Topic 20

Lighting floor plan - introduction

Light is the basic *material* from which you make video images. But it's the light landing in the camera that forms the video image. Without it, there's no picture. As a video artist, the different qualities and colours of light are the choices on your palette. As a run-of-the-mill videographer, it's still light which the stuff of your work is.

Two Kinds of Light

When people speak of light, they refer to *incident* light and *reflected* light. Incident light is the light as it's travelling from the source. Reflected light is the light after it has hit a surface and bounced off it.

The video image is made from the pattern of reflected light which enters the camera's lens. As a videographer, your job is to choose the right light sources (incident light) for the visual effect you want to achieve, and then carefully arrange their heights, positions, intensities, colours and reach so the resulting composite of reflected light produces the picture and mood you seek. Every surface reflects light differently. Some surfaces are smooth and shiny. They reflect an even light, which may be bright or dark depending on the colour of the surface, the intensity of the incident light and the angle of reflection of the light into the camera lens. For example, a polished black stone surface can reflect a very bright light from some angles, but appear as an even, dark black from other angles. Getting the angle right between your camera lens and a critical surface can make or break a shot.

Other surfaces are textured and reflect a variegated pattern of light interspersed with tiny shadows. The angle of the incident light in relation to the surface texture is important. Frontal lighting reduces shadowing to almost nothing, whereas side lighting produces dramatic shadows. Knowing this allows you to emphasize or downplay the degree of apparent texturing of any surface in your picture.

So you can choose to make the performer's face look smooth, by lighting from the front, or craggy, by lighting from the side. Or you can highlight the folds of a background curtain by lighting the curtain from the side, or make the folds almost unnoticeable by lighting them from the front.

Curving surfaces reflect a gradation in intensity of light, with some parts bright and some areas falling away into shadow. As a baby you had to learn to interpret the meaning of different types of reflected light—you learned to predict hard and soft, sharp and 'comfy', wet and dry, as well as near and far. As a lighting person, you need to convey similar meanings of texture and depth

to your audience, although, because you're working with a flat screen, you have only two dimensions with which to get across the *feel* of things. When you set up the lighting for a shot or a scene, you should constantly draw on what you already know about reflected light. But don't stop there—continue to observe keenly and use what you discover.

That's how to lift your shots from mediocre to stunning.

Design Procedure

The following, outlines a procedure useful for the comprehensive and responsible lighting design, of a professional stage production. This applies to theatre, dance, opera, musical or other entertainment productions.

SCRIPT ANALYSIS: Read the script (score) several times, once for enjoyment and then again to determine; the times of day, seasons, type and direction of sources, moods and other intellectual and emotional stimulus.

TALK WITH THE DIRECTOR: Meet with director and other designers. Determine their interpretation of the script. What is the proposed style of design? What are their expectations regarding the lighting?

SET & COSTUME DESIGN: Gather together and familiarize yourself with the set drawings, renderings, costume sketches and the model. If there is a model, take a 'Poloriod' photo of each scene, to help you during the design process.

STUDY THE THEATRE: Visit the venue or study the plans. Get to know the lighting and rigging positions. Get a complete inventory of any permanent fixtures, circuits, dimming and control equipment. All other lighting equipment will need to be rented. If the production is to tour, determine and study the details of all theatres.

TIME/CREW/BUDGET: Will the lighting budget allow you to meet the needs of your anticipated design? Determine exactly how many hours you have in the theatre, for all aspects of the design. Determine exactly how many crew members you will have available and when. Finally determine what budget is available for additional rented equipment.

ATTEND REHEARSALS: Watch for blocking, and other mechanics. See if there is a particular style to the direction, (there should be). Are there specific conventions being used? Get exact measurements for furniture and 'specials'.

PREPARE THE LIGHTING DESIGN: Form a verbal 'concept' for the lighting. Next form a visual image as to how you expect the production to look, moment by moment. Next produce the

LIGHTING PLOT and all related paper work (including: the SHOP ORDER, HOOK-UP, INSTRUMENT, FOCUS and COLOR schedules).

SUPERVISE THE FOCUS: Although your attendance at the HANG may not be required, your attendance at the FOCUS session is mandatory. During this session you must aim, focus & document each fixture, one by one.

SUPERVISE THE LEVEL SETTING: Build each lighting picture one at a time so as to fulfill your design criteria. You must also establish exact 'counts' for the transitions from one cue, to another. Provide the Stage Manager with exact script locations (GO point) for each cue.

LIGHTING REHEARSALS: Supervise and refine all lighting levels and transitions as needed. Instruct your electricians as to 'running' maintenance and provide them with all final documentation.

Design Planning:

Lighting design is a two part process. First the designer must create the lighting in his mind. Next he must create it in the real world.

Any lighting design begins with the designer having a complete understanding of just what it is that he is lighting. Not only must the lighting designer be able to accurately visualize his proposed design, he must visualize it in the actual venue or performance space. This only comes from a thorough understanding of the script, the scenic design and the venue. All of this is very important!

THE SCENIC DESIGN

Usually the set designer will provide a scale rendering and a floor plan of each scene. These drawings are tremendously useful to the lighting designer and will show each scene both drawn from the front (elevation) and from the above, (plan view). The set designer may also provide a cross section and detailed construction drawings. Sometimes the set designer will include an indication of the anticipated lighting.

Many set designers will also construct an 3-D model of the set, (built to scale and accurately painted). The model is worth it's weight in gold and should be monopolized by the lighting designer whenever possible. This is the best design aid the lighting designer will ever have. He can position the model on a drawing of the theatre and easily determine the distances and angles to any lighting position. It doesn't get much better than this.

THE VENUE

After a complete understanding of the scenic design, the lighting designer must gain a full understanding of the performance venue. In particular the lighting designer must know the locations, distances and angles to all permanent lighting positions. Without this understanding, at best the lighting designer will only be able to 'fumble' through his design. Maybe things will work, but if they do it won't be because of planning.

The following drawings show the lighting positions of a typical proscenium theatre in both

PLAN and SECTION: Note how the two drawings directly relate to each other. Distances may be accurately measured using a 'scale rule' having the same scale as the drawings. In the U.S.A. and Canada, common scales used for theatre drawings are: 1/8", 1/4" and 1/2" = 1.0 foot.

PROSCENIUM THEATRE - PLAN VIEW

PROSCENIUM THEATRE - CROSS SECTION

The drawings above show standard lighting positions found in most proscenium theatres. They include: CEILING COVE(S), BALCONY RAIL(S), WALL SLOT(S) (BOX BOOM), OVERHEAD STAGE PIPES, BOOMS, FLOOR LIGHTING AND FOOTLIGHTS.
The lighting designer must always obtain facility or venue drawings that accurately show the location and detail of all lighting positions (both in the auditorium and above the stage. The venue drawings and the scenic drawings should be drawn to the same scale. This will allow the lighting designer to superimpose one set of plans on the other, showing the lighting positions in relationship to the set. This 'composite' drawing will usually form the fist stage in producing the final 'lighting plot'.

OTHER DESIGN TOOLS
Today many different computer aided design (CAD) programs exist to help the lighting designer visualize the performance space in 3-D. Modern programs allow accurately rendered models to be 'rotated in space' and viewed from any angle. Some programs have excellent light rendering capabilities and are great visual aids.
Regardless of how he does it, the lighting designer must quickly be able to visualize a particular production in a specific venue. He must also be able to accurately determine the distance and angle to any lighting position. The designer not equipped with this basic information is poorly equipped to proceed with any lighting design.