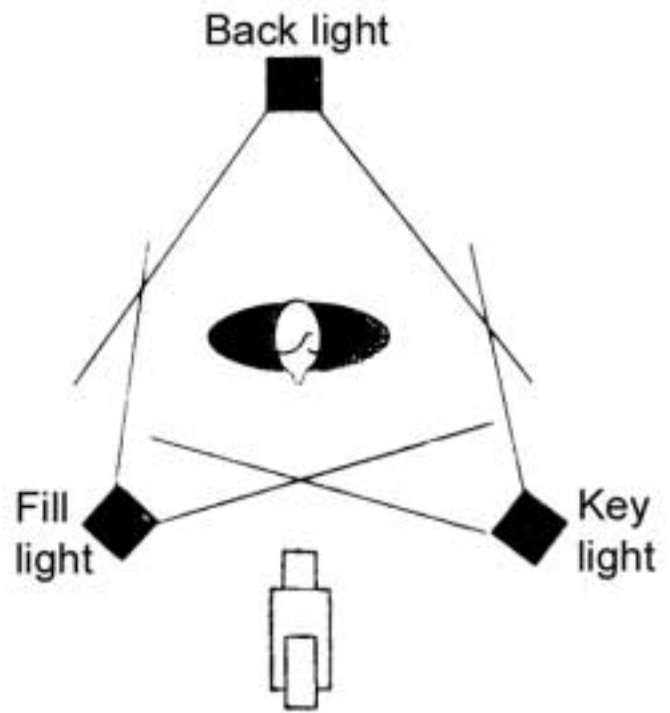


Lighting Worship For Video

By Ted May

For those of you video taping or broadcasting your services in any way, shape or form, you must realize that television is a 2 dimensional medium in its traditional applications. For many of you, your lighting is somewhat pre-determined by the lighting designers and architects that designed, recommended and installed your lighting equipment. For others there can be some adjustments made and programming changed to help improve the lighting look. Other factors will come into play such as skin color, clothing colors and reflectance, hair, make-up and a host of little nightmares. The one thing that is certain is that we are lighting the human form, which is 3 dimensional to be viewed on a 2 dimensional media. The trick is to give the best illusion of depth possible in order to emphasize the 3 dimensionality of the human form and this is done with the correct placement of light. Lighting for the purpose of video we must remember, is not an exact science, rather it is more of an art with no hard rules, only suggested starting points. Lighting is accomplished for the most part by eye and where it is taken is entirely up to the lighting designers imagination.



Certain aspects of the human form can cause the lighting designer a multitude of problems on the way to the final placement. Hair is probably one of the most commonly encountered aspects that vary from person to person. For example, dark hair without any reflected highlights can appear as undefined as a pile of mud, merging into an often dark background, leaving only the outline of a face. Excessive backlight especially on light colored hair can have equally unattractive effects, leaving the hair glowing like a light bulb and appearing quite unnatural. A steep backlight can emphasize thinning hair or cause a light colored, shorthaired person to look bald. Consequently, bald heads often produce nasty reflections and also appear "blown out" or over exposed on the monitor. Ears and eyes also have their own idiosyncrasies in that too bright of a back-light can cause certain types of ears to appear translucent or stick out too far. Deep-set eyes often go "soulless" black with too steep of a Key light that is above a 40-45 degree angle. Eyeglasses can cause terrible reflections or strange linear shadows when improperly lit. Noses can also cause some lighting problems if they are improperly lit. Shadows can cause a myriad of problems such as making the nose look longer or exaggerate the shape of the nose. Double front or Key lights can cause twin nose shadows forming a "shadow moustache". A shiny nose that is over-lit can cause the nose to appear bulbous like W.C. Fields! So as you can see, the many complexities of the human form can cause a multitude of lighting problems, which you need to be aware of as you light your people for broadcast.

Clothing also plays an important factor in the lighting process. Reflectance and color can be determining factors as to lighting color, intensity and placement. Reflectance is a consistent property of a piece of clothing for example. Most objects reflect only a percentage of the light falling onto them. So we can say that the reflection factor is the percentage of light actually reflected off the surface of the object. White clothing reflects 90% or more of the light falling on it while black absorbs most all the light and reflects only a small percentage around 2% to 4% of light. Color also affects the reflectance and luminance (brightness) value of the clothing. Remember, if the robes are red, you must have some red content to the light you are using to illuminate your subject with. Light the red robe with blue light and the robe reflects nothing and appears to be black. These factors must be considered when committing to a lighting design. Sometimes the clothing selections must be made carefully and presented to the lighting designer well in advance of the production.

So keep in mind that black or dark clothing often "disappears" into the background while white or light clothing often "blooms" and appears over exposed on the video. Colors will alter and change as a direct result of the color of light used to illuminate the clothing. With all this in mind let's proceed on.

As you begin your lighting design whether on blueprints or in real surroundings, you need to have a basic understanding of the functions of lights. I have been tossing around a couple of terms like "Key" light and "Back" light in this article. Indeed, these terms are indicative of the myriad of lighting terms we will explore in part. The most common type of lighting set up you will encounter is called "3 point lighting".

The Key light is the main source of lighting within the frame. The Key light establishes the directionality and source of motivated light. The Key light traditionally is placed at approximately a 40-45 degree angle off center of the talent in a normal setting such as a church service. When considering the movement of talent, we may have more than one single source, which we would consider the Key light. Many times we have a larger number of lights in the loft, which are acting as Key sources. In fact, you will find in the next section that the Fill lights may be hard to differentiate from the key lights when dealing with a large number of instruments sometimes used to light the video area, especially when we are dealing with an animated talent that covers a lot of ground during the service. Typically the most common instruments used for key lights will be of the Ellipsoidal type or PAR type lights. Incidentally, PAR stands for Parabolic Aluminized Reflector, which relates to the shape and coating of the lamp itself. These types of lighting instruments produce a harder source of light, which can cast a noticeable shadow and produce well-defined modeling on the talent. Care of placement of the Key light is tantamount to producing satisfactory results.

A Key light with too steep of an angle will produce heavy brow shadows, which will cause the eyes to go dark and look evil or sinister. If you start with correct positioning, you can figure about a 40 degree elevation of your Key light angle will suffice and not cause the brow shadow problem. A correctly placed Key light will properly illuminate the eyes and add some sparkle and life to them through the specular reflections on the eye itself. Too low of a key angle is generally not an issue with most churches as the lights are usually flown from a lighting loft or suspended truss or pipe. Hopefully when the Key lights are properly placed we will not experience any major reflections on eyeglasses. Sometimes too low of a Key light will produce some bad reflections on eyeglasses. The only fix for this may be to raise the lights higher. This could be a problem if the lighting loft is permanently fixed as part of the architecture of the building.

So to summarize the correct use of Key light, one should consider the correct angle of elevation and offset angle to be roughly 40-50 degrees off center, either to the right or to the left, and 40-45 degrees of elevation. The correct amount of light will be dependant on the cameras exposure value of "F" stop needed to get the right amount of light for the image. The video department may also want to consider a higher "F" stop, which requires more light and produces a greater depth of field. The Key lights should also not have any specific coloration to them beyond the normal "white" light they produce. Sometimes we may add a slight tint to enhance the flesh tones, however this should not be an interference to correct color reproduction of the camera.

Perhaps the most misunderstood of the 3-point lighting positions is the Fill light. Traditionally the Fill light was used to "fill in" the shadows left by the Key light and to add specular reflections to the eyes. Moreover, a more modern definition of a Fill light would be a light used to adjust the lighting ratio between the Key and the Fill light. Traditionally, the fill light was placed lower and closer to the camera for the studio "portrait" look. For permanent light placement in your house of worship, the Fill lights should be placed opposite of the Key lights at a slightly less offset, perhaps 20 to 30 degrees off center. With a large lighting installation, you may find lights placed in groups or intervals all the way across the catwalk, including straight dead center. This is not a bad thing as these lights in the center areas can be aimed at selected areas, which may need additional light, or as general wash lights to bring up overall ambience.

The Fill lights should never cast additional shadows. This is why Fill lights tend to be more diffused sources. The Fill lights should never be of brighter intensity than the Key lights and should rarely equal Key

brightness. How bright then you say? The "rule-of-thumb" is one-half to one third as bright as the Key as we have no hard rules in lighting! The amount of Fill will be determined by the amount of tonal contrast you want in the frame. This is often quite low in most video broadcast situations. Keep in mind that the more Fill light the less contrast you have and the flatter the picture appears in terms of dimensionality. Remember, we are trying to create the illusion of depth in a 2 dimensional media.

For the most part we can look at contrast in simple terms. Lighting ratios of 1:1 and 2:1 between the Key and Fill lights whereas the Key and Fill are equal in brightness to approximately a 2 times brighter Key light is what we refer to as Low Contrast or "High Key" lighting in photographic terms. This High Key lighting is conducive to bright general mistake proof wash lighting you pretty much find in most worship situations. It often leads to over exposure problems with clothing, hair and some skin. Also the illusion of depth is reduced with this "flat" lighting ratio. Lighting ratios of approximately 3:1 to 4:1 whereas the Key is roughly 3 to 4 times brighter than the Fill will be the ratio you should strive for to be the best combination of good lighting levels and coverage, and the better illusion of depth within the frame. Lighting ratios of approximately 5:1 and 6:1 whereas the Key is 5 to 6 times brighter than the Fill is what we call High Contrast, Low Key lighting, which will produce poor video results for the worship service. All this in mind, when lighting the podium area for broadcast video, one should strive then to bank the frontal lights into the 2 distinct groups of Key and Fill. The Key lights can be more defined or harder light sources, perhaps more ellipsoidal types, while the Fill side can be softer more diffused sources like wide flood PAR lamps or Ellipsoidals with soft focus or slight diffusion. Once hung properly, the lighting designer can light with the camera while keeping a close eye on the talents face on the monitor while adjusting the focus and intensity of the instruments. I would look for a 2:1 to 3:1 ratio between the Key and Fill sides of the face as discussed for the most pleasing ratio. Once this ratio is achieved, make sure that the lighting can be somewhat maintained should the talent leave the podium and wander around the staging area. Perhaps this is where the center-hung instruments can come into play to hold light levels in fringe areas where the talent may wander.

Keep in mind that people often move in and out of light, so you may have some areas which are darker or lighter, but to even everything out, you revert back to 1:1 even, flat wash lighting ratio and their goes your depth and modeled facial features. Which side do you want for Key or Fill is up to you. Often the Lighting Director looks for some motivation for light. An example of motivated light could be some large windows in the house of worship. My suggestion would be to Key from the window side, as that is the natural direction light is coming from in the room. Don't be afraid to experiment with amounts for Key and Fill, but do try and make your adjustments while on camera to be able to use the monitor as a lighting reference to achieve the best look for your service. In the next segment we will discuss the backlight, which is the final stop in the 3-point lighting scheme.

Depending on whom you talk to, you will find varying opinions on the use of the Backlight. Some purists will never use a Backlight claiming it is unnatural and detracts from the image. Others will tend to over-use it to the point of even randomly coloring the Backlight to suit the mood of the scene. Normally, the Backlights should be hung above and behind the talent. Too shallow or too steep of an angle will cause problems which we will discuss. An angle of approximately 40 degrees will put you in the right area. When the Backlight is properly used, natural or not, it helps to define and separate the human form from the background. With certain combinations of dark clothing and dark backgrounds or light clothing and light colored backgrounds especially in the same tonal color value range, we tend to loose the outlines of the human form. The same holds true for hair, in that the hair often blends with the background and leaves only the outline of the face. In fact, another term often used for a Backlight is a "Hair light". But watch out, too much Backlight on poofy blond hair will give you more than a "heavenly glow". The most important reason to use a Backlight results from the need to give the illusion of 3D in a 2D video world. All photographers can agree that the proper amount of Back light does indeed give an edge to the human form which tends to offset the talent from the background, hence accenting the illusion of a third dimension by adding apparent depth to the shot. Remember, in combination with a Backlight, the proper light levels on the background must also be set to achieve the maximum illusion of depth. Try and reduce your background lighting to the point that it looks

about twice as dark as your front of stage areas and you will notice better separation and depth with or without a Back light!

How much is enough and what is too little? Just like any other situation, you must light for the camera with the actual talent. If the hair glows too much on the monitor, back off the intensity. If the Backlight is unnoticeable, increase the intensity. Tonal separation can be an all too familiar problem with dark hair and clothing, allowing the talent to blend too much into the background. A properly placed Backlight will enhance the hair and clothing enough to bring it out of the dark and separate the talent from the background. Slight color variations can work to help enhance hair texture, however it is best to stay with "white" light if you are not sure what will work and still look "tasteful" to the camera. A good rule of thumb here is to give the talent just enough edge to start to be visible to the camera. Too much and the shoulders start to get hot. If your Backlight is mounted at too steep of an angle, you can expect shadows from the face and nose to reside on the talents chest. Conversely, too low of an angle on the Backlight will result in light entering the camera lens and producing lens flairs. Of course you may be able to lower the top flap of a barn door to block the light from the camera lens while still hitting the talent, providing your instrument has that feature. Barn doors are the 2 or 4 blade metal flaps that can be affixed to the front of most types of lighting instruments that allow you to "cut" the light as desired by swinging the selected metal "doors" in or out of the beam of light.

So now you have the basics of 3-Point lighting down! With this information you should be able to tailor your look to optimize the picture for the best video possible. Make sure you work closely with the camera operators or video technicians when adjusting any lighting. They can be your best assets for properly adjusting the lighting to compliment their images. Also, light with the monitor by keeping the camera open and properly exposed on your talent through a variety of shots until you feel that you have the lighting fully adjusted. Proper white balancing should be done also before and after you make any lighting changes. Keep in mind that your eyes are very sensitive lighting tool along with your good judgment, learn to trust them. When the lighting is right, it is usually pleasing to the eye as well as the camera!

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