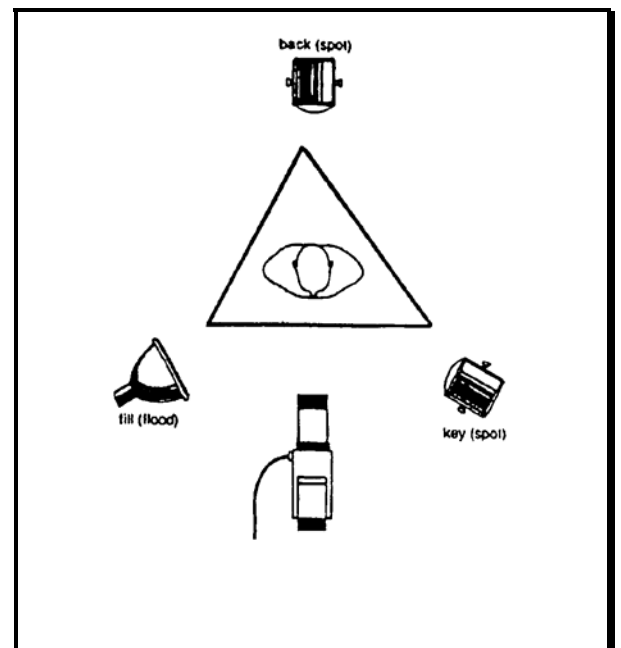


Competencies

- The development of the three-point lighting principle
- Importance of the key light
- Applications of the back light
- Use of fill light

Development of Three-Point Lighting

Basic lighting technology has been developed by the photographic industry. Early still photography created the triangle lighting or three-point lighting technique. The principle gets its name from the placement of the lighting instruments in relation to the subject. There are three main light sources: key, back, and fill. Each of these sources fulfills a specific purpose.



Key Light

Function

To fulfill one of the basic requirements of lighting—to provide general illumination of the subject, the key light serves as the principal source of illumination. The major function of the key light is to reveal the basic shape of the subject. In order to reveal the basic shape, the key light must produce some shadows.

Position

The key light is positioned in front and to either side of the viewer or the camera. The horizontal angle is generally from 30 to 45 degrees from center. There is no hard and fast rule as to instrument placement, but a 30-degree angle is a good starting point. Generally, when we decrease the horizontal angle of the key light and place it more frontally, we tend to flatten out a subject's features and create a two-dimensional look. Increasing the horizontal angle increases modeling and will produce an aging effect, emphasizing features and skin texture.

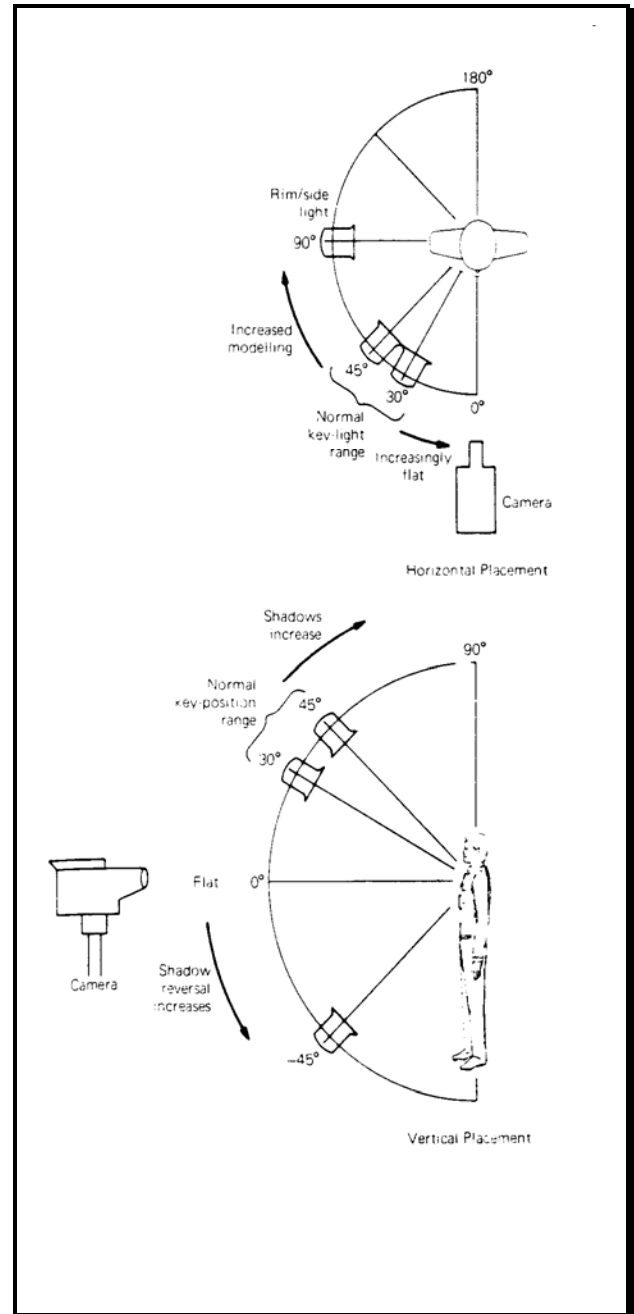
A good starting point for determining optimum placement of the key light from the vertical is also 30 degrees. A fairly high key light position means that the key light strikes the subject from a steep angle, causing large dark shadows under any protrusion or indentation, such as the eye sockets, under the nose, and under the chin. As the key light is lowered from vertical, the harshness disappears, but the subject then becomes two-dimensional.

Because of the extremely high grid in the Tom T. Hall studio, the only way to reduce the vertical angle is to move the instrument further from the subject. However, moving the instrument away from the subject quickly reduces the light level of the instrument. Pantographs and vertical extension pipes are available to suspend the instruments downward from the grid.

If you move the key light below the subject, the shadows now reverse themselves, producing a ghostly and mysterious effect.

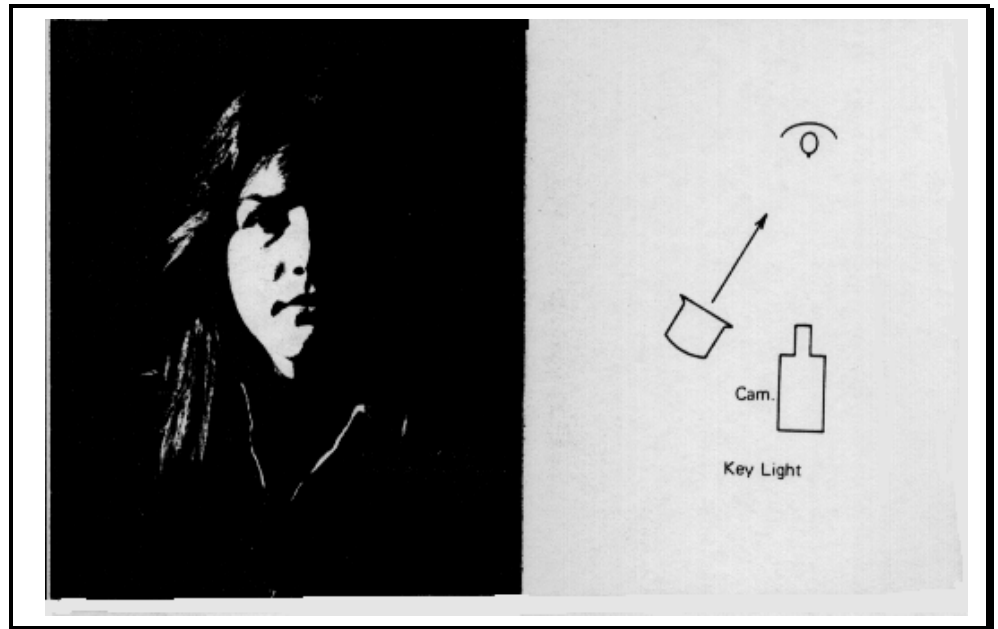
The key light determines the relative intensities of the back and fill lights. The key is the highest intensity of the three lights.

Key light can either be motivated or unmotivated. A motivated key is placed to suggest that its illumination is coming from a specific direction. A subject setting near a window or lamp should have their key instrument placed to support the assumption that the light source is from the outside or the lamp. Unmotivated keys are used when it obvious that the production is from a studio.



Intensity

The key light determines the relative intensities of all the other instruments, which are balanced in proportion to the key's light level. A minimum of 150 footcandles is needed in the studio for an acceptable TV picture, so the key light level should be at or above this minimum.



Instruments

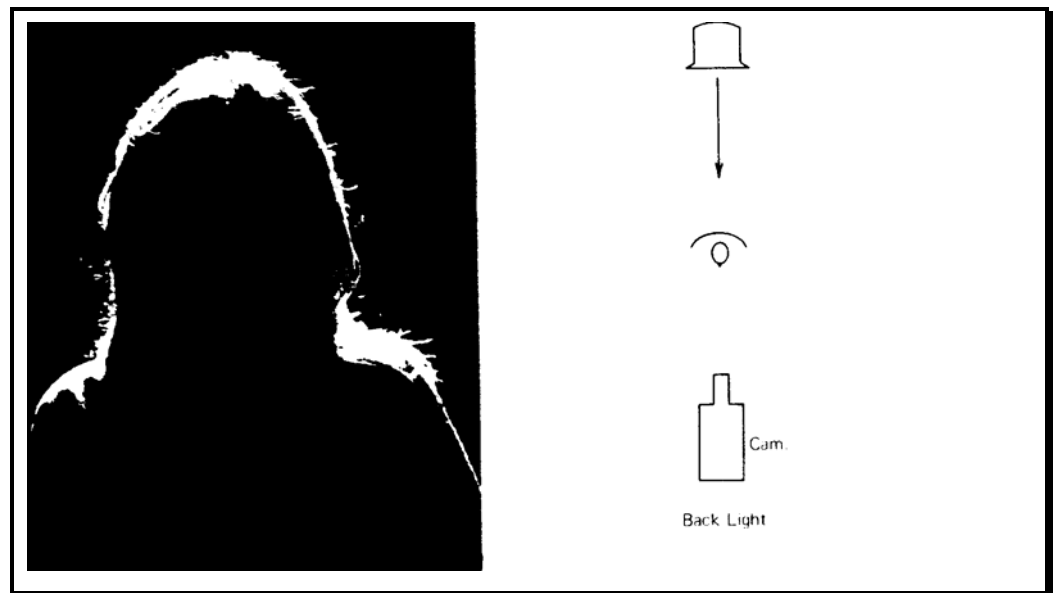
Fresnel spotlights are almost always used for key lights. This is because of the hard; directional light produced by the instrument. This hard, quick fall-off light is needed to create the modeling effect and sharp shadows. Additionally, the flood-spot adjustment provides greater control.

Scoops and softlights have been used for key lights but simply provide for general illumination. If you want to establish a specific direction from which the principal illumination is coming and provide modeling of the subject, you should use a spotlight.

Back Light

Function

The backlight has several important functions. It helps to distinguish the subject from the background. It also emphasizes the outline and contour of the subject. The backlight adds a dimension to the subject-background space.



The backlight is very important when chroma keying the subject over a chroma key background (usually blue or green). Sometimes a yellow gel is placed in the backlight to further add to the outline.

Position

Generally, try to position the backlight directly behind the subject. A more critical problem is the vertical angle the instrument is placed. A 45-degree angle is a good starting place. If the instrument is placed almost overhead, the backlight becomes a top light and produces an unnatural effect. On the other hand, if it is placed too low, it will distract the viewer by being directly in view. Again, because of the height of the grid, the biggest problem with the backlight is to keep it a respectable angle and not use it as a top light. You can accomplish this by keeping the subject away from the outside walls, near the center of the studio.

Intensity

The backlight as well as the fill light should be set relative to the key light. Generally the backlight should be the same intensity as the key light. This is a 1:1 ratio. This ratio is determined by several variables. If the subject is very dark, such as black hair, more back light is needed. If the subject is much lighter, the back light ratio can be reduced. The range of the backlight can be from 50 to 150 per cent of the key. If a lot of sparkle is needed, the backlight should be increased.

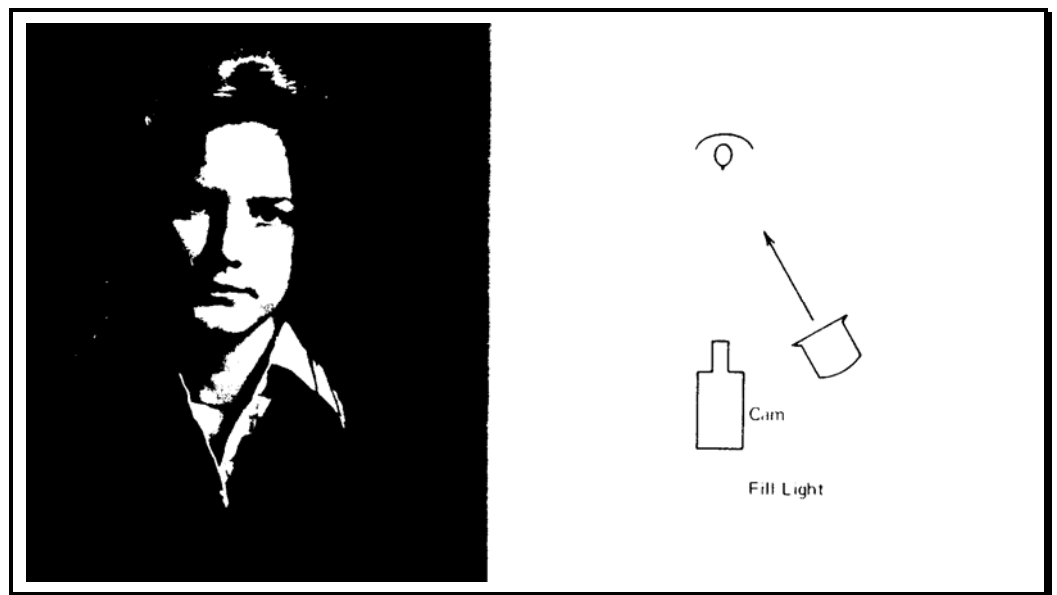
Instruments

Since backlight also requires a hard, directional light source, the Fresnel is the usually the best choice. To level out the intensity, the spot-flood control should be placed in the “flood” position and barndoors used to control the spill light.

Fill Light

Function

The fill light is used to lighten the shadows produced by the key light.



Position

The fill light is placed on the opposite of the viewer from the key light. Because the fill light is used to reduce shadows, the quality of the light should be somewhat defused and not sharp or harsh. The position of the fill light is not as critical as the key light, but the horizontal and vertical angles determine the slight shadows that remain.

Intensity

Because the key light is the major source of illumination of the subject, the fill light should never be higher than the key light. A good starting place would be 50 per cent of the key. A softer, less harsh look is created as the fill intensity approaches the key intensity, but it also produces a "flat" look on the subject. As the key light is reduced, a harsher look is created, emphasizing the contrast between the light and dark areas. The terms "low key" and "high key" denote the relationship between the key and fill lights. A bright, no-shadow look is called "low key" lighting, while a subject lit with harsh shadows, is called "high key" lighting.



Instruments

Unlike key and backlight that use Fresnels almost exclusively, you have a wider choice of instruments for the fill light. Scoops and softlights provide the correct quality of light needed. If an uncontrolled illumination of the general area of the subject is permissible, scoops and softlights are the logical choice. If more control is needed, then the Fresnel is used. A Fresnel that is fully "flooded" will provide a rather soft illumination, and barndoors are used to control the light. A scrim or defuser can further soften the quality of the light but will reduce the intensity of the light.