Video in the church world has become common place and for many churches that are broadcasting their services or producing podcasts, it is a great source of outreach. However, there are special considerations that have to be melded together in order to produce adequate lighting for video telecast, recording or image magnification (IMAG). High quality video pictures are not possible without well-planned lighting. The new onset of HD (high definition) quality video makes this even more important. It really starts with a determination on how many cameras will be used, the type of camera and where they will be. This tells us what angles we have to light and what backgrounds have to be addressed.

This article will take a look at many different elements of video lighting from angles, to levels, fixtures, positions, color, background and more. In addition we will discuss some of the latest technology and how it relates to video lighting such as HD video and LED lighting.

**High Definition**
There is not a specific lighting design or lighting equipment necessary for HD shoots. However, HD will be less forgiving about uneven lighting or improperly lit backgrounds. As a general rule it reveals everything and hides absolutely nothing. There is also a greater contrast range. Low light conditions are recorded with a truer black range than the noisy, murky, muddy imagery generated by standard definition. If anything HD allows us to take advantage of lightings capabilities and refine our techniques.

**Light Level (Illumination)**
You will most commonly measure the light in Foot-candles with a light meter. For starters, one should throw away the myth that video lighting takes an enormous amount of over-all light level or intensity. In a not so distant past we needed 200 F/C of lighting level to make pictures. Today's camera technology allows for great looking pictures in relatively low light levels such as 50-60 F/C. The exact levels you’re looking for will be dependent on what the video producer or engineers will be requesting, the background, depth of field and contrast ratio. Whatever the level, the goal will be to have a fairly even stage wash so that the presenter is not walking in and out of varying light levels. The light meter can be used to help measure and balance the lighting.

If you are going to include shots of the congregation in your video then the congregation needs to be lit in close range to the level of the platform. An example would be to run the platform area at approx 20 foot-candles or so above the congregation. This will allow it to be clearly delineated, but not too much brighter than the rest of the room. This is easier today with lower stage light levels than it used to be in the past.
Front Lighting (Key Light)
Many are under the impression that a 45 degree angle is optimum for front-light. This is certainly true in the theatre and in basic lighting handbooks. However, for video lighting we lean more towards an angle of 30-35 degrees. This allows for better illumination of the eye sockets and less shadow problems in the background. Angles lower than 30 degrees start to make the subject appear flat. Simple two point lighting (one right and left of a subject) is most commonly placed approx 35 - 45 degrees apart. This allows for proper coverage of a subject's face from both sides. Added modeling of the subject can be done by varying the intensity of the two lights or adding fill lights creating a more three dimensional look.

Back-Light
The three most important things about video lighting are backlight, backlight and backlight. This is a very important element of the design and secondary only to front light. Backlight will work the hardest to separate the subject from the background. It achieves this by providing light for the shoulders and hair, allowing for dimension. The angle should be considerably steeper than the front light to come down on top of the shoulders. Levels should be even with or slightly under that of the front light.

Color
The use of color in video is an opinionated subject, and can be very complex. Standard tungsten color temperature is 3200K. You will typically leave the front light (key) fixtures un-gelled for subjects to appear “normal” in the shot. If sunlight is present thru windows (which has a higher color temp) then decisions have to be made in regards to which color temperature you will work with so that things seem even. The color temperature thing is a whole separate report.

Background
The best lighting in the world will fall short on camera without the presence of background. The background has to be planned, lit, colored and textured. The background is crucial to giving the shot depth and dimension. Depending on what the background is (plants, choir, band, scenery, exit doors, walls) will determine the lighting treatment it needs in regards to level, angle, color and texture. The background is preferably broken up or textured somewhat to show depth and dimension. It will also need to have a very delicate balance in level with the rest of the over-all picture. It is very easy to over-power the subject with an out of control or out of balance background. This is one of the more difficult parts of the video lighting equation to master. It’s an area you will want to experiment with along with your producer or engineers in order to find a balance. Professional lighting designers will have an arsenal of background options and techniques that make stunning pictures like the virtual screen background in the picture above.

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Lighting Fixtures
At one time Fresnel’s and standard Par Cans were used for front or key lighting of a platform area. These units have limited focus and are a flood. For a big even wash they work well, but in an environment where you have to keep ambient lighting to a minimum or keep light off of screens and backgrounds these units will not be your friend. In most of today’s installations front lighting is being done with ellipsoidal reflector spotlight (ERS) fixtures such as the ETC Source Four or equivalent. An ellipsoidal unit has many focusing options and delivers a very even field of light. The challenge is in blending one light to another with its hard edge nature. However, experimenting with diffusion gel filters will make focus and blending of these units much easier. Pars and Fresnel’s are excellent choices for backlight.

Background lighting can be done with almost anything depending on the desired effect, level, color or texture options. ERS units can be used to provide color and texture on the background through the use of templates. Other conventional lighting such as Pars, Strip lights and LED units can provide color wash. Color scrollers can be added to any ERS, Fresnel or Par fixtures for added color capability.

Automated lighting can offer great capabilities and control of the background such as multiple color options, texture possibilities, motion effects, hard and soft focus ranges and the ability to remotely focus the light exactly where it needs to be. These units also allow for special effect lighting in the background when desired. Caution should be used however involving automated lighting in respect to illuminating people with the lights due to the higher color temperature range. Proper use of automated lighting in video warrants its own article as well.

LED Lighting
LED (light emitting diode) fixtures are the newest thing to the professional lighting industry. Once again, this is a topic that needs its own article. However, in short LED fixtures use very little power to produce multi-colored lighting for task, architectural, interior and entertainment purposes. Typical LED performance is extremely efficient and longer lasting than conventional systems. LED lighting meets the need in Green design programs. There is almost no maintenance due to the absence of lamps and there is very little heat build up which can improve HVAC efficiency over platforms. These units do not require a dimming system which can save thousands in dimming, conduit and wire in new installations.

These units are excellent for accent lighting and for use in backgrounds and sets. However, we have a long way to go before they totally replace the fixtures of today. It has only been in the last five years that we have started seeing LED units as stand alone lighting fixtures. Due to the color temperature, they are not good for lighting people (such as front light fixtures) and they have limited throw distances. However, they are making advancements in LED lighting every day and with each trade show we see new products that get closer and closer to the real deal. There are many benefits to the LED unit but you have to be careful where it is placed and what you are asking it to do. It is not the glorious fix all that it is often made out to be. Proceed with caution.

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Focus
You must create a very even field across the stage. Cameras will pick up every little detail, dip or hot spot in the stage lighting especially HD cameras. A podium setting can be relatively simple but when dealing with a 40’ X 60’ stage it can get a little tricky. You will have to rely on fixture photo metrics (provided by the manufacturers) to determine area sizes that you can achieve based on the location of the fixture in relation to the stage and the intensity of that light when it gets to the subject. The next issue is the process of figuring overlap of intensity as you continue to add fixtures and areas moving right and left or up and down stage. You also have to be careful of the background, screens and being able to keep your min video levels if you need to start dividing the stage up.

Operation / Programming
Keep your stage lights in close proximity to where you balanced your cameras at. If you balanced the cameras with stage lighting at full they need to maintain that within reason except for video roll fade outs. Fading them down 30% or more will start having an impact on your color temperature which plays havoc with your video engineers and the over-all look. You can use the background lights to do more of your changing, fading and effects as needed. You will want to stay away from blackouts. When the lights are blacked out there is absolutely nothing to shoot. A sudden return of light can cause cameras to bloom and become quickly over saturated with light.

Always use a video monitor and router with the different camera shots to see how the lighting looks, not the stage. If a monitor is not available, look thru the camera, go to the control room or video truck. You have to view the presentation through the eye of the camera.

Ambient Light & Projection
Last but certainly not least, your lighting design plan is going to have to encompass keeping light off of the video screens (if you have them) in addition to everything else. When possible you have to work to try and keep the screens in a place where they are not in a direct line of fire of the stage lighting. However more times than not, that’s where they were designed initially or in some cases it’s where they need to be. This makes a lighting designer’s job challenging.

You can make a big difference in the ambient light in the room by using ERS units for front light because they have a lot less spill and can be controlled by the use of shutters. Pars are great for backlight, but they do release significant, uncontrolled ambient light. The use of barn-doors (accessory that fits in frame holder of Par) can be used for those units right around the screens.

Other considerations need to include carpet or stage floor color. The bounce of your lighting from the floor to the screen can cause damaging ambiance levels. Nearby curtains or set pieces that may be reflecting light will have the same problem. If possible, it is also a good idea to recess the screens up to 6” – 12” into a surrounding. This significantly reduces the ambient light hitting the screen.

It is the job of the designer and the video department to work together on keeping the screen filled with vivid color from one edge to another, which partly depends on your background. If the screen only has a talking head shot surrounded with dark or black image (caused by lack of background) then the screen will appear dark around the edges and you will see all of the ambient possible on the screen. If the screen stays filled with color, you will not see a lot of the ambient levels.

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Summary
Most importantly all of these video elements need to be executed while still maintaining an attractive and welcoming picture on the live stage. I have never been a fan of trashing the live image for video when the two can work together. There needs to be a delicate balance between making it right for video and still maintaining a warm feeling in the room. It's the art of combining all of these elements together along with staging, sets, choirs, bands and orchestras to make a successful picture that requires practice, skill and experience. It is an art all in itself.

Once the mood, staging, set and performance parameters have been determined by the producer, the lighting design best suitable for the project can be prepared within the budget allotments. Every situation should be looked at individually and all facilities will require different solutions. Many things could interfere with the “proper” way to achieve the results such as power restrictions, position limitations, weight and load limits, budgets and aesthetic or historic considerations. These minor or major details can throw curve balls into a design plan.

The impact of lighting in video is often under estimated. Regardless of how much investment has been made in studio equipment, HD cameras, switchers, screens, projectors and regardless of the video crew’s experience, the quality of the picture will be determined by the lighting. If you don't believe me, just hit the blackout button in the middle of the rehearsal and see if you can count to three before your video director screams for lights.

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