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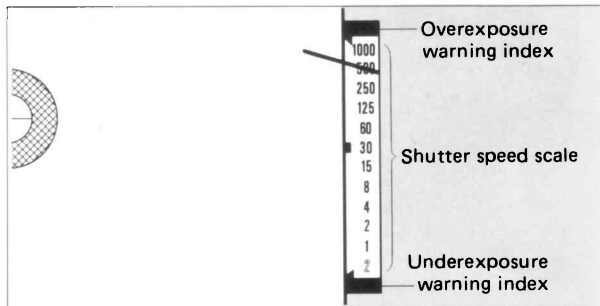
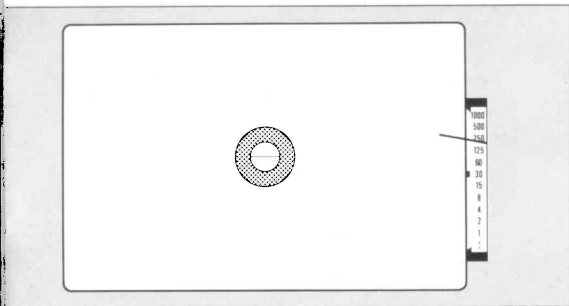
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Checking the Exposure



Look into the viewfinder. On the extreme right is a scale with shutter speeds from $\frac{1}{1000}$ sec. to 2 sec. All solid black numbers are reciprocals of the real shutter speed so that 500, for instance, stands for a shutter speed of $\frac{1}{500}$ sec. Only the black-outlined "2" at the bottom of the scale is a whole number standing for 2 sec. Above 1000 is a red overexposure index. Below the last number 2 is the red underexposure index.

Now gently press the shutter release button halfway. The meter needle will jump up to indicate the shutter speed the camera has

set for the aperture you have chosen. Notice that the meter needle quickly changes position as the light conditions change or as the camera is moved. To assure exact exposure, the camera controls the shutter speed steplessly and will not fix it until the shutter button is pressed.

If the meter needle points to the red index at the top or bottom of the shutter speed scale when the shutter button is pressed halfway, exposure will be incorrect. Correct the exposure according to the chart on the right.

Check the exposure according to the following chart.

Position of Meter Needle	With Aperture Ring At	Exposure
Not touching any red mark	Any f/stop	Correct.
Touching Underexposure Index 	Any f/stop	Incorrect. Turn the aperture ring to a larger f/stop.
	Largest f/stop	Incorrect. Switch to flash, add light or use a film with a higher ASA rating
Touching Overexposure Index 	Any f/stop	Incorrect. Turn the aperture ring to a smaller f/stop.
	Smallest f/stop	Incorrect. Attach an ND filter or use a film with a lower ASA rating.

- ND filters, which reduce the light coming into the lens but do not affect color, are available as optional accessories.
- If there is light behind your subject, exposure may not be correct even if the meter needle is not touching a red mark. See page 47 for correction.
- Remember: A large f/stop is a small number on the aperture scale. A small f/stop is a large number on the aperture scale.

Battery check/camera
shake warning index



Meter needle



Camera shake
likely

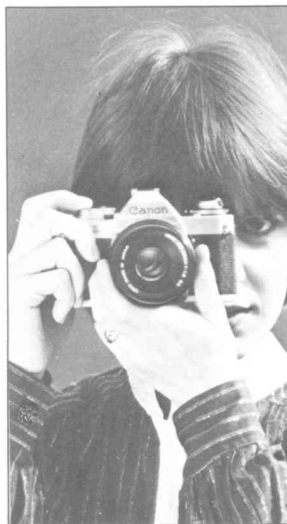
If the meter needle points to or below the camera shake warning index when the shutter button is pressed halfway and you are using a 50mm lens, there is a good chance of camera shake which will blur the picture.

Correct as follows:

1. Select a larger f/stop.
2. Use a flash. Or
3. Attach the camera to a tripod and use a cable release.

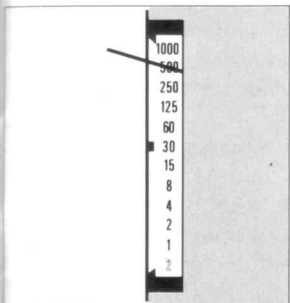
Of course, if you are as steady as a tripod, you can try hand-held shooting.

If you are not using a 50mm lens, see page 41 for steps in preventing camera shake.



Holding the Camera

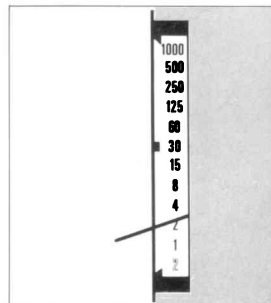
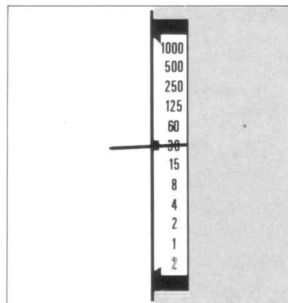
Camera shake can ruin your picture with blur. Although the best precaution in preventing camera shake is to press the shutter release button gently, it is also helpful to hold the camera properly. Before focusing and taking your shot, please read the following suggestions.



When the meter needle points above the camera shake warning index when using a standard lens:

1. Grip the camera firmly in both hands with some right fingers on the finger grip and with the left hand supporting the lens.
2. Press at least one elbow firmly against your body, and press the camera firmly to your cheek or forehead.
3. Spread your feet slightly apart with one a little ahead of the other and relax.

Lean against a steady support, such as a wall or a tree, if one is available.



When the meter needle points at or below the camera shake warning index when using a standard lens:

Choose a larger f/stop or use a flash and hold the camera as described above. If the aperture ring is at the largest f/stop and you do not have a flash, use a tripod and a cable release (see page 50).

Not using a standard lens:

See page 41.

Composing

Look into the viewfinder eyepiece and compose your picture so that your subject is where you want it to be. The subject will be recorded on the film exactly as you see it in the viewfinder. While composing, keep in mind that the AV-1 uses the Central Emphasis Metering method of exposure measurement which reads the entire viewing area with emphasis on the central portion. As long as the subject is pretty well centered in the image, this method normally assures very accurate exposure.

Focusing

To focus, rotate the focusing ring as you look through the viewfinder. The focusing screen inside the viewfinder has three focusing aids: a split-image rangefinder, which is the horizontal line in dead-center, a microprism ring, which surrounds the split-image rangefinder, and a surrounding matte screen.

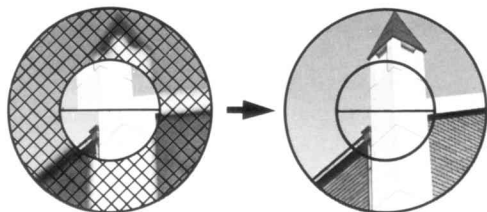
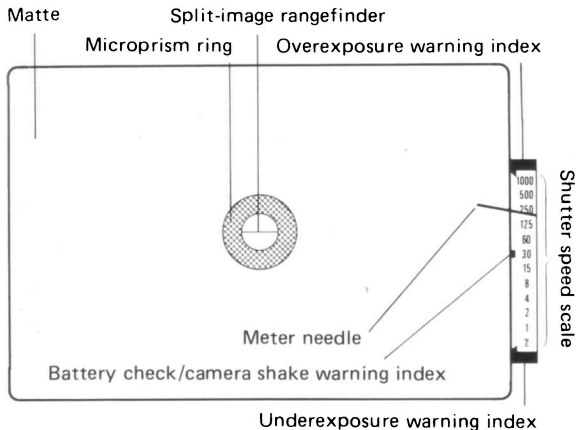
1. The split-image rangefinder "tells you" that the image is in focus when the image, which is divided horizontally when out of focus, merges to become one complete image.

2. The microprism ring presents a clear, steady image when in focus but a broken, shimmering image when not accurately in focus.
3. The surrounding matte screen is foggy when the subject is out of focus and becomes clear when in focus.


When your desired subject is sharp, you know that the focus is set correctly. You can focus with any of these three focusing aids as you like depending on the subject and personal preference.

(Canon offers several viewing and focusing aids. See ACCESSORIES at the end of this booklet.)

Viewfinder Information Display



Double-check Before Shooting

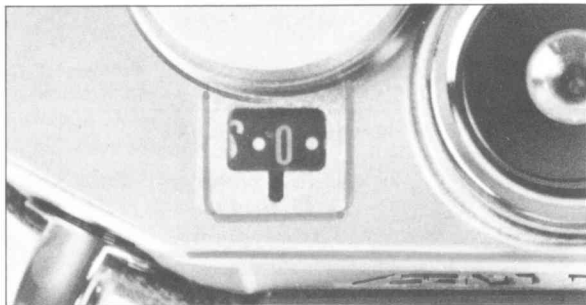
1. Have you checked the battery power level?
2. Have you set the correct film speed?
3. Is the film properly loaded?
Each time you advance the film, the rewind knob should rotate.
4. Is the shutter release button lock lever set to "A"?
5. Is the selector dial set to the  position?
6. Is the aperture ring off the "A" mark?

Shutter Release

Once you have set an aperture on the lens, checked the exposure, composed and focused your picture, you are all set to take your shot. Simply press the shutter release button gently all the way down to set the shutter in motion for exposure. Once you have pressed it all the way you may withdraw your finger.

For proper function of the camera and the least camera shake, it is very important to press the shutter button gently. Chances of camera shake will also be reduced if you make a habit of pressing the shutter button as you exhale. Following shutter release, advance the film advance lever to wind the film.

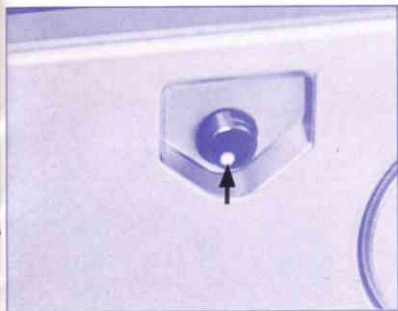
Pressing the shutter button will not make an exposure if the film is only partially advanced or if battery power is too low.



Frame Counter

Each time the film is wound, the AV-1's frame counter advances to the next frame, indicating the number of frames already exposed. It will not advance higher than 38. The numbers 0, 20 and 36 are marked in orange to indicate usual starting and ending points of films. Don't be surprised if, at the end of the film, the frame counter indicates fewer or more frames than the film is supposed to have; it depends on how economically you loaded the film.

The frame counter automatically returns to "S" when the back cover is opened.



Rewinding the Film

If, after shutter release, the film advance lever cannot be turned or stops before the end of its stroke, the film has reached its end. **DO NOT** force the film advance lever or the film will tear or become detached from the cartridge. In this case, rewinding would be impossible and you would have to unload the film in complete darkness. **DO NOT** open the camera's back cover before rewinding or most or all of your film will be ruined.

To rewind the film:

1. Press in the film rewind button on the base of the camera. Once you have pressed it you can remove your finger.
2. Unfold the film rewind crank and turn it in the direction of the arrow. Keep cranking until you feel no further pressure on the rewind crank.
3. Then pull the rewind knob up sharply to open the back cover and remove the cartridge. It is preferable to place the exposed cartridge back in its canister and to have it developed as soon as possible.

Applied Usage

Special Functions and Hints

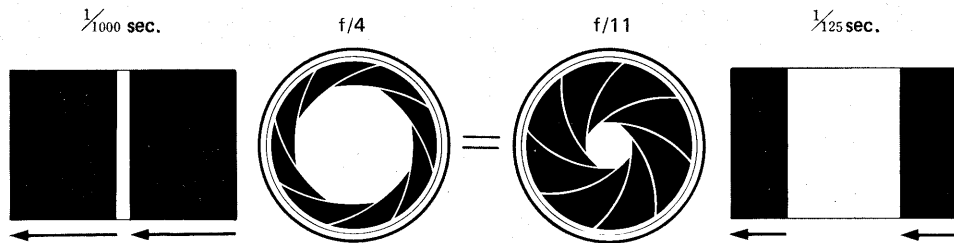
f/stop	1.2	1.4	1.8	2	2.8	3.5	4	5.6	8	11	16	22
Brightness ratio	3	2	1 1/4	1	1/2	1/3	1/4	1/8	1/16	1/32	1/64	1/128

EXPOSURE

What's going on when you turn the aperture ring? Each time you move from one f/stop to the next smaller f/stop (larger number), the aperture becomes only half as big and the exposure is halved.

While the amount of light allowed to strike the film for exposure is controlled by the aperture size, the shutter speed regulates the time the light strikes the film. Like f/stops, each time the shutter speed changes from one speed to the next faster speed, the exposure is halved.

However, the total amount of exposure necessary in any particular situation is fixed. This means that if you select the next smaller f/stop, the camera will automatically reduce the shutter speed one step to give the same exposure. By extension, you can see that several different combinations of aperture and shutter speed give the same exposure.



The Finer Points of Selecting an Aperture

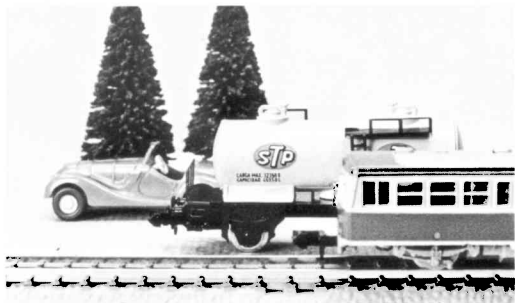
If correct exposure is your only concern, you may simply select any f/stop as long as the meter needle does not point to one of the exposure warning indices. However, even if the image is exposed correctly, the feeling of the photo will vary greatly depending on which aperture you select.

Depth of Field

Aperture has great influence on depth of field. The depth of field is the area in front of and behind the subject which is in focus at the same time as the subject. The smaller the

f/stop, the greater the depth of field, i.e., the wider the range of sharpness from fore to background. Depth of field is greater at f/11, for instance, than it is at f/4. Depth of field is also governed by lens focal length and shooting distance. If the aperture and shooting distance remain the same, depth of field is greater the shorter the focal length. With aperture and focal length constant, depth of field is greater the greater the shooting distance. Generally, depth of field is also greater in the back than in the foreground.

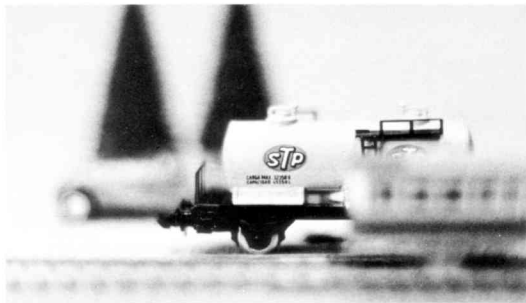
Taken at f/11.



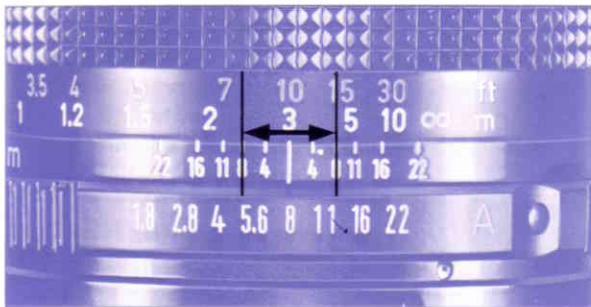
Using a small f/stop such as f/11, will give pretty sharp overall focus and is very effective in landscape photography and any other kind of shot where this is preferable. A large f/stop, such as f/1.8, on the other hand, will throw the background and foreground out of focus to have the effect of emphasizing the subject. This is very effective in portraiture and for special effects. Please compare the two photos.

You can check the depth of field by using the depth-of-field scale which is a series of f/stops repeated on each side of the distance index on the lens barrel. The scale differs according to the lens. First focus your subject.

Taken at f/1.8.



Find the two f/stops on the depth of field scale which correspond to the aperture you have set for the exposure. Draw imaginary lines from these two f/stops to the distance scale. The effective depth of field extends between those two distances. For example, using a standard 50mm lens focused at 3m (10ft.) with the aperture set at f/8, depth of field extends from 2.4m (8ft.) to 4.5m (15ft.). Any subject from 2.4m to 4.5m away will be in reasonably sharp focus in the image.



Shutter Speed

Lest it be forgotten, the aperture will also have a great effect on shutter speed. For some shots, the shutter speed which corresponds to the aperture you have selected may not be suitable. This is the case, for instance, when you want to take a hand-held shot and the meter needle points at or below the camera shake warning index.

The shutter speed is most often used for freezing or emphasizing action. While a slowly walking person may be frozen at a shutter speed as slow as $\frac{1}{60}$ sec., faster moving subjects require correspondingly higher shutter speeds. On the other hand, you may want to blur the image intentionally to emphasize the movement. You can do this either by using a slow shutter speed of perhaps $\frac{1}{30}$ sec. to blur the subject or by following the subject in a panning technique to blur the background.

If you want to forego a tripod with a telephoto lens and try hand-held shooting, the minimum shutter speed should, generally-speaking, be equal to or faster than the reciprocal of the

focal length of the lens. With an 85mm lens, this means $\frac{1}{125}$ sec., with a 200mm lens, $\frac{1}{250}$ sec. This rule can also be applied generally to all other focal length lenses. In some cases, perhaps slightly slower shutter speeds may be used with wide-angle lenses.

In any case, don't forget that you have complete control over shutter speed with your AV-1. Simply turn the aperture ring to a smaller f/stop to reduce the shutter speed or to a larger f/stop to raise the shutter speed. You can easily confirm the shutter speed in the viewfinder by pressing the shutter button halfway.

Meter Coupling Range

The abbreviation EV stands for "exposure value" and indicates the total amount of exposure obtained with a certain combination of aperture and shutter speed. The meter coupling range is expressed in terms of EV and is limited by the limits of the aperture and shutter speed scales and the film speed. The AV-1's meter is capable of metering for automatic exposure within a range of EV1 (f/1.4 at 1 sec.) to EV18 (f/22 at $\frac{1}{500}$ sec.)

when using ASA 100 film and a lens with an aperture scale of f/1.4 to f/22, such as the FD 50mm f/1.4 lens. This means that, when using this film and lens, you can get the largest total amount of auto exposure with a combination of f/1.4 at 1 sec. If the meter needle still points to the underexposure index with this combination, it means that the lighting is too dark. If the meter needle still points to the overexposure index with a combination of f/22 at $\frac{1}{500}$ sec., the lighting is too bright. See page 29 for further details. Please refer to the graph for the meter coupling range with other film speeds and aperture ranges.

AE Meter Coupling Range at Various Film Speeds

Shutter Speed (sec.)

EV \	2	1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250	1/500	1/1000
0	f/1.4	1.2										
1	2	1.4	1.2									
2	2.8	2	1.4	1.2								
3	4	2.8	2	1.4	1.2							
4	5.6	4	2.8	2	1.4	1.2						
5	8	5.6	4	2.8	2	1.4	1.2					
6	11	8	5.6	4	2.8	2	1.4	1.2				
7	16	11	8	5.6	4	2.8	2	1.4	1.2			
8	22	16	11	8	5.6	4	2.8	2	1.4	1.2		
9	32	22	16	11	8	5.6	4	2.8	2	1.4	1.2	
10		32	22	16	11	8	5.6	4	2.8	2	1.4	1.2
11			32	22	16	11	8	5.6	4	2.8	2	1.4
12				32	22	16	11	8	5.6	4	2.8	2
13					32	22	16	11	8	5.6	4	2.8
14						32	22	16	11	8	5.6	4
15							32	22	16	11	8	5.6
16								32	22	16	11	8
17									32	22	16	11
18										32	22	16

Films and Filters

The ASA speed of the film, which must be set on the camera, is one of the important factors in choosing film. The higher the ASA film speed, the more sensitive the film is to light. If you wanted to try shooting in dim light without flash, for instance, ASA 400 film might be a likely choice. On the other hand, the faster the film, generally the grainier the results, so for fine detail in a photo of autumn colors, for instance, a film with a rather low ASA rating might be a better choice. Films also differ in several other ways, including color rendition, exposure latitude and color temperature.

Of course, you have the basic choice between black and white or two types of color film — color slide film or color negative film for prints.

Due to the nature of films, there is some chance of underexposure and color shift when using very slow shutter speeds of 1 sec. or slower. This is due to reciprocity failure which is a particular problem with slide films. You can obtain more information concerning

reciprocity failure and how to correct it from the data sheet that comes with the film or from the film manufacturer.

A little knowledge about film will go a long way in increasing your appreciation of the AV-1's abilities. Please always pay careful attention to the information in the data sheet that comes with the film.

Some films, such as black and white infrared film, require a certain filter. Others may require a color conversion filter under certain lighting conditions. Again, you will find this information in the film data sheet. Filters can also be used to emphasize certain colors for more clarity or special effects. Canon offers a wide variety of filters for both black and white and color films. Most filters screw into the filter thread at the front of the lens but gelatin filters can also be used in Canon's Gelatin Filter Holder which can be attached to most lenses. Since the AV-1 has a through-the-lens meter, there is no need to make an exposure correction for light loss with filter factors when a filter is attached.

Canon Filters

Film Type	Filter Type	Filter Factor	Filter Uses and Effects
For color and black and white films	UV Clear Ultra Violet (SL37)	1X	Absorbs only ultraviolet rays and has no effect on other colors. Effective for cutting out haze on beaches and in high mountains where ultraviolet rays are strong.
	Skylight (Light Pink)	1X	Used with daylight type film for shooting under fair weather conditions. Cuts short wavelengths. Reduces the bluish tinge of sky and sea and prevents the shades of foliage from turning excessively green. In other words, this filter prevents blue and green from being unnaturally emphasized.
	*ND4-L, ND4 Neutral Density	4X	Has no effect on colors. Reduces light volume entering lens under strong light conditions. Useful when using high speed film in bright sunlight.
	*ND8-L, ND8 Neutral Density	8X	Performs same function as ND4 filter, but two times stronger. Reduces light volume to $\frac{1}{8}$.
For color films	CCA4 (Amber)	1.5X	Used with daylight type film for shooting under cloudy or rainy weather conditions or in the shade under fair weather conditions. Eliminates bluish tinge.
	CCA8 (Amber)	2X	Used for more natural color when shooting in the morning or evening light with tungsten type film.
	CCA 12 (Amber)	2X	Used with tungsten type film for shooting under sunlight (or other light source with daylight color temperature) to obtain normal color tones.
	CCB4 (Blue)	1.5X	Used with daylight type film for shooting in the morning or evening light to eliminate reddish tinge.
	CCB8 (Blue)	2X	Used with daylight type film for shooting at night or indoors with clear flash bulbs.
	CCB 12 (Blue)	3X	Used with daylight type film for shooting under artificial lighting to obtain natural color tones.
For black and white films	Y1 Light Yellow (SY44)	1.5X	Absorbs colors ranging from ultraviolet to violet. Adjusts color tone of the sea and brings out the whiteness of clouds by darkening the blue sky.
	Y3 Yellow (SY50)	2X	Similar to Y1, but more effective. Increases contrast of distant scenes.
	G1 Light Green (G55)	3X	Transmits green best. Holds back colors ranging from ultraviolet to blue and red. Good for outdoor portraits using ordinary film for natural reproduction of brightness of sky and face. Also good for natural reproduction of foliage.
	O1 Orange (SO56)	3X	Absorbs colors in a wide range from ultraviolet to green. Blue becomes fairly dark and yellow and red appear brighter than seen with the naked eye. Especially effective for emphasizing contrast of distant landscapes.
	R1 Red (SR60)	6X	Absorbs colors ranging from ultraviolet to yellow. Used for both ordinary and infrared films. Blue is reproduced as black and red as white. In some cases, daylight scenes look like night scenes. Very effective for distant shots.

* The new L-type ND filters are manufactured using a special process to give extra high-quality performance.

Subject to change without notice.

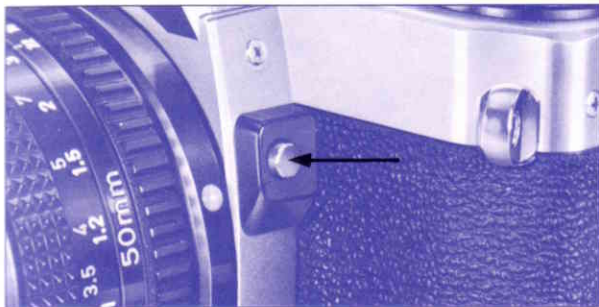


SHOOTING WITH LIGHT BEHIND YOUR SUBJECT (AND OTHER LIGHTING PROBLEMS)

Like all metering systems, the AV-1's metering system is designed to give correct exposure under normal lighting conditions. What is not normal? Not normal is a situation in which your subject is backlit with strong window, sun or artificial light behind it. In this case the camera will be influenced by this light into choosing a shutter speed which will underexpose your subject. The metered exposure must be increased. The same holds true if your subject is surrounded by a bright beach or snow and the latter is

taking up the major part of the viewing area. In general, some correction may be necessary if your subject is not centered in the viewing screen or if you wish to overexpose the image intentionally for a high-key shot.

On the other side of the coin, the camera may be fooled into choosing a shutter speed which will overexpose your subject if it has a very dark background, such as in stage photography and concerts; or you may wish to underexpose your subject intentionally for a low-key shot.



Backlight Control Switch

When you press this switch, the camera will automatically reduce the shutter speed $1\frac{1}{2}$ steps to increase exposure. This will be useful in all those cases described above in which you would like to give your subject a little more exposure, such as in backlit situations. Since the shutter speed will be considerably reduced, make sure to check the shutter speed in the viewfinder before shooting to make sure there is no chance of camera shake and that the meter needle does not point to the underexposure index. It may be necessary to turn the aperture ring to a larger f/stop for hand-held shooting and

correct exposure. Please note that you must keep pressing this switch until after you press the shutter release button. It does not lock.