the result being the time of exposure or the factor can be divided into the film rating, the resultant number used to set the exposure meter and the exposure settings then read off without further compensation.

When Kodachrome titles are made, the close-up reading should be made direct from the title material, no substitutions being made.



When copying do not cast a shadow on the white paper

Eliminate the shadow on the white paper by holding the meter at a different angle or changing the illumination

Pets

Pictures of dogs, cats and other pets require the same exposure meter technique as for portraits. Either a close-up reading of the animal can be made and the normal arrow set to the light value, or the two reading method can be used. Usually the single close-up reading is sufficient. Use a fairly fast shutter speed, for animals frequently have the discouraging habit of moving rapidly at the wrong time.

Pictures of pets use close-up or two-reading method

Baby Pictures

Again, the same technique is used for baby pictures as for portraiture in general. The advice regarding the fast shutter speed is also well applied to this class of photography Good baby pictures require plenty of patience and film, as anyone who has made them will testify. But the results are more than ample reward.

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