

A Brief Outline of the History of Stage Lighting

Reference:

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- Owens, Bobbi. *Scene Designers on Broadway*. New York: Greenwood Press. 1991.
- Pendleton, Ralph. *The Theatre of Robert Edmond Jones*. Middletown, CT. Wesleyan University Press. 1958

On the Internet:

- [Kliegl Bros. Collector's Society](#)
- [The Lighting Archive](#)
- [Theatrical Lighting Database](#)
- [Strand Archive](#)

[Lighting Equipment](#) - [Lighting Designers](#) - [Lighting Educators](#) - [Time Line: 1880...](#)

Lighting Equipment

General Illumination: *Candle - Oil Lamp - Gas - Electric*

Specific Illumination: *Lime Light - Arc Light - Electric Spotlight*

General Illumination

General illumination provides a diffuse, shadow less, wash of light over the entire stage space.

- **Candle**
 - **Italy - 1580-1618:** Candles are introduced in both the academic (*Teatro Olimpico*) and court (*Teatro Farnese*) theatres.
 - **England - 1600s:** Used in the *private* (indoor) *theatres* and Inigo Jones' (1573-1652) *Court Masques* .
 - **1660s:** Reintroduced during the English Restoration.
 - **Mounting Positions:** *Chandeliers* over both the stage and the house, *Front edge* of the stage (footlights), and "*Ladders*" between each pair of side wings.
- **Oil Lamp**
 - **1780s:** Swiss chemist Aime Argand develops the modern oil lamp which soon replaces the candle as the primary light source.
 - **Mounting Positions:** The same as with candles--*Chandeliers*, *Foot lights*, and *Ladders* in the wings.
- **Gas**
 - **1816:** The world's first gas stage-lighting system is installed at the *Chestnut Street Theatre* in Philadelphia.
 - **1817:** Gas-lighting systems are installed in London's two legitimate houses: *Drury Lane* and *Covent Garden*.
 - **1820s:** Gas light is in experimental use in most countries of the Western World.
 - **1840s:** Gas lighting is widely adapted and the *gas table* (control board) makes its appearance.
 - **1880s:** The incandescent mantle (the *Auer burner*) is introduced producing a much brighter and safer

light.

- **Mounting Positions:** *Footlights*, *Border Lights* (horizontal "strip lights" hung between each pair of scenic borders), and *Wing Lights* (vertical "strip lights" between each pair of scenic wings). For example in the late **1850s**, the stage of the *Royal Theatre* in Stockholm was illuminated with 562 burners:
 - 66 in the *Foot Lights*,
 - 8 sets of *Wing Lights* with 9 gas jets each, and
 - 8 *Border Lights* with 44 burners per position.

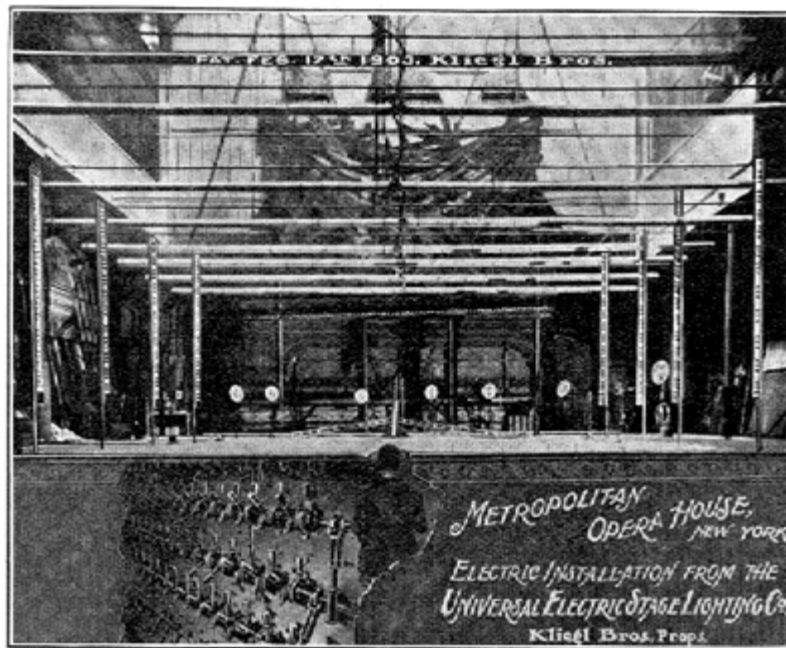
- **Electric**

- **1878:** British inventor Joseph Wilson Swan (1829-1914) patents the worlds first incandescent electric lamp.
- **1879:** Thomas Edison (1847-1931) receives the American patent for his incandescent lamp.
- **1881:** London's *Savoy Theatre* (the home of the Gilbert and Sullivan Operettas) installs the world's first electric lighting system-- 824- 16 candle power *Swan lamps* were used to light the stage and an additional 334 lights illuminated the auditorium. As *Savoy* producer, Richard D'Oyly Carte, explained...

The greatest drawbacks to the enjoyment of the theatrical performances are, undoubtedly, the foul air and heat which pervade all theatres. As everyone knows, each gas-burner consumes as much oxygen as many people, and causes great heat beside. The incandescent lamps consume no oxygen, and cause no perceptible heat.

- **1882:** The first American installation of electric lights is at Boston's *Bijou's Theatre*.
- **1890s:** By the end of the 19th century most "modern" theatres have switched from gas lights to the much safer electric lights.
- **1903:** *Kliegl Brothers* installs an electrical lighting system with 96 resistance dimmers (and 20 additional dimmers for house lights) at the *Metropolitan Opera House* in New York City. See the illustration below.
- **Mounting Positions:** The same as with gas-lighting: *Footlights*, *Borderlights* and *Winglights*. When the new *Stockholm Opera House* opened in **1898**, the stage was illuminated with a three color (white, red, and green) lighting system using 544- 25 candle power lamps per color-- a total of 1632 lights.
 - 40 lamps per color in the *Foot Lights*,
 - 9 *Border Lights* with 40 lamps per color.
 - 9 sets of *Wing Lights* with 8 lamps per color, and

The Metropolitan Opera House, New York City
(1903)



The above illustration of the "new" electrical system at the **Metropolitan Opera House** is from a 1913 *Kliegl Brothers* catalogue. Note the eight set of *border lights* above, the four sets of *wing lights* on the sides of the stage, the seven *bunch lights* mostly up stage, the *switch board* in the basement and the *electrician* standing in the "prompter's box."

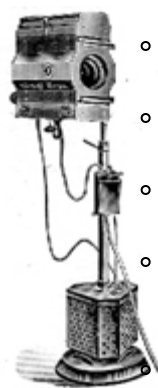
Specific Illumination

Specific illumination, introduced by the *lime light* in the middle of the 19th century, provides a sharp, highly controlled shaft of light. These shafts were used to highlight a small area of the stage, a principal actor, or create the illusion of sunlight (or moonlight). These units were typically placed in the balconies of the auditorium or the galleries on the sides of the stage house. The **1903** electrical installation at New York's *Metropolitan Opera* included 14 *lens boxes* (spotlights), 12 powerful *open faced carbon arc flood lights* and 12- *12-lamp bunch lights* (floodlights) in addition to the four color (white - amber - red - blue) foot lights, proscenium lights, and the eight sets of border lights.

• Lime Light

- **1816:** The *calcium light* (also known as a *limelight* or *Drummond light*) is demonstrated by Thomas Drummond, its inventor.
- **1837:** English actor-manager Charles Macready uses a *limelight* at London's *Covent Garden*.
- **1870s-1880s:** The *limelight* is in general use in "modern" theatres. By the end of the **1880s** as many as eleven units were used in productions at Stockholm's *Royal Theatre*.
- **1890s:** The *limelight* is beginning to be replaced by the newer and brighter *carbon arc* lamp.

• Arc Lamp



Kliegl No 5

- **1807:** Sir Humphry Davy demonstrates a *carbon arc lamp* powered by a 2,000 cell battery. Further development is halted by the lack of a readily available power supply.
- **1832:** Hippolyte Pixii, a French instrument maker, builds an experimental direct current dynamo (generator).
- **1849:** An *arc lamp* is used to create a sunrise effect at the Paris Opera's production of Meyerbeer's *Le Prophete*.
- **1878:** Charles Brush develops a practical dynamo making the *carbon arc lamp* a workable light source.
- **1890s:** The *carbon arc lamp* begins to replace the *calcium light* in the "modern" theatre. The illustration on the left is a *Kliegl No. 5*, a 5" *Lens Box* with a 25 amp (2750 watt) *carbon arc burner* (1913).
- **1920s:** The newer and safer *incandescent* spotlight, using a modern 1000 watt lamp, begins to replace the *carbon arc* for general theatrical use.

- 5" 25 amp spotlight ○ **1990s:** *Carbon arc lamps* continue to be used as a *follow spot* until the end of the 20th century.
- **2000s:** The *high intensity discharge lamp* (HID) replace the *carbon arc burner* in most modern *follow spots*.

• **Electric Spotlight**



Kliegl No. 5N

5" 1000 watt spotlight



Klieglight

8" 1000 watt spotlight
1936

- **1904:** Louis Hartmann builds a small (5" lens) spotlight, a *baby lens*, which used a 50 candle power (approximately 50 watt) lamp for David Belasco's production of *The Music Teacher*.
- **1906:** Hartman uses 4-- 250 watt *baby lenses* (in addition to 31-- 1,500 watt carbon-arc spots) in Belasco's *The Rose of Rancho*.
- **1907:** Edison General Electric introduces the 500 watt lamp.
- **1911:** Edison General Electric introduces a "concentrated filament" lamp for use in a *lens hood* (spotlight).
- **1913:** Kliegl Brothers markets the *No. 60*, a 5" *Baby Spot* built around a 100 candle power lamp. According to the catalogue, the unit provided a "mild ray of light."
- **1913:** The 1000 watt lamp becomes available.
- **1916:** Designer Norman Bel Geddes replaces the *carbon arc lamp* in a *lens box* with a 1000w incandescent lamp.
- **1920s:** 5", 6" and 8" PlanoConvex spotlights (*lens hoods*), using a 1000 watt lamp, begin replacing the *Lime Light* and *Carbon Arc* lamp. The illustration on the left is of a *Kliegl No. 5N*, a 5" *Lens Box* with a 1000 watt lamp (1926). Note the similarity between the *No 5* and the *No 5N*.
- **1929:** Kliegl Brothers introduces the *Fresnel lens spotlight*.
- **1933:** Both Kliegl Brothers (*Klieglight*) and Century (*LekoLight*) introduce the *ellipsoidal reflector spotlight*.
- **1971:** Altman Lighting introduces the *360Q axial ellipsoidal*.
- **1992:** ETC introduces the *Source4® ellipsoidal reflector spotlight*

Lighting Designers

Adolphia Appia - Normon Bel Geddes - Robert Edmond Jones
Abe Feder - Jean Rosenthal - Peggy Clark
Tharon Musser - Thomas Skelton - Jules Fisher - Jennifer Tipton
Beverly Emmons - Ken Billington

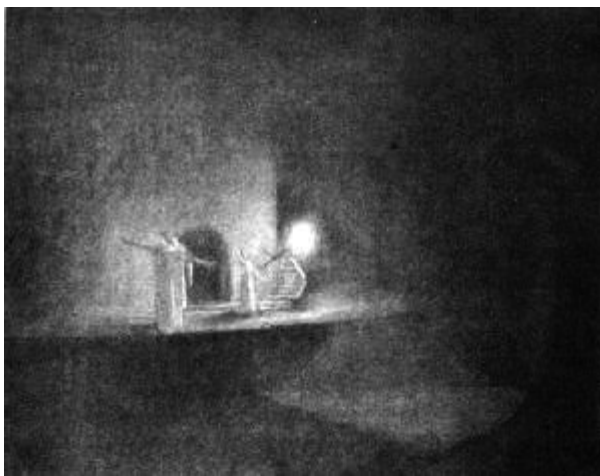
• **Adolphia Appia** (1862-1928)

Swiss writer/designer, **Adolph Appia** was one of the leading visionary of the late 19th century. Many believe that the modern concept of lighting design began with his writings.

In *Die Musik und die Inszenierung (Music and Staging)* (1899) he distinguished three kinds of stage light.

1. *Helligkeit*, the "diffused light" which illuminated the general acting space,
2. *Gestaltendes Licht*, the "creative light" which creates the highlights and shadows, revealing the three dimensional world, and
3. *Painted Light*, the highlight and shadows painted on the scenery by the scenic artist. This static, painted light, was not a part of Appia's vision.

Appia's sketches indicate a plastic, three dimensional set (steps, columns, ramps, platforms) revealed in directional light. He believed that shifting light should create an inner



Tristan and Isolde

drama which flows and changes with the texture of the music; that the intensity, color and direction of the light should reflect the changing atmosphere or mood of the work. Perhaps the best illustration of this concept is Appia's *mise-en-scene* for Wagner's *Tristan and Isolde*:

"The terrace in front of Tristan's castle is modeled in light and shadows as a dream vision, in dazzling sunlight when Tistan sinks into unconsciousness, in the blood-red light of sunset fading into twilight and, finally, into a hazy darkness around the lonely, white figure of Isolde." (Bergman. p327-328)

Appia suggests four different lighting looks or cues:

1. starting with (Q1) "dazzling sunlight"
2. x-fading into (Q2) "blood-red light of sunset"
3. fading into (Q3) "twilight" and
4. finally (Q4) "hazy darkness."

This was difficult in 1899 when the primary lighting equipment consisted of foot lights, rows of border lights and perhaps a dozen lime lights (or arc lamps).

- **Maude Adams** (1872-1953)

Maude Adams is best remembered today as the American actress who created the role of Peter Pan in James Barrie's most famous play. According to a feature story in the January 5, 1908 issue of the *New York Times*, producer Charles Frohman decided, after three successive years on stage with *The Little Minister*, that his star needed a hobby. "Lights," thought Mr. Frohman "...I'll set her to playing at light effects; the very thing for adding a new interest to this third year in one play." After a number of experiments, Miss Adams decided that the footlights were more of an impediment than a help. According to the *Times* story: "Nothing had as yet suggested itself in place of footlights. But the problem had reduced itself to the question of counteracting the force of the footlights. It must be a powerful sun-like light from above, Miss Adams knew. She saw proof of this at the *Comedie Francaise* one night when, lighted only by the great chandelier from above, the faces of Mounet Sully and the company grouped for the curtain call, were illumined in a finer manner than when all the border lights and footlights were in full operation." In 1908 Miss Adams installed a 2' deep by 32' wide light bridge on the stage of Frohman's *Empire Theatre*. The bridge would hold seven operators who could focus and refocus the seven incandescant spotlights which produced the "equivalent of 8000 candles." The new light bridge was believed to be the "longest step yet taken toward the end so many are striving for--lighting the stage, not theatrically, but as nature lights her landscapes."

- **Norman Bel Geddes** (1893-1958)

Norman Bel Geddes, an American theatrical (and industrial) designer, was born in Adrian, Michigan, briefly attended the Cleveland Institute of Art and the Art Institute of Chicago and was an illustrator in a Detroit advertising agency. In the evenings he built a model theatre complete with a model electric lighting system. He used this model to experiment with "modern" staging. As he writes in his autobiography, *Miracle in the Evening* (1960), these experiments...

made it clear that the first row of overhead lamps should be in front of the proscenium instead of behind it. Overhead lamps located at a forty-five-degree angle in front of the curtain line produced modeling in facial features, and life to the eyes, which neither border nor footlights could achieve. They were equally favorable for the figures and clothing of the players and, owing to the concentrated beam, did not strike the scenery. (p.136)

In 1916, at the age of 23, he left the Detroit advertising world to become the resident designer for Aline Barnsdall's short lived *Little Theatre of Los Angeles*. The company leased the 450 seat theatre at the Egan Dramatic School and Bel Geddes, with the aid of the company's electrician, built a dozen spotlights by installing new 1000 watt lamps in twelve old *carbon arc lamp lens hoods*. According to his autobiography...

I placed lights in the auditorium chandeliers, on the sides of the balcony rail, and put a whole line of them behind the proscenium. This was as they had been in my Detroit model. The system replaced the theater stage lighting equipment of low intensity flood lighting from foots, borders, and bunch lamps. The new method provided high intensity individual lamps, which could be focused on any area of the stage floor or scenery, in any color, with a variable amount of light due to individual dimmer control. All were operated from the stage switchboard by a single electrician. This installation, at the *Little Theatre of Los Angeles* in 1916, was the first use of focus lamps as the sole means of lighting the stage. Two years later I made the first installation in New York...Today [*in the mid 50s*] the system is in universal use. (p. 161)

Two years later in 1918 he (1) presented a successful lighting demonstration to Broadway producer Winthrop Ames, (2) was contracted to redesign the lighting system, using new 1000 watt spotlights, for both the *Little Theatre* (now the *Helen Hayes*) and the *Booth Theatre* on 45th Street, (3) lit, with 18- 1000 watt spotlights, a six show, summer stock season, at the *Pabst Theatre* in Milwaukee, (Sets designed by 31 year old Robert Edmond Jones), and (4) received his first New York design credit.

Today he is primarily remembered for his massive theatrical designs, especially those for Austrian director: Max Reinhardt (1873-1943). Like most designers of the period, he created both the scenic environment and the lighting design.



The Divine Comedy

Probably his most famous theatrical creation was the monumental 1921 design for Dante Alagherii's *The Divine Comedy*. The set for this unproduced project was 124' wide and 148' deep. The two massive side towers which framed the *pit* were each 59 feet tall. This imaginative theatrical concept exists today as a notated "script", sketches, a scaled ground plan and front elevation, and a number of photographs taken on an 8' by 8' model.

He designed two massive productions for Max Reinhardt-- *The Miracle* in 1924 and *The Eternal Road* in 1937. For the New York production of Karl Vollmoeller's word-less Biblical pageant: *The Miracle*, Bel Geddes converted the 2000+ seat Century Theatre into a realistic 15th century cathedral. In 1937, for *The Eternal Road*, an Old Testament spectacle by Kurt Weill (score) and Franz Werfel (text), he created, on the huge stage of Oscar Hammerstein's Manhattan Opera House, a winding road which reached from the front edge of the orchestra to the "Promised Paradise." This four hour production which had a cast of hundreds and tons of solidly-built scenery was a critical success but a commercial failure.

In the fall of 1931, Bel Geddes designed and staged a three act, two hour fifteen minute melodramatic interpretation of Shakespeare's *Hamlet*. The production starring Raymond Massy ran for 28 performances at the Broadhurst Theatre. The thirteen scenes were presented on a single architectural set containing a flat neutral playing area, four large raised platforms, a series of steps, four huge towers, and a wrap-around cyc. There were ten hidden entrances into the acting space. Like other Bel Geddes designs, the set broke the proscenium line thrusting the action of the play twenty feet into the auditorium. Locations within the unit set were established through the choice of specific props and the careful focus of the beams of light.

Six years earlier in a French production of *Jeanne D'Arc*, on a very similar architectural set, Bel Geddes used only 3 sections of border lights, 24- 1000 watt 6 inch "focusing" spot lights, 3- 400 watt "baby" spots

and 18- 1000 watt cyclorama floods. His autobiography, *Miracle in the Evening* was published in 1960, two years after his death (Garden City, NY: Double Day and Co., Inc). Link to [Norman Bel Geddes'](#) production credits listed in the *Internet Broadway Database* (www.ibdb.com).

- **Robert Edmond Jones** (1887-1954)

Robert Edmond Jones is considered the father of American scene design. He graduated from Harvard in 1910, traveled to Europe to study the "New StageCraft" and returned to America at the beginning of World War I. He shocked American audiences in 1915 with his simple presentational set for Arthur Hopkin's production of *The Man Who Married a Dumb Wife* (directed by Granville Barker).



Today he is primarily remembered for the staging of Eugene O'Neill's *Desire Under the Elms* (1924) and his vivid dramatic lighting for Arthur Hopkins' three Shakespearean productions: *Richard III* (1920) with John Barrymore, *Macbeth* (1921) with Lionel Barrymore, and *Hamlet* (1922) with John Barrymore. The expressionistic production of *Macbeth* was performed on a bare stage under the constant gaze of three gigantic, moveable, witches masks. The primary acting areas were isolated in carefully focused shafts of light.

Macbeth

The *Banquet Scene* - Act III, Scene iv

For this production of *Macbeth*, Jones used 14- Spotlights on the First Electric, 5- Spotlights on each of the two Torm positions and 4 Baby Spots (focused on the three masks) in the foot light trough. Six lamps were used to light the *Banquet Scene* (III,iv) illustrated above-- two down lights center, one side light from stage left and the three baby spots focused on the masks. Link to [Robert Edmond Jones'](#) production credits listed in the *Internet Broadway Database* (www.ibdb.com).

The First Generation of Lighting Designers: Abe Feder, Jean Rosenthal and Peggy Clark

- **Abe Feder** (1909-1997)



Abe Feder, who liked to refer to himself as a "worker in light" invented the position of *Lighting Designer*. After studying engineering and theatre technology at the Carnegie Institute of Technology (now Carnegie-Mellon University) in Pittsburgh he went to the Goodman Theatre in Chicago and then on to New York City where he began a fifty year career in Light. Over three hundred Broadway shows including Nazimova's productions of *Ghosts* (1935) and *Hedda Gabler* (1936), *I'd Rather be Right* (1937), *Inherit the Wind* (1955), *My Fair Lady* (1956), and *Camelot* (1960) carry the "Lighting by Feder" credit. Between 1935 and 1939 he lit more than 200 projects for the WPA Federal Theatre. Included in this extensive list is T.S. Elliot's *Murder in the Cathedral* (1936), the Living Newspaper's presentations of *Power* (1937) and *One Third of a Nation* (1938) and Orson Welles' famous productions of a "voodoo" *Macbeth* (1936) set on a West Indies island, *Dr. Faustus* (1937) staged on a bare stage surrounded by black drapes, and *The Cradle Will Rock* (1938) which was locked out of its theatre by the government and forced to give an "outlaw" performance in the Venice Theatre. Link to the FTP Production Notebooks (prompt scripts) for [The Tragical History of Dr. Faustus](#) (Light plot: Image #10; Focus charts: Images #12 to #39), [Macbeth](#).

(Focus notes and equipment lists: Images #9 to #16) and [Power](#) (Light plot Image #33).

In addition to design, he wrote the unit on stage lighting in John Gassner's *Producing the Play* (1940). He used his lighting design for Nazimova's production of Ibsen's *Ghosts* (1935) at the Empire Theatre to

illustrate typical practice in the mid-1930s. The layout, which he considered "necessary for general lighting of this type of production" included..

- 6-- 500 watt 6" Ellipsoidals on the balcony rail
- 22-- 400 watt 6" Fresnels on the First Pipe,
- 4-- 400 watt 6" Fresnels on the First Torm left and right
- 2-- Sections of 200 watt strip lights on the First Pipe, and,
- 2-- Sections of 60 watt foot lights.

In addition to the general light, Feder used 2-- 250 watt baby spots, 5-- 1000 watt 16" Beam Projectors, 2-- 1000 watt flood lights and 7-- R-40 strip lights to light the backings of Stewart Chaney's set. In contrast he used 78 units (including 7 front-of-house) for Welles' *Macbeth* and 114 (with 22 front-of-house) lamps on *Dr. Faustus*.

Building on his theatrical experience, Feder created a second career as an architectural lighting designer. Structures which carry the Lighting by Feder credit include New York's RCA/GE building in Rockefeller Center, the Empire State building and the United Nations building. When comparing his two professions as a theatrical and architectural lighting designer, he commented: "How can you get excited about a 50-foot stage after you've lit a 50 storey building?"

In 1993 Abe Feder was the first to be honored as a *USITT Distinguished Lighting Designer*. Abe Feder's papers are archived in the *Avery Architectural & Fine Arts Library*, Columbia University, New York City. Another significant archive of Feder's work is held by the *Glesca Marshall Library and Archives*, Springer Opera House, Columbus, Georgia.

Link to [Abe Feder's](http://www.ibdb.com) production credits listed in the Internet Broadway Database (www.ibdb.com).

- **Jean Rosenthal (1912-1969)**



Today, over forty years after her death, **Jean Rosenthal** is primarily remembered as the Lighting Designer for some of the great musicals of the nineteen-fifties and sixties and the early comedies of Neil Simon. This list of Broadway shows includes *West Side Story* (1957), *The Sound of Music* (1959), *Barefoot in the Park* (1963), *Fiddler on the Roof* (1964), *Hello, Dolly!* (1964), *The Odd Couple* (1965), *Cabaret* (1966), and *Plaza Suite* (1968).

After briefly studying acting and dance at New York's Neighborhood Playhouse and three years at Yale University she arrived in New York and became a technical assistant with the WPA Federal Theatre, Project 891. John Houseman was the producer, Orson Welles the director, Nat Carson the scene designer, and Abe Feder the lighting designer. When Houseman took a leave of absence in the fall of 1936 to stage Leslie Howard in Shakespeare's *Hamlet* at the Imperial Theatre, he brought Rosenthal along as the assistant stage manager in charge of lighting. When the man from the rental house, who was to install the electrical system became ill, Rosenthal suddenly became the "worker in light." I assume the lighting system she designed was similar to the layout created by Abe Feder for Welles' Elizabethan productions at the Federal Theatre. This was, perhaps, her earliest *lighting* credit.

Following the outlaw performance of *The Cradle Will Rock*, John Houseman was fired and Orson Welles resigned from the Federal Theatre. These two men joined forces and created the legendary Mercury Theatre. Jean Rosenthal became their production and lighting manager. Although credited as the "Production Manager," it is believed that she designed the lighting for the eight productions staged by the company.

Probably her most influential work was with the *Martha Graham Dance Company* (1934-1969) and the *New York City Ballet* (1948-1957). Her imprint on the world of dance is huge. Echoing a comment by

dance designer Thomas Skelton, "Jeannie Rosenthal invented dance lighting."

Rosenthal's paper work including light plot, hook-up chart and cue sheets for two works by Martha Graham: "Errand Into the Maze" (1947) and "Night Journey" (1948, revised 1960), Orson Welles' *Julius Caesar* (1937) at the Mercury Theatre, *Joy to the World* (1948) at the Plymouth Theatre and the national tour of *West Side Story* (1957) can be viewed online at [The Lighting Archive](http://thelightingarchive.org) (thelightingarchive.org).

Link to [Jean Rosenthal's](http://www.ibdb.com) production credits listed in the *Internet Broadway Database* (www.ibdb.com). For more information on Miss Rosenthal, link to my [Jean Rosenthal](#) page.

- **Peggy Clark (1915-1996)**



Peggy Clark's fascination with theatre began at an early age. She created her first "stage show" when she was only five. After seeing a performance by "America's Puppet Master," Tony Sarg, she built a marionette theatre from a cardboard box, a ball of string and her collection of dolls. Her original goal was to become an actress, but by the time she finished high school her interests had shifted to scene design. She graduated from Smith College with a BA in the "dramatic arts" in 1935, and an MFA in production design from Yale University three years later in 1938. Her thesis project was the scenic and lighting design for a production of Owen Dodson's *Divine Comedy*.

After arriving in New York in 1938 she

began assisting a number of prominent scene designers -- Stewart Cheney, Donald Oenslager, Howard Bay, Raoul Pene du Bois and Oliver Smith. Her first Broadway design credit was for the costumes for *The Girl from Wyoming* which opened its 86 performance run on October 29, 1938. Three years later, in March 1941, she would design the sets for *Gabrielle*, an adaption of *Tristan* which saw a two performance run on the stage of the Maxine Elliot Theatre. Her first lighting credit was for the *Beggar's Holiday*, Duke Ellington's adaption of John Gay's *The Beggar's Opera* which starred Alfred Drake (as Macheath) and Zero Mostel (as Peachum) and opened a 111 performance run at the Broadway Theatre on December 26, 1946. Sets for *Beggar's Holiday* were designed by Oliver Smith. Peggy Clark and Smith would work together on 43 Broadway productions. In 1959 Oliver Smith designed the sets for *Sound of Music*, Rodgers and Hammerstein's last musical. Smith's 1/2 inch scale blue prints (working drawings) were drafted by Peggy Clark. The lighting for that production was designed, not by Clark, but by Jean Rosenthal.



**Peggy Clark's set for *Divine Comedy* (1938)
Yale University**



***Wonderful Town* (1953)**

Her most famous Broadway lighting designs include *Brigadoon* (1947), *Gentlemen Prefer Blondes* (1949), *Paint Your Wagon* (1951), *Wonderful Town* (1953), *Peter Pan* (1954), *Auntie Mame* (1956), *Bells Are Ringing* (1956), *Flower Drum Song* (1958), *Bye Bye Birdie* (1960), and *The Unsinkable Molly Brown* (1960). Her last Broadway lighting credit was *Musical Chairs* in 1980. A simplified version of her "Lighting Layout" for *Wonderful Town* was published in 1954 in Rubin and Watson's *Theatrical Lighting Practice*. The original Layout, plus hook-up charts and cue sheets can now be viewed online at [The Lighting Archive](http://thelightingarchive.org)

(thelightingarchive.org).

During World War II she was co-designer of Broadway's *Stage Door Canteen* at 216 W. 44th Street (The cafe under the *44th Street Theatre*), technical director of American Theatre Wing's *Lunch Time Follies*, a musical review which performed in the East coast defence plants, and developed "blue prints" for overseas USO camp shows.

In 1968 she was elected president of Local 829 of the United Scenic Artists. She was the first woman to hold this position. She also taught lighting design at both Smith College (1967-1969) and Yale University (1969-1970). One of her MFA students at Smith College, H. Lang Reynolds, was one of my mentors at Southern Illinois University in the mid 70s. Her papers have been donated to the Library of Congress in Washington DC.

Link to [Peggy Clark's](#) production credits listed in the *Internet Broadway Database* (www.ibdb.com).

- **Tharon Musser** (1925-2009)



Tharon Musser was generally considered the *Dean of American Lighting Designers*. She graduated from Berea College in 1946 and like Rosenthal, attended Yale University (MFA: 1950) before moving to New York. Her first Broadway lighting credit was Jose Quintero's staging of Eugene O'Neill's *Long Days Journey into Night* (1956) at the original Helen Hayes Theatre.

Among the many musicals she designed are two of the longest running Broadway shows: Michael Bennett's *A Chorus Line* (1975 to 1990), which introduced a computer controlled lighting system to the Broadway theatre, and Gower Champion's *42nd Street* (1980 to 1988). Her dramatic credits include Neil Simon's autobiographical trilogy: *Brighton Beach Memoirs* (1983), *Beloxi Blues* (1985), and *Broadway Bound* (1987). She has worked with the *Jose Limon Dance Company*, the *American Ballet Theatre*, and the Dallas and Miami Opera Companies.

In 1972 she won her first *Tony Award* for Michael Bennett's *Follies* which was followed by *Tony's* for Michael Bennett's *A Chorus Line* (1976) and his *Dreamgirls* (1982). In the mid-1990s she was diagnosed with "early-onset Alzheimer's" which made it more difficult for her to focus on the project at hand. Her last "new" Broadway credit was *The Lonsome West* which opened at the Lyceum Theatre in April 1999. She was honored as a *USITT Distinguished Lighting Designer* in 1996.

In 2006, her Tony award winning design for *A Chorus Line* was re-created by Natasha Katz for the "30th" anniversary revival at the Schoenfeld Theatre.

Virtual copies of the paper work (including light plot, hook up chart, magic sheet, focus charts, equipment list, follow spot cues, and tracking sheets for the 134 cues) for the original 1975 production of *A Chorus Line* is archived at the [Theatrical Lighting Database](#). The [database](#) also includes virtual copies of the paper work for *Fall River Legend* (Tom Skelton, 1991), *Hair* (Jules Fisher, 1968) and *Sunday in the Park with George* (Richard Nelson, 1984).

She died peacefully in the company of her long-time partner and assistant, Marilyn Rennagel, on April 19, 2009.

Link to [Tharon Musser's](#) production credits listed in the *Internet Broadway Database* (www.ibdb.com).

- **Thomas R Skelton, Jr.** (1928-1994)

Thomas Skelton, while a theatre student at Middlebury College in Middlebury, Vermont, developed a deep and lasting interest in modern dance. Upon graduation he moved to New York where he continued to pursue his interest by studying with Martha Graham (1894-1991), Doris Humphrey (1895-1958) and José Limón (1908-1972). His first lighting experience was as an apprentice to Jean Rosenthal at the *American Dance Festival* in New London, Connecticut. He would soon become a major lighting designer, working primarily in the field of dance. He designed for the



*Joffrey Ballet, the Martha Graham and Jose Limon Dance companies, the New York City Ballet, and American Ballet Theatre and the Ohio Ballet. Dance pieces he lit include: the original productions of Paul Taylor's *Aureole* (1962), Robert Joffrey's *Astarte* (1967), and Jerome Robbins' *Dances at a Gathering* (1969), as well as revivals of Kurt Jooss' *The Green Table*, José Limón's *The Moor's Pavane*, and Leonide Massine's *Parade*. Skelton's paper work including light plot, hook-up chart, instrument schedule, focus charts, magic sheets, cue sheets, tracking sheets and the "calling book" for the 1991 revival of the American Ballet Theatre's production of *Fall River Legend* at the Metropolitan Opera House can be viewed at New York Public Library's *Theatrical Lighting Database* (lightingdb.nypl.org). [Link](#) to the *Fall River Legend* paperwork.*

Skelton's approach to dance lighting, which is probably based on Rosenthal's, was published in *Dance Magazine* between October 1955 and October 1957. This series of 25 articles, collectively titled *The Handbook of Dance Stagecraft*, in the words of Richard Archer, a member of the StageCraft List, "showed us all how to light dance." [Link](#) to the *Handbook*... hosted by the University of Minnesota in Duluth. Tom Skelton was also on the faculty of the *Lester Polakov Studio and Forum of Stage Design* in New York and at *Yale University* in New Haven.

His first Broadway show was *Oh Dad, Poor Dad, Mamma's Hung You in the Closet and I'm Feelin' So Sad* which opened at the Morosco Theatre in the summer of 1963. His last show was *Shakespeare for my Father*, which closed in January 1994. Notable Broadway productions he designed include revivals of *Death of a Salesman* with George C. Scott (1975) and Dustin Hoffman (1984), *Guys and Dolls* (1976), *The King and I* (1977), *Oklahoma!* (1979), and *Brigadoon* (1980). He was nominated three times for a Tony Award, for *Indians* (1969), and for the revivals of *All God's Chillun Got Wings* (1975) and *The Iceman Cometh* (1985). He died in the summer of 1994 after a long battle with lung cancer.

His papers (ca. 1953-1994) are archived in the *Jerome Robbins Dance Division* of the New York Public Library (www.nypl.org). [Link](#) to the archive listing. Photocopies of selected documents from the New York archive are also located in *The Jerome Lawrence & Robert E. Lee Theatre Research Institute* at Ohio State University in Columbus.

Virtual copies of the paper work (including light plot, hook up chart, magic sheet, focus charts, equipment list, follow spot cues, and tracking sheets for the 134 cues) for the 1991 Revival of *Fall River Legend* at the Metropolitan Opera House are archived at the [Theatrical Lighting Database](#).

Link to [Tom Skelton's](#) production credits listed in the *Internet Broadway Database* (www.ibdb.com).

- **Jules Fisher** (1937-)

In his 40+ year career, Jules Fisher, a graduate of Carnegie Institute of Technology (now Carnegie-Mellon) (1960), has lit over 150 Broadway and off-Broadway shows, as well as film, dance, opera, television, and rock-and-roll concert tours. His first Broadway credit was *Spoon River Anthology* which opened at the Booth Theatre in September 1963. He has received 18 Tony nominations and has won 8 Tony awards, a record in the lighting category, for *Pippin* (1973), *Ulysses in Nighttown* (1974), *Dancin'* (1978), *Grand Hotel* (1990), *The Will Rogers Follies* (1991), *Jelly's Last Jam* (1992), *Bring in 'da Noise, Bring in 'da Funk* (with Peggy



Eisenhauer, 1996) and *Assassins* (with Peggy Eisenhauer, 2004). In addition to his eight Tony awards, Fisher has been honored twice, in 1987 and again in 1995, by the *USITT*.

He designed the lighting for Kevin Kline's "Great Performances" production of *Hamlet* (1990) for PBS, and has lit productions of *Porgy and Bess* and *A Midsummer Night's Dream* for the New York City Opera company.

He was production supervisor (and lighting designer) for tours of the Rolling Stones (for which he won a 1976 *IES Lumen Award*), KISS, David Bowie, and the rock concert version of *The Who's Tommy*.

He has designed the lighting for the Radio City Music Hall presentation of *The Teenage Mutant Ninja Turtles*, the 1977 *Academy Awards Show*, Quincy Jones' *Reunion on the Mall* concert for President Bill Clinton's inaugural, *America's Millennium Live All-Star Concert New Year's Eve 2000* and the concert segments of Barbra Streisand's 1976 film: [A Star is Born](#) and the theatrical segments of [Chicago: The Musical](#) (2002), [The Producers](#) (2005) and [Dreamgirls](#) (2006).

In 1993 he began the *Broadway Lighting Master Class*, a four day seminar conducted by major New York lighting designers.

Virtual copies of his paper work (including light plot, hook-up chart, cue synopsis, cue sheets, follow spot cues, focus charts, equipment list,) for the 1968 production of *Hair* is archived at the [Theatrical Lighting Database](#).

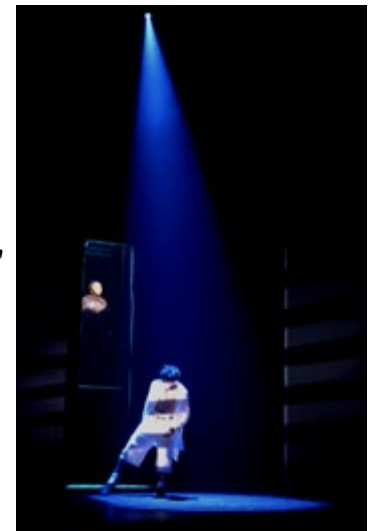
Link to [Jules Fisher's](#) production credits listed in the *Internet Broadway Database* (www.ibdb.com).

- **Jennifer Tipton** (1937-)



Jennifer Tipton (1937-), the principal lighting designer for the *Paul Taylor Dance Company*, was born in Columbus, Ohio, the daughter of two science professors. She developed her love of dance and theatre long before college. During the summer of 1953, between her junior and senior year in high school, she studied at the [American Dance Festival](#) at Connecticut College in New London and was permitted by her parents, to travel alone to New York, during the Christmas break of her senior year, to participate in Martha Graham's "Christmas Course." Although she had been dancing since the age of twelve, her goal at the end of high school was to become an astrophysicist- to become the "first woman in space." She began her studies at Cornell University in Ithaca, New York, with a major in physics and graduated in 1958 with a degree in English.

After graduation she moved to New York to continue her studies in dance and began performing with the *Merry-Go-Rounders*, a touring company which performed primarily for children. She became the troupe's "rehearsal mistress" (touring director) which required her to watch the performance from the front. She



*Bring in 'da Noise,
Bring in 'da Funk* (1996)

began to look at the larger picture, and that larger picture was *determined and controlled by the light*. "I fell in love with light," she told Linda Winer in an October 2003 interview, "and have been in love with it ever since." The following summer she returned to the *American Dance Festival* and took a class in dance lighting from Thomas Skelton. She became his assistant, and as the stage manager, was soon recreating his designs on the road for the *Paul Taylor Dance Company*. Her first lighting design credit for Paul Taylor was *Orbs* (1966), a two-act dance set to the music of Beethoven. Her first Broadway lighting credit was for a production of *Our Town* at the ANTA Theatre (now the Virginia Theatre) in 1969.

It was her design for Jerome Robbins' *Celebrations: The Art of the Pas de Deux* (1973) at the Spoleto Festival (Italy), which brought her to the attention of the theatrical world. By the mid-1970s her work was regularly being seen on the off-Broadway stages of New York's Public Theatre, the home of Joseph Papp's *New York Shakespeare Festival* as well as the stages of numerous Broadway houses. By the 1980s she was regarded as one of dance's most versatile lighting designers. Her achievements range from the "forceful, sculpted effects" in Twyla Tharp's *Fait Accompli* (1983) to the "subtle, shimmering vision" for Jerome Robbins' *In Memory Of...* (1985). Her work in opera includes productions of Wagner's *Parsifal* at the Houston Grand Opera, *Tannhauser* for the Chicago Light Opera and Martin David Levy's *Mourning Becomes Electra* at the Seattle Opera.

Tipton's lighting has won a Drama Desk Award for Ntosake Shange's *For Colored Girls Who Have Considered Suicide / When the Rainbow is Enuf* (1976); a Joseph Jefferson Award for John Guare's *The Landscape of the Body* (1976); a Drama Desk and Tony Award for *The Cherry Orchard* (1977); a second Tony Award for *Jerome Robbins' Broadway* (1989) and an Obie for Sustained Excellence at the New York Shakespeare Festival (1979).

Beginning in 1981 Tipton has been a professor of design at the [Yale School of Drama](#) where she advises her graduate lighting students to "use what you have, ...use it well and imaginatively."

According to Chris Davis, the Associate Lighting Supervisor at *Queens Theatre In The Park* in Queens, New York-- "Jennifer Tipton is primarily a dance LD. She tends to work within a confined palette, no color and a little color correction in either direction. Her work is all about angle, shape, and intensity, and she's a master at it."

Link to [Jennifer Tipton's](#) production credits listed in the *Internet Broadway Database* (www.ibdb.com).

- **Beverly Emmons** (1943-)



Beverly Emmons has designed the lighting for numerous productions in Broadway, Off-Broadway, and Regional Theatres. She is a 1965 graduate of Sarah Lawrence College and assisted Jules Fisher after her arrival in New York. She began working Off-Broadway in 1970. The show was *Sensations* at Theatre Four on West 55th Street. Her first Broadway lighting credit was *A Letter for Queen Victoria* which opened at the ANTA Theatre (now the August Wilson Theatre) in 1975. In the early 1980s she adapted, to Broadway, the lighting design for two London West End productions: *Amadeus* (1980) and *The Life and Adventures of Nicholas Nickleby* (1981). Her Broadway credits include *A Day In Hollywood / A Night in the Ukraine* (1980), *The Dresser* (1981), *Piaf* (1981), *Abe Lincoln in Illinois* (1993), Stephen Sondheim's *Passion* (1994), *The Heiress* (1995), *Jekyll & Hyde* (1997), and a revival of *Annie Get Your Gun* (1999) starring Bernadette Peters,

The [Lortel Off-Broadway Archives](#) list 45 Off-Broadway productions designed by Emmons between 1970 and 2005. Included are *The Vagina Monologues* (1996), *The Elephant Man* (1979), and Sam Shepard's *True West* (1980). For director Robert Wilson she has designed lighting for Phillip Glass' *Einstein on the Beach* (NYC, Metropolitan Opera House, 1976) and the *CIVIL warS, Act V* (Minneapolis, 1984). She has designed regional productions at Washington's Kennedy Center, the Ally Theatre (Houston), the Guthrie, the Arena Stage (Washington DC) and the Children's Theatre of Minneapolis. She has taught at Barnard College, Parsons School of Design and New York University and has guest designed at numerous colleges and

universities. She has designed lighting for the Trisha Brown, Martha Graham and Merce Cunningham dance companies.

She has had six Tony Award nominations, and won the 1976 IES Lumen Award, the 1984 and 1986 Bessie Awards (for "Sustained Achievement" in dance lighting), and a 1979-1980 Obie (Off-Broadway theatre award) for Distinguished Lighting Design. She has also won five Hewes Design Awards presented by the American Theater Wing.

In the late 1980s she became the lighting supervisor for the Martha Graham Dance Company. In this position she began recreating Jean Rosenthal's original lighting designs when the early works (1936-1969) of the Graham company were revived. During the past 20+ years she has strived to make these early design documents more easily available to student and scholars. In the fall of 2009 she created [The Lighting Archive](#) web site. The first documents to be posted were Rosenthal's design for Martha Graham's *Errand into the Maze* (1948). Emmons states "All the information to light Martha Graham's *Errand Into The Maze* is contained in these 4 documents [light plot, hook-up chart, focus chart, cue sheet]. I know because I have reproduced these cues. They are just not in the formats we use today." In the spring of 2010 she added design documents for Graham's *Night Journey* (1948, revised 1960).

Link to [Beverly Emmons](#)'s production credits listed in the Internet Broadway Database (www.ibdb.com).

- **Ken Billington (1946-)**



Ken Billington is probably the most successful "young" lighting designer. After graduating from high school, he went directly to New York City where he studied at Lester Polakov's *Studio and Forum of Stage Design* and "apprenticed" with Peggy Clark and Tharon Musser. As he has said, "If I'm a good designer today it's because I learned so much from Tharon -- I always say I went to Musser U." He began as a "go for" and worked his way up to "assistant." He observed Tharon at work and used her techniques in small off-Broadway venues. After receiving his first New York lighting credit, an off-Broadway production: *Fortune and Men's Eyes* and supervising several non-union designers in Broadway houses, he got his big chance. In the fall of 1973 he received (what I believe was) his first Broadway credit for the three show season of the *New Phoenix Repertory Theatre* at the Ethel Barrymore Theatre. One of the three productions, a revival of Dürrenmatt's *The Visit*, was nominated for a Tony.

Billington has designed over 75 Broadway shows, 50 off-Broadway productions, 60 operas for companies like the Houston Grand Opera, the Chicago Lyric Opera, the New York City Opera, the Christmas and Easter Show for Radio City Music Hall and Las Vegas acts for performers like Ann-Margaret, Shirley MacLaine and Liberace. He has developed a reputation for lighting big production: *Sweeney Todd* (1979), Discover Card's *Stars on Ice*, *Riverdance*, and *Footloose* (1998); and especially star driven revivals of classic American musicals: *My Fair Lady* (1981) with Rex Harrison, *Fiddler on the Roof* (1990-2010) with Topol. and *Hello, Dolly!* (1995) with Carol Channing,



*Velma's entrance in "All That Jazz"
Chicago (1996)*

In 1997 he won the *Tony* for the Broadway revival of Bob Fosse's *Chicago* and was honored as a *USITT Distinguished Lighting Designer* in 1996. In March 2010, I attended a two day USITT "Broadway Lighting Designers Seminar" presented by Ken Billington and Natasha Katz, the lighting designer for Disney's *Beauty and the Beast*. Billington is presently an Adjunct Professor of Drama at Carnegie-Mellon

University.

The paper work, including light plots, for the Broadway, London, National Tour, and Bus-and-Truck productions of *Sweeney Todd* (1979) are archived at TheLightingArchive.org (Go to TheLightingArchive.Org > Archive > Billington > Sweeney Todd) The light plot and hook-up chart for *Sweeney Todd* were also published on pages 159-160 of Leland Watson's *Lighting Design Handbook* (McGraw-Hill, 1990).

Link to [Ken Billington](http://www.ibdb.com)'s production credits listed in the *Internet Broadway Database* (www.ibdb.com).

Lighting Educators

Stanley McCandless -- Theodore Fuchs -- Gilbert V. Hemsley, Jr -- John Gleason

- **Stanley McCandless** (1897-1967)

Stanley McCandless, architect, designer, author, illumination consultant and lighting professor at Yale University from 1925 to 1964, was probably the most influential teacher in the field of theatrical lighting.

After graduating from the University of Wisconsin in 1920, *Mac* received a Master of Arts degree in architecture from Harvard University (1923). He worked several years as an architect before becoming a lighting consultant in the late 1920s. He used an ellipsoidal reflector in the house light fixtures he designed for the Center Theatre in New York's Radio City (1932). These units were the prototype for the ellipsoidal reflector spotlight he created for Ed Kook and Chuck Levy's Century Lighting-- The *Leko*.

In 1925, he and George Pierce Baker (1866-1935), who he had met at Harvard, created Yale University's School of Drama. The following year, 1926, he offered the first academic class in Stage Lighting. During his 39 year tenure at Yale he would teach some of America's most important lighting designers including both Jean Rosenthal and Tharon Musser. *A Glossary of Stage Lighting* was published in 1926, this was followed by *A Syllabus of Stage Lighting*, first published in 1927, and *A Method of Lighting the Stage* (1932). McCandless' *method* is still the basic foundation of modern stage lighting.

He retired from teaching in 1964 and died three years later at the age of 70. His professional papers are archived at Yale University.

- **Theodore Fuchs** (1904-1995)

Theodore Fuchs, an author, teacher, and theatre consultant, graduated from high school at the age of 15 and had earned a bachelor's degree in both Chemical and Electrical Engineering by the time he was 19. According to one source, he was a lighting design student of Stanley McCandless, before joining the staff of Northwestern University in Evanston, Illinois. He retired from Northwestern, after 42 years of service, at the end of the 1969-1970 academic year.

His most significant work, *Stage Lighting*, was published by Little Brown and Company in 1929, making it one of the earliest theatrical lighting texts. Ten years later in 1939, Samuel French published *Home-Built Lighting Equipment for the Small Stage*, an expansion of Chapter Seven from his 1929 work. In the early 1950s he self published, through Northwestern University, several "books" on suggested layouts of stage lighting equipment for the school and college auditorium.

One of his major contributions as a consultant, especially in educational theatres in the midwest, was the *Plaster Cyc* -- replacing the traditional *Sky Drop* with a permanent, off-white, sand-blasted plastered rear wall.

He was presented the *USITT Award* for his "lifetime contribution to the performing arts community" at the 1980 Kansas City Conference. His professional papers have been archived in the *Theodore Fuchs*

Collection on Theatre Technology in the Lee Library on campus of [Brigham Young University](#) in Provo, Utah.

- **Gilbert V. Hemsley, Jr (1936-1983)**

Gilbert Hemsley was born in Bridgeport CN in 1936 and developed an interest in technical theatre while an undergraduate history major at Yale. He continued into graduate school and received his MFA, also from Yale, in 1960. His master's thesis was *A History of Stage Lighting in America, 1879-1917*. After graduation he became the lighting designer and production manager at Princeton University before joining Jean Rosenthal's studio as an assistant. His first Broadway credit was for a revival of Richard Sheridan's *School for Scandal* presented by the *APA-Phoenix Repertory Company* at the Lyceum Theatre in November 1966. Paper work from this five show repertory was published in the second edition (1968) of Parker and Smith's *Scene Design and Stage Lighting*.

Much of his design work was created for the theatre of opera and dance-- companies like the *Metropolitan Opera*, the *New York City Opera* (for which he designed 36 productions and was appointed production supervisor in 1981), the *Lyric Opera of Chicago*, the *Martha Graham Dance Company*, the *Alvin Ailey Dance Company* and the *New York City Ballet*. In September 1971 Hemsley was production manager and lighting designer for Leonard Bernstein's *MASS: A Theatre Piece for Singers, Players, and Dancers*, a work commissioned by Jacqueline Kennedy for the opening of the John F. Kennedy Center for the Performing Arts. He was the lighting designer/production manager of the US tour of the *Performing Art's Company of the People's Republic of China* in 1978 and the gala inaugural celebrations of Presidents Nixon and Carter. He was nominated for two Drama Desk awards: for *Porgy and Bess* (1977) and *The Mighty Gents* (1978).

Hemsley's paperwork including light plot, section, shop order, hook-up chart, magic sheet and tracking sheets for the Houston Grand Opera's production of *Porgy and Bess* at the Houston Music Hall (1976) and on Broadway at the Uris (now Gershwin) Theatre (1976) is archived on-line at [The Lighting Archive](#).

In 1970 he joined the theatre design faculty of the University of Wisconsin where he soon became one of the most popular and respected professors on campus. He continued to design, often using his students, known as "Gilbert's kids," as assistants, giving many of them their first experience in the real world of the theatre. Shortly after his death in 1983, the *Gilbert V. Hemsley, Jr Internship in Lighting* with the *New York City Ballet*, the *New York City Opera*, and the *Lincoln Center Festival* was established. The selected student spends nine months, June to February, working with these three Lincoln Center based companies. Probably his major legacy is the love, passion and professionalism he instilled into his students, many of whom work in the Minneapolis area. His papers, both designs and teaching documents, are archived at the Wisconsin Center for Film and Theatre Research on the Madison campus of the University of Wisconsin.

Link to [Gilbert V. Hemsley, Jr](#)'s production credits listed in the Internet Broadway Database (www.ibdb.com)

- **John Gleason (1941-2003)**

John Gleason was born in Brooklyn, NY in 1941 and began lighting shows as a student at the prestigious Stuyvesant High. He lit 75 shows while majoring in zoology and chemistry at Hunter College, a campus of the City University of New York. He passed the union exam during his junior year at Hunter. His committee included Jean Rosenthal, Peggy Clark and Tharon Musser. After graduation, designer David Hays hired him to assist on a production of *The Changeling* for the *Repertory Theatre of Lincoln Center* which was then in residence at the now-departed ANTA-Washington Square Theatre. His first design credit was for a revival of Moliere's *Tartuffe* presented by the *Repertory Theatre* in 1965. Two years later he was named their resident lighting designer.

In 1971 he joined the theatre faculty of New York University, a position he held until his retirement 26 years later in 1997. "Teaching...made me a better designer," he told *Theatre Crafts International*, "I always allow my students to ask any questions they want about my work, and so I have to be prepared to answer....When I began to teach, I also started to think about what I liked about lighting....The fact that I

don't hold a nine-to-five job, that's pretty terrific. Sometimes I get asked by my students 'Why do you still do it?' And I'll laugh and say, 'Well, think about it: where else can you get paid by someone to spend their money to fulfill your fantasies?'"

Lloyd Burlingame, Chair Emeritus of the Department of Design at NYU said "It was our great good fortune that he came to join us and worked his magic as a master teacher of lighting for a quarter of a century...Like the great lighting artists of our time, he understood all facets of what went into making the stew of a play, dance, or opera. His critiques on scenery and costumes were often deeply penetrating. He always insisted on his students understanding the heart of a play or opera. His light labs were famous for demonstrating the importance of lighting cues in relationship to music. If I were forced to choose one aspect of his art that made him unique in his generation, it would be his sense of color. He never put a foot wrong in his imaginative color choices."

Costume designer Carrie Robbins spoke about their collaboration on a Broadway show which had a short run or a week or two-- "I had an idea of creating a tintype / old-photo kind of look for a flashback sequence. I used a range of sepia stuff, of course, and hoped it wouldn't be too bland or too obvious. John worked his usual color magic, which I had come to count on, and the scene came alive, chirasuro'd in rich tones of gold to deep shadowy umber. I asked him what in the world did that. 'It's just the right color of gel,' he said. 'What do they call it?' I asked. 'Chocolate, of course.' Now there's an apt name. I still to this day don't know if he was kidding me or if there really is a chocolate gel." (Yes, there is a chocolate gel. It was *Brigham 70* and is *Roscolux 99* or *Lee 156*.)

Link to [John Gleason's](http://www.ibdb.com) production credits listed in the Internet Broadway Database (www.ibdb.com)

A Few Contemporary Lighting Educators

- **William Warfel**

Professor Emeritus of Lighting Design at Yale University. He earned his MFA from Yale in 1957 (Thesis: *Theatre fire prevention laws in model building codes*) and is the author of *The Handbook of Stage Lighting Graphics* (1974), *Color Science for Lighting the Stage* (1982) and *The New Handbook of Stage Lighting Graphics* (1990). He is a frequent presenter at USITT Conferences.

- **J. Michael Gillette**

Professor Emeritus of Lighting Design at the University of Arizona, Tucson, AZ. He is the author of *Designing with Light* (1978 - 2007) and *Theatrical Design and Production* (1987 - 2004)

- **Linda Essig**

Chairman and Artistic Director of Theatre at Arizona State University, Tempe, AZ. She was the Professor of Lighting at the University of Wisconsin - Madison from 1988 to 2004 She has designed lighting for professional theatres throughout the country and is the author of *Lighting and the Design Idea* (1997 - 2004) and *The Speed of Light* (2002). She is a frequent presenter at USITT Conferences.

- **Ann Archbold**

Professor of lighting at University of Wisconsin - Madison. Before moving to Wisconsin she was the director of the MFA Lighting Design program at Florida State in Tallahassee. She is a member of the United Scenic Artists (#829-IATSE) and has lit approximately 400 productions of theatre, music, dance, opera, and industrials. She holds degrees from the University of Michigan and San Diego State University. She is a frequent presenter at USITT Conferences.

- **Cindy Limauro**

Professor of Lighting at Carnegie Mellon University in Pittsburgh, PA. She designs nationally and internationally for theatre, opera, dance and architecture. Professor Limauro is a member of the United Scenic Artists (#829-IATSE), the International Association of Lighting Designers and was named a Fellow of the Institute by USITT in 2000 for Outstanding Contribution to the Theatre. She is a frequent presenter at USITT Conferences. She holds a BA (1974) from the University of Michigan and an MFA (1978) from

Florida State University.

- **Mark Stanley**

Professor of Lighting at Boston University. Mark Stanley, a member of United Scenic Artists (#829-IATSE) is the resident lighting designer for the *New York City Ballet*, a position he has held since 1986. He has also designed for the *San Francisco Ballet*, the *Pennsylvania Ballet*, the *Goodspeed Opera House* in East Haddam, Connecticut, the *Ordway* in Minneapolis, and the *New York City Opera* for which he was the resident designer from 1983 to 1986. He is the author of Rosco's *Color of Light Workbook* (1987) and is on the board of directors of the *Gilbert V. Hemsley Jr Internship in Lighting*. He hold a BA (1978) from the College of William and Mary in Williamsburg, Virginia and an MFA (1986) from the University of Wisconsin - Madison. He is a frequent presenter at USITT Conferences.

Time Line: 1877...

The first reference to a designer is **high lighted**.

- 1877- Brigham introduces **Gel** (color media) to the theatre world
 - 1878- **Joseph Swan** "invents" the incandescent lamp
 - 1879- **Thomas Edison** "invents" the incandescent lamp
 - 1880's
 - 1881- London's *Savoy Theatre* installs the first **theatrical electrical lighting system**
-

1890's

- 1899- **Appia's** *Music and Staging* is published
-

1900's

- 1900- **Lamp dip** is introduced to color the bulbs used in the border and foot lights
 - 1903- **Kliegl Brothers** installs a 96 dimmer stage lighting system at the *Metropolitan Opera House*
 - 1904- **Louis Hartmann** uses a "baby len" in Belasco's *The Music Teacher*
 - 1908- **Maude Adams** installs a 2' deep by 32' wide light bridge in Charles Frohman's *Empire Theatre*.
 - 1908- **RoscoGel** is introduced
-

1910's

- 1915-**Robert Edmond Jones** designs *The Man Who Married a Dumb Wife*
 - 1916- **Norman Bel Geddes** builds a 1000 watt Spotlight from a carbon arc lens box.
 - 1916- Bel Geddes lights the Little Theatre of Los Angles entirely with 1000 watt Spotlights.
 - 1918- Jones and Bel Geddes work together at the *Pabst Theatre* in Milwaukee
-

1920's

- 1921- Robert Edmond Jones designs *Macbeth*
 - 1921- Norman BelGeddes designs *The Divine Comedy*
 - 1924- Norman BelGeddes designs *The Miracle*
 - 1925- **Stanley McCandless** offers the first *Stage Lighting* course at Yale University
 - 1929- **Theodore Fuchs' Stage Lighting** is published
 - 1929- Kliegl Brothers introduces the Fresnel Lens spotlight
-

1930's

- 1932- Stanley McCandless' *A Method of Lighting the Stage* is published
- 1933- Century (**Leko**) and Kliegl (**Klieglight**) introduce the Ellipsoidal Reflector Spotlight
- 1935- **Roscolene** color media is introduced in America
- 1935- **Abe Feder** designs the lighting for *Ghosts*
- 1936- **Jean Rosenthal** designs the lighting for *Hamlet* starring Leslie Howard
- 1937- Norman BelGeddes designs *The Eternal Road*

- 1937- Abe Feder designs the lighting for the Federal Theatre's production of *Dr. Faustus*
 - 1938- Jean Rosenthal designs the lighting of Orson Welles' production of *Julius Caesar* at the Mercury Theatre
 - 1938- **Cinemoid** color media is introduced in England
-

1940's

- 1940 - Abe Feder's approach to lighting is published in Gassner's *Producing the Play*
 - 1943- Jean Rosenthal designs the lighting for *Richard III*
 - 1946- **Peggy Clark** designs the lighting for *Beggar's Holiday*
-

1950's

- 1953- Peggy Clark designs the lighting for *Wonderful Town*
 - 1954- Peggy Clark designs the lighting for *Peter Pan*
 - 1955- **Tom Skelton** publishes *The Handbook of Dance Lighting* in *Dance Magazine*
 - 1956- **Tharon Musser** designs the lighting for *Long Day's Journey into Night*
 - 1956- Abe Feder designs the lighting for *My Fair Lady*
 - 1957- Jean Rosenthal designs the lighting for *West Side Story*
 - 1959- Century introduces the 10 scene **preset lighting console**
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1960's

- 1960- Peggy Clark designs the lighting for *Bye Bye Birdie*
 - 1960- Abe Feder designs the lighting for *Camelot*
 - 1963- **Jules Fisher** designs the lighting for *Spoon River Anthology*
 - 1963- **Tom Skelton** designs the lighting for *Oh Dad, Poor Dad, Mamma's Hung You in the Closet and I'm Feelin' So Sad*
 - 1963- A 12 channel, 2 scene preset lighting console is installed in Shrycok Auditorium, SIU, Carbondale, IL
 - 1964- Jean Rosenthal designs the lighting for *Hello, Dolly!*
 - 1965- **John Gleason** designs the lighting for *Tartuffe*
 - 1966- **Gilbert Hemsley** designs the lighting for *School for Scandal*
 - 1966- **Jennifer Tipton** designs the lighting for Paul Taylor's *Orbs*
 - 1966- Metropolitan Opera House installs a 228 channel, 10 scene preset console
 - 1968- Jules Fisher designs the lighting for *Hair*
 - 1969- Jean Rosenthal's last Broadway design credit: *Dear World*
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1970's

- 1970- Gilbert Hemsley joins the faculty of the University of Wisconsin - Madison
 - 1970- **Lee** color media is introduced
 - 1971- Altman Lighting introduces the **360Q axial ellipsoidal**.
 - 1971- John Gleason joins the faculty of New York University
 - 1972- Tharon Musser wins a *Tony* for her lighting design for *Follies*
 - 1973- **Ken Billington** designs the lighting for *The Visit*
 - 1973- Jules Fisher wins a *Tony* for his lighting design for *Pippin*
 - 1975- Tharon Musser introduces the **computer-assisted memory lighting system** to the Broadway theatre, the show was *Chorus Line* at the Shubert Theatre
 - 1975- Tharon Musser wins a *Tony* for her lighting design for *Chorus Line*
 - 1975- **Beverly Emmons** designs the lighting for *A Letter for Queen Victoria*
 - 1976- **Roscolux** color media is introduced
 - 1977- Jennifer Tipton wins a *Tony* for her lighting design for *The Cherry Orchard*
 - 1979- Ken Billington designs the lighting for *Sweeny Todd*
 - 1979- Abe Feder's last Broadway design credit: *Carmelina*
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1980's

- 1980- Peggy Clark's last Broadway design credit: *Musical Chairs*
 - 1981- Wybron introduces the ColorMax **color scroller**
 - 1982- Tharon Musser wins a *Tony* for her lighting design for *Dreamgirls*
 - 1983- Beverly Emmons designs the lighting for *Elephant Man*
 - 1984- **GamColor** is introduced
 - 1986- USITT establishes the DMX-512 dimmer protocol standard
 - 1989- Jennifer Tipton wins a *Tony* for her lighting design for *Jerome Robbin's Broadway*
 - 1989- David Hersey uses 19 Vari*Lites (**automated fixtures**) in *Miss Saigon*
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1990's

- 1992- ETC introduces the **Source4® Ellipsoidal**
 - 1992- ETC introduces the **Obsession** control board
 - 1993- Jules Fisher begins the *Broadway Lighting Master Classes*
 - 1995- ETC introduces the **Express** control board
 - 1997- Ken Billington wins a *Tony* for his lighting design for *Chicago*
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Revised: September 14, 2015

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