

# A Photo Essay on Light

from

## *The Magic of Light*

by

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Lighting equipment courtesy of Kliegl Brothers

The following photo essay was shot on a miniature stage (scale: two inches to one foot) using small versions of the fresnel and ellipsoidal spotlights. The figures are sculptor's scale-model manikins. The essay is preceded by a [mini light plot](#).

The essay was designed to show in simple terms how light coming from the standard theatre lighting positions will look when focused to light an actor in a given area on the stage. The [mini light plot](#) is a ground plan showing where the light pipes and instruments are hanging in relation to the stage. The plot also has on it an elevation of one of the tormentor pipes (or "booms," as they are sometimes called) for side lighting, and the ground plan of the tormentor positions used in the photo essay.

Each of the photo essays will refer back to the [mini light plot](#) for position of the instrument used. Through the use of this reference, the logic of why instruments are positioned as they are to achieve the desired angle and effect will become evident.

*[I have added a number of bracketed comments based on either my personal experience or the study of Miss Rosenthal's work archived with the Wisconsin Historical Society located at the University of Wisconsin in Madison. I have found the "Photo Essay on Light" to be an excellent teaching tool. The following link will open the [mini light plot](#) in its own browser window. -LW ]*



Figure 1

**No.2 pipe diagonal x-lights.** Fresnel lamps no. 1 and no. 4 on a 45-degree angle cross-focus to center stage. Both lamps are on half focus. [No. 2 Pipe 1 - 4]

*[Diagonal x-light will produce adequate, although shadow filled, illumination. The addition of a little front light from the Cove or Rail position will improve the audience's ability to read the actor's face. See Figure 22 Two eight inch fresnels at each end of the Pipe should light the full width of the bay. Additional fresnels placed in the second, third and fourth bay can create a full stage cross wash. -LW]*

**No. 1 pipe ends.** Ellipsoidal lamps no. 1 and no. 5 are focused diagonally to center stage, and both are shuttered upstage and downstage to stay inside the first bay. The onstage, or bottom, edge of each light has been squared off on the shutters to keep the floor pattern tidy. [No. 1 Pipe 1 - 5]

*[Ellipsoidals make it possible to accurately control the beam of light. Ellipsoidal Pipe Ends are often used to light an actor who is only a*



Figure 2

*couple of feet from the set. Two 6x12 ellipsoids at each end of the Pipe should cross light the full width of the bay. -LW]*



Figure 3

**Backlight.** Ellipsoidal backlight from the no. 4 pipe center position, on sharp focus. [No. 4 Pipe Center]

*[Backlight high lights the head and shoulders and can be used to separate the actor from his background. From the front, backlight, like downlight creates matching patterns of parallel beams. Four 6x12 ellipsoids could backlight the entire width of the bay. -LW]*



Figure 4

Fresnel backlight from the same no. 4 pipe center position, on half focus. [No. 4 Pipe Center]

*[Notice the soft edge of the floor pattern. -LW]*



Figure 5

**Combination** showing no. 2 pipe fresnel x-light (lamps no. 2 and no. 3) and no. 4 pipe fresnel backlight, all focused to downstage center, all on half focus. [No. 2 Pipe 2 - 3, No. 4 Pipe Center]

*[Again, cross and backlight will produce adequate, but shadow filled, illumination. The addition of a little front light from the Cove or Rail position will improve the audience's ability to read the actor's face. The Second Pipe fresnels, lamps 2 and 3, are on a sharp 60-degree angle cross-focus to center stage. See Figure 22]*

**Downlights.** No. 1 pipe ellipsoidal lamps no. 2 and no. 4. The focus is straight down and sharp. The downlight can be very dramatic but is not very good for faces. Viewed from the front,

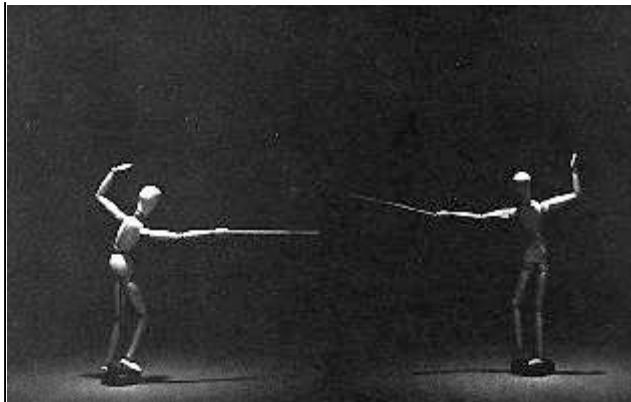


Figure 6

downlights create matching patterns of parallel beams. [No. 1 Pipe 2 - 4]

*[The three downlights on the **First Pipe** can be worked together to create an evenly spaced wash, or controlled individually to develop a grid of specials. Twelve lamps, three per bay in four bays, can create a full stage grid. This pattern is seen in most of her dance plots. -LW]*



Figure 7

In order to show the comparison of control of the light beam in an ellipsoidal with the ambiant haze light of a fresnel, we have placed two figures on the stage. One figure is in the center of the light and the other is just outside the ring of light. Although the photograph exaggerates the situation a little, it tells the story clearly. In **Figure 7** we have an ellipsoidal downlight on sharp focus, and we cannot see the second figure at all. [No. 1 Pipe 3]

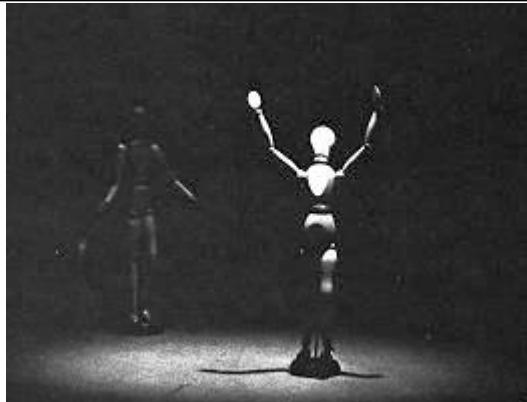


Figure 8

In **Figure 8** we have replaced the ellipsoidal with a fresnel, and the second figure has become visible in the ambiant haze of light, even though the fresnel is also on sharp focus. Both lamps are from the no. 1 pipe no. 3 position.[No. 1 Pipe 3]



Figure 9

**Frontlight.** An ellipsoidal from the center of the ceiling cove, or second balcony position, focused to downstage center. Upstage the shuttering is off the backdrop; downstage it is to the edge of the stage, and the sides are squared off for a cleaner floor pattern. By itself, this frontlight gives a very flat quality to the figure, even when x-focused, but it is good for seeing eyes in faces. [Cove Center]

*[Because very few Broadway houses had **Cove** positions in the 50s and 60s, **Frontlight** lamps were usually mounted on the **Balcony Rail**. This meant that not only was the actor's face brightly lit, but so was the scenery behind him. -LW]*

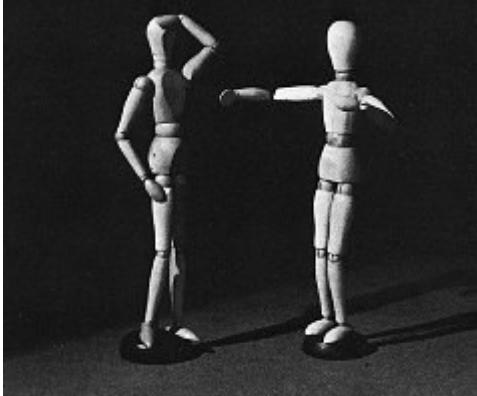


Figure 10

**Box lights.** An ellipsoidal from the box-right position. In the shuttering it has been cut off the right proscenium, the upstage drop, and the edge of the stage downstage, which would include staying off the proscenium on stage left. [Box Right]

[Three 6x12 ellipsoidals should give a full stage wash. -LW]

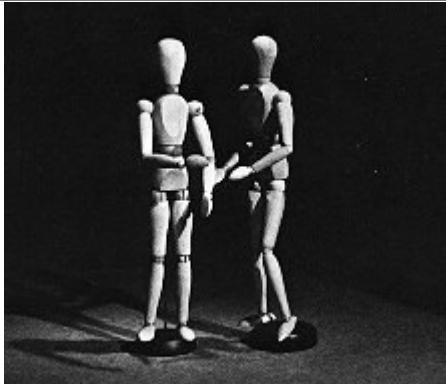


Figure 11

An ellipsoidal from the box left position combined with a no. 2 pipe fresnel (lamp no. 2) focused to downstage center. [Box Left, No. 2 Pipe 2]

[The fresnel side light from the **Second Pipe** adds depth, but some fill from either stage right or the front is still needed. -LW]

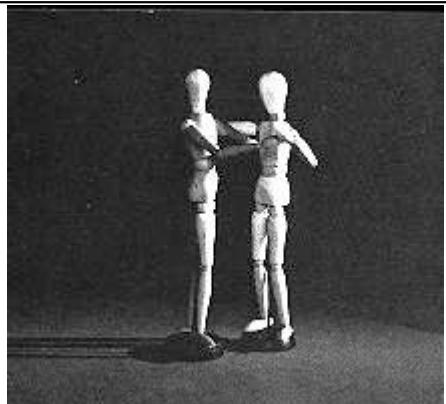


Figure 12

**Torm x-light.** No. 1 torm left, lamp no. 3. An ellipsoidal focused straight across, covering the stage for the figure from stage right to stage left, or full x-stage coverage. [No. 1 Torm Left 3]

*This is the basic side light position for dance. In a musical or drama, this instrument could represent a rising (or setting) sun. Fill light could come from the stage right torm. -LW]*

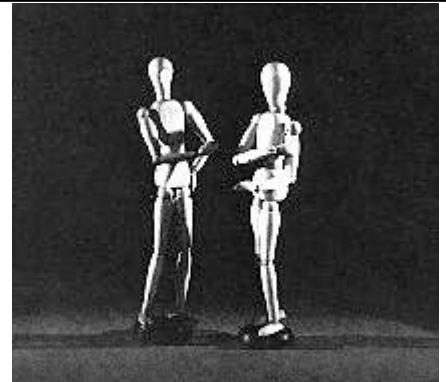


Figure 13

**Torm x-light.** From both no. 1 torm left, lamp no. 3, and no. 1 torm right, lamp no. 3. Both are focused for head high at center and give full x-stage coverage. [No. 1 Torm Left & Right 3]

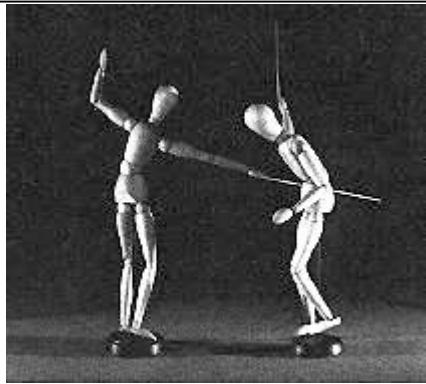
*[This has become the standard mounting position for lighting dance. Compare the mid-torm cross light with the high side light from the **First Pipe** pipe ends. See Figure 2. -LW]*

**Low x-light, or "shinbuster."** No. 1 torm left, ellipsoidal lamp no. 4, focused straight across the stage and shuttered both upstage and downstage off the opposite, masking legs. It is also shuttered

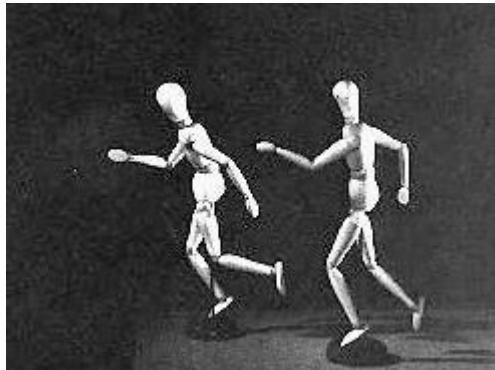
**Figure 14**

off the floor with the bottom of the light, making the beam invisible until someone moves into it. [No. 1 Torm Left 4]

*[Like the mid-torm cross light, the shinbuster is one of the main stays of a dance lighting designer's vocabulary -LW]*

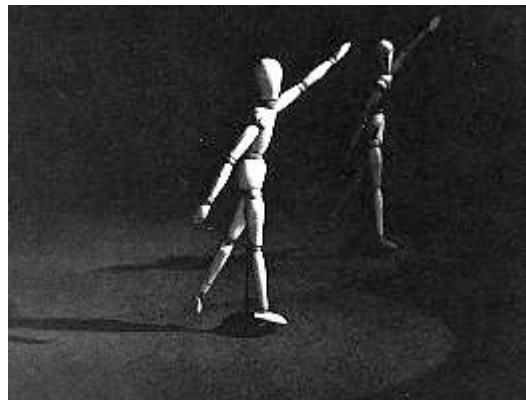
**Figure 15**

**Uplight.** Ellipsoids from no. 1 torms left and right, lamps no. 4. They are focused to head high at center stage. There is no shuttering upstage, and the light has not been shuttered off the floor. The only cuts are off the downstage masking legs (wings) opposite each lamp. [No. 1 Torm Left & Right 4]

**Figure 16**

A combination of uplight from no. 1 torm left no. 4 ellipsoidal and a high torm x-light from no. 1 torm right no. 1 ellipsoidal. The high torm lamp is shuttered off both the upstage and downstage masking legs. The stage right, or onstage, edge of the light has been shuttered to square off the pattern as we see it on the floor. [No 1 Torm Left 4, No. 1 Torm Right 1]

*[The dancers are moving into the stage right light, so the stage left shin buster is providing fill light. As an alternative, the high side light could come from an ellipsoidal hung on the right end of the First Pipe. -LW]*

**Figure 17**

**High term diagonals.** Ellipsoids in the first and second bay stage left, no. 1 torm left no. 1 ellipsoidal and no. 2 torm left no. 1 ellipsoidal . Focus is to center and covers the figure from left to center stage. [No. 1 Torm Left 1, No. 2 Torm Left 1]

*[A second ellipsoidal, focused to the center line could be added to light the dancers from center to stage right. A similar effect could be produced with **Pipe Ends**. Notice that each bay has its own set of **Torms**. Most dance programs were done with four bays requiring a minimum of eight booms. -LW]*

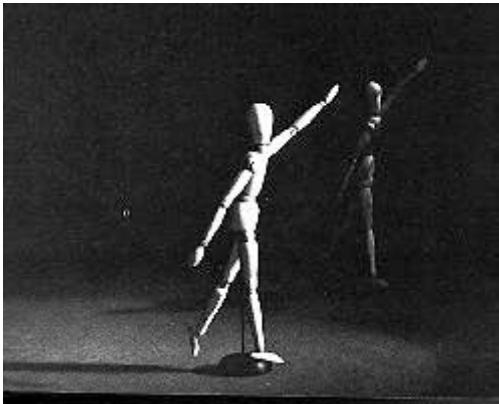


Figure 18

To the high torm diagonal ellipsoidals we add a midtorm fresnel x-light in the first bay, no. 1 torm left no. 2 fresnel. The addition of the fresnel in the first bay gives more distance and separation to the two figures. The fresnel is focused straight across for full x-stage coverage in the first bay. [No. 1 Torm Left 1 - 2, No. 2 Torm Left 1]

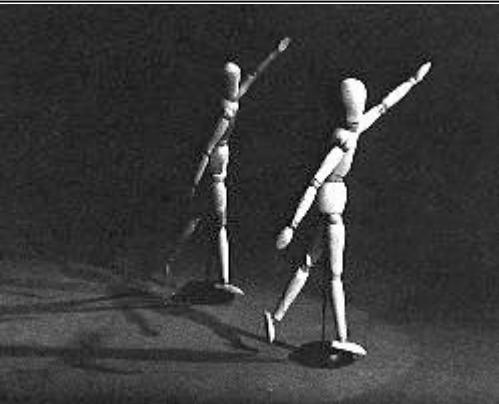


Figure 19

To the high torm diagonals (No. 1 torm left, no. 1 ellipsoidal and no. 2 fresnel. No. 2 torm left, no. 1 ellipsoidal) we add the box boom left ellipsoidal. (See Figures [10](#), [11](#), [17](#) and [18](#).) [Box Left, No. 1 Torm Left 1 - 2, No. 2 Torm Left 1]

*[The addition of the diagonal front light from the Box Boom will fill in some of the shadows.. -LW]*



Figure 20

**Combination:** Ellipsoidal x-light. No. 1 torm left no. 3 ellipsoidal, no. 1 torm right no. 3 ellipsoidal. Fresnel x-light. No. 2 pipe no. 1 and no. 4 fresnels. All focused to center stage. (See Figures [1](#) and [13](#).) [No. 1 Torm Left & Right 3, No. 2 Pipe 1 - 4]

*[Some front light from the Cove or Balcony Rail would help the audience see the actor's face. -LW]*

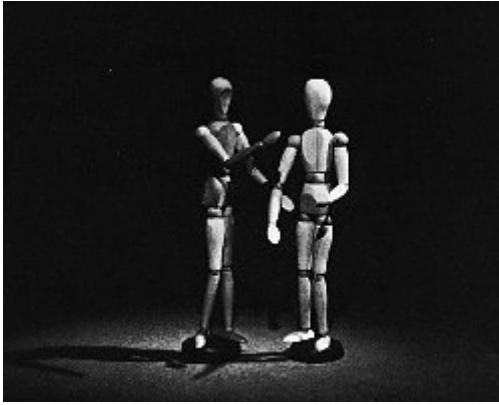


Figure 21

**Combination** of the center ceiling cove ellipsoidal with the no. 2 pipe no. 1 fresnel. The frontlight by itself is flat, but by adding the no. 2 pipe end x-light we begin to achieve a little modeling on the figures. [Cove Center, No. 2 Pipe 1]

Now by adding the no. 2 pipe fresnels from both ends of the pipe (lamps no. 1 and 4) and taking a lower-intensity reading on the frontlight, we still have good "face" light from the front but better



Figure 22

modeling. (See Figures [1](#) and [9](#).) [Cove Center, No. 2 Pipe 1 - 4]

*[The combination of frontlight from the ceiling Cove and cross light from the ends of the Second Pipe makes a good, all purpose general wash. The addition of Backlight would improve separation. Compare the light on the faces in this figure with the face light in Figure [21](#) -LW]*

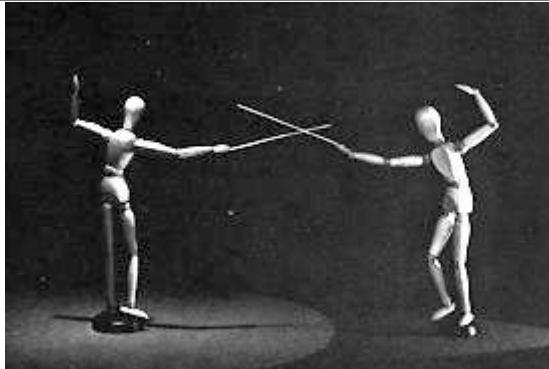


Figure 23

**Combination.** No. 1 torm left, ellipsoidal no. 4 as an uplight, hitting the back of the figure on stage left; no. 1 pipe ellipsoidal no. 3 as a downlight on the figure center stage. [No. 1 Torm Left 4, No. 1 Pipe 3]

*[A dramatic image for a brief moment in a show. Compare with the down lit figures in Figure [6](#). - LW]*

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