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MOMENTOUS CHANGES

Extensive and exciting changes in USITT's management structure commenced on July 1, 1996. The Institute's National Office moved into a new location with a new team of employees on board, four officers began their new positions, and several USITT committees are in the process of extensive rearrangement. These are some of the most sweeping changes in the 36 year history of the Institute, and are momentous changes occurring at one time.

We welcome to USITT a superb team of management employees.

Three very experienced professionals make up this new team. Our new Membership Services Manager, **Christine D. Gancarz** is responsible for all aspects of membership support for the Institute. Christine has over 15 years experience in business in customer service areas and is an assistant instructor in the Dale Carnegie Institute. The newly created position, Marketing and Public Relations Manager, has been filled by **Mary P. Buffum**, who most recently was the Director of Marketing and PR for The Volunteer Center in Syracuse, NY. She has helped to organize many successful fundraising events in the Syracuse community. Rounding out this team, also in a newly defined position, is **Michael Wolfson**, Financial Ac-

counts Manager. Michael is responsible for bookkeeping and financial reporting for our \$1 million dollar budget corporation. Michael has had extensive experience in accounting for several not-for-profit organizations, as well as owned successful restaurant franchises for 11 years in the Central New York area.

This team began their USITT employment during the first two weeks of July and already have the new office up and running. They will continue to learn about USITT and its members as they begin making improvements to USITT procedures and member services. The Syracuse, NY area provided a wealth of applicants for our potential employment. Over 100 applications were received in response to our advertisement and I was joined by Bill Byrnes, Leon Brauner and Helen Willard in interviewing 22 persons for these positions over a three day period in June. Moving the National Office to a new location gave us an excellent opportunity to reassess the positions in the National Office and to institute a team management approach for operation of the National Office.

The USITT National Office moved into 1,375 square feet of space in the eastern suburbs of Syracuse, NY, where it is conveniently located a few miles from the Syracuse airport and from a NYS Thruway entrance. The space is freshly painted and carpeted, located in a single floor building with other business tenants, easily accessible to city services, with spacious parking

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WILLIAM J. BYRNES

WELCOME TO THE NEW USITT MANAGEMENT TEAM! (L TO R) MARY BUFFUM (MARKETING AND PUBLIC RELATIONS MANAGER), MICHAEL WOLFSON (FINANCIAL ACCOUNTS MANAGER) AND CHRISTINE GANCARZ (MEMBERSHIP SERVICES MANAGER).

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EXECUTIVE COMMITTEE

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facilities and most importantly, is arranged to take advantage of a team working environment. It is a lovely space that will allow and encourage our new team of employees to comfortably work together on the important services provided to our members from this office. This space is also considerably less expensive than our former New York City location.

In the early 1990s the USITT Finance Committee, in its serious consideration of the long term fiscal health of the USITT corporation, concurred with findings of several previous special committees that the National Office, located in New York City, required a very substantial amount of USITT resources for the services it provided. During the 1993 Winter Board Meetings, Van Phillips of the firm of Philips and Jones Associates, Inc. presented the Board of Directors with a comparison report of office operation costs in New York City compared to six other cities. Based upon this report, an ad hoc USITT Office Location Committee was created. Chaired by Dick Durst, this committee worked over the next three years in development of site selection criteria for locating the National Office, preparing for the expiration of the lease of our 10 West 19th Street location in November 1996. The committee, whose members include Bill Byrnes, Tim Kelly, Craig Martin and myself gathered information on a number of cities. This research found that operations within any of the cities explored outside of NYC would be less expensive, and that differences city to city were not major. Realizing that moving the USITT National Office while conference registrations were being processed in November was not advantageous, the Office Location and Executive Committees stepped up the location investigation last winter so that decisions would be made to best work within the National Office and conference schedules.

At the same time the office location investigations were occurring, planning was underway for me to transition from the office of USITT Treas-

urer to USITT President. With the concurrence of the Executive Committee, this transition was to be different than many other transitions, where usually one officer turns over massive files to his/her successor and business continues as usual. When I took on the job of USITT Treasurer eight years ago, the fiscal activity of the Institute was much more modest than it is today, and the tasks required of the office were almost within the realm of a trained volunteer. Over these past eight years the financial activity of the Institute has grown dramatically, as have the Institute's related corporate needs. During the Executive Committee meetings held at the Fort Worth conference, the Committee agreed that the most important consideration for the Institute's immediate future was the successful transition from a volunteer Treasurer to an experienced and full-time financial management employee.

Following the Fort Worth conference, the Office Location Committee and Executive Committees decided to move the USITT National Office, unless a location could be found within the New York City area that financially compared with the other cities studied. During March and April the location committee visited sites under consideration from their study. In the process of comparing the data from these cities and taking into account the Treasurer transition, Bill Byrnes and I made a recommendation to the Executive Committee that the ease of this transition would be best facilitated by a move to Syracuse, NY. The move to Syracuse enabled USITT to continue under the laws and regulations of New York State, to continue utilize many existing services, and the new employee team could be oriented by a USITT officer. This recommendation was approved by the Executive Committee, and following this approval, all but one of the USITT Directors-At-Large were called by me and invited to support this decision or express their concerns. The Directors-At-Large were very supportive of this decision.

The USITT Executive Committee will be retreating in Pittsburgh, PA in early August to continue discussions of

items resulting from the move and new employees as well as continuing to work upon recent changes in committee charges and committee assignments. Joining the Executive Committee for his first meeting as an officer is LeRoy Stoner, VP-Liaison. Normand Bouchard will also continue to serve on the Executive Committee, having agreed to serve in an executive position within the conference structure.

As a result all of these structural changes, there will also be some changes in USITT procedures and deadlines. The first change is in the publication date of this *Sightlines* issue. We are publishing a few weeks later than usual so that we could include a full report on these changes. The September *Sightlines* issue will also appear later in September than previously, although the August 5 deadline for this issue will remain. This change is being made to coordinate the publication of conference information and registration forms following the USITT Annual Conference & Stage Expo Committee meeting early August. We have also decided to delay the printing of the *TD&T Membership Directory* 1996-97 issue. This publication date will be announced in the September issue of *Sightlines*. Delaying this publication should enable us to include many more current addresses of our members. We look for a deluge of address change forms in August and will make sure that these changes are shown in the 1996/97 Directory issue.

The July 1, 1996 changes will result in USITT continuing to be a successfully operated and fiscally sound corporation. I look forward to being part of this team of employees, Executive Committee, Directors-At-Large, committee chairs and commissioners who will work together to prepare USITT to continue very successfully into the next century.

Christine L. Kaiser
USITT President

FELLOWS ADDRESS

THE LAST PIANO BOARD

[The following article by Richard Thompson is one of two Fellows speeches given at the Fort Worth Conference & Stage Expo in March. The other one, by Robert Scales, will appear in next month's Sightlines.]

My portion of this address is a look back into the relatively recent technology of the theatre, and the changes that have occurred since the forming of the Institute.

Many of you in the audience tonight are unaware that when the Institute was founded in 1961, every Broadway show's lighting was controlled by piano boards. These were the standard dimmer boards for the legitimate theatre in New York. They usually consisted of fourteen 2000 watt resistant dimmers. They were built into metal lined wood crates resembling their original heritage, that of the packing crate that upright pianos were shipped in. One electrician could operate two boards. A major musical of the time would have 4 to 6 electricians attempting to take their cues all at the same time.

Why was this technology still there? Fear? Job security? No, it was that the theatre owners would not pay for the cost to convert their old Direct Current supplied buildings to Alternating Current. This was a tradition that had lasted for years. One electrician did finally take a stand. George Gebhardt was the master electrician and Abe Feder the lighting designer for *My Fair Lady*. They convinced the producers of *My Fair Lady* that the road production would travel with autotransformer dimmers, and that if a theatre wanted to have the show play there, it have to have alternating current installed. The mold was broken!

But, the autotransformer boards only lasted a short time. As the Institute was being founded a new device was discovered. The SCR. Century Lighting, Kliegl Brothers, Ward Leonard and Ariel Davis all quickly de-

veloped products and the lighting control industry has never looked back. We began with preset systems, 2, 5, 10 and even 20 rows of potentiometers to allow the fading in and out the stage lights. Dimmers were expensive so we combined a number of spotlights through a patch panel and controlled them all by a single dimmer. The typical show might have 50 instruments, spots, strips, floods and if the budget permitted beam projectors. A show with more than 30 cues was a complicated and "heavy" show. The role of the lighting designer began to expand.

At the time the major players in lighting design on Broadway were Abe Feder, Jean Rosenthal, Peggy Clark Kelly, Tharon Musser, Jo Mielziner, Charles Elson, and Bill and Jean Eckart. But Broadway still used piano boards. The sophistication of preset control technology; the use of thyatron, magnetic amplifiers and SCR dimmers was relegated primarily to academia. We were told that the "unions would not allow it." Yes, there was an assumption, by some, that this new technology would put men out of work. All you had to do was have one person to push a button when the curtain went up and again when it went down, that was that. In reality, there was a communications break down between the academic community and the professional unions.

Presets did have limitations. With the ability of a flexible control concept, lighting designers began to add cues. It was now possible to have subtle changes in lighting levels even on these systems. One machine and one or two operators replacing what those six electricians could do. These almost subliminal changes directed the eye of the audience to the point of interest. Motion pictures and television had long ago found the ability to show you only what the director wanted you to see. On the stage, you saw everything. But the director still wanted you to see what he had decided as important to the telling of the story. As more and more cues were needed the industry responded with C-cards, Mag Cards, Punch Cards, Punched Tape and modified audio tape recorders.

Many concepts were tried, and

many, if not all, failed. Computers were still large machines. A viewing screen to tell you what was happening did not exist. Printing was done only by Teletype machines. In an early product design meeting on a computer controlled dimming system, I was asked by an engineer, "How many cues would be needed." I said, "one for every beat of the music!" When the computer manufacture was informed that his equipment must operate without failure from curtain up at 8:30 to curtain down at 11:00; his answer was, "Have two computers."

The breakthrough came from television. They had the funds to do the R&D. In 1965, CBS opened its new production center in New York. A main frame computer which did payroll also ran the lighting control system. Control potentiometer knobs, now called point setting controls, moved by individual miniature motors. The system had many problems and debugging was a new word in our technological lexicon.

But this system begat "Auto-Cue" and parallel development in Great Britain begat "Q-file" which begat all of the other computer based, PC based, DMXed and MIDI control systems. As the early computer systems began, one small manufacture, Van Buren Industries in Los Angeles, brought their prototype to the Los Angeles Music Center. George Van Buren, Jr., its owner, was a union man, and his family had a long history in the IATSE. The IA could not restrict his business. It was soon discovered that the ability to do many rapid, accurate and repeatable cues gave the lighting designer a new tool. He could use more lights, more cues, heavier shows. This meant more work, more workers. It was a win-win situation for everyone. *Chorus Line* was the first Broadway show with computer controlled SCR dimmers. The technology revolution had started.

There were other technological advances entering the theatre. Many went by so fast we have to now look back, and ask where it all started.

My own memory of significant USITT programs include attendance at the second USITT conference on a

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FELLOWS ADDRESS

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spring 1962 Sunday in Manhattan at the Time Life Building. Attendance was around 150. Architect John Knight of Welton Becket showed slides of the then under construction Los Angeles Music Center.

Richard Land, then a student from MIT, described how he and some of his classmates were using a large computer at MIT on an Air Force Contract which during its free time was used to design floor plans and block actors for their college shows. They even had a color wheel that would give animation to the image on the CRT. By the way, the CRT was round! Was this the start of CAD and computer graphics?

Gil Hemsley described the logistics he undertook as technical director for the McCarter Theatre at Princeton. He was able to schedule weeks in advance the delivery of a piano at a specific date and time for a recital. Gilbert always organized the organizing.

In 1963 I was asked to join a special ad-hoc USITT committee to assist architect Ben Schlanger in the rewriting of the New York City Building Code. Earlier, while at Yale, for Ed Cole's technical production course, I wrote a term paper proposing the use of deluge sprinklers as a replacement for the traditional asbestos curtain. It was published in the *AIA Journal*, and I found myself as a code expert.

C. Ray Smith of *Progressive Architecture* magazine chaired the committee. Members included Joel Rubin, Ed Peterson, Ed Kook, Arthur Benline, Don Swinney and others. We got the deluge system into the Code. We found a way to permit construction over the stage house. The Minskoff and Gershwin theatres on Broadway are the results of this change. Ben Schlanger got his continental seating concept into this Code. Many architects may disagree with the concept, but it offered another way to arrange the seats in a theatre. It improved on what the audience could see and their comfort. We discovered that by placing a sign on the door of a motion picture projection booth stating, "Nitrate Film Prohibited" we could eliminate the

fire shutters and the toilet without a door. This simple notification has made the multiplex theatre possible. After many arguments we learned that if we changed the name of stage elevators to stage lifts the equipment was no longer subject to the elevator code. The end result was a new Code for Places of Public Assembly adopted in 1967 by the City of New York. Many of these changes then were adopted into other building codes through out the country.

Since that time the Institute has been one of the more active organizations in the role of building and safety codes affecting our industry. We began to take on the National Electrical Code in 1968. Our first discovery was that codes, and all rules and legislation, are not written by a star chamber. It was up to the individual, and the industry he represents, to submit changes or write new rules. Out of this evolved the Institute's NEC Committee and ultimately the Health and Safety Commission.

In the late 1960s the Psychedelic Hippie movement had infiltrated the theatre. An artists was featured in *Life Magazine* having projected slide images on dancers. Josh White and the Joshua Light Show was playing weekly at the Fillmore East. Kodak Carousel projectors were being forced to do things Kodak never intended. Overhead projectors covered with a Pyrex dish of water and drops of colored oil created interesting abstract patterns. Josef Svoboda was wowing them in Prague with his use of light and projection. Prague's *Lanterna Magika* came to the 1964 New York Worlds Fair. The Metropolitan Opera acquired the first 10,000 watt Pani Scenic Projectors in the U.S. Gunther Schneider Simpson began the design of his first Ring Cycle at the Met using scenic projection as a primary design tool. The European technique of painting on a glass slide was replacing our concept of photographic slide images.

In 1968, I organized and moderated a day long seminar at the Met on scenic projection. For the first time all of the existing projection machines were displayed together. Kodak's representative explained that they had no

intention in redesigning the Carousel projector as a scenic projection device. We learned that there was a physical limit to the amount of energy that could be passed through a 35mm aperture. The industry had been brought together in one place, and they learned. From that time on scenic projection moved from a "gimmick" to a respected tool for the designer. Josef Svoboda added to the education and use of this technique by his master classes conducted at major theatre departments throughout the country a few years later. Was this a turning point for scenic projection, perhaps.

I recall the 1964 USITT conference as I was its program chairman. We started with a pre-onference tour. It began at 7:00A.M. with a tour of Radio City Music Hall. From there we went to the New York World's Fair, which had opened a few days earlier. That tour included the Jo Mielziner designed Bell Telephone exhibit, being operated by a new kid on the block, David Mintz. The group of about 200 was herded from place to place by myself and Bob Benson at the head end, and Gil Hemsley, with a bull horn taking up the rear. From the Bell exhibit we walked over to the GE Pavilion, with its revolving stage designed by Olaf Soot. The entourage then went to Greenwich Village for lunch and a presentation of the just opened ANTA Washington Square Theatre by Elia Kazan and Jo Mielziner. The grand tour culminated late that afternoon with a trip to the New York State Theatre at Lincoln Center, which was opening that night. Philip Johnson, the theatre's architect, held court for us in the lobby.

The Institute began to grow and with any growth there were growing pains. We began a Journal. Joel Rubin was President and Ned Bowman was its first editor. There had been much discussion as to whether or not the Journal should have advertising. At the time such crass commercialism was beneath us. Later we learned that it was important to involve the manufacturers in the Journal and still later to initiate a trade show.

Yes, we have grown, our technology now covers the world. The communi-

cations barriers between the other media has broken down. Today, we find cinematographers using dimmers to light their films. Lighting instruments, once exclusive to theatre now find their use in film and TV. The academic institutions are beginning to understand that an art director is a scenic designer, that a playwright is a screen writer. Directing, acting, costuming are all similar occupations.

We are beginning to establish an ongoing relationship with the craft unions. Many USITT members are members of one or more of the industry unions. We do need to develop a better understanding of the union's role at the academic level. With the demise of apprentice programs within the unions, there is the need for a place to train. What better place than in our colleges and universities. The sophistication of our technology compounds itself daily. We must forge communications between the theatre departments, manufactures, unions, film, television and other media. We are all linked by a common technology, believe it or not!

Richard D. Thompson
Fellow of the Institute

ENGINEERING

CODE CORNER

Last month's Code Corner question consisted of several parts. A fixture of a given wattage had its three-foot lead plugged into a 50-foot extension cord which, in turn, was plugged into a dimmer with a circuit breaker of a given rating. Section 240-4 of the National Electrical Code (NEC) states the requirements for the protection of flexible cords. The general requirement is that the overcurrent-protection device (fuse or circuit breaker) must not be larger than the appropriate ampacity for the cord as found in Table 400-5(A) "Allowable Ampacity of Flexible Cords and Cables." In the below examples, Column B is the appropriate column. Exception No. 1 covers the three-foot lead on the fixture. The actual gage of the fixture

lead is as required by the fixture's listing by a recognized testing laboratory. However, how it is connected to the supply is of importance to the user. Exception No. 3 covers extension cord sets. Listed extension cord sets are factory-made complete assemblies that have been investigated by a recognized testing laboratory. They are not extension cords made in the production shop with listed cable and listed connectors.

The first question was "If the circuit breaker in the dimmer is rated 20A and the lamp bulb is rated 1,000W, what is the minimum acceptable gage of flexible cord that may be used for a code-compliant extension cord? For the fixture lead?" (see the May/June issue of *Sightlines*) The testing laboratory may very well allow the fixture manufacture to provide an 18 AWG lead ($1000W / 120V = 8.33A$). Exception No. 1 allows a minimum 18 AWG fixture lead on a circuit protected at 20A. As a side note, the testing laboratory will usually limit the length of small-gage fixture wire leads so that the wire resistance is low enough to allow the circuit breaker to open properly in case of a short circuit. Exception No. 3 allows a minimum 16 AWG listed extension cord on a 20A circuit. Again as a side note, a listed extension cord is usually marked with a special voltage, current and wattage rating which is dependent on its length. This special rating, as with any rating marked on a listed device, must be complied with and supersedes the ratings in Table 400-5(A).

The second question was "If the circuit breaker in the dimmer is rated 20A and the lamp bulb is rated 2,000W, what is the minimum acceptable gage of flexible cord that may be used for a code-compliant extension cord? For the fixture lead?" The fixture manufacturer may provide a 14 AWG lead. Exception 1 allows a minimum 18 AWG cord on a fixture lead. Exception No. 3 allows a minimum 16 AWG listed extension cord set; however, its listed rating must be observed. It is highly unlikely that a listed extension cord set smaller than 12 AWG would have a rating of at least 2,000W. Note that this is the same requirement as if the general rule was applied and an

extension cord made in the production shop with listed cable and listed connectors.

The third question was "If the circuit breaker in the dimmer is rated 50A, what is the minimum acceptable gage of flexible cord that may be used for a code-compliant extension cord? For the fixture lead?" The answer to this question is the same for both the 1,000W and 2,000W load. Exception No. 1 requires that 50A circuits employ minimum 20A rated cord on fixture leads. The manufacturer would have had to provide minimum 12 AWG leads in order for the fixture to be connected to a 50A circuit. Of course the connectors would all have to be rated at least 50A. Any extension cords would have to be minimum 6 AWG.

The questions in this issue will continue this discussion. A fixture with a given wattage and a 3 foot lead will be plugged into one or more extension cords which, in turn, is plugged into a dimmer with a given circuit breaker rating.

1. If the circuit breaker in the dimmer is rated 50A and the lamp bulb is rated 5,000W, what is the minimum acceptable gage of flexible cord that may be used for code-compliant extension cord(s)? For the fixture lead?
2. If the circuit breaker in the dimmer is rated 100A and the lamp bulb is rated 10,000W, what is the minimum acceptable gage of flexible cord that may be used for code-compliant extension cord(s)? For the fixture lead?
3. If the circuit breaker in the dimmer is rated 100A and the lamp bulb is rated 5,000W, what is the minimum acceptable gage of flexible cord that may be used for code-compliance for the extension cord(s)? For the fixture lead?

(The information in this article is the opinion of the author. Only the NFPA and your local jurisdictional authority can interpret the NEC. The author and USITT are not liable for anything resulting from the use of this information.)

Ken Vannice
Vice-Commissioner
for NEC, Panel 15

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MEMBER NEWS

BROADWAY LIGHTING MASTER CLASSES

Take New York City, add Broadway and shows and you have the theatre capital of the world. Add to the mix lighting designers, scenic artists, costume designers and directors and you have the creative artists who make Broadway theatre.

How can one share this energy and excitement with interested designers from across the country and around the world? Broadway Lighting Master Classes. In 1993 Sonny Sonnenfeld approached Jules Fisher with a plan he had thought about for years, and Jules agreed to join Sonny as the creative consultant in launching a new seminar in lighting.

Broadway Lighting Master Classes is a four-day seminar held in October at the John Jay College Theatre, with a faculty of many of the world's leading lighting designers. Jules Fisher, as creative director, sets the tone for the sessions. "This seminar attempts to investigate the current and future design philosophy of stage lighting. For this exploration, I have chosen a group of seasoned artists that inspire me from all aspects of theatre lighting design. The other members of the faculty include such practicing professionals as Danny Franks, Bran Ferran, Beverly Emmons, Peggy Eisenhauer, John Gleason, Roger Morgan, the legendary Abe Fedder, Ted Mather, Steve Cochrane, Wendell Harrington, Gil Wechsler, and others. Each session addresses a different facet of theatre lighting from color in lighting to the rhythm of cueing (as musical), from light plot to Broadway show, adjusting show lighting to television and topics of interest to lighting designers.

This four-day seminar is an opportunity to meet and listen to these designers. The attendees mix with students from all over the world to exchange experiences and ideas. The usual mix of attendees covers many areas of the theatre—college professors, technical directors, lighting designers of regional theatres, IATSE members, etc.

At the Friday session, Jules Fisher discusses his lighting philosophy for a current Broadway show for which he and Peggy Eisenhauer designed the lighting. The attendees receive a copy of the light plot, the shop order and a part of the cue sheet.

Friday evening the entire group then attends the show. Following the attendance at the performance, a Saturday morning session is conducted by Mr. Fisher to discuss what was seen, how it was received and to answer questions.

Sunday morning's session is an informal seminar held at a hotel during brunch. The first part is a forum with many of the lighting designers on hand to answer questions from the floor. The second part, "Collaboration: the lighting designer, the scenic artist, the costume designer and the director," is a lively discussion among the various disciplines to get a show on the stage. In the past the participants have included Tony Walton (scenic artist), William Ivy Long (costume designer), Graciella Danielle and Rob Marshall (director).

The four-day seminar ends on a high note. The audience, reluctant to leave, spend time speaking to the designers. The response is the most enthusiastic. As one college professor said, "This week I feel as if I walked among the great".

To enrich your theatre lighting capabilities and to give you an experience you'll never forget, we invite you to join Broadway Lighting Master Classes '96 in New York City, October 10, 11, 12 and 13.

For further information contact:

Broadway Lighting Master Classes
155 West 68th Street, #1505
New York, NY 10023
Tel: (212) 769-2060
Fax: (212) 721-0979

Kelly Sonnenfeld
Broadway Lighting Master Classes

[Broadway Lighting Master Class has offered to give USITT members a discounted rate when registering for their next four-day seminar. Registration information is available by calling Sonny or Kelly Sonnenfeld (212-769-2060) or by visiting the USITT web site (<http://www.culturenet.ca/usitt>). Ed.]

LIGHTING

WHAT'S HAPPENIN' IN THE INDUSTRY

Here are a few highlights of what is happening in the entertainment lighting industry:

The closing of the Colortran plant in California and subsequent layoff of the staff and management personnel was the subject of many rumors and speculations. NSI of Wilsonville, Oregon purchased most of the assets of Colortran in the Spring of '96. Plans are to begin shipping of newly manufactured product later this summer. They have exhibited at both the National Association of Broadcasters and Lightfair and are again placing ads in trade publications.

Karl G. Ruling joined ESTA May 28th as Technical Standards Manager working out of the ESTA office in New York. People may know him for the numerous articles he wrote as Technical Editor for *TCI* and *Lighting Dimensions* magazines over the last six years. Previously, Karl worked as an Assistant Professor and Designer/Technical Director at several colleges and universities across the United States. He holds an MFA in Lighting and Scenic Design from the University of Illinois at Urbana-Champaign, and a BA degree with majors in Psychology and Dramatic Art from the University of California at Santa Barbara.

ESTA's Control Protocols Working Group has resolved the public review comments it had received on the draft version of the "Recommended Practice for Ethernet Cabling Systems in Entertainment Lighting Applications." It is hoped the standard will be published prior to LDI96 in Orlando.

The Ethernet cabling recommended practice document will be important for users of lighting equipment because it clearly lays out how an Ethernet system needs to be designed so it will be reliable under performance conditions. The industry will see more of Ethernet, too. It has the bandwidth necessary to carry all the data people now want to move with multiple control consoles, remote

designer's stations, dimmer feedback, and automated luminaires—and it can do it at a reasonable price because it is the de facto standard in computer networks.

A recent publication entitled "Introduction to Modern Atmospheric Effects," written by ESTA's Fog and Smoke Work Group, demystifies fog-making technologies, and helps the user select the appropriate technology for a desired effect. The booklet also encourages the safe and responsible use of fog. It is available from some ESTA Dealer and Manufacturer members and from Broadway Press (800-869-6372).

Vari-Lite is continuing their Series 300 DMX Workshops which many USITT members participated in during the Fort Worth conference. Most often held in conjunction with a local college or university, the workshops are designed to help designers and technicians setup and operate the VL-5, VL-6 and VL-M fixtures on a standard theatrical console using the DMX protocol. The series of workshops will continue throughout the fall and winter.

Rob Rowlands
Vice-Commissioner

TECHNICAL PRODUCTION

OISTAT DELEGATES DEBATE TECH ISSUES

It was my great pleasure to attend the April meeting of the OISTAT Technical Commission held in Graz, Austria, as an official delegate representing USITT.

The meeting included 17 delegates from 16 of the OISTAT members nations including representatives from throughout Europe and from Taiwan. I had an eye-opening experience similar to the early days of my participation in USITT; discovering that there were other people doing what I did and struggling with similar professional issues.

We were hosted in Graz, which is about 120 miles south of Vienna, by the Austrian counterpart of USITT: the Österreich Theatertechnische Gesellschaft. The meeting was concur-

rent with a trade show of European stage, lighting and sound equipment at the *Graz Messe*. Before the meetings began, we were treated to a tour of Graz's historic district and a performance of *West Side Story* at their beautiful opera house. It was strange and wonderful to see Bernstein's musical in a gritty and violent production inside the baroque splendor of this beautiful house.

One subject of considerable interest in the meeting was the OISTAT Theatre Atlas project which seeks to build an Internet database of theatre plans and sections from around the world. Louis Janssen, Vice-President of the OISTAT Technology Commission, is chairing this effort. It dovetails nicely with USITT efforts to develop a drafting repository. If you are interested in this project you can contact me (e-mail: jdarling@nwu-edu or tel: 847-491-3121) or Louis directly (e-mail: louis.janssen@tga.nl).

Mr. Janssen was involved in developing a CD-ROM of plans from the major Dutch touring houses. This was greatly needed because their theatre companies tend to be touring companies rather than companies who own buildings. The CD-ROM plans are DXF and AutoCad files for loading into CAD programs, but due to storage considerations the Theatre Atlas is looking to provide PICT files and contact names where DXF files could be obtained if needed. The Dutch Theatre Atlas can be found at (http://www.oistat.nl/Country_members/NETHERLANDS/stichttekening/index.html). Mr Janssen has also developed OISTAT's web pages which can be found at (<http://www.oistat.nl/>).

There was also much debate about compliance with various European Community efforts to produce European standards. Prof. Bruno Groesel presented copies of the recently completed Austrian Stage Equipment Standards which might serve as a model for a European standard. Kevin Hyver, Safety Manager for the Royal Shakespeare Company, presented the RSC's program for compliance with European workplace health and safety guidelines and detailed the RSC's system for accessing risk on each production.

One concern to the Technology Commission is the lack of an invitation for the 1997 meeting. The commission usually meets when a time and place are offered by a host organization. The host is basically responsible for the food and lodging needs of the delegates once they arrive at the host city as well as a meeting room. If anyone feels they have the ability to host the commission through their school, company, or organization for 1997 or another year, please contact me (e-mail: jdarling@nwu-edu or tel: 847-491-3121).

I hope that members of the USITT Technical Production Commission will take every opportunity to meet our international guests at the 1998 conference in Pittsburgh. Since the OISTAT World Congress will be meeting in Pittsburgh just prior to our conference there should be plenty of international colleagues staying over.

The Technical Production Commission is developing a more prominent role for international liaison with its activity. We believe that international dialogue can create a more exciting environment for our work and tremendous opportunities for professional growth and recognition. Get active, you won't regret it!

Jonathan Darling
Co-Commissioner

SCENE DESIGN

COMMISSION PROJECTS PROLIFERATE

Is there life between the USITT conferences? The obvious answer is "Yes; between conferences is when we dedicate our time, talents and energies to our professions." The Scene Design Commission too has a life between conferences. That's when we work on the projects that are the life blood of the commission.

Projects serve the members of the commission and the Institute in two ways. First, projects give members the opportunity to propose, plan and implement ideas that are potentially more expansive or longer term than

what can be presented in the conference format. Second, projects allow for dissemination of information to the entire membership of the Institute.

As a result of the interest generated at the Fort Worth Conference & Stage Expo, three distinct projects are in the early planning phases. Each of the three projects represents a unique area of interest within the Scene Design Commission and has a specific contact person who is chairing the project.

NATIONAL PROPERTY ARTISAN DIRECTORY

Steve Gilliam, Vice-Commissioner for Properties has undertaken the National Property Artisan Directory project. He is compiling names and addresses of individuals who specialize in managing or crafting properties in the entertainment industry. A mailing has been sent to all LORT theatres who employ property specialists inviting individuals to list names in the USITT directory. In the fall, the commission will target universities who maintain staff property artisans, theme parks, retail houses and the like. It is our hope that by the time Pittsburgh rolls around, the directory project will have its first edition. If you would like to have your name listed in the directory, send the appropriate information via e-mail to: Sgilliam@Trinity.edu. If you care to assist in the organization of properties, please contact Steve.

SCENE PAINTING NEWSLETTER REVIVED

Newly appointed Vice-Commissioner for Scene Painting, Jason Phillips, is announcing his intention to revive the scene painting newsletter. With the first issue targeted for October publication, the newsletter will be published on a quarterly basis providing there is sufficient response to Jason's call for contributions (not monetary! just lots of ideas.)

Jason is soliciting material for the Fall newsletter. A few possible topics include:

1. Scene painting problems solved.
2. Improved recipes for old techniques.
3. New products, their uses and applications.
4. Dangers and potential hazards in

the product and painting world.

5. What's going on in painting projects today:

- *New areas of work to investigate—whether you have gotten work in a previously untapped market or are searching for one.
- *New products that you have acquired for new companies.
- *New directions in the business.
- *Business/work news (gossip?).
- *Significant accomplishments of you and/or your colleagues.
- *Anything you believe your colleagues would like to know, including your favorite chocolate chip cookie recipe for those 1:30 A.M. paint calls!

Please send all material and comments to:

Jason Phillips
c/o Greg Thompson Productions
921 Elliot West
Seattle WA 98119

THEATRE COLLECTIONS ARCHIVE

Not enough has been done in the United States to catalog theatre design collections. To address this problem, Ron Naversen is heading the Theatre Collections Archive project. Information will be catalogued in a file which will be disseminated on the Internet and eventually published in *TD&T*. The list will be cross-referenced to cover all disciplines with two separate catalogs for American and International Collections. Information pertaining to collections will be gathered by posting notices in various periodicals like *Sightlines*, *TD&T*, *TGI*, the United Scenic Artists newsletter and other selected scholarly journals. Please contact Ron (e-mail: RNAVERSEN@aol.com) to indicate your interest in this project.

The ongoing success of each of these projects depends on the contributions of members of the Scene Design Commission. Please give as much (or as little) time as you have.

Kim Williamson
Co-Commissioner

TECHNICAL PRODUCTION

CIRCUIT CURRENT IN GROUND PATHS

A grounded 120-volt circuit consists of three conductors, a "hot" (black), a neutral (white), and a safety ground (green), as shown in figure 1:

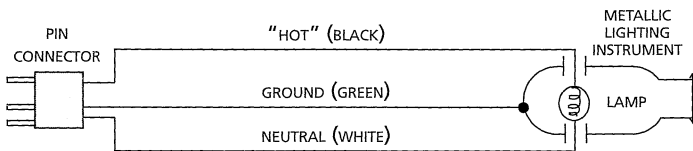


FIGURE 1

The "circuit" is formed by the "hot" wire and the neutral wire. Normally, no circuit current should flow in the green ground wire. To prevent this, the neutral is grounded at one point only; at the electrical service's point of entry into a building (fig. 2):

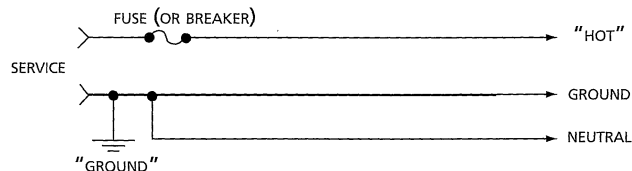


FIGURE 2

If faulty insulation in a piece of equipment, such as a stage lighting instrument, causes the "hot" wire to contact the metal housing of the equipment, the green ground wire provides a path for current to flow back to the service location and, thus, blow a fuse or trip a breaker to remove the power supply to the faulty device (fig. 3). If the green wire is not present, or is bypassed in some manner, this safety feature is defeated and a very hazardous condition would remain. That is, the metal housing of the defective equipment would continue to be "hot" with respect to any grounded object (such as building steel or metallic piping systems):

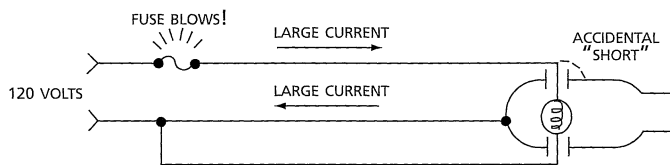


FIGURE 3

If the neutral were to be grounded at some point besides the required ground connection at the electric service, then the ground connection would be placed in parallel with the neutral and some of the normal circuit current would flow in the ground (fig 4):

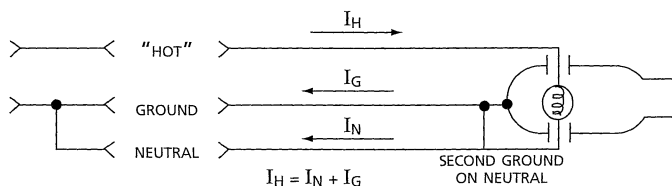


FIGURE 4

This is a very undesirable situation because the green ground wire is not considered to be a normal circuit conductor and should not carry any part of the normal circuit current.

Also, the green ground wire is to be bonded to any metallic housings such as equipment cabinets, junction boxes, switch boxes, etc. If conduit is used and/or such metallic housings are mounted on building steel, then the ground path carrying part of the normal circuit current would become very extensive and difficult to predict.

An unintentional reversal of the neutral and ground wires in a cable used to connect a lighting instrument to a source of power produces the same effect of using the ground path as the current return for the circuit.

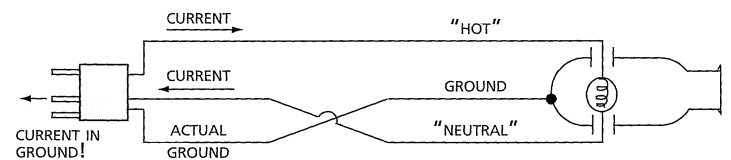


FIGURE 5

Figure 5 shows the case for a lighting instrument mounted on an electrically isolated structure such as a free-standing "boom" on a wooden floor; for the case where the instrument is hung on a grounded structure (such as a "front-of-house" pipe), the current would divide between the neutral and the ground path, just as shown in figure 4.

The 1996 *National Electrical Code* addresses this situation in Article 250-21, titled "Objectionable Current over Grounding Conductors." It says, in part:

The grounding of...circuit conductors...shall be installed and arranged in a manner that will prevent an objectionable flow of current over the grounding conductors or grounding paths.

It then proceeds to discuss certain limited alterations of grounding connections which are allowable to eliminate such objectionable currents, but states:

Currents that introduce noise or data errors in electronic equipment shall not be considered the objectionable currents addressed in this section.

There are two interesting aspects to the above. First, it is recognized that currents flowing in grounding paths are objectionable. Presumably, the intent here is the consideration of shock hazards and, possibly, electrolytic action in water piping systems.

However, if the only adverse effect of currents flowing in ground paths is that it "screws up" electronic data transmission, that is not sufficient reason to alter any of the intentional grounding connections which exist. The fact that such problems can occur is obviously recognized regardless.

The reason that electronic data transmission can be adversely affected by currents flowing in grounding conductors is that data circuit cable shields or grounded common conductors can be in parallel with the power system ground path. Thus, some of the 60-Hertz power current will flow in the data circuits, or 60-Hertz signals can be induced into those circuits.

Thus, to avoid such difficulties, some means of assuring that accidental reversals of neutral and ground wires (as in cables) cannot occur is of great value.

T. J. Blalock

[Mr. Blalock kindly provided this article as a follow up to his Technical Source Guide #24 in which he describes a cable tester designed to, in part, prevent accidental reversal of neutral and ground wires.]

COMPUTERS

WOW! OR WADING ON THE WEB

This article is intended for Internet newcomers who want to get their feet wet, as well as experienced net surfers. This list consists of hot spots which should be of interest to theatre professionals and educators. "WOW!" now has its own homepage (http://www.siu.edu/COSTUMES/WOW/WOW_INDEX.html) which should make it easier to link to the locations (URLs) found in this article.

MUSICAL COMPOSERS:

Through the years there have been many excellent musicals written by great composers. The Web is a good source to find information on musical composers and their work. One of the most prolific playwrights today is Andrew Lloyd Webber (<http://www.reallyuseful.com/index.html>) who wrote *Cats*, *Phantom of the Opera*, and *Sunset Boulevard*, to name a few. *Miss Saigon* and *Les Miserables* composers Boublil and Schonberg have a home page (<http://www.netlink.uk/users/nomad/index.html>). Using the Internet, you can also find information on Rodgers and Hammerstein (<http://www.shubert.com/rogerham.html>), and Gilbert and Sullivan (<http://math.idbsu.edu/gas/GaS.html>). A few other composers also have Web sites: Cole Porter (<http://www.doitall.com:80/cole/>), George Gershwin (<http://www.sju.edu/~bs065903/gershwin/homepage.htm>), and Kurt Weill (<http://www.kwf.org/>).

MUSICAL LYRICS:

Choosing the musical for your production season can be a major chore. Finding out information on each musical can take time. Now with the Web, you can have a readily available list of the songs from each musical. Two Internet sites can be very helpful: "The Musicals Home Page" (<http://musicals.mit.edu/musicals/>) and "Musical Lyrics" (gopher://gopher.etext.org:70/11/Quartz/theater/musicals).

"The Really Useful Challenge" (<http://www.reallyuseful.com/quiz/index.html>) and "The Musicals Challenge" (http://www.best.com/~gregwong/music/broadway_quiz.html) are fun sites to test your knowledge of musicals. And if you would like to actually hear the music from these plays you can visit the "Broadway MIDI Page" (<http://members.aol.com/moohat/broadway.htm>).

ITALIAN RENAISSANCE ARTIST:

If you are researching works by Italian Renaissance masters, start with (<http://cellini.leonardo.net/art/renais.html>). You can find Michelangelo's paintings at (<http://www.planetitaly.com/Culture/Art/michelangelo-painter.html>) and his Sistine Chapel at (<http://www.science.wayne.edu/~mcogan/Humanities/Sistine/index.html>) or at (<http://www.christusrex.org/www1/sistine/0-Tour.html>). Leonardo da Vinci's work can be seen at (<http://www.glasscity.net/~omoral/leonardo.html>) or the Leonardo da Vinci Museum (<http://www.vol.it/MIR-ROR/EN/ftp.leonardo.net/museum/main.html>). Raphael's work is found at (<http://www.christusrex.org/www1/stanzas/0-Raphael.html>). There is additional Italian art work at the Vatican Museums Web site: (<http://www.christusrex.org/www1/vaticano/0-Musei.html>).

ITALIAN RENAISSANCE ARCHITECTURE:

If you're into Italian Renaissance architecture, check out two excellent sites: one authored by Professor Joseph Connors of Columbia University (<http://www.cc.columbia.edu/imaging/html/browsers/connors/connors-browser.html>) and the other by Professor C. W. Westfall of the University of Virginia School of Architecture (<http://www.lib.virginia.edu/dic/colls/arh102/index.html>). Andrea Palladio, one of the most celebrated architects of the Renaissance can be seen at (<http://libra.caup.umich.edu/ArchiGopher/Palladio/Palladio.html>). Several Italian museums also have Web sites: of note are the Firenze (<http://www.thais.it/scultura/firenze.htm>), the

Uffizi Gallery (<http://www.televisual.it/uffizi/>), and the Vatican City (<http://www.christusrex.org/www1/citta/0-Citta.html>).

AWARD WINNERS:

Quick! who won the Tony Award for best lighting design of a musical in 1992? Answers to all such burning questions are found at a nifty gopher site. Winners from 1946-60 are found at (gopher://gopher.etext.org:70/00/Quartz/theater/tonys46-60), 1960-70 at (gopher://gopher.etext.org:70/00/Quartz/theater/tonys60-70), 1970-80 at (gopher://gopher.etext.org:70/00/Quartz/theater/tonys70-80), 1980-94 at (gopher://gopher.etext.org:70/00/Quartz/theater/tonys80-94). You can also find information on the Academy Awards (<http://us.imdb.org/Oscars/>) and the Emmy Awards (<http://www.emmys.org/emmys/trivia.html>) on the Internet.

Please share with your fellow USITT members any Internet resources you particularly like. Send the URLs and brief descriptions to me at (osweeze@daisy.siu.edu). If your theatre department has a Web site, please send that information to Ken Frazz (mchale@netusa1.net) who is helping me collect it.

C. Otis Swezey
Vice-Commissioner for
Electronic Communications

GENDER ISSUES CAUCUS

VIDEO SHOWS WOMEN IN NON-TRADITIONAL ROLES

As Ellen Jones, co-chair of the Gender Issues Caucus, mentioned in this column in the last issue of *Sightlines*, the Caucus has encouraged the development of a project which is gaining enthusiasm with various members of the regional sections and commissions of the Institute. This project is an effort to professionally produce a high quality "encouragement/motivational" video celebrating the women of the Institute in roles not necessarily associ-

ated with women. The plan is to highlight four or five women in an upbeat half-hour program.

The purpose of the project is three-fold. It will serve to chronicle and archive special accomplishments of women of the Institute; it will help create opportunities by encouraging, teaching and promoting women who are entering our professions to pursue the many and sometimes unusual avenues for their careers; and it will function as a recruitment tool for the Institute.

A formal proposal presenting the strategy, budget and funding requirements of this project is nearing completion. Details on the nominating process and criteria for selecting the women to be included in the video, as well as information about sponsorship opportunities, will be forthcoming once the project is more formally launched. Also, know that your individual participation would be most welcome. If you are interested in learning more about this project please contact Donna Smith (tel: 303-893-4000 ext. 2253).

At the Pittsburgh Conference & Stage Expo, the Caucus will have a general meeting on Friday, March 21, at 10:00A.M. and will co-sponsor a session with the Management Commission on Saturday, March 22, at 10:00A.M. titled, "Bringing Venus and Mars to Earth—A Study of Communications Styles."

Remember to send co-chair Andi Lyons (e-mail: AL874@cnszax.albany.edu) your contact information for the Networking Directory. The deadline is September 15th. The Caucus is still looking for someone to serve as Membership Coordinator. If you are interested please contact Ellen Jones (e-mail: 76500.2551@compuserve.com). Finally, the Caucus is still seeking volunteers to draft written guidelines for dealing with issues of harassment and discrimination. Andi Lyons (e-mail: AL874@cnszax.albany.edu) needs your help with this important effort.

Donna E. Smith
Gender Issues Caucus

REMEMBERING

Betty Williams passed away June 26 after a long, courageous battle with breast cancer. A theatrical costumer and founder of the Studio in New York, Betty was an active member of USITT. She was one of the founders and driving force behind *Cutters Research Journal* for which she wrote numerous articles. USITT members will remember her presentations for several Costume Symposiums, USITT conferences and wonderful receptions at the Studio.

Betty's costume work included the original production of *The Fantastics*, *Dames at Sea*, *The Boys in the Band*, *Oh Calcutta*, *Alfie*, and *Cunning Little Vixen*. She worked extensively with New York City Opera, Alvin Ailey Dance Company, Jose Limone Company, The New York Shakespeare Festival, Goodspeed Opera Company and *The Lost Colony* in North Carolina.

Always a mentor, she nurtured and influenced thousands of young designers over the past forty years for the development of hundreds of off-Broadway and regional productions. She worked nationally in regional and academic theater. She taught at the Fashion Institute of Technology, New York University, John Jay College as well as Guest Lecturer at many Universities in the US. Betty was a major force in founding Theatre Development Fund's The Costume Collection.

An avid researcher, Betty pioneered the extensive resurgence of interest in commercial garment patterns. She amassed a comprehensive collection that is a major resource for theatre and fashion designers. The collection is unique. Culmination of her research will be displayed in the major exhibition, "Dreams on Paper: A History of Home Sewing in America" at the Museum at Fashion Institute of Technology, February 25 to April 19, 1997. Betty was working as co-curator of the exhibition at the time of her death.

Betty was awarded the USITT Citation of Excellence for her life-time achievement in 1994. Her legacy lives on. Betty will be remembered for her enormous generosity of spirit and life

of accomplishment. We will miss this Great Lady.

Betty is survived by her husband, the author Gene Williams.

A research archive in her memory is planned. Announcements about making contributions to the "Betty Williams Pattern Archive" will be forthcoming.

Joy Emery

Vice-President for Communications

COSTUMES

COSTUMER'S NOTEBOOK

Special thanks and congratulations to Barbara Murray, Jeff Lieder and Melissa Kieffer who presented their Neat Tricks at the Costume Commission meeting in Fort Worth. Barbara Murray presented an easy way to make Elizabethan bum roll farthingales. Jeff Lieder presented wardrobe tips from Utah Shakespearean Festival. Melissa Kieffer presented a way to ombré-dye sequin polyester chiffon.



OMBRÉ DYEING SEQUIN CHIFFON

By Melissa Kieffer,
University of Wisconsin's
Professional Theatre Training Program

Faced with the challenge of ombré dyeing sequin polyester chiffon to realize designer Janet Swenson's sketch for the Snow Queen in the Northern Stage production of *Cinderella*, we searched for a solution that would color the fabric to the intensity desired and yet not ruin the plastic sequins. Because polyester dyes are toxic and require high temperatures to bond and set, and because we had no experience using them to ombré dye, we used a fabric paint and applied it, thinned with water, to the back side of the fabric. Although the paint adhered to the sequins, it didn't change the shine of them or ruin the sparkle. Also, because the paint does not need high heat to set it, the sequins didn't flatten out or turn dull.

We used FabricARTS Liquid Paints from Ivy Imports, Inc. (P.O.Box 887, Reverdale, MD 20738, 800-783-9265). The paint comes in 28 colors and can be mixed to any color desired. You can reproduce the flowing silk painting techniques on any fabric with this product, and although it is actually a pigmented paint, it doesn't change the hand of the fabric and remains permanent on polyester fibers. The paint can be diluted with water or FabricARTS dilutant. We used simple spray bottles, three with different intensities of paint, and sprayed the paint on the thread traced dress pieces in the spray booth. We covered the paper filters on the spray booth with a layer of cheese cloth and the suction of the booth held the pieces in place. By layering the paint, we achieved a beautiful ombré effect. When the pieces were dry, we set the paint with a hair dryer. For less delicate material, you can iron, or place in the dryer for twenty minutes. FabricARTS "All Fabric" paints are non-toxic.



WARDROBE TIPS FROM THE UTAH SHAKESPEAREAN FESTIVAL

By Jeffrey Lieder, Costume Director

Because of the quantity of costumes and number of performers at the Utah Shakespearean Festival, we have developed a number of tricks to make the organization and running of wardrobe easier.

1. Use plastic size dividers to organize individual performers hanging wardrobe. These clean, long lasting unbreakable and inexpensive dividers are much better than homemade plywood dividers. Buy them blank for \$.49 each.
2. Use a computer label printer (we use CoStar LabelWriter XL Plus) to print performer name and character labels for the plastic dividers. We use the video cassette top labels, which measure 3 inches by 1-3/4 inches, and they produce neat and easily read labels that fit perfectly on the top of the dividers. We also use a

database software application (we use FileMaker Pro) to make lists of actors names and easily match them with character names.

3. Use sturdy hangers which are appropriate for the garments and keep wardrobe storage areas neat. Order steel, chrome-plated hangers with shoulder strap notches, regular shaped hangers, or special skirt and pants hangers from fixture supply companies.
4. Make foam covered hangers for delicate or slippery garments by covering plastic or heavy wire hangers with 1/2 inch open cell filter foam cut into strips and stitched over the hangers. Quick, easy and inexpensive to make, these hangers give the garment something to hold onto and keep them off from the floor.
5. Recycle or return to the cleaners, all thin white shirt hangers. Don't let them get into your storage area.
6. Don't cut good silk ties to rig them for fast changes, use TIE IT ONC mail order from the address below for only \$.33 each!

RESOURCES:

Hangers, dividers, garment racks:
American Hanger & Fixture Corp.
520 West 27th Street
New York, NY 10001
800-221-2790

Filter foam:

Twin Cities Filter Foam,
Minneapolis, MN
or most hardware stores

CoStar LabelWriter XL Plus:
MacWarehouse
1720 Oak Street, PO Box 3013
Lakewood, NJ 08701-5926
800-255-6227

Tie It Once, and never tie your necktie again (3 for \$.99)

Jackie Hoffman,
Wemco Factory Store,
6170 West Grand Ave, T-601
Gurnee, IL 60031
708-855-1405



ELIZABETHAN BUM ROLLS FROM DRYER HOSE

by Barbara Murray,
Santa Clara University

The use of dryer hosing for Elizabethan bum roll farthingales and for lightweight farthingale support is a technique discovered while working on a production of *The Tempest*. We had made cartwheel farthingales but were having trouble supporting them under the weight of the upholstery brocade skirts. We were having the same problem with the stuffed padded bum rolls. One morning I was lecturing to my fashion history class—we happened to be on the Elizabethan period—and was showing the slide of the women in their under garments. I tried to describe the bum roll and ended by saying, "It looks rather like dryer hose. Oh wow that's it! Dryer hose!" My class thought I'd lost it, but that's what we ended up doing and it worked extremely well, being the right size, strong and extremely light weight.

This was the last presentation for Neat Tricks at the Costume Commission meetings. Next year at the conference in Pittsburgh, a neat technique or product will be part of the Costume Poster Session. If you have any new technique, new solution to old problems, solutions to new problems, instructional techniques, results from research oriented projects, etc. write to Betty Blyholder, University Theatre FAC 228, University of Arkansas, Fayetteville, AR 72701. Betty will send you a description of the "Poster Presentation." The Poster Session will be juried and anyone interested must submit an abstract by January 15, 1997. Further information will follow in September's *Sightlines*.

Gwen Nagel
Notebook Editor

TECH EXPO

PITTSBURGH HOSTS NUMBER SIX

Minneapolis, Calgary, Boston, Wichita, Las Vegas... the first five conference sites for USITT's biennial Theatre Technology Exhibition. In 1997, Pittsburgh, Pennsylvania will join this group when "Tech Expo" number six comes to the USITT Conference & Stage Expo, held March 19–22, 1997.

Start planing now to share some of the creative solutions to production problems and challenges you have encountered over the past few seasons. The exhibit committee is looking for exhibits representing all areas of the Institute, including, sound, rigging, costume crafts, properties, mask making, lighting technology, stagecraft, and special effects.

The Theatre Technology Exhibition is the only national venue for theatre technologists and craftspersons to display and share their creative ingenuity. In addition, descriptions, drawings, and photographs of every entry are published in the Theatre Technology Exhibition Catalogue. Previous exhibitions have included 25–35 entries, so each of the catalogues provide a useful record of some of the best ideas and solutions we are putting into practice. "An Ethafoam Rod Splitter," "Scenic Visualization using Virtual Reality," and "Building a Late Gothic Reticulated Headpiece," are only a few of the projects appearing in previous exhibitions.

An application for the 1997 Sixth Biennial Theatre Technology Exhibition will be published in the November issues of *Sightlines*, but don't wait till then to jot down a couple of good ideas, methods, or solutions and begin planing how you are going to participate in this valuable sharing of ideas and information.

Barry Cleveland
Tech Expo Committee

CLASSIFIED ADS

CARPENTER/STAGE MANAGER

Rancho Santiago College in Santa Ana, California has an opening for Performing Arts Master Carpenter/Stage Manager.

Salary: \$2,359 to \$3,010 per month; deadline: 9/19/96. Contact 714-564-6499 for applications and job announcements. AA/EOE/ADA

SHOP SUPERVISOR

POSITION: Shop Supervisor for The Conservatory of Theatre Arts at Webster University and Technical Director for the Opera Theatre of St. Louis.

SALARY: \$23,000.

PERIOD OF EMPLOYMENT: August 26, 1996 through July 6, 1997.

QUALIFICATIONS: Bachelor of Fine Arts degree.

DUTIES: Teach Scene Shop Techniques for The Conservatory and assist in supervising in the areas of scenery, lighting, props, paints and sound with the Faculty Production Supervisor. For the Opera Theatre of St. Louis, candidate will assist the Production Manager in planning for the season and then act as Technical Director for the mainstage season of four operas in rotating repertory.

THE INSTITUTION: Webster University, founded in 1915, is a private coeducational, multi-campus institution offering undergraduate and graduate degrees in liberal arts, fine arts, education, as well as business and management. It is dedicated to excellence in teaching, to joining theory and practice as closely

as possible, to fostering academic scholarship, and to being international in scope. The St. Louis campus provides an academic home for more than 2,700 undergraduate and 1,800 graduate students. Webster University offers academic programs in 15 states and in six foreign countries. These campuses create an international network of more than 10,000 students.

APPLICATION: Letter of application with supporting materials (resume, references, statement of teaching philosophy) should be sent to:

Assistant Director of Human Resources
Webster University
470 East Lockwood
St. Louis, MO 63119.

Webster University is an Equal Opportunity, Affirmative Action Employer. Women and minority candidates are strongly encouraged to apply.

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