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It's (Still) Time to Honor Sound Designers

Of course the Tonys know how to judge sound—why they choose not to is the real mystery.

There's an old saw—set in stone in the movie Jerry Maguire—that “It's not show friends; it's show business.” We may get involved in theatre because we like the community or something in the art speaks to us, but if you make your living in it—or want to make your living in it—you recognize at a certain point that money enters into the equation. It's the same way with awards shows, which constantly straddle the line between art and commerce.

The point of the awards is to promote theatre—both specific shows and the larger general issue of the quality of art in a region. But, obviously, you can't put lipstick on a pig on call it Hamlet. If a show's no good it doesn't matter how many awards you give it, it still won't win over audiences. So even as awards shows rush to promote theatre, they have to know what's artistically good in order to boost their business. If they can't judge something artistically, then they lose any kind of moral claim to be something other than a simple business cash grab.

Which makes the decision to take away the Sound Design Tony even more baffling. After years of campaigning, the American Theatre Wing recognized the artistry of sound design with a Tony Award in the 2007-2008 season. And then six years later decided it wasn't artistic enough. Patrick Healy, reporting in The New York Times in 2014 about the decision to remove the award cited anonymous committee members saying that sound design was “technical” and not a “theatrical art form.” Even if that’s not the attitude of all members of the Tony Committee, the fact that some felt comfortable telling the Times about it speaks volumes about how they view sound—but it also speaks loudly about the quality and competency of the Tony Awards judges themselves. If Tony Voters can’t be trusted to understand the art of theatre well enough to understand how sound works, how can we trust them to know how anything else artistic works? And if they can’t actually be trusted to understand the artistic merits of a show, then the awards are strictly a mercenary endeavor, good for nothing other than lining the pockets of producers.

Because of course the judges know how to evaluate sound. The judges are producers, critics, directors, actors, tradespeople and more—people whose livelihood depends on them understanding how theatre works artistically. Which makes whatever rationale the Tonys trot out for not including sound design awards specious at best, insulting at worst. The American Theatre Wing’s refusal to recognize the genuine artistic contributions sound designers make to a show remains an embarrassing black mark on the Tony Awards and will continue to do so until they remedy this situation and return the category. It’s time to stop the business buffoonery and recognize all artistic aspects of a show.

Jacob Coakley
jcoakley@stage-directions.com
In the Greenroom

Honor the Sound Designer

The Tony Awards announced the nominees for the 2016 awards on May 3, and while everyone expected Hamilton would dominate, no one guessed they’d have a record-setting day, netting 16 nominations overall—including, of course, Best Musical. In addition to announcing the nominees, the Tony Awards announced a few other special awards. The Paper Mill Playhouse will receive the 2016 Regional Theater Tony Award and Brian Stokes Mitchell will receive the 2016 Isabelle Stevenson Tony Award, in honor of his volunteer work with The Actors Fund.

What they didn’t announce was any plans to re-introduce the Tony Award for Sound Design. Online, people have been honoring the sound designers of the nominated shows around the hashtag #TonyCanYouHearMe. Because we’ll never know who the Tony Awards would have nominated for the Best Sound Design award Stage Directions gathered a list of all the sound designers who should have been eligible for the 2016 Tony Award in Sound Design for a Play and Best Sound Design for a Musical. We print them all here, along with a continued call for the American Theate Wing to do what’s right, and reinstate the Tony Award for Sound Design and recognize the indispensible—and yes, creative—work of these theatre artists.

Sound Designers on 2015-2016 Tony-Eligible Plays

- Fitz Patton, An Act of God
- Clive Goodwin, Old Times
- Ryan Rumery, Fool For Love
- David Van Tieghem, The Gin Game
- Peter Fitzgerald, Sylvia
- Josh Schmidt, Thérèse Raquin
- Paul Arditti, King Charles III
- Tom Gibbons, A View From the Bridge
- Darron L West, Misery
- Peter Fitzgerald, China Doll
- Christopher Cronin, Noises Off
- Fitz Patton, Our Mother’s Brief Affair
- Fitz Patton, The Humans
- Adam Cork, Hughie
- Broken Chord, Eclipsed
- Fitz Patton, Blackbird
- Tom Gibbons, Arthur Miller’s The Crucible
- Fitz Patton, The Father
- Jill BC DuBoff, Fully Committed
- Clive Goodwin, Long Day’s Journey into Night

Sound Designers on 2015-2016 Tony-Eligible Musicals

- Jon Weston, Amazing Grace
- Nevin Steinberg, Hamilton
- Gareth Owen, Spring Awakening
- Scott Lehrer, Dames at Sea
- Steve Canyon Kennedy, On Your Feet
- Kai Harada, Allegiance, A New American Musical
- Mick Potter, School of Rock, The Musical
- Gregory Clarke, The Color Purple
- Scott Lehrer, Fiddler on the Roof
- Mark Menard, Disaster!
- Jon Weston, She Loves Me
- Nevin Steinberg, Bright Star
- Dan Moses Schreier, American Psycho
- Jonathan Deans, Waitress
- Brian Ronan, Tuck Everlasting
- Scott Lehrer, Shuffle Along

Whirlwind Announces Factory Expansion

Whirlwind, a leading interface manufacturer for the live event, audio installations, and theatre industries, is completing a 13,000-square-foot expansion of their New York factory to handle the explosive growth the 41-year-old company has been experiencing. When completed this month, the total size will be 60,000 square feet.

“We’re growing in every category, and every direction, so we needed our facilities to grow too,” says Will Young, marketing director/artist relations at Whirlwind. “This expansion is going to allow us to increase our ability to serve our customers and shorten our turnaround time considerably, among other things.” The “other things” include accommodating their power distribution Power Link division, which he says is especially seeing strong sales.

Whirlwind was founded in 1975 by Michael Liaacona, who has built a company that, in the words of Young, is “the company who connects everything—speaker cables, concert line arrays, consoles, and beyond.”

“Everything we do is developed and built right here at our plant, and we’re able to make sure the reliability factor is extraordinarily high,” says Young. The addition will also call for adding more people to their already 140-person roster.

Online Only Gear Reviews

In addition to our review of the Chauvet Professional Ovation E-910FC on page 26, we have a companion review of the Ovation ED-190WW fixture. It’s an LED ellipsoidal-style fixture that plugs directly into a conventional dimmed circuit. We let you know what the color quality is like—and whether it dims correctly—at bit.ly/SDCP1O90. And if you’re wrestling with wireless frequencies, we’ve got the low down on version 5.0 of Intermodulation Analysis System from Professional Wireless Systems (bit.ly/SDIA5PS).

Point Source Audio Receives Patent

Point Source Audio received U.S. Patent No. 9,271,065, protecting their modular headset design method of integrating in-earphones into a structure where the earphones can be readily separable, removable, and replaceable via wired guided grooves designed into the headset. The process is used on their CM-i3 and CM-iX headsets. Read more at bit.ly/SDPA9271.

Seasons Change

Change was on the mind of our stage management bloggers this month, in more ways than one. David J. McGraw talked about the first phone call a stage manager makes to a cast—and wonders whether it’s even necessary anymore (bit.ly/sdsmkphone). In “Practically Perfect,” Katy McGlaughlin tackles the stage manager’s drive for perfection, and how to not get caught in a negative loop at the inevitable slip up (bit.ly/sdsmkpview). And just in time for the summer months, McGraw also pens an ode to summer stock—where SM’s go to different theatres to do the same job and call it a vacation (bit.ly/sdsmkstock). How will you be spending your summer season? Will you call the cast to let them know the first rehearsal schedule? Get online and let us know!

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## Tools of the Trade

### Chauvet Professional Maverick MK2 Spot

The new Maverick MK2 Spot from Chauvet Professional produces 2,518 to 18,079 lux at 5 meters, depending on the zoom angle. The new fixture, which has a seven-position plus white color wheel, also produces a wide range of rich, realistic hues, thanks to its CMY and variable CTO color mixing system. The Maverick MK2 also includes a precision engineered optical system, dual 6-position rotating slot and lock gobo wheels, variable frost, a 3-facet prism, 13° to 37° zoom range and 16-bit dimming for the smooth control of fades. The user-friendly Maverick MK2 Spot also offers a wide variety of control options, including DMX, WDMX, SACN and ArtNet. [www.bit.ly/sdcpmmk2](http://www.bit.ly/sdcpmmk2)

### DPA Microphones d:facto Linear Vocal Microphone

DPA Microphones’ d:facto Linear Vocal microphone is a new capsule for its popular d:facto Vocal Microphone that removes the 4db boost at 12kHz. It’s designed for sound engineers who prefer a truly uncolored sound, giving them free range to EQ as much or as little as they see fit. Featuring a new capsule with an isolation-optimized supercardioid polar pattern that is specifically designed to augment the human vocal range, the d:facto Linear Vocal Microphone combines the very best of cardiod and supercardioid directional characteristics, just like the original d:facto Vocal Microphone. This ensures complete focus on the sound source with minimal bleed, delivering exceptionally natural sound, high separation and SPL handling up to 160 dB. [www.bit.ly/sddpsdflvm](http://www.bit.ly/sddpsdflvm)

### JBL Professional Control SB2210 Subwoofer

The JBL Professional Control SB2210 Subwoofer is a dual 10-inch compact subwoofer designed for the installation market. An update to their popular Control SB-210, the new SB2210 offers a range of improvements in the same-sized cabinet, including power capacity that has been boosted to 500 watts and a flatter frequency response with an improved bass extension to 38 Hz. The new 10-inch drivers’ woven fiberglass cones deliver robust performance and the highly damped butyl rubber surround and linear suspension spider provide clean sound quality with low distortion. Installation options include floor placement, wall or ceiling attachment via an optional U-bracket, or suspension via 13 included M6 insert points. The cabinet is available in black or white and is paintable. [www.bit.ly/sdjblpcsb2210](http://www.bit.ly/sdjblpcsb2210)

### Martin Audio CDD-WR and CDD-Live! Loudspeaker Packages


### MDG Me8 Large-Scale Fogger

MDG’s new Me8 fog generator is the largest fogger in the Me family. Designed primarily for large-scale applications the Me8 has eight nozzles and is capable of pumping out a massive 800 cubic meters of fog per minute, both indoor and out. The Me8 has a 1% - 100% variable fog output that can be controlled directly from a lighting console or via local control, a 100% duty cycle that guarantees high-quality, consistent fog at all levels of output, and MDG’s Automatic Purging System (APS). Numerous control options are on-board as standard and include three standard DMX channels, XLR-5 connectors, a 4-button LCD user interface and RDM compliancy. [www.bit.ly/sdmgme8](http://www.bit.ly/sdmgme8)

### Mega-Lite Baby Color VW

The Baby Color VW from Mega-Lite is a bright variable white fixture that’s ultra-compact in size. The unit is equipped with seven 5-watt LEDs and has less than a 5-inch square body. The fixture has a 20° beam angle and comes with a diffuser that increases the beam angle to 25°. The Baby Color VW is controllable via DMX and has amber, warm white, cool white, dimmer, CTO and strobe channels. It also has the control options audio trigger and master slave. The Baby Color VW has a double mounting yoke so it can be set on the floor or hang from a structure. It has a digital display designed for ease of use. The unit is equipped with power con in and out and 3-pin or 5-pin XLR connections. [www.bit.ly/sdmlbcvw](http://www.bit.ly/sdmlbcvw)
The new PSL7 lavalier microphone from Provider Series is a heavy-duty version of Provider Series’ popular low profile PSL6 lavalier microphone. The PSL7 features a more robust 2mm cable, while remaining extremely small and lightweight. The small size (3mm capsule) and light weight are designed for applications requiring comfort and minimum visibility. The PSL7 can easily be hidden in wigs, hair, and costumes and is available preconfigured for various beltpacks including: Shure, Audio-Technica and Sennheiser. It is available in black or tan. 

www.bit.ly/sdpsl7

Soundcraft released a new version of the firmware for their Ui Series of compact, remote-controlled mixers. Soundcraft engineers considered feedback from the user community and have included many of the most requested features within this firmware update. The consoles now offer support for the Microsoft Edge browser, and the Ui12 now includes stereo recording features—previously found only on the Ui16. The firmware upgrade introduces a more secure password-protected Access Limitation System, giving mix engineers the ability to assign secure access privileges to other users, offering complete flexibility on what areas of the mixer are opened up to individual user control. 

www.bit.ly/sdscuifw

When Udo Künzler set up German Light Products (GLP) in 1994 dance lighting was huge and manufacturers were still looking for the way to transfer from the scanner to the new world of moving yoke fixtures. He created the Patend Light, with both fast mirror scanning as well as a pan and tilt housing. GLP parlayed this success into new moving head fixtures and other advances, including the release of the Impression 90 in 2007, the first professional LED wash light. Mark Ravenhill joined the company in 2009, helping them open up their U.S. office in Los Angeles. Other offices—and more fixtures in the Impression series—followed, and now GLP has a global presence and a success built on providing designers what they need to make a great show. We talked to Ravenhill, now president of GLP US, about how GLP approaches their product development.

On being market-driven:
The driving thing is always that any new fixture has to be something that has been asked for, something that designers want, or need, or have requested. We don’t just make stuff because we have engineers that could make cool stuff. We’re market driven all the way. Color rendering is huge at the moment. Some fixtures have very distinct peaks in terms of their output. That might look great in concert because the colors look good together, but with period costumes or scenery, all you see is the red or green bits and nothing in between. Theatre designers aren’t willing to accept that. For us, when we make theatre fixtures, good color rendering is a huge requirement.

On getting every aspect of a fixture right:
There’s so many aspects to a product these days. We have to be able to fulfill all the requirements of a fixture as well—size, weight, even simple things like the hanging possibilities, the IP rating. Noise level is critical in theatre.

One fixture being noisy might be OK, but if it’s a good fixture a designer is going to want to put 24 up in the rig, and all of the sudden they create a problem. We identify and fulfill the needs of a designer and then deliver a product to market in a professional manner and support it. Support is key.

www.germanlightproducts.com

Get It Right
GLP built their success on listening to the market then delivering a quality product that met designers’ needs. By Thomas H. Freeman

Mark Ravenhill
Theatre can be done anywhere—and frequently is—but whether it’s a multi-purpose room, a re-configurable black box, or a purpose-built space with multiple theatres, it needs to be designed with care and outfitted with the right equipment to work correctly. Here are four recent installs and the companies that made the space work, no matter what it was.

**Writers Theatre**

**Glencoe, Ill.**

Writers Theatre’s new theatre center, designed by Studio Gang Architects in partnership with theatre consultants Auerbach Pollack Friedlander, and built by general contractor W.E. O’Neill Construction, features two intimate performance spaces (a 250-seat thrust stage and a 99-seat flexible black box venue, respectively), patron and artist amenities along with rehearsal and production spaces.

Among other key features in the new theatre center include the Litowitz Atrium, a spacious main lobby with seating tribunes that functions as a central gathering area; the Stephanie and Bill Sick Rooftop Terrace, one of several outdoor landscaped spaces; and the Grand Gallery Walk, a timber structure by renowned engineer Peter Heppel, suspended around the lobby and serving as a viewing area and “front porch” to the building—all of which comprise a place of both physical and artistic beauty.

Lightswitch was responsible for lighting and lighting control throughout the entire building, except as it specifically illuminates the stage. “Everything that’s not a Source Four,” jokes Avraham Mor, partner at Lightswitch. Part of the mandate for Lightswitch was to help the theatre achieve a Gold LEED certification. The main way they did this was just as you’d expect: lots of LEDs. But there’s creativity and control behind those LEDs that make sure everyone working in the theatre can be efficient and artistic.

Every light source back of house is LED, except for a couple exceptions. The scene shop needed to include some incandescent work lights so they could be sure their work would
match the light on stage, which was designed as a traditionally dimmed incandescent space. Dressing room mirrors were ringed with incandescent sources so actors could get their coloring right as well. But these were also engineered with energy-savings in mind.

“When you turn on incandescents, the LEDs turn off. The two can never be on at the same time,” says Mor. “The incandescent fixtures only exist because we had to have it for color.”

Everything that’s not on theatrical dimming is controlled by an ETC Unison system that consists of two Paradigm processors and four Echo Relay panels. Two processors were necessary thanks to all the keypads and auxiliary sensors throughout the building. Illumination sensors in the building know when to turn on exterior lighting, manage the light levels in the theatre’s lobby, and automatically turn off lights in rooms that have been vacant for 30 minutes. Because the building was planned five years ago, when the ideas of nodes was prohibitively expensive, DMX is distributed throughout the building via opto splitters.

“The key to this whole thing is the Unison system. There’s wasn’t any other way to go,” says Mor. The four Echo Relay panels include redundancy for emergencies—two for normal power and two for emergency power. In the case of emergency a generator supplies power and the DMX sets all emergency fixtures to full. “I’m not familiar with anybody other than ETC who makes a product that’s fully UL-924 listed for this scenario.”

But even though it’s an architectural system there are still theatrical flourishes. “For the lobby space itself, there was a real push to not have any lighting in the ceiling, but to light the ceiling. You have this beautiful wood ceiling, this wood structure, glass everywhere,” says Mor. The team decided to embrace the theatrical. “The end solution we came up with uses Source Four LED Cyc units lighting the ceiling. They have ability to do color changing, tune in to a specific color and be very theatrical. We’re not hiding the fact that this is a theatre, and this is a theatrical space.”

Writers Theatre General Manager Jon Faris was delighted to find the Writers Theatre family felt right at home in its new and impressive environment. “From the first day our artists and technicians began using the building it has felt like we’ve lived in it for years already,” Faris says. “This feeling of comfort is rewarding—it shows that the design team and contractors listened closely to us as clients to give us what we needed, exactly how we needed it to function smoothly as a theatre company.”

The British International School of Chicago
Chicago, Ill.

At the British International School, creating a total performing arts and athletic facility out of a gymatorium space required a clear plan and peerless technical execution, especially from an audio standpoint. Enter Matt Gajowniczek, president/found-
er of Sound, Production and Lighting LLC, who took on the project with his business partner Mike Ross.

“From the beginning of the project the school made it clear that the room needed to be very flexible,” Ross explains. “There was no dedicated auditorium planned for the building so the school needed the gym’s lighting and sound system to be able to handle a very wide range of performance and event applications; anything from choir and band concerts, lecture based activities, or fully produced musical theatre performances.

At the same time, the room needed to always exist as a gym, where the system and installed technology would not get in the way of classes during the day, and, ideally, aid them. At the same time, this complex and multifunctional system must be managed by teachers and facility staff who wouldn’t have the time in their daily routine to also be full time A/V engineers.”

To accomplish this, the SPL team installed 15 loudspeakers across the room, all routed and driven in a way that allowed the room to be divided into a variety of zones based on application; analog and digital input panels were spread out around the room to allow for the audio mixing position to be moved and setup anywhere in the room. “The control and configuration of the system is managed by a custom created graphic user interface on a flush mounted touch screen in the processing rack that allows quick and intuitive changes to the system, based on the user and the needs of the production,” Gajowniczek adds.

Using a dozen RCF C3110-96 speakers downfired from roof joists, the SPL team zoned the system into a number of configurations that could encompass various house layouts. “We used 10-inch two-way passive cabinets with a 90°-by-60° pattern to provide smooth coverage throughout the room,” Gajowniczek says. “A main cluster of three Danley SH46, 40°-by-60° Synergy horns provides main coverage for the bleachers in theatre mode.”

A great accomplishment as part of the install, according to Gajowniczek, was putting in a custom GUI control system to cover the gym’s audio. “Again, the room needed to have so many flexible applications, but also needed to be simple enough for anyone to operate,” he continues. “The custom-created interface, running on a Microsoft Surface tablet flush mounted in the rack, allowed different modes to be selected. On top of just the zone control of the speakers, these presets in the software system allowed the user to power up/down the system, run diagnostic checks on the equipment, and load specific equalization presets.” The control system was also so easy to use school staff members required almost no training to operate it.

The end result? The British International School now boasts the perfect flexible event space that will allow its students to do, and be, their very best.
San Francisco Opera’s Dianne and Tad Taube Atrium Theater
San Francisco, Calif.

Located in the newly renovated Diane B. Wilsey Center for Opera, the 299-seat Dianne and Tad Taube Atrium was outfitted with a Meyer Sound Constellation acoustic system, custom designed to provide the showcase venue with a range of acoustic environments, depending upon specific performance needs.

A D-Mitri digital audio platform provides the backbone for Constellation, and hosts the patented VRAS acoustical algorithm. This works in conjunction with 24 widely distributed microphones and 75 small, self-powered loudspeakers mounted discretely within the theatre walls and ceiling. But Steve Ellison, applications director, digital products for Meyer Sound, felt that his biggest technical challenge was accommodating the various seating configurations available in the space.

“The room can be used in a flat-floor configuration as well as with stages set on various walls with risers in other parts of the room,” Ellison explains. “Constellation can be set in a way that optimizes the system response both for the musicians as well as the audience in these various configurations. Unlike the active acoustics, changing the seating doesn’t occur ‘with the press of a button’ so we had to make sure to qualify the system with artists in multiple room configurations to ensure the best performance, and this took significant planning and coordination given their schedule.”

Ellison welcomed the input of the creative personnel who tried out the space as the project evolved. “The most rewarding aspect was experiencing the acceptance of the technology by the artists—singers, instrumentalists and directors—as they performed while we made small adjust-
ments to the final settings,” he recalls. “One of the tenors was so articulate in his expression of the subtle changes in acoustics settings he experienced that we joked with him that he could always fall back on an acoustics career if singing didn’t work out! Related to this was coming back for a rehearsal to assist the creative team with finding an appropriate (acoustical) setting, and arriving to find that they had already dialed in the system to a setting that they loved and to which we made no adjustments.”

Chapman University’s Marybelle and Sebastian P. Musco Center For The Arts
Orange, Calif.

The $82 million, 88,000-square foot Musco Center was designed by architect Pfeiffer Partners in collaboration with Theatre Projects, acoustician Nagata Acoustics, and AV consultant Sonitus. The center features the 1,044-seat Julianne Argyros Orchestra Hall, featuring a mezzanine, side boxes and two levels of balconies. The theatre features a full fly tower, stage traps and two orchestra lifts that can create a Broadway pit, large opera pit, or stage extension, plus a dimming and relay system, advanced LED lighting, and a full array of rigging, including a motorized house curtain.

In a very novel design twist, the space can transform from proscenium theatre to concert hall in less than an hour through the use of a one-of-a-kind fully flown orchestra shell. The unique 120,000-pound shell, designed by Nagata Acoustics, is lifted and flown by hoist machinery through coordinated grid slots, in conjunction with Pook Diemont & Ohl and their partners, C.K. Wegner and Thern. Michael Ferguson, Theatre Projects’ project manager, elaborates, “What’s great about the Musco Center, and what we put a lot of care and effort into, was making a beautiful performance space that doesn’t just feel like a room with an orchestra shell wedged into it,” says Ferguson. “It’s not just a proscenium theatre that we put a shell in; it’s a concert hall where we can take the shell out. It’s one of the most well-integrated orchestra shells we’ve ever designed.”

All in all, the Musco Center’s design elements allows for high function—the hallmark of any successful install. “We all know it is difficult to achieve one room that does all things well, but this room really does,” Ferguson summarizes. “The Nagata-designed acoustics aren’t compromised in the least, and the technical capabilities are all there for opera, dance, and amplified performances. This flexibility allows not only their music and opera programs to grow, but allows great performances to be brought in and housed on campus, enriching the lives of both students and community.”

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Prime Movers
When it comes to iconic looks, who provides the inspiration?

By Jacob Coakley

Which came first, the chicken or the egg? Or in the case of theatre: The designer or the manufacturer? Designers and directors are always pushing for new effects, new looks, new possibilities; but would they even know those possibilities existed without manufacturers inventing new tricks? We asked lighting and special effects companies how they’re responding to designers to help them create beautifully subtle looks—or blast the back row into the stratosphere—and what the current “must-have” effect is.

Ben Nye Makeup
www.bennye.com

“We always say you don’t need a makeup artist until you need one,” jokes Nan Zabriskie, a professor at The Theatre School at DePaul University and a freelance makeup artist based in Chicago. Zabriskie gets called when a show has 30 seconds, offstage, in the dark, to create a memorable makeup effect. She teaches a lot of actors and wardrobe personnel—people who may have had no color theory or know how to put tones together—how to paint a bruise. “That’s what I’m called in for—more than making yourself pretty, which everyone knows how to do by now.”

As a makeup artist, Zabriskie finds herself responding more to the needs of a play than seeing a large trend in makeup. Which is not to say that the makeup effects can’t be large. For the Broadway production of Craig Wright’s Grace Zabriskie had to create a prosthetic face for Michael Shannon, whose character had lost half his face in a car accident. She created the prosthetic and used a vacuform mask like plastic surgeons use to keep skin from tightening up. Her prosthetic was painted, but Shannon still had to adhere it to his face every night and use makeup to blend it in. “We had to bump things up,” says Zabriskie of the makeup requirements. “Bumping up highlights and shadows and new skin healing pink. And then alter it to make sure it read from last row and didn’t overpower the first.”

She used a lot of Ben Nye cream liners in Character Base, Misty Violet and Blood Red, then Neutral Set Powder and Final Seal to hold the makeup. And of course a lot of Ben Nye Bond Off as a remover. The audience loved the reveal, but she likes how Ben Nye responds to her requests for new colors and keeps making special product to make her job easier.

Chauvet Professional
www.chauvetprofessional.com

“While our new ellipsoidal products like the Ovation E-910FC have been enjoying a very enthusiastic reception this year, we’re also seeing a growing interest in moving fixtures being used in theatrical applications—it seems like everyone from high school theatres, to mid-sized roadhouses, to large roadhouses are looking for suggestions for affordable moving head wash lights,” says Ford Sellers, senior product manager at Chauvet Professional. “There’s been a realization these fixtures that can move around the stage and give you a complete stage wash, or zoom in for isolation and specials are finally good enough for theatrical use... because of their flexibility, you can even use them for accent lighting.” And Chauvet Professional’s Rogue 1 and Rogue 2 Wash fixtures fulfill all these demands gracefully. The wide zoom range in the fixtures—beam angles from 8° up to 30°, and field angles up to 49°—mean they can provide great big washes for backdrops and scenery or a tight column of light for a special. “Application wise they offer a lot of flexibility,” says Sellers.

But that’s not all they offer. As LEDs have gotten more powerful and as LED color technology has gotten better they’ve been able to supply a great color gamut without resorting to CMY modules and color wheels—all of which means fewer moving parts, making them smaller and faster and (especially) easier to maintain. “Because you’ve cut down points of failure and you’ve made it so a theatre doesn’t have to be overwhelmed with the technology of the instrument,” says Sellers. “There are a number of high schools that have recently said ‘Hey, looking at this price point, this is possible.’” Still, Chauvet knows that for a lot of theatre designers the Holy Grail isn’t a moving head, but a classic ellipsoidal style fixture that can deliver high-quality and high-powered white light—and they have something that’s waiting in the wings just for them. “We hear a lot of people asking for an LED fixture that’s brighter than a 750-watt HPL ellipsoidal—and we’ll have something for them very shortly.”
Elation Professional
www.elationlighting.com

For Elation the coolest new thing for designers isn’t exactly new—but its affordability and availability is: a digital light. The Emotion is a digital light—a digital projector moving head lighting fixture. With its built-in media server the Emotion is helping people create scenic backdrops, project onto scenery, or even just be used as a standard fixture.

“People are starting to see what you can do with it, and are becoming excited by its possibilities,” says Eric Loader, director of sales and marketing for Elation Professional, who shares that the Los Angeles Community College recently bought some for their theatre department to use for scenic projection and “They love them.”

They’re also appealing to A/V companies, who have found their video flexibility a life—and budget—saver. “If you need a custom gobo quickly, you can spend hundreds getting one made—or you can simply create one with the Emotion,” says Loader. “You can get ROI pretty fast.”

Return on investment and the many layers of cost savings LEDs provide to an institution through reduced electricity and heating costs are good for the accountants, but Loader knows that designers demand more. “Lighting designers want fixtures that can do multiple things. They want a fixture that can be smaller, brighter, faster, and all with better performance and the ability to do a few things well—be a spot, a beam or a wash fixture.” To fit that need, Elation released the Platinum FLX, a “kitchen sink” fixture that is quiet, full-featured, and has great optic quality.

And everyone knows theatre designers are incredibly tough about color. Elation has always been a leader in LED color. They were the first to offer tri-color on a single chip, and at Pro Light+Sound in Frankfurt they just released the Platinum Seven, an LED wash fixture that offers seven colors—RGBAW, Cyan and UV—on one LED chip. “It gives designers more color, more control and a wider color range,” says Loader.

Electronic Theatre Controls
www.etcconnect.com

For designers, there’s really only one Holy Grail: The ability to quickly and efficiently get the vision in your head on stage. ETC’s latest software for the Eos family of consoles has the tools to make sure designers get exactly what they want, when they want it, as fast as possible.

ETC’s x7 system expanded what colors were available from LED fixtures, and other manufacturers have added similar approaches to their fixtures as well. With these ranges of fixtures, there are a lot more ways to generate a specific color by changing the recipe of the emitter mix. Tweaking individual emitters lets designers keep the color in the air (or the chromaticity) the same, while changing the look of costumes or set pieces. And ETC’s Eos software makes this easier than ever. “We introduced spectrum tools so you can select a gel match, and see how closely the transmission curve of the color you’ve set is to the idealized version that comes from gel manufacturer’s swatch book,” says Anne Valentino, senior controls product manager at ETC. Then the software will let you pull colors out of the recipe or add them in, and automatically adjust the other emitters so you hold the same white point, but with a different mix, letting you accent or visually recede the color elements you want. “It’s a way for you to fine tune your color and still have R80 on the wall.”

It also helps with transitions. Fades between colors on LED systems run along the outside of an HS color space, which means a fade can go between a rainbow of colors during a fade—which is usually not desired. Programmers used to have to make “way points” along
a fade to make sure the fade only went through approved colors. But the new Fade Path tool optionally makes the transition look like it was a straight cross fade between two different fixtures in two different colors. “It even emulates the intensity drop when both of those fixtures are at the 50%,” says Valentino. “The whole impetus of the software was exposing the capabilities of a seven color system in a better way, and putting control back in a designer’s hands.”

**eZ-Hoist**

[www.ez-hoist.com](http://www.ez-hoist.com)

Founded as a division of ZFX Flying Effects, eZ-Hoist takes the same approach to detail, safety, reliability and control of scenic automation that its parent company takes to performer flying. “We’ve been doing flying effects for a long time, and for that to work you have to have high-end automation gear that you can program quickly,” says Robert Dean, founder of ZFX Flying Effects and eZ-Hoist. “It has to be very safe and reliable. We worked hard to do that. It puts us in a different class than a standard scenic automation company that just needs to move an object from Point A to Point B.”

Dean founded eZ-Hoist using the same machinery, control and grace that people have come to expect from ZFX. “When you come at it from that direction there’s a much higher likelihood that we can achieve the director’s vision because our software is so advanced.”

The software is full of functionality that allows technicians to create fluid, complex and synchronized motion rather than simple trapezoidal moves lacking independent acceleration and deceleration rates. It’s also easy enough to use so that even in a cramped rehearsal time period it’s possible to program exactly the moves envisioned by the creative team.

“But even with all that—good machinery, good controls, good software—you have to have people experienced and knowledgeable enough creating the cues,” says Dean. That’s why he and eZ-Hoist are offering full scholarships this summer to training sessions in Raynok, the software that runs ZFX and eZ-Hoist’s motion. The sessions will train technicians to program and operate the software. “It will show students how the software works, and then get them working in our studio with actual machinery moving actual things,” says Dean. “It’s not just theoretical—it will be practical and hands on.” Building the right gear and training the right people so that productions get the effects they want is the goal of eZ-Hoist.

**Flying by Foy**

[www.flybyfoy.com](http://www.flybyfoy.com)

Whether they’re flying for huge corporate events (Superbowl Halftime shows), huge ships (Centrum Wow for Royal Caribbean) or huge Broadway shows (*Mary Poppins*, recently, as well as the classic *Peter Pan* and innumerable others) Flying by Foy believes their success is all about responding to directors and interpretation.

For Shi-Shi-O, a recent kabuki show that came direct from Japan to play the Hollywood room at the MGM Grand in Las Vegas, Dana Bartholomew of Foy says Joe McGeough—president of Foy, who installed and programmed the show—received five short lines of instruction (two of which were, essentially, “attach the effect” and “detach the effect.”) With such little info to go on, sometimes the team at Flying by Foy has to educate the director on what is even possible. “A lot of times directors are unsure of what they want because they’re not sure what they can do,” says Bartholomew. “It’s a matter of explaining what the capabilities are, what the limitations are, and then interpreting their vision to develop the best flying sequence for their show.” For Shi-Shi-O Flying by Foy took care of designing a system for the space, getting it approved by engineers, translating those drawings into their design software Aereographer, and then interpreting those five lines of instruction into a flight path that the director was delighted with.

In addition to magically flying people they’re also flying magic. Their new Featherweight winch is a small servo motor coupled to a high end level-wind reel. It uses a braided synthetic line to move smaller objects around a stage, including 3D movement utilizing multiple winches. “It would not be used for flying people, obviously,” says Bartholomew. “You’ll see it being used for special effects, flying small magic props, orbs, silks, things like that.” It’s getting work on a certain magical play that will debut this summer.

All in all though, it comes back to interpretation. “The director interprets the show, and Flying by Foy makes sure to interpret that vision and bring it to life,” finishes Bartholomew.

**GLP**

[www.germanlightproducts.com](http://www.germanlightproducts.com)

For a fixture to truly dazzle a designer, it has to do a lot of things—move, zoom, change color, and anything else you can think of. “The more designers can get out of a fixture, the more flexibility it gives...
The company made famous for performer flying introduces an automated winch system designed for flying objects in 3D, with all the full-featured magic of FOY flying in much a smaller package.
The Bar started as a standard cyc light, but GLP found ways to make it special, incorporating other technology from their X4 series, like zoom that allows it to go from a wide angle to a sharp 7° beam angle. “Now it’s a light curtain effect as well,” says Ravenhill. GLP made sure the sources in it are tightly binned and designed the fixture to be able to be joined together with no gaps in sources, so that designers could make a consistent, coherent line of color across as many fixtures as they wanted. “It’s a new version of the light curtain that can do more, with built-in color changing, zoom and movement.”

They went big with the Bar, and small with the Atom. “We wanted to develop a fixture that was small enough and flexible and versatile enough that it could be put anywhere a designer would want.” As scenery has gotten grander and more complicated, it is a simple light that can fit anywhere on it. But if you want to get complicated with its design, that’s possible too thanks to its side adapters, which allow users to link them together in all sorts of configurations to create intriguing eye candy—and its cheap enough to experiment with.

“That was really the thing with the Atom,” says Ravenhill. “We made it affordable, so you can really go to town with it.”

Graftobian Makeup Company
www.graftobian.com

A subgenre has become the dominant trend in makeup, according to Janine Wardale, a customer service specialist at Graftobian: “Steampunk opera, steampunk Shakespeare, anything Victorian or Dickens—they’re catching on to steampunk.” Which means she’s fielding a lot of questions about gear stencils and metallic tints. “Sometimes they just want to glue a gear on, or make the face look like a cog, or embellish the eye, or add a metal look on the face to match the metal look on the arms by using Metal Mania,” says Wardale.

The Graftobian Metal Mania line is available in silver, gold and bronze/copper. It’s a powdered, cosmetic-grade metal that gets mixed with Magic Set Mixing Liquid to create liquid metal. “Think of the Tin Man, that’s the most classic example,” says Wardale, “but you can take it and go into other colors, like making someone an Oscar statue.”

As extreme as the metallics are, the other trend in makeup is the exact opposite, getting very subtle with your looks. “Lighting has changed, theatres have changed,” says Wardale. These changes have led to necessary corrections in makeup. Lighting used to blast actors with lots of orange and yellow, so makeup had to counteract that. “In some instances, makeup was fighting your lighting, the two had to balance each other. Now with more newer lights, traditional theatrical colors can be too heavy.” Graftobian’s HD Beauty and HD Airbrush line offer a softer look, with natural skin tones. Which is not to say they don’t sell traditional theatrical makeup. “There’s still a need for both. It depends upon the vision of the director or costumer.” And even with HD makeup there’s still a need for technique, to highlight and contour the face, and to create “live eye.”

“Your eyes are what sell in terms of makeup—it’s the first thing I teach whenever I do a basic makeup for stage class,” says Wardale. “You always have to have some kind of black eyeliner.”
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Because special effects are, well, special, there’s not one effect that everyone asks for. And Bohdan Bushell, a special effects coordination and pyrotechnician with J&M Effects, knows how to make sure any effect works better in a show. “Every time you add a layer you add visual interest, and you make the audience more comfortable with a make believe environment,” says Bushell. For the current Broadway revival of A Long Day’s Journey Into Night, lighting designer Natasha Katz wanted the fog to be a real, animated character in the fourth act. So Bushell and the J&M team worked with Katz to create layers of moving fog between the semi-transparent walls of the set and the cyc. Each of the layers—light, fog, semi-transparent set—worked to create a fog with malleable depth and density.

Practical effects also help with incorporating video effects into stage pictures. Practical effects have to obey the laws of physics—falling in the right way, moving in space the right way. And if an audience is primed with a layer of practical effects they’re more likely to accept something like video—where you can make things do whatever you want. Bushell uses last December’s The Wiz Live! to illustrate his point. When Glinda floats in, for example, there’s a tiny fogger hidden in the skirts of her dress. It gives off a bit of smoke that moves correctly and lets the audience accept the smoke effects in the video. Also, another aerialist sprinkled gold confetti in front of her as she flew in—the gold sparkles fell and twinkled like things would in the real world, which lets audience members accept added video, or projection on a set. “You don’t just do it on video and have the audience accept it,” says Bushell. “You make it real and then echo it in your video. You reinforce it.”

Color this trend unexpected: High schools getting video walls. But it’s happening, says Guillermo Cabada, CEO of Mega Systems. “A couple high school districts have called us up and we’ve gotten a couple requests about adding them to new installs,” says Cabada. Theatres can eliminate the need for cyc lighting by using them, as they project their own light, and of course they can even be used for virtual scenery. “You can add video or a whole set or actual sunset instead of a backdrop sunset,” says Cabada. “Boom—you load a file and there it is.”

It also saves money for multi-use spaces as well, as venues don’t have to spend another $50k on projector equipment or bulb maintenance if the space needs to be used as a lecture hall or to host meetings. And you wouldn’t be able to use that projector during a performance anyways, as you’d project all over the actors. “This gives you depth and dimension,” adds Cabada. “You get creative with your facility.”

They recognize that a video wall might be for bigger schools only, but they have something for people with smaller venues as well: The Drama 50. It’s a super-compact, bright LED ellipsoidal. “It eliminates the need for a big fixture in a black box or local theatre that only has a 14-foot trim and not a big elaborate budget—so why bring in a 700 or 500 watt fixture that has a large footprint when all you’re trying to do is a little color or highlighting?” The Drama 50 is more compact and delivers good output for the smaller spaces. “There’s always a need for small fixtures,” says Cabada. “If all you have to do is highlight a table, why are you going to use half a fixture, either cropping it all out or dimming it down? This gives you another tool that’s bright, compact, efficient and good duty cycle.”
"I refuse to become a victim of bad LED lighting"

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good,” says Fisher. “But we need the director’s input for their vision.” And preferably in advance. Flying systems are specific pieces of engineering, and they can’t be modified on-site to do something they weren’t designed to do. Often a school production will rely on parent volunteers to communicate with the special effects house, and this can be dangerous for a show. It has led to a certain amount of scrambling on some shows as Fisher adapted to the new show requirements and brought in extra pieces of gear (at the expense of rehearsal time) to make a vision a reality.

Free and open communication is important in other aspects of pre-production as well. “Script changes are another important thing to share,” says Fisher. “I’m currently working an Aladdin Jr. and many of the lines and scene orders are modified.” These modifications make it difficult for him to train a crew if they had to spend time reacting to changes. Keep in mind that the flying crew will not have been in rehearsal with the students for the weeks and months they prepare for the show. A lot of little changes add up, and can mean a great deal of time lost in rehearsal when it comes time to implement the flying. “Send us your script, your set designs, and anything new or special you are adding in, and we can ensure your flying effects are a hit with minimal onsite or training issues,” Fisher says.

Which is not to say he’s against change or trying things a new way. “The more a show is different, the more it’s worth doing,” Fisher says.

RC4 Wireless
www.theatrewireless.com

Sometimes designers don’t know what they want until they want it. And the only thing a company can do is respond—quickly. That sort of innovation and responsiveness is baked into RC4 Wireless and its latest product, the DMXpix. The DMXpix is designed to wrangle every designer’s current bête noire, LED tape. As manufacturers have added more and more base colors to it—they’re now RGBA/WW/CW LED tape available—it means that addressing them and creating all the great effects that designers want has taken more and more universes, pushing even cutting-edge consoles to the brink.

The DMXpix slashes address counts and makes programming much easier—all in a wireless box about the size of a Zippo lighter. Released last fall, it earned the Innovation Award at the London PLASA show. But what really pushes it over the top is its ability to handle whatever comes next.

“I’m not sure a whole lot of products can respond to changing demands like this one can,” says James David Smith, founder and president of RC4 Wireless. In the past three months alone they’ve added support for three new types of LED tape. One was requested by a Broadway show whose designer decided to put a new string all over the stage, and another was requested by a large company fond of theme parks and non-disclosure agreements that came to RC4 looking to run a new type of LED tape remotely. “They had already found this new product and built props using it, but had no driver for it,” says Smith. In 10 days Smith had a driver for the new tape that made sure it looked great, dimmed great, and could be controlled from a device no bigger than a thumb. “It was flattering to me that they came to us and I was happy to do it,” says Smith.

But the fact that the RC4 DMXpix has a code loader on it means that everyone can benefit—not just multinationals. Any user of a DMXpix device can upload the new firmware to their device and also control the new LED tape. “Nobody gets left behind,” finishes Smith, with a smile.
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Rich Latta says the Ogunquit Playhouse owned almost no gear in 2007, and now has a full rig, including 300 units and dimmers, 50 moving lights, and more. But it’s not “new.” The fact that it was bought used enabled the 80-year-old theatre to stock up on gear and raise its production values significantly. Yet even with this great result, “I have to say buying used gear is stressful,” Latta confesses. “There’s a fear of breakdowns.”

Other theatres wouldn’t touch used gear. And, as Wes Bailey of UsedLighting.com warns, sometimes that’s the right call. If the deal seems to be too good to be true—well, it usually is. But otherwise, he points out that just like pretty much everything else, “there are customers at every price point. I think there will always be customers who want certain fixtures based on performance, or need, or their particular venue, and if you can offer them that fixture either new or used like we can, you are giving them the opportunity to see where they can find the most value for their dollars.”

The advantages of buying used gear outweigh the avoidable perils
By Kevin M. Mitchell

Rich Latta says the Ogunquit Playhouse owned almost no gear in 2007, and now has a full rig, including 300 units and dimmers, 50 moving lights, and more. But it’s not “new.” The fact that it was bought used enabled the 80-year-old theatre to stock up on gear and raise its production values significantly. Yet even with this great result, “I have to say buying used gear is stressful,” Latta confesses. “There’s a fear of breakdowns.”

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The theatres and universities Gearsource.com often work with “have Champagne taste on a beer budget,” says Henry Kones. Often in the case of upgrades to a theatre, the designer or consultant will put that $15,000 moving light system on paper and then suddenly the budget is thrown off. “That’s when the used gear market comes in,” says Kones. “There’s great equipment that has been pushed downstream but can be had for 40 percent of the cost of something new.”

Companies and Trends

4Wall was founded in 1999, and they launched UsedLighting.com at the same time. “Since its inception, the site has carried 4Wall’s rental inventory that is currently active, which means all the gear labeled as ‘4Wall/UsedLighting.com Owned’ is currently certified and maintained by our techs,” explains Wes Bailey, VP of marketing and integration for 4Wall. “By selling our 4Wall rental gear relatively quickly, it allows us to keep fresh equipment in rentals and lightly used gear on the website that comes with long term warranties. As we bring in new gear to our rentals, we are constantly looking at what items are turning two-three years old, and those are the items we look to move on the site. This process makes sure that the customers who buy from us are getting equipment that still has plenty of life in it.”

Bailey says an obvious trend is the switch to LEDs. “There are more good LED products than ever at a variety of price points. For a long time the prices on what the industry would consider ‘professional’ LED products were a bit prohibitive for smaller theatres. Now you can get LED strips, uplights and even moving lights at affordable prices.” And with LED products come lower maintenance costs, as bulbs don’t need to be changed out, and gear is subject to less wear—another bonus for theatres.

Gearsource.com was founded in 2001, and helping smaller theatres and universities improve their production capabilities is a significant portion of their business, says VP Henry Kones. “The more recent advances in technology in the last four year has been really transitional, and that has made a lot of gear obsolete.” In audio, the transition from traditional point boxes to line array systems in arenas has reached the theatre and university world. And the latest trend, line arrays featuring powered speakers, is making a lot of good used non-powered line arrays available. “Those are getting snapped up by theatre departments everywhere.” Kones says another trend is in LED displays and video walls, which are coming into their own for smaller venues.
We find stuff on eBay, too!” he exclaims, though he acknowledges something they thought we might be interested in—we have a Production Services in Boston. “They would call us when they had happy with the equipment and service he received there. And he the crucial decision to pick a good supplier was next. Latta frequented UsedLighting.com for some gear and was happy with the equipment and service he received there. And he also leveraged a relationship he had with Advanced Lighting & Production Services in Boston. “They would call us when they had something they thought we might be interested in—we have a good relationship with that shop.” But that doesn’t keep them from looking around elsewhere: “We find stuff on eBay, too!” he exclaims, though he acknowledges the risks that come with not truly knowing the history of the gear. Luckily the Ogunquit has a talented staff to service the gear and they have the budget for parts, so even if they get stuck with a clunker, they can make it good themselves. Theatres with neither of those would be best sticking with a reputable company that trades in used gear. Another tip he offers is if you’re buying A/V equipment, try to stick to a brand and model for a set of products even if they aren’t all purchased at the same time. Regularly scheduled maintenance is even more important on used gear and needs to be budgeted for, too. “You don’t want the lights to blow up and there suddenly be a $2,000 repair bill,” Latta says. “Follow protocols once you buy the gear.”

Advice

Definitely knowing where the gear originated and what the process of getting it ready for sale is important. For example, at 4Wall the rental stock is teched for a used sale, and treated just like it was going out for a rental. “A certified technician goes through it, cleans, it, and tests it completely,” Bailey says. “We want people who buy our equipment to really see the difference in buying from a professional seller vs. buying on eBay, Craigslist, or another site.”

Bailey advises that theatres do research when buying anything from anyone, and be sure you know the seller and know why they are selling. “Most of the horror stories I hear are from people who have bought equipment second hand from a friend or a company that went out of business.” Also, make sure you research with your space in mind. “With more choices in regards to fixtures and brands, it becomes more important than ever to research what is best for your space. If you’re a volunteer, or a technician just starting out, don’t be afraid to ask for help. Bring in a professional to do a site survey, or go online and seek out the advice of other theatre pros. The research up front will be well worth the time investment.”

At Gearsource, Kones says their team is dedicated to making sure customers receive quality gear. “You have to guarantee functionality when selling used,” he says. “For us, our vendor does not get paid until the customer receives the product, inspects it, and accepts it.” Buying used, name brand gear is often a better way to go then new equipment from some small company you’re not familiar with, he adds. One thing to consider is that inevitably you’ll need a part for your gear—and Martin, High End, Vari*Lite, etc., will always be there. “Here’s the difference between something from China versus branded: Consistency. If you buy an automated light from High End or another big brand, you can come back a year later and buy another same model and it will shine with consistency of the first one. There’s repeatability across those lights. Otherwise, when you program a string of different lights, they likely don’t exactly line up, and in the smaller theatres, those inconsistencies stick out like a sore thumb.”

For Kones the biggest misconception about the used market is that “it’s crap and was used in a murder,” he wisecracks. While he understands that some may have that anti-used car philosophy, if you know who is selling it, and if it’s a good product with a good track record of reliability, it’s a worthy risk.  

www.stage-directions.com • June 2016
Gear Review | By Craig Rutherford

Lime Is Key
A close look at the colors of Chauvet Professional’s Ovation E-910FC ellipsoidal and its lime LEDs

The common perception of LED lighting versus the reality of today’s amazingly high-quality professional LED lighting products is a constant source of fascination for me. Many consumers think of LED lighting as “industrial” or sterile—while nothing could be further from the truth when it comes to modern products intended for the theatre. Case in point, the Chauvet Professional Ovation E-910FC, an LED “ellipsoidal” that utilizes a relatively new technology—Lime LEDs from Lumileds. This Lime color is exactly what it sounds like: a raucous, very tropical color that isn’t terribly pleasing to look at on its own. However, our eyes are most sensitive to the color green, and by adding those green frequencies into the color mix, we get increases in not only brightness but incredible color rendering as well.

The Fixture
The basic unit is shaped roughly like a traditional ellipsoidal and is solidly built. The rear of the unit houses the light engine and electronics, while the front half houses the glass and optics of a standard ellipsoidal-style light. Chauvet has flagged each of their barrels with color-coded stickers that also have drafting symbols for their beam, useful for identifying them quickly in storage—or up in the rig. ETC Source Four lenses are also compatible with this light, useful for rental houses that already own a large stock of those. All the usual controls are here, including four handles for controlling the shutters for beam shaping, a slot for a drop-in iris or other accessories, and a standard B-size gobo slot. The unit weighs 15.4 lbs. Power auto-ranges from 100VAC to 240VAC, and input is via Neutrik powerCON in and throughs on the rear of the unit. Data input is via 5- or 3-pin DMX ins and throughs on the rear of the fixture, right below the unit’s menu display and buttons.

Output and Color
Power consumption for the E-910FC is nominally 240 watts, but with LEDs that doesn’t really tell us much about the brightness. Using the 19° lens barrel they sent me for testing, and letting the unit reach thermal equilibrium, I measured 2,854 lux at 5 meters. Their spec sheet lists 3,107 lux—we were definitely within the margin of error here. The dimming curve is extremely smooth and follows an ideal square law by default. Users can select additional curves from the menu system that smooth out the incoming DMX data and add some delay to mimic the thermal delay of incandescent sources, especially on fade-outs.

In terms of optics: field evenness was excellent, with virtually no center to edge brightness difference. Focus on gobos was also very good, with quite acceptable levels of chromatic aberration visible. As with other LED profile lights of this class, moving the lens out of focus results in visible multicolored shadows as the beams from the separate sources deconverge. For this reason, to achieve a soft edge one should use a frost filter instead of moving the focus of the barrel.

As with most LED color-mixing fixtures, in open white these would be better suited to replace a 575-watt instrument, as 750-watt units still have a brightness edge. But for saturated colors, any brightness edge from incandescents disappears entirely. Colors like congo blue and saturated red read as much brighter with the E-910FC than with the subtractive mixing system of a gel cutting light output.

The Lime LEDs, unlike the very narrow-bandwidth RGBA LEDs, are broad spectrum. These are highly efficacious LEDs, with a spectral power distribution falling almost perfectly on top of the photopic curve. In other words, they emit a very good match for the frequencies that the human eye is most sensitive to. The Lime emitter, when added to the RGBA mix, does not make the color of the light more green, as one might imagine, but rather brings the light closer to white as it is added. In short, what we get from the Lime emitters is high power over a broad spectrum without any nasty peaks or valleys—exactly what we need to mix whites that look great on skin.

Color rendering from the E-910FC was excellent. The Lime emitter helps fill in the overall gaps in the spectrum, producing very good pastels, and the amber emitter improves colors like oranges and yellows significantly. The true strength of this fixture is showcased when using it to match incandescent sources. I had no trouble color-matching it. And to make things even easier, Chauvet includes a “Virtual Color Wheel” that lets users pick presets for popular Rosco gel colors. In case those aren’t quite right for you, they publish the DMX values for all of their presets, so you can recreate and adjust these manually if necessary. (They also have a DMX control channel that has whites at several predefined Kelvin values for fast and easy programming.)

The E-910FC succeeds in producing very usable white light across a variety of color temperatures and provides high-quality color mixing in one package.
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For *Fences* at Arizona Theatre Company, Scenic Designer Vicki Smith and Charge Scenic Artist Brigitte Bechtel presented to us an opportunity to help create a set that needed to look grungy, worn and real, with rusting metal, peeling paint on wood, tattered pavers and aged brick.

For the creation of the aged brick, the process consisted of about 10 steps, starting with milling brick shapes from about 75 4-foot-by-8-foot sheets of ½-inch soundboard on a CNC ShopBot machine. Then we distressed the perfect brick patterns using primarily grinders and other tools found in the shop. After the necessary level of distress was achieved, we coated the sheets with a layer of Henry brand elastomeric primer and coating tinted to the color of the mortar with universal tints. Once completely dry, we used a common house paint to roll the base color on the brick. The mortar lines were carefully avoided in this step. Once dry, the toning process began.

We used three different colors to tone and individualize the bricks: Rosco Off-Broadway paints in Raw Umber, Van Dyke Brown and Burnt Umber diluted to a wash consistency. The paints were mixed with Plastic Varnish Flat from Sculptural Arts Coating to add more binder back into the mix and to add protection since the set was traveling. We used brushes and rags to apply the toning wash to the bricks, and did some spattering to help unify some areas and provide a bit of texture.

The aging process was next, using primarily Van Dyke and Raw Umber colors in a heavier application. The purpose was to create dirt, water, and rust stains in order to give an aged look. This step allowed for the mortar lines to start getting “dirty” as well so they weren’t bright white and wouldn’t stick out against the grungy bricks. We used rags, sponges and water sprayers; really anything that worked to create a layer of dirt on the walls. After one coat, we had our designer Vicki give us feedback on areas that needed more “dirt,” so we went back and did another layer where she indicated. No sealer was necessary as PVF was introduced into the paints.

The aged clapboard walls were similar, beginning with color washing the raw wood to darker, cooler hues and finishing with the application of paint with a block of wood dragged onto the surface in order to create that chipped-away paint look. First the clapboard flats were built with the raw wood. Tar paper was attached to the scenic flat as specified by the scenic designer, and the raw clapboarding was added over that. We then flame-treated the raw wood with Rosco Flamex WD. More Raw Umber and Van Dyke paint was used to weather the wood. The walls were laid flat on the shop floor, and we spread the colors on the surface of the clapboards with brushes and by spraying water to wash the colors evenly. The water worked as a blending medium for the various colors in our directional blending on the clapboards, and also helped us achieve the desired level of color intensity.

Once the clapboard surface dried, we started the chipped, faded paint look using Glidden Speed-Wall flat white interior paint, tinted with universal tints in Raw Umber and Burnt Umber. Using a large, lay-in brush, we dry-brushed in heavier areas and used the block of wood trick on more faded areas, according to the designer’s rendering. For the block of wood trick, any scrap block of wood that is clean and easy to hold will work. The bottom surface of it is dipped in paint on a paint tray or flat surface. This is taken and scraped steadily across the surface you are wanting to distress, in the direction of the original paint treatment application. I learned this brick trick from ATC’s charge artist, Brigitte, and she learned it from a sign painter who knew a lot of old styles of painting. It was a great way to achieve the distressing we wanted on this particular set.

Many of these aging and distressing processes are about building upon and elevating the rich textures and patterns already found in the materials used. By simply building layers to give that grungy, worn look, ATC’s scenic artists tell the story of *Fences* and help bring it to life.
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