# Chapter 4

# Practical lighting

Good lighting can transform even a routine, uninteresting shot into an attractive, appealing picture.

## 4.1 Lighting for everyone

Don't be scared of lighting! A lot of people are apprehensive about doing the wrong thing and looking foolish. Others think of lighting as an unnecessary luxury for a small production unit. They assume it requires a lot of equipment, and kilowatts of power. It can, if you have to light a large-studio drama, or the inside of a stadium. But everyday video productions are not usually so extensive, and even quite modest facilities will still give you opportunities for some really worthwhile lighting treatment.

As we shall see, there are many situations where just one lamp, or a well-placed reflector, is all that is needed to make a picture spring to life. Even where production is on a larger scale, foresight and imagination can often make a little light go a long way. It is chiefly a matter of knowing what you are aiming at, what to look out for, and what you can do about problems you meet.

Why not simply go around shooting in whatever light is available? You could. On your good days, you will finish up with clear attractive interesting pictures, where realistic color makes the picture sing. But there will certainly be those other days when pictures are lifeless, drab, or crudely over-contrasty; when you can't see the subject clearly, or its texture is lost, or attention goes to the wrong subject; when everything looks uninteresting and dull; when video noise spatters the picture, and color smears in the gloom.

So much depends on where and when you are shooting. Are you inside a building (interior) or out in the open (exterior). Is it day or night? Are the surroundings well illuminated, or in shadowy gloom? Are you shooting quite localized areas, or taking spacious long-shots? And finally, a lot will depend on the sort of atmosphere you are aiming to convey to your audience: a realistic everyday scene or a moody dramatic situation.

Obviously, you are not going to introduce any extra lighting into a scene unless it is really going to enhance your pictures. Often, you will not have the time or the opportunity to make changes anyway. So we shall assume that, at most, you will only be toting around a handful of lightweight lamps.

There will be many situations, particularly in the open air, where you do not even need these, provided you know how to arrange your subject in the existing lighting.

## 4.2 The camera does not compensate

One of the most important things to bear in mind, when you are lighting, is the essential difference between the way your eyes and brain register the scene and the limited, literal way your camera reproduces it.

Your eyes and brain compensate (sometimes *over*-compensate) in many subtle ways, as the lighting of your surroundings varies. You seem to be able to see details in shadows; variations in color values pass unnoticed. You are still able to see a remarkable amount even when the lighting conditions are very poor.

Your camera cannot interpret. As you saw earlier, it responds to what is there, within its limitations. If a surface reflects too much light for the video system, whether it is a specular reflection from a shiny surface, or a very light tone, it blocks off to a blank white in the picture. Darker-toned furniture, clothing, foliage or shadows often crush-out to black on camera. If you are on the spot, looking at the scene, you have none of these problems. So you have to be alert to how the camera is really reproducing what you are seeing.

Loss of detail and modeling in certain parts of the picture may not be important, unless you particularly want to see features of a white wedding dress or a black velvet costume (Section 3.14). Where the lost tones do matter, you may sometimes need to 'doctor' the scene to make it appear normal on the screen, e.g. by lighting a dark background to bring it within the range of the camera system, or deliberately keeping it out of shot.

## 4.3 The key factors

Did you realize that you already know a lot about the principles of lighting? Although these everyday effects are so similar that you probably don't give a second thought to them, you already have quite a store of knowledge about the way light reflects from different surfaces, how shadows fall, how the appearance of things can vary under different kinds of light, and so on. You will be applying these various observations, as you light your production.

'Lighting' involves a lot more than simply having enough illumination around to let the camera see what is going on. Light influences what your subject looks like, how people feel about what they see, what attracts their attention. So we need to think about not only where to put our lamps, but the sort of light we are getting from them, and how all this affects the quality of our pictures.

For most everyday purposes, we simply refer to illumination as 'light', and leave it at that. But to use it successfully, we should take a look at some of its interesting characteristics.

1 The light's *intensity* (brightness), for this affects exposure.
2 The light's *quality*; whether it is concentrated 'hard' shadow-forming light, or diffuse 'soft' shadowless illumination.
3 Lighting *contrast*; the relative brightness of the lightest and darkest areas in the shot.
4 The *direction* of the light relative to the camera's viewpoint, and the effect this has on the appearance of the subjects.
5 The light's *color temperature*; the luminant's overall color quality.

When using *colored light* for effect, you are concerned with:

its *hue* (the predominant color, e.g. blue, green, yellow),
its *saturation* (chroma, purity, intensity), i.e. its richness or paleness,
its *luminance* (brightness, value), i.e. how light or dark it appears.

If you understand how to control (or compensate for) these various features, you will be able to create consistent high-quality pictures, even when shooting with available light. If you ignore them, results may be fine; but then again, they may be unpredictable.

## 4.4 The light's intensity

As you know, the camera requires a certain amount of light reflected from the scene to produce high-grade pictures. If there is too little, the shot is underexposed (all tones reproduce too dark). If there is too much, it will be overexposed (all tones reproduce too light). You can measure the intensity of the lighting with a light-meter, or rely on the camera's exposure-indicator, or on the appearance of the picture in your viewfinder.

The camera will not receive sufficient light if:

- the illumination falling on the subject is too dim (low light levels),
- your lens aperture (stop) is too small,
- you are using a filter that is too dense, relative to the tones in the scene, or its overall brightness.

Clearly, you will need less light to achieve good pictures in a white-walled room than a dark-panelled one. Remember, extra video gain can only partly compensate for underexposure, for although it boosts the picture strength, the CCD sensor itself is still getting too little light from the scene (causing picture noise, smearing, trailing effects).

## 4.5 If there is not enough light

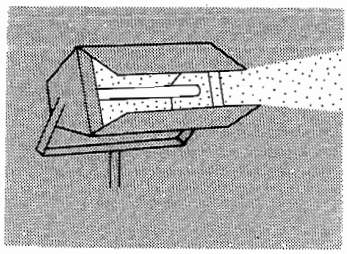
If you are shooting inside buildings, or outdoors at night, you are quite likely to find that there is not really enough light around to get high-grade pictures. There are several regular solutions:

- Move the subject to where there is more light.
- Open up the lens aperture – but this reduces the zone of sharpness ('depth of field').
- Increase the camera's sensitivity ('boost' 'video gain') – but this will increase picture noise.
- Increase the local lighting, i.e. switch on more room lights.
- Add some of your own lighting to the scene.

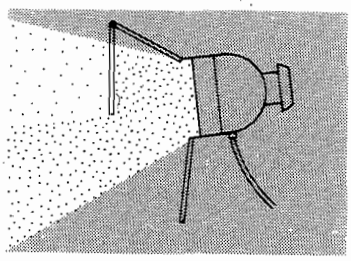
## 4.6 If there is too much light

If lighting is too intense (high light levels), you may compensate:

- by moving the subject to where there is less light,
- by stopping the lens down (smaller aperture),
- by using a neutral density filter,
- by switching off some of the existing lighting,
- perhaps pulling shades or blinds.

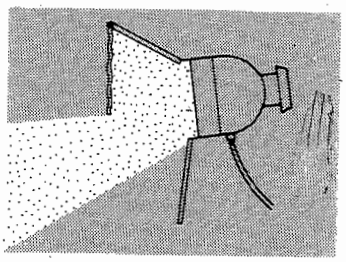


By partly closing the flaps you can limit the spread of the light.



Clipping a piece of diffuser to a barndoor flap.

Reduces the intensity of part of the light beam.



Similar to Pt 2 above but holding a sheet of cooking foil, cutting off the light completely.

**Figure 4.1 Controlling the light**

Otherwise, if you are using lamps to light the scene, you may:

- switch off some bulbs (in a multi-bulb light source),
- switch off some of your light sources,
- use lower-power sources,
- use a dimmer (although dimming a lamp lowers its color temperature),
- place diffuser material over a lamp,
- take the lamp farther away,
- flood (spread) the lamp's beam,
- use 'bounce light' instead of some of the direct lighting.

## 4.7 Hard light quality

Because the sun is so distant, it behaves as a localized *point source* of light. Its rays are therefore very directional and travel to us in straight lines. They cast distinct sharp shadows, which emphasize the texture and contours of any subject, especially when the light falls at an oblique angle. Because it is directional, you can easily block off this *hard light*, to prevent it falling on any surface.

Many man-made light sources, such as a match, a candle or a bare light bulb, also behave in this way. Because they are of very limited size, they act as point sources and produce hard light, irrespective of how powerful or weak they are.

Rather than allowing the light to spread around in all directions (as with a bare bulb hanging from the ceiling), many lighting fittings include a specially shaped 'parabolic' reflector, that directs light rays forwards in a narrow beam. They may also be fitted with a 'fresnel' ('stepped') lens to concentrate the beam further. This light-gathering improves the lamp's efficiency, and helps you to restrict the light to selected parts of the scene.

By adjusting the position of the reflector and/or the lens relative to the bulb, you can vary the spread of its beam, and to a certain extent, its intensity. Flaps or light-shields may be attached to the fitting, to cut off parts of the light beam. (These are known as barndoors, flags or snoots.)

The *good things* about hard light are:

- It is directional, so can easily be restricted to illuminate just those areas you want to light.
- It casts clear-cut shadows and shows up texture.
- Hard light can produce vigorous, bold, well-defined effects.
- The intensity of a hard light source, does not fall off appreciably with distance. So you can illuminate things effectively, with a lamp some distance away.

The *bad things* about hard light are:

- You often want to avoid distracting or ugly shadows (e.g. on the background behind someone).
- Results may look harsh, contrasty and unattractive.
- You may not want to emphasize texture (e.g. revealing the irregularities in someone's skin).
- Hard light sources have restricted coverage, so that you may need several lamps to cover a wide area.
- When you use more than one hard light source, the multi-shadows can be very distracting.

## 4.8 Soft light quality

Diffused light scatters in all directions. It occurs naturally, when the sun is obscured by cloud, and whenever sunlight is reflected from rough light-toned surfaces.

When subjects are illuminated by this *soft light*, there are no distinct shadows, only slight variations in surface brightness. So texture and surface contours are not very pronounced in the picture. You may not be able to see them at all.

There are several different types of fittings designed to provide soft light.

Some rely on diffusion material such as spun-glass sheet, frosted plastic or tracing paper (sometimes wire mesh) to scatter the light. (You can put a diffuser over a hard light source to reduce its intensity and soften its quality to some extent.) In others, the light from hidden lamps hits a reflector and scatters.

Another form of soft light uses a group or bank of open lamps. Their overlapping beams combine to give shadowless illumination.

At a pinch, you can create a compact 'soft light' source by placing two or three layers of diffuser (e.g. spun glass) over a hard-light source such as a lensless spot.

*The good things* about soft light are:

- It can produce subtle delicate shading.
- Soft light does not create unwanted shadows.
- Soft light avoids emphasizing modeling and texture.
- Soft light can illuminate the shadows cast by hard light sources, so that we can see details there, without itself casting further shadows.
- Soft light sources can cover a wide area of the scene.

*The bad things* about soft light are:

- It can flatten out all signs of surface shape and texture in the picture.
- Soft light spreads around, flooding all surfaces with light. It can be very difficult to restrict, and keep off selected areas.
- Soft light quickly falls off in intensity, as you increase the lamp's distance from the subject. So something fairly near the source may be over-lit, while another subject a little way away, is insufficiently lit.

## 4.9 Lighting contrast

The 'contrast' in a scene is simply the difference between the brightness of its lightest and darkest tones. If the range is too great for the camera to handle (around 20:1 to 30:1 max.), as it well might be when strong sunlight casts deep shadows, the extreme tones are lost in the picture. Many TV receivers can only reproduce a range of around 15:1 anyway.

The tonal contrasts that your camera sees will depend partly on the tones of the subjects themselves, partly on variations in the light's intensity, and partly on the shadows it casts.

Excessive lighting contrast produces a coarse 'soot and whitewash' effect, with burned-out highlights and detailess lower tones. Whether the result looks highly dramatic, or crude and difficult to interpret, depends on the situation.

When lighting is contrasty (e.g. lots of hard light from one direction, and no fill light), picture quality can alter considerably as you vary the camera's position. Shooting with the light behind the camera, subjects may look very

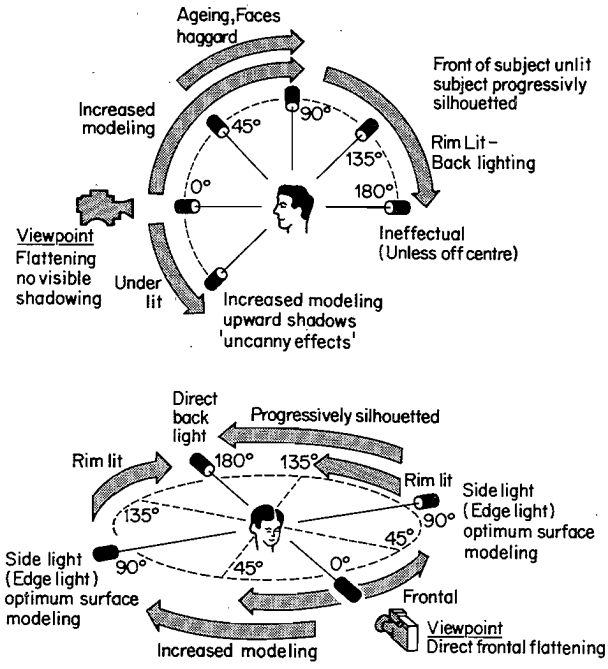



**Figure 4.2 Light direction**
As the position of the light changes, relative to the camera viewpoint, its effect alters on the subject. The direction you choose depends on which feature you want to emphasize or suppress.

*Top*: moving light upwards, and behind.

*Bottom*: moving light round and behind the subject.

bright, flat and unmodeled. If you shoot towards the light, only the edges of subjects will be illuminated, while the rest of them remains unlit.

The other extreme is the effect you get when the scene is lit with soft shadowless lighting. Now everything is very subtly modeled – perhaps so subtly, that the picture looks uninterestingly flat, as if things had been cut out and stuck onto their background. Even if you move the camera around over a wide angle, the tonal quality of the picture remains reasonably constant under soft lighting.

In practice, you usually want to avoid the harshness that comes from a high lighting contrast, and the flatness that you get with a low lighting contrast. The best solution is to use a careful balance of hard lights (which creates a three-dimensional illusion), and some soft light, to illuminate any shadows (i.e. 'fill' them) without casting extra ones.

## 4.10 Light direction

The direction of light can have a considerable influence on what any subject looks like. The best way to demonstrate this for yourself is to sit in front of a mirror in a dark room, holding a flashlight. Then you will see not only how the effect changes as light from different directions, but you will begin to understand the ways in which light-direction affects portraiture.

First hold your flashlight beside your head, pointing it straight into the mirror. This is the equivalent of a light just beside the camera. Notice how this direct frontal light seems to flatten out the texture and shape of the front of your face. If there is a smooth or shiny surface behind you, the light bounces straight back into your eye (i.e. into the camera lens), and appears as a hotspot on the background. Even a rough surface, such as stone or concrete, may look smooth under direct frontal lighting. It reminds you too, how unpleasantly dazzling it can be for people if you light them this way.

Move your flashlight to above your head, shining straight downwards. See how the light emphasizes every wrinkle! The top of your head and your nose are now bright ('hot') and your eyes are hidden in dark sockets. You have instantly aged many years, and look dreadful! (So always try to avoid top, overhead, downward lighting, particularly when shooting people.)

Hold the flashlight down low, shining upwards, and the effect is spooky, because we are not used to seeing people lit in this way – except in horror movies. Now the eyes and the neck are strongly lit. Again, surface details are emphasized with upward shadows.

Take the light round to one side, and you will see how only half of your head is lit, and the surface texture and contours of your face are unattractively exaggerated.

If someone takes the flashlight and holds it behind you, shining onto the back of your head, you will see that only the edges of your head will be lit (i.e. hair, ears and shoulders if the lamp is high). This sort of *backlight* is very successful when lighting solid subjects, for it helps to make them stand out from their background, and creates a three-dimensional illusion. If the subject is of transparent or translucent material, the backlight will reveal this.

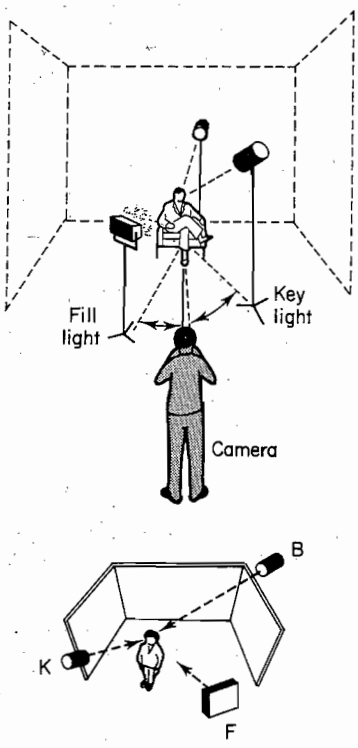



**Figure 4.3 Three-point lighting**
*Basic set-up.* Three lamps are used: The *key light* which models the subject, and is some 5–30° to one side of the camera (vertical angle of 10–40°). The *fill light* (*filler*) which illuminates shadows but ideally casts none of its own (diffused), positioned say 5–30° on the other side of the camera. The *back light* placed behind the subject, to outline it with light; up to 20° either side of the dead back position, facing the camera; vertical angle of 25–60°.

*Area lighting.* This principle can be used for lighting areas too.

## 4.11 Three-point lighting

For most situations, you will find that the best results come from using three basic light directions.

The main light, or *key light*, is positioned slightly above and to one side of the camera. This is normally a hard-light source (a spotlight), and it reveals the shape and surface features of your subject.

A soft light (broad source) on the opposite side of the camera illuminates the shadows and reduces the lighting contrast. The more the key light is offset, the more important this soft *fill light* (filler; fill-in) becomes. If the key is nearly frontal, you may not need fill light at all.

Finally, a *backlight* angled down onto the subject from behind gives it solidity.

Wherever possible, you can add extra lamps to light the background behind the subject. But where space or facilities are limited, you may have to rely on spill illumination from your key and fill lights to cover background areas instead.

## 4.12 Measuring light levels

The most convenient method of measuring light is to stand in the *subject's position*, and point your light-meter towards a light source to measure the incident light. It is usually better to check and balance the final lighting set-up, than to switch on and measure individual lamps.

The best way to learn about appropriate light levels for your equipment, is by experiment. Set the lens aperture to e.g. *f*/4. Sit someone in front of the camera, and adjust the intensity of the key light (change power, distance, diffuser, dimmer) until their face and clothing appear attractively exposed, when viewed on a picture monitor (not the camera viewfinder). Light tones should not be crushed out, nor darker areas clogged.

Now read the key light's intensity, and you have a typical guide figure for future reference. Add sufficient fill light (offset at e.g. 5–30°) to relieve the shadows, without overlighting them – as *judged by your monitor picture*. Measure the fill light intensity (re-check the key-plus-fill brightness).

Having noted these figures; repeat the operation for the back light. You now have useful working data for the future.

The amount of light produced by a particular lighting fixture, depends on its design, the quality of its light (how hard or soft), its power, how it is adjusted, the lamp's age and condition, its distance from the subject, etc. Forget formulae! Measure how much light *your equipment* gives at a typical distance under *your* working conditions, and use this as a basis for the number of units you need for a job.

## 4.13 Typical light levels

If you want to work with a lens aperture of *f*/4 (to get sufficient depth of field), you may need a typical light level from the key light of e.g. 100 fc (1076 lux). This is the main light source, that determines the exposure. Don't *underlight* if you can help it. Some people use minimum light, and boost the video to improve the signal, but this degrades picture quality. Worse still, you are unlikely to be able to judge tonal balance accurately at lower light levels. Your eye will overlook distracting shadows, that become all too prominent on camera!

The intensity of the *back light* should usually be similar to the key light (e.g. 100 fc/1076 lux); but it will vary with the subject. Strong back light when appropriate may look 'glamorous'; but hot edges around subjects can also be artificial and distracting too. Weak back light is ineffectual.

The amount of *fill light (filler)* you need from soft-light sources, will depend on how contrasty you want the final effect to be. A rough rule-of-thumb is *around one-half to one-third as bright as the key light (e.g. 50–33 fc/530–360 lux). It should seldom be similar (high key situations), and never stronger than the key.* Remember, the purpose of the fill light is to augment, to illuminate shadows, without casting fresh shadows.

## 4.14 Color temperature compensation

The color quality of light can vary considerably, from the orange–yellow of candlelight or small tungsten lamps to the bluish illumination of daylight; from the warm hues of sunset to the greenish quality of many fluorescent light sources.

For good color fidelity, your camera system's color response, and the color quality of the prevailing light, need to match reasonably well. If they do not, you will find that the pictures have a pronounced bluish or orange–yellow color cast.

You can *match the camera to the lighting* by switching in a compensatory color-correction filter on the camera, and/or readjusting the camera's white balance.

Sometimes you will meet a *mixture* of lighting, e.g. high color temperature daylight coming through the windows, and low color temperature tungsten light inside a room. Then you have the choice of:

- shutting out the daylight by pulling the shades and relying on your quartz/tungsten light alone (camera set to 'tungsten balance'),
- putting light-blue filters (or 'dichroic filters') over the quartz/tungsten light to raise its color temperature (camera set to 'daylight' balance),
- attaching large sheets of orange–yellow color filter material over the windows to match the quartz/tungsten light (camera set to 'tungsten balance'),
- simply shooting the scene with its mixture of daylight and unfiltered lighting, and accepting the results.

With the camera balanced to 'daylight', the daylight will look right and the tungsten over-warm.

With the camera balanced to 'tungsten', the daylight will look very blue, and the tungsten light will look natural. The color-quality of light (its *color temperature*) is measured in kelvins (degrees kelvin (K)). If you want accurate consistent color reproduction (e.g. when shooting for medical records), or need to match several video cameras, you can use a special color-balance meter to check the light, and then introduce appropriate compensation. But for most purposes, it is sufficient to switch the camera to its nearest color-correction position (e.g. 'daylight', 'artificial', 'fluorescent', or 5600 K, 3200 K) and white-balance to these conditions.

## 4.15 Using colored light

Because your video is in color, it seems reasonable to assume that you would use quite a lot of colored light. But, in practice, you will only find yourself needing colored light when creating decorative effects (e.g. for a display, a dance or musical routine, firelight or moonlight), or to change the appearance of backgrounds (to introduce some color on a plain neutral wall or drapes).

When you do need colored lighting, you clip a sheet of special color media over a light fitting. Make sure that the sheet is not going to restrict ventilation to the lamp (which will overheat and fail). And do not put it so close to the lamp that the color sheet is destroyed by the intense heat.

Various materials are available, but never use colored glass. Colored gelatine is quite cheap, but it burns up, quickly becomes very brittle and torn, and pales out in use. Special plastic sheeting (of acetate, polyester, mylar or acrylic) is expensive, but will last and can be re-used.

If you are shooting under tungsten lighting and want to create an overall warm look to your picture, all you have to do is to set your camera to 'daylight' color correction. Conversely, you can use a 'tungsten' setting when shooting in daylight, to give pictures a very cold blue wintry appearance.

## 4.16 Shooting in daylight

Although daylight provides us with a free, convenient light source, it isn't a particularly reliable one. Its intensity varies, and so does its overall quality. Clouds pass over the sun, and sharply defined shadows vanish. Instead we may be left with a much weaker, diffused light. Throughout the day, the color quality and the direction of the light alter, and the sun that was frontal in the morning can gradually change to side light by the afternoon. All this may make it difficult to cut together shots that have been taken at different times of the day, where the variations in lighting show in the edited version of the action.

What you always have to bear in mind, is that the effect of light depends on the *position of your camera.*

Strong sunlight, that is more than enough from one viewpoint, may only rim the subject from another angle, leaving it in deep shadow.

You really have four choices. You can:

- Move round your subject until the sun is roughly behind the camera (but then it may not be the background you want!).

- Turn the subject into the light.
- Wait for the sun to move round to a better angle.
- Add (or reflect) lighting to compensate.

Sometimes you will just have to accept things as you find them. Suppose, for example, you want to take shots of an impressive building. Sunlight falling at just the right angle would throw wall texture and its various features into sharp relief. Once in a while, the light will be just right, and produce exactly the results you are looking for. There are even tables to tell you where the sun will be at any time of the day. But don't rely on it!

Under dull overcast skies, everything can look uninterestingly flat. Perhaps you could try again later, when the sun is shining. It could be that the particular features you want to show never do get suitable sunlight anyway! If a wall is facing north, it never does get full sunlight. So you may have to shoot the subject as it is, and just hope that results will look all right on the screen.

## 4.17 Using reflectors

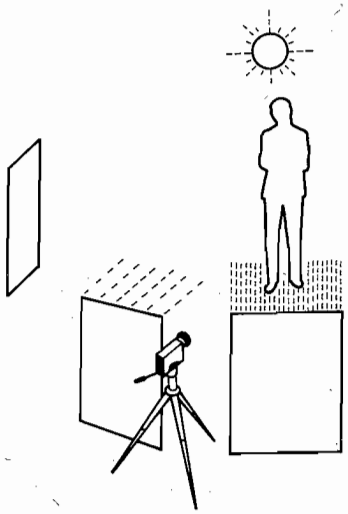


**Figure 4.4 Reflectors**
How effective a reflector is depends on its surface (polished, metallic surfaces are best) and on its angle to the sun or other light sources. If you use a reflector beside the camera, and reflect a source directly ahead of the camera, the intensity and coverage of the reflected light is maximum. As you angle the reflector to the source, its output and its coverage fall.

The cheapest way to improve a subject's lighting when shooting in sunlight is to use a *reflector*. This is simply a surface such as a board, screen, cloth or even a wall, that reflects existing light onto the subject from another angle. The quality of the reflected light depends on the surface you use.

A mirror surface (e.g. metal foil or metallized plastic) will reflect a distinct beam of light from a hard light source, creating sharp well-defined shadows. This light travels well, even when the subject is some distance away. (A mirror surface will even reflect soft light to some extent, if placed fairly near the subject.)

Unfortunately, the angle of a mirror-finish reflector can be critical. When the light shines directly at its surface, you will get the maximum effect. But as the surface is angled to the light, the reflected beam, which only covers a restricted angle anyway, narrows and becomes less effective. In a long shot, its limited coverage is seen as a localized patch of light.

If your reflector has a matte-white surface, it will produce a soft diffused light, which spreads over a wide angle. But this soft reflected light is much weaker, and will only travel a relatively short distance, depending on the intensity and distance of the original light source.

Reflectors are easily made from a board covered with aluminium cooking foil (smooth or crumpled and flattened) or matte-white painted, according to the type of light reflection you want. (A board faced with two different surfaces can be very useful.) The bigger the reflector, the more light will be reflected over a broad area, and big cloth or roller-blind reflectors (even portable cine-screens) can be used. But reflectors of this size are cumbersome to transport and support, and likely to vibrate in any wind.

Reflectors come into their own in strong sunlight. Over a limited area, you can use the reflected light to fill in deep shadows or to provide a frontal key light when the sun is behind the subject. Two or more reflectors can be used together. The main problems are in directing the light to exactly where you want it, and in supporting the reflectors perfectly still, at the right height.

However, as the only alternative is to use powerful lamps, or lights close in to the subject, it is an approach that is certainly worth trying when the sun's direction is appropriate, and tonal contrast is high.

Indoors, you can use reflectors to redirect light from windows into shadowy corners, or reflect sunlight as a filler. And when you are using backlight, a

low reflector near the camera can provide useful filler, perhaps to lift the shadows under people's chins and eyebrows.

Finally, while on the subject, when you are shooting in bright sunlight, look out for *accidental colored reflections* from nearby surfaces. Even a smart green shirt may show its wearer with a green complexion!

## 4.18 Bounce light

It is a common trick in *photography* to point a flash-gun at the ceiling or a wall when photographing interiors to give the scene an overall wash of diffused 'bounce light'. (But don't use a colored surface, or the reflected light will have a similar hue!)

Although you can sometimes use the same idea when shooting video, and point your lamps at the nearby surfaces to get a soft 'base-light', remember that only a fraction of the lamp's output is reflected. So it is really a pretty wasteful, random method. If you use more powerful lamps in order to get stronger bounce light, ventilation can become a problem in a small room. On balance, it may be better to use a strongly diffused broad source instead.

## 4.19 Do we need to light it?

It is an interesting fact that, if you look around any everyday scene, your eye will often pass without a second glance, over incidental features that seem to stand out in a photograph. You overlook the reflections in a shop window, and concentrate on the items on sale within. You accept a bright blob of light on a tiled surface without a thought. You talk to people, and note their expressions and how they are dressed perhaps, and that is an end to it.

Now look at a video of the same scene, and you are likely to react quite differently. The reflections in the window seem to stop you seeing into the shop. The blob of light on the tiles has become an annoying distraction. You tend to look at the people in the picture in a much more detached, critical way, than in everyday life. You may well be struck by their shadowed eye sockets, how haggard they look under the steep lighting, the hot tops to their heads; you may become aware of ugly neck shadows, bright noses or ears, strongly lit shoulders, the long nose shadow that looks like a mustache . . . Various trivial aspects of the everyday scene now have quite a different impact on the screen.

This is why professionals go to so much trouble to re-adjust and light many scenes, where there is obviously insufficient illumination to produce acceptable pictures. It is not enough, for example, to be able to get shots of an audience at a concert; one wants the pictures to be *attractive* too. The available light is often in the wrong direction, or is too flat or too contrasty, or it only illuminates part of the scene clearly. The extra lighting seeks to correct these shortcomings.

## 4.20 Lighting options

Whatever sort of program you are making, you really have four choices as far as lighting is concerned:

1 You can shoot with the existing lighting, either from your chosen viewpoint, or after moving to another position where the subject looks better.

2 You can increase the intensity of the lighting already there, e.g. take shades off light fittings or replace the bulbs with others of higher power.
3 You can augment the present lighting with extra lamps of your own. These may be anything from a reflector or a single hand-held lamp to a number of lighting units.
4 You can rely entirely on the lighting equipment you have taken along, because either there is no other illumination there, or you have decided that it is unsuitable and switched it off.

Then you have the choice of either lighting the whole action area, or restricting your lighting to suit limited action in one small section at a time.

## 4.21 Economy lighting

Whenever you shoot in the light that just happens to be there at the time, whether it is daylight or artificial, there is always an element of uncertainty about the quality of the pictures you are going to get.

By lighting the scene, or supplementing the existing lighting, you have some control over the situation, and a far better chance of achieving consistently high quality pictures.

'Economy lighting' is a way of thinking, a matter of turning whatever lighting is available to your advantage.

You begin by asking yourself: 'Can I shoot the scene from the camera position I have chosen, with the present lighting?' Check on whether you can expose the picture properly. Is there good detail and tonal gradation in the subject you are particularly interested in? If part of the subject is in shadow, does that matter? Would some fill light from a reflector, or a hand-lamp beside the camera, help to show details in the shadows? Are there any distractions in the shot, such as a bright sky or a large defocused blob of color?

Perhaps the overall effect would look better if you were to turn the subject slightly towards the light. Then you might not need any fill light for the shadows at all.

Would it be better to wait for the sun to come out, or return another day when the light is right?

If you are shooting an interior and there is daylight around, can you make use of it in some way in your shot, e.g. to save you providing a key light, or lighting a background wall?

And here's a trick, when there is virtually no light, or it's impossible to get good pictures with your video camera. Use a *photographic camera* (either with flash or a time exposure), to take a slide of the scene. Then project this slide in a dark room, and shoot the screen with your video camera!

## 4.22 Makeshift equipment

If one is on a tight budget there is a natural temptation to improvise. There are occasions when you can for a short time put a higher-powered bulb into a hinged desk-lamp or a ceiling light-track, clip on a sheet of cooking foil to shade off the wall, and a piece of tracing paper to soften the light. But these makeshift arrangements take a while to set up, easily come adrift, and are very temporary. And they are not particularly safe. Time soon passes, and the fitting overheats.