ACTING, DIRECTING

&

DESIGNING LIGHTING &

SCENERY

for

THE THRUST STAGE

PART FIVE
SUPPLEMENT
CHAPTER
TO

ACTING IS ACTION

by

Phillip Rayher

TABLE OF CONTENTS

LIGHTING THE THRUST STAGE AND THEATRE-IN-THE-ROUIND

LIGHTING THE THRUST STAGE AND THEATRE-IN-THE-ROUIND

Much of the elaborate and expensive scenery required by a proscenium staging is not needed on the thrust stage. However, the requirements for lighting a thrust stage are more elaborate. The production must be well lit for members of the audience who are looking at it from three sides; therefore, at least five, six or eight separate instrument positions will be required. Often the arrangement of set pieces and properties will dictate how a thrust stage is best divided into acting areas, and each of these will require several instruments focused on it from several directions. And the angle of the lighting must be high enough to avoid having the light fall on the spectators in the front row, directly across from the instruments. Audience members may become uncomfortable being lighted well enough to feel as if they are onstage.

Any theatre designed for the thrust stage should include provision for good mounting positions for lighting instruments. The lighting grid (a network of pipes from which lighting instruments are hung) in a thrust stage is usually suspended over the entire stage and auditorium space, so instruments can be hung wherever necessary to effectively light the playing area. Lighting grids vary in complexity from designs that hide the lighting instruments from the spectators' view to simple pipe grids from which the lights are hung in full view.

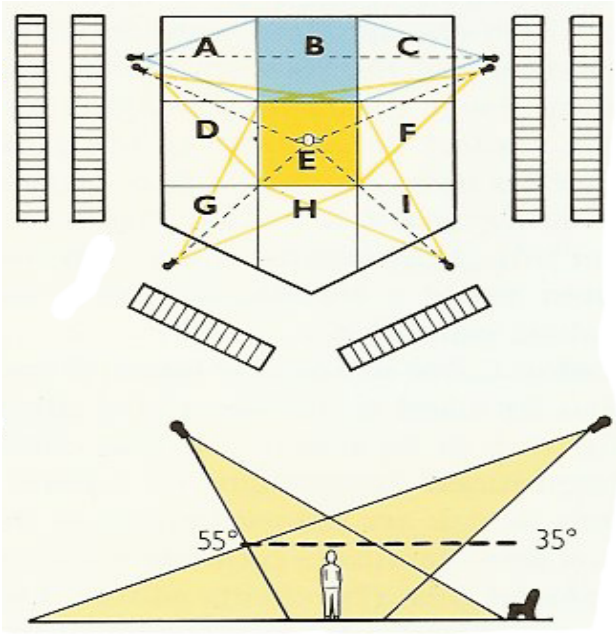
The stage floor becomes a major scenic element in most thrust houses because of the steep audience rake. Lighting color, texture, and composition will read quite strongly on the floor.

Aisles (or voms) because performers often enter and exit the stage from these positions often become transition areas as different scenes unfold.

Thrust lighting almost always require tighter and more individual dimmer control than proscenium productions.

Three-point lighting, four-point lighting, and five-point lighting angles

Top and back lighting is also essential to set the actor off from the background.[1] Blending and toning are best accomplished by use of soft-beamed spotlights to throw color washes over large portions of the stage.[2]

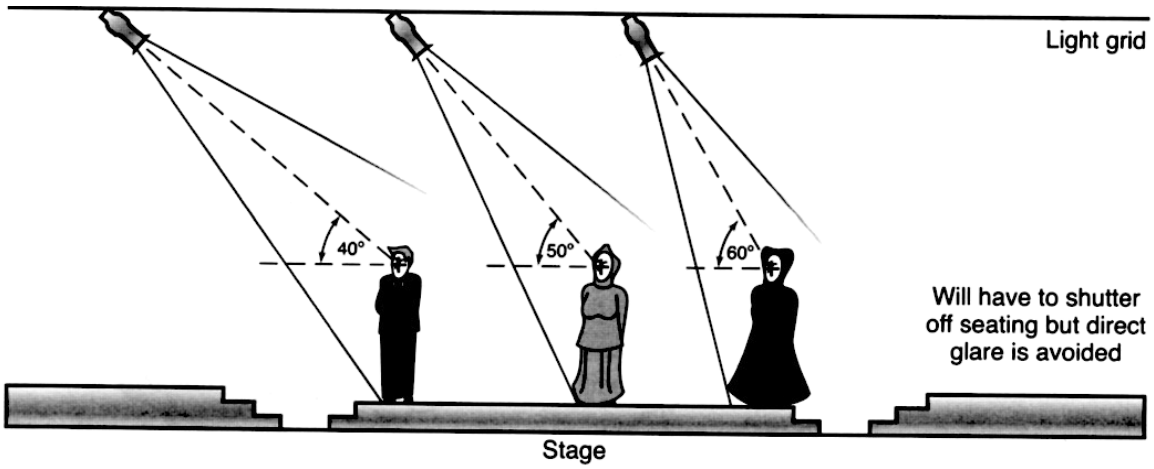


In these illustrations on the left the designation of the stage areas (A through I) is totally arbitrary. Two or three instruments would be used to light the back areas (A, B, and C), and three to five instruments to light the front and side areas (D through I).

Lighting angles are standard for good visibility, but because it must be assumed that the actor will both face, and be viewed, from several angles and of the need to avoid directing lights into the audience's eyes, the lighting angle must change from 45° for areas of the grid close to the edge of the stage. An angle of 55°, lighting actors positioned on the edge, will avoid dazzling people sitting in the front row. In open theatres it may also be necessary to light the stage from over the audience's heads, so angles lower than 45° will have to be used to light actors' faces properly. (Bottom illustration and the following illustration.)

[1] In terms of color the down and back lighting is often not far from white light.

[2] At School of the Arts we found using ETC ParNels is best for this effect.



In the illustration above is illustrates using progressively elevated angles to avoid spill and glare on the audience. While elevating angles helps to avoid spill and glare, it also creates a side effect of highlighting the forehead and brownie and can cause eye sockets to go into shadow. The secret is in finding an appropriatee balance betweenn these two elements.

Equipment for thrust stage lighting.

Since one of the greatest physical problems of arena lighting is preventing light from spilling into the eyes of the audience, plano-convex lenses on spotlights provide best results. Diffused light from fresnel lenses or PAR lamps is difficult to control unless long funnels are provided. It is possible to use diffused light from offstage sides focused into acting areas if sharp-edged light (or controlled light) is used from onstage positions focused to outer fringe areas. Since the throw to small thrust stages is seldom over 16 feet, baby spotlights or PAR-38 units provide minimal light. Stages requiring a longer throw will obviously need larger spotlights, but because of the large number of lights required for effective lighting, it is desirable to use low-wattage units.

Control for thrust lighting.

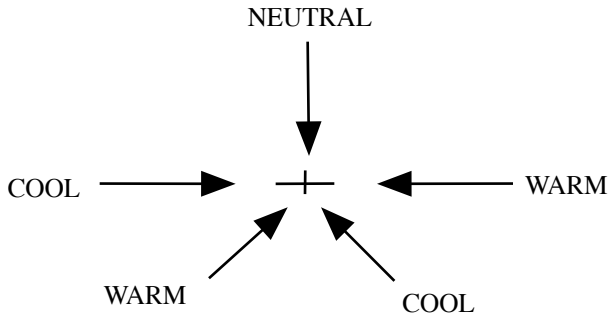
Sufficient control should be provided for each acting area, each entrance, each color wash or circuit, and a minimum of six extra dimmers for special lights. An alternative plan calls for one or two high-capacity dimmers to handle all lights considered general lights in a given production, plus lower-capacity dimmers to which color circuits and any special areas may be plugged through an interconnecting or plugging panel. Since blackouts are used in place of a curtain, master switches must be of sufficient capacity and strong enough in construction to withstand continual operation with lights at full capacity, or the board must be equipped with a special blackout switch.

McCandless method.

Basic principles of stage lighting are simple in concept but often complex in execution. In a widely used method developed in the 1930's by Stanley McCandless of Yale University, each area downstage is lighted by two spotlights from FOB (front of balcony) beam position and each area upstage is lighted by two spotlights from electric pipe positions. Ideally, spotlights should be mounted to form a 45° to 60° angle with the stage floor and a 60° to 90° angle with each other (physical limitations of most stages force adjustments, and the ideal is seldom obtainable). Area lighting such as this provides a basic formula with which to work. Each area should be well blended with adjacent areas, and each area should have individual dimmer control.

As an aid to providing a three-dimensional quality, the McCandless method establishes a warm and a cool side of the stage and places warm colored media (usually called "gels," short for gelatin— out of which color media was traditional made— in all spotlights focused from one side of the stage and cool-colored media in all spotlights focused from the other side. In adhering to this practice, however, excessive contrasts of colors should be avoided.

For the thrust stage a two-sided color approach allows for very little variety or color interest and may not be desirable for a production with a number of scenes each demanding specific lighting.



A Possible Color Key for the Trust using five different angles

With the minimum of five instruments on each acting area and a color arrangement as shown in the above illustration, the designer is provided with several more options.

1. The two warms can act as key light with the cools filling.
2. The two cools can act as key with the warms filling.
3. Any one instrument (except the back light neutral) can be lowered in intensity or dropped out completely, causing a color shift as well as compositional change.

For more dramatic productions, the vertical angle of side light can be raised. The following occurs:

1. Higher angle distribution will cause sharper facial and body shadows.
2. Sill into side audience seating is more controllable.
3. Area control can be tighter.

Units are ganged (two-fered) with warms together and cools together. If the neutrals are the same color they are often ganged together.

Texture achieved by patterns or gobos can break up the sometimes flat and dull surface of the thrust stage, with high side often being a desirable angle.

Ellipsoidal reflector spotlights (called by most Lekos[3]) are used a great deal in the thrust stage layout because of the good control we have over their beams. When possible they are soft-edged by shifting the lenses to throw the gate out of focus, so as to cut down on sharp patterns and abrupt changes of intensity on the stage and the actors. For the same reason Fresnel spotlights are used when their spill light will not be critical, and even then barn doors are suggested on many instruments.

The following section: **Lighting the Arena and Thrust Stage** is at http://www.northern.edu/wild/LiteDes/ldarena.htm [4]

1. How can the McCandless system be adapted to the Arena and Thrust stage? Stanley McCandless' method can be easily adapted to the needs of the sculptural stage. The "method" designer can still divide the stage into lighting areas, add washes of toning and blending lights, and highlight a climactic moment with a couple of carefully focused specials. Only background lights (and then only for arena productions) need to be sacrificed.

2. What are the standard mounting positions? Most *arena* or *thrust stage* theatres have a rigid pipe grid suspended sixteen to twenty feet above the deck. This grid normally extends six to eight feet beyond the edge of the stage, therefore a 24'x24' acting area would require a 40'x40' grid. This grid would traditionally be divided into four foot squares.

3. What is the typical number of lighting areas in an arena layout? The "standard" 24' square acting area is typically divided into nine 8x8 lighting areas.

4. Where are they located? The lighting areas are generally arranged in a three by three grid.

---

[3] Leko is a registered trade mark, like is Kleenex, of Strand Lighting for their ellipsoidal reflector spotlights. The Strand Electric Company began operating in 1914 to serve London's theater district. In 1926 Century Lighting opened for business in New York to serve Broadway. Today, Strand Lighting, the union of these two companies, continues as the world's leading name in stage, television, motion picture, and architectural lighting and services.

[4] Resources: Text: J. Michael Gillette. *Theatrical Design and Production*, 4th edition. Mountain View, CA: Mayfield Publishing Company. 1999. Chapter 12: Lighting Design, pp. 310-312.

5. Which area is most important? The center-center acting area is the *arena* equivalent of a proscenium theatre's down center area.

6. What is the minimum number of lamps needed per area? Three.

7. How should they be distributed around the performer? They should be evenly spaced around the performer. The separation angle between lights should be about 120 degrees. Although three lights is the minimum, most designers follow J. Michael Gillette's example and assign four lamps (separated by 90 degrees) to each area. This four light approach is known as the *double McCandless* system.

Three Light System - No Color

Three Light - Three Color
R01 - R51 - R63

Double McCandless
R01 - R63

8. Which color systems are most effective? Two basic approaches have been used with the three light system. **One**: all three lamps are in the same (or closely related) color and **Two**: A neutral is added to McCandless' warm and cool colors creating a warm (*R03: Bastard Amber*) - neutral (*R51: Surprise Pink*) - cool (*R63: Pale Blue*) system. With the *double McCandless* approach, two lamps (opposites) are usually gelled in a warm color and two in a cool color.

9. What instruments are used for toning and blending lights? Toning and blending lights tend to be 6" Fresnels or PAR lamps.

10. Where are they located? They are typically hung over the stage creating a wash of down light.

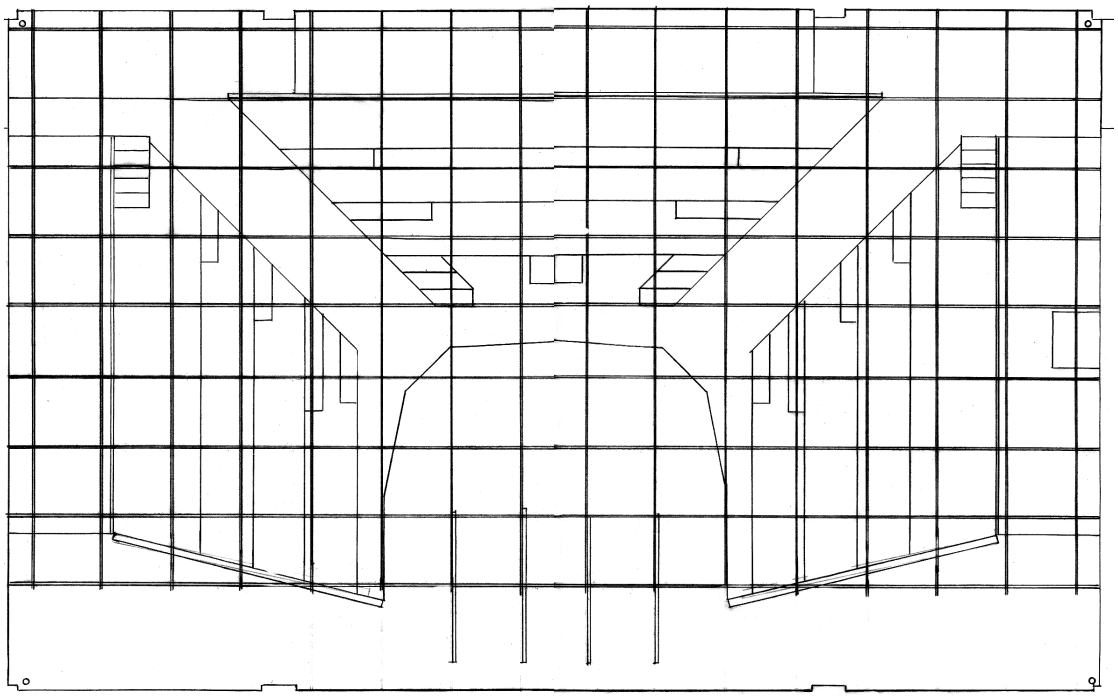
11. What is the "backdrop" in an arena production? The stage floor.

12. How is it lighted? The "backdrop" in an arena theatre is lit from above using both the *acting area* lights and the *toning and blending* lights.

13. What are the two major problems encountered when lighting an arena production?

- Keeping light out of the audience's eyes, especially those sitting in the first row.
- Direction, with the exception of down light, is no longer a design function. What is side light to half the audience is front light to one quarter of the audience and back light to the other quarter.

The use of gobos on a thrust stage. Play: *Tale of Teeke* Theatre: Unknown



The lighting grid layout of the Drama Studio, the former thrust stage, at School of the Arts high school in San Francisco.

LIGHTING USING A TENSION OR SUSPENSION GRID

HANGING POSITIONS In thrust theatres, the grid forms the most common method for mounting luminaires usually with a full grid that covers the entire theatre.

A tension or suspension grid consists of a series of tensioned aircraft cables stretched across the entire theatre in two perpendicular directions on roughly 2-inch intervals. This allows electricians to walk directly on the grid and greatly facilitates the hanging and focusing of the luminaires. The instruments are hung from horizontal pipes that are temporarily mounted above the grid across vertical uprights. The instruments hang just above the mesh grid with the lens located 6" away from the mesh which elements the grid and cross bars acting as a gobo and casting its pattern on the stage floor and are easily focused and maintained by the crew. Due to the closeness of the lens barrel to the grid, light from these luminaires passes directly through the grid and the mesh pattern is not seen by an audience. However, if a lamp is mounted too far above the grid, the shadows of the individual cables can become visible and will produce a gobo-like effect across the stage. Also, when looking up, not only will an audience see the circle of light associated with the lens of a lighting instrument but also a secondary ring of light that is cast onto the surface of the grid, which is shaped according to the angle at which the light strikes the grid. The electricians must also take special care not to bump previously focused units and shutters when climbing around the grid while working, which can become a challenge when crawling under or trying to step over pipes that contain a number of lurninaires and their associated wiring.