USITT Stage Expo 2017:  
St. Louis, the "Gateway to the West"—or, "Everywhere"  
BY KARL G. RULING

USITT 2017 DREW A RECORD 5,508 attendees and 307 exhibitors (82 of them new) to the America’s Center in St. Louis, MO. It was a great show, with 182 exhibitors re-booking for USITT 2018 before the event ended. These numbers come from the wrap-up press release, which would be anomalous if it didn’t have a positive spin, but it really felt like an extremely successful trade show, on an upward arc. The total attendees is a record: slightly more than the 5,474 in Cincinnati in 2015, but much more than the 4,500 or so in Salt Lake City in 2016. The number of exhibitors also was up about 10% from the previous peak. There was good traffic all the time, even on the last day, which is often dead at trade shows. A lot of the attendees were students, who often are tomorrow’s customers, not today’s, but many of the vendors I spoke to reported being approached by people with projects and money for them right now.

My title comes from the St. Louis Gateway Arch, designed by the Finland-born, Yale-trained architect Eero Saarinen. It’s a stainless steel, weighted catenary arch, more than twice as tall as the Statue of Liberty, and visible from around the city and from across the Mississippi. It is dedicated to the “people of the United States,” but it was erected to celebrate the nation’s westward expansion, and is often called “the Gateway to the West.” However, most gateways go at least two directions, not one, and I could imagine this one going many directions. At the USITT Conference and Stage Expo, I felt I was in the middle of the United States, at an event pulling in people and things from all over the world and time. It was the “Gateway to Everywhere.”

Rose Brand is a great aggregator of things from everywhere, and what caught my eye in the Rose Brand booth was a Räder Busch...
Pneumatic Triple Swivel Caster, something I had last seen under scenery backstage at Oberammergau in 2010. (See “Backstage with Judas Iscariot: Letter from Oberammergau,” Fall 2010 Protocol.) It’s a triple caster with a rugged air-bladder between the swivel and mounting plates. Thirty-five psi is more than enough to lift over 800 lb.—and it doesn’t need a lot of air. At Oberammergau they were using an air tank under the wagon for up to 20 scene shifts. Rose Brand also showed Räder Busch scenery hinges: beefy hinges in general, but the Double Knuckle Hinge is designed so the leaves can fold flat over each other, which often is what you need for trap doors. The measurements in the Rose Brand catalog are odd: 2 3/8” by 3 9/16” for the Heavy Duty Scenery Hinge, but that’s a perfectly sensible 60 mm by 90 mm in SI.

InterAmerica Stage also had an impressive addition to their SkyDeck: the X-LED System Architecture from Carl Stahl Architektur. It’s a system of LED pixels that mount under a SkyDeck tension grid, so you can have houselights, worklights, or a low-resolution video screen overhead—whatever since it is all programmable. The pucks themselves are quite rugged, and the cabling is under the SkyDeck. As I listened to the pitch, I wondered about how much work it would be to install this lighting system under a grid in the air—but, of course, SkyDeck is modular, so that was a stupid thought. You don’t weave SkyDeck in place; you mount pre-assembled panels, and they can have the LED pucks pre-installed, too.

Productions Unlimited showed safepit+, an orchestra pit cover consisting of open-frame panels covered with a rigid wire mesh. The mesh is rated for 20 psf: strong enough to hold performers and crew with some flex, and certainly strong enough to keep them out of the pit. The cover can be reinforced with polyonxy+ or other rigid sheeting to provide a 150 psf stage apron extension. polyonxy+ is the company’s stage floor sheathing product. It’s a panel about 95% recycled plastic and made in the US. It comes in four thicknesses from nominal 1/4” (actual 0.236”) to 3/4” (0.708”). (Those are weird measurements, but they work out rationally to 6 mm and 18 mm in SI.) polyonxy+ is sold as a durable, inherently black, alternative to hardboard as a performance floor covering. You can use it as-is over safepit+, but I was shown panels specially prepared with felt padding on one side and a simple fastener to lock the panels to the safepit+ mesh.

I saw something like the safepit+ mesh on the front of counterweight arbors in the J.R. Clancy booth. Actually, it was a gate to retain the weights in Clancy’s new FrontLoader arbors. These arbors are essentially metal boxes with three slightly sloped shelves onto which counterweights can be stacked from the front of the arbor. There are no arbor rods to reach around, no spreader plates and locking collars to get in the right position, and the three levels help reduce the probability that an arbor can’t be loaded because it is just a bit too high or low relative to the loading bridge. You never want run-away arbors, no matter how they are built, but Clancy had
a video showing what happens when an arbor of this new design, loaded to 1,000 lb, is allowed to crash into the stop rail, the effect of a run-away batten flying all the way from the deck to the grid. The arbor becomes a mass of twisted metal, but the counterweights stay captive. North America now has two manufacturers of front-loading arbors—a far more ergonomic design than North America’s traditional double-rod, side-loading arbor. Of course, front-loading arbors are not really new, having been used in Europe for a long time. I saw them backstage at the Edinburgh Festival Theatre at Showlight in 2001—and that was an old installation.

More up and down: Columbus McKinnon showed the Shopstar VS, a variable-speed chain hoist. The one shown weighed only 26 lb. and was rated to lift 250 lb. on 120 V, single-phase. It had what looked like a standard pickle, but bouncing the up-switch, or simply pushing on it harder, made the hoist speed up, with a range from 3’ to 6’ per minute. The brochure says to “choose this reliable hoist for light assembly workstations that require high speed and precision control lifting. But, the pitch at Stage Expo was that it might be useful for variable speed lifting in a show. I can see that. It does not have the encoders that would be needed for a multi-hoist fly system with synchronized movement, but there are many applications that don’t need that. It was quiet, too.

I was told I needed to look at Ayrton’s MagicBlade FX, a new effects luminaire that arranges seven RGBW LED modules with 67 mm square, 15:1 zoom optics into a row. It projects up to 4,500 lumens in a flat fan of light that can go from 3.6° to a broad 53°. As with the other Ayrton luminaires, pan and tilt can spin continuously. Inspired by Justin Townsend’s use of very tight beam-effects luminaires as long-throw specials in Joan of Arc: Into the Fire, I played a bit with the MagicDot SX, also shown in the Ayrton booth. It’s really an aerial effects unit, but I was impressed by how smooth the field is. The color rendering made my hand look unhealthy, but it isn’t designed for lighting people and for some shows it wouldn’t matter anyway. Dracula looks just fine if he looks dead.

I wandered the Stage Expo floor open to whatever caught my eye, but also looking for small, LED-based fresnels for one-night performances in unconventional spaces (e.g. an abandoned court room). Tobin Neis in the Barbizon booth pointed out the Mole-Richardson MP100FDTF 125 mm fresnel. It’s reasonably priced—inexpensive for a Mole-Richardson luminaire—because the housing is made of plastic and aluminum, but that helps keep it lightweight, 6 lb. The price also includes four-way barndoors, a 3 m DMX cable, a 4 m power cord, and a 3,200 K color correction filter. The unfiltered output is 5,600 K, but, color-corrected or not, the color rendering is beautiful; my hand looked years younger in the light! Dimming is controlled by a knob or one channel of DMX512, and the power consumption is only 100 W—suitable for wall-receptacle power but you can run it on batteries, too.

Strong Lighting still has the venerable and large Super Trouper and Gladiator, but it is working on filling out the line with smaller
units. At Stage Expo the company showed the Trouper 300L, which uses a 230 W white LED source to deliver 6,000 lumens at 5,600 K. It is simple to operate, with a learning curve of about 45 seconds. (It takes longer than that for a novice followspot operator to learn how to stand quietly.) Look for 440 W and 800 W units with different sources to be introduced soon.

Littlite is a venerable name in small task lights. Originally developed for the Leprecon lighting control desks over 30 years ago, the little lights have evolved into an extensive product line. The new thing being promoted at the Stage Expo was a blue/white bi-color luminaire with LED sources, but I was much more interested in the red/white version. When you twist the dimmer just a bit above full-off, the red LED comes on. As you continue turning, the warm white LED dims up, taking the output through pink to white. Blue is the traditional back-stage worklight color, but I find red light at comparably low levels is much better for seeing detail. This might
simply be my eyes, but you have a choice, and with either product you can add in a little white light so that color perception is possible.

There were lots of sound products at Stage Expo. Dan Dugan Sound Design showed the Model E-3A, Automatic Mixing Controller, with 32 channels of processing.

Dugan had a demo set-up of three headsets with boom mics. The unit automatically adjusted gain so that whoever was talking took precedent, but the gain of the others was also adjusted so that the background noise, picked up by all the mics, stayed at the same level. There was no audible gating, no breathing of the noise; it was simply what you would expect if the system were controlled by an attentive human, flawlessly adjusting the microphones for a panel discussion or area micing on stage—any live event where many mics are in use, significant gain is needed, and feedback is to be avoided. “Dan Dugan.” The name seemed familiar. I asked Dugan if he’d worked at American Conservatory Theatre in San Francisco. Yes, from 1967 to 1969, the years when I was first seeing and hearing serious plays. He designed the sound for *Long Day’s Journey into Night*; I still remember that production.

The Stage Expo offered a number of digital mixers, running a wide gamut of sizes and prices. Larger control surfaces give quicker access, but they also take up seats in the house, or force the sound operator into an awkward place where she doesn’t hear what the audience is hearing. RCF showed the M18 Digital Mixer, a small black box, only 13.5” x 7.2” x 3.5”, that can be rack-mounted with the connectors facing front or back. The control surface is a tablet computer linked to the mixer via Wi-Fi, so it’s small and can sit in the sound operator’s lap, thus costing no more than one seat in the house. (I recently attended a Hannah & Maggie concert in Massachusetts, where a guy sat in the third row with an iPad. He was the sound tech, and the mix was flawless.) The channel count is not large—eight mic inputs, ten line inputs, six aux-out, headphones, two main output channels, and three auxiliary buses for internal effects—but enough for many events and musical groups. There is a USB port for external mass storage for the internal two-track player and recorder. The software appears to be well designed, with...
important controls not buried too many windows deep.

Energy Transformation Systems showed the ETS InstaSnake, a product line that allows you to use an eight-pair Cat5 to Cat6 cable for carrying up to four discrete channels of audio at mic or line level—or digital. The send and receive boxes are totally passive devices; there is nothing going other than connecting the signal from the audio connectors to the twisted-pairs in the UTP cable. The InstaSnake has been factory tested to 1,900' over Cat5 using balanced line low impedance dynamic microphones. Phantom power has been tested to 850' over shielded cable, with the shield carrying the phantom power return. UTP can be used with phantom power, but with one pair sacrificed for power, cutting the number of channels to three. While it is not recommended that you leave InstaSnake adapters in the rain, if you do, there is really nothing in them to be harmed by a shower.

VaporFlame showed the VF6, a flame effect device that uses only water, compressed air, and LEDs. Despite the “vapor” name, the VF6 uses a ring of six nozzles to make a blast of water mist above an array of 24 RGBA LEDs, making an amber/yellow flame effect or something more bizarre, such as blue/green, in any case, without toxic or flammable chemicals. The mist is fine; the water evaporates quickly and does not build up around the effects unit. Control is via DMX512 directly to the effects head. A road case houses the air compressor, water tank, and water filter.

One more effects machine: the Actor Cigarette by NewRuleFX. It’s an e-cigarette, which is a class of products that makes atmospheric effect machine manufacturers nervous for fear they will revive the old fog machine controversies. There are reports in the press about e-cigarettes being tweaked, with people mixing their own fluids and altering the heat settings. Furthermore, the Centers for Disease Control describes e-cigarettes as “electronic nicotine delivery systems.” However, the Actor Cigarette Prop System is different from street e-cigs: it contains no nicotine in its fog and the device is difficult to mess with, so it works as designed. The fog concentration is high but exposure is short. The fog’s constituents are relatively benign and won’t hook an actor or reinforce an existing nicotine addiction. Consider the alternative. Cigarettes contain hundreds of ingredients that create thousands of chemicals when burned, and scores of them are known carcinogens—and burning cigarettes are a fire hazard.

Next year’s USITT Annual Conference and Stage Expo will fill the Greater Fort Lauderdale-Broward County Convention Center from March 14 – 17. Access should be easy, with the Fort Lauderdale airport only five miles away, and the Miami and West Palm Beach airports are within an hour’s drive—and all of them are outside the 30 nautical mile radius security zone that’s imposed around Mar-a-Lago when the President is in residence. I look forward to seeing you there!