Ravitz notes that his design brief was that "there needed to be some vibe that harkened back to the way things felt in the 1980s."

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Intervision

2016 lighting technology By: Mary McGrath hen Bruce Springsteen and the E Street Band perform, the experience is akin to a marathon: The show can last up to four hours. Springsteen frequently changes up the set list and takes requests from the audience, so every performance is unique.

In December, Springsteen released The Ties that Bind: The River Collection, a four-CD-plus three-DVD special edition boxed set of The River-originally released in 1980which included outtakes as well as photographs and other memorabilia. To celebrate the release, Springsteen and the band appeared on Saturday Night Live; the rehearsals for the telecast led him to think about a tour. "The first call I got was that Bruce wanted to start tour rehearsals immediately after the SNL performance, since the band would be together and everyone would have had a warm-up," explains Springsteen's longtime production designer Jeff Ravitz, of Intensity Advisors, headquartered in North Hollywood, California.

It was the holiday season, and the time line that Springsteen was considering "nearly put me into an apoplectic seizure," Ravitz says. Thankfully, the artist reconsidered. "Even considering Leonard Bernstein's observation that great achievement can result from having 'not quite enough time,' Bruce admitted that it was probably a little too fast for the best planning," Ravitz adds. "So they gave us a five-week lead time."

Because the production is focused on *The River*, Ravitz says, "George Travis, the tour director, explained that they wanted something that would harken back to the 1980s. Since the plan was for Bruce and the band to play the album in order, do some of the outtakes, and then some classics, he felt, as I did, that there



The lighting rig, which consists of more than 330 units, was supplied by Morpheus Lights.

needed to be some vibe that harkened back to the way things felt in the 1980s. It was a brief brief."

The words "PAR cans" were even uttered at one point, Ravitz says: "Taking out a PAR-can rig sounded interesting from a stylistic point of view, but uninteresting due to the limitations that a system like that would impose on us, let alone using that comparatively cumbersome technology, and asking the crew and the vendor to deal with everything that goes along with it in order to create a historic look that only a few eagle-eyed aficionados might recognize or appreciate. I suggested that it be more about how the lights are used and cued, and not necessarily the fixture that is used."

Certain stylistic elements of Springsteen/E Street Band productions have remained consistent through the years. "The backbone of the design remains intact because we have honed and tweaked lighting positions and angles and so forth to the point that they work really well for this configuration of the band," Ravitz says. "The core band layout hasn't changed; they're still in the same places, so I still need to light them in a way that everybody has become really happy with. I don't want to change it just for the sake of changing it."

For *The River Tour 2016*, Ravitz put together a lighting system that consists of upstage, midstage, and downstage trusses, with two straight side trusses and a pair of frontlight trusses hung out over the audience. There's also a front-of-house truss for audience/effects lighting positions. "My favorite lighting configuration is a simple grid over the stage, which gives me lots of opportunities to put fixtures where I need them in relation to the band," he notes. The 330-plus-fixture lighting rig was provided by Las Vegas-based Morpheus Lights.

Layering is key to Ravitz's lighting design: "We populated the truss and lighting system first with wash lights that create a PAR-like foundation of color, and then with spots that I use to carve people out of the darkness, from any angle, with whatever ratio of backlight, sidelight, and frontlight I think is best at any given moment. We also have some beamy fixtures that add an entirely different texture."

Ravitz's wash light of choice is the new Ayrton NandoBeam-S9 [there are 58 in the rig], provided by Morpheus, the exclusive US distributor for Ayrton products and the longtime supplier for Ravitz and Springsteen. The designer explains, "We have more of the S9 fixtures than any other, because they create the foundation of light that everything else cuts through. Texturally, we have this soft wash, although these lights are also capable of going fairly tight and beamy. They can be quite PAR-can-like in their beamyness, which has been a nice bonus for the style of this show." NandoBeam-S9s have largely, but not completely, replaced the Ayrton WildSun-500s that were used on the last tour. "NandoBeam is the next evolution from the WildSun; it is much brighter, tighter, and has more evolved color capabilities," Ravitz says. "I'm having a good time using them." NandoBeam-S9 has an $8^{\circ} - 40^{\circ}$ adjustable zoom spread, emits up to 12,000 lumens, and has a power supply that features over 95% total output efficiency.

Ravitz is also a fan of lights that offer a visual punch. "Years ago, Morpheus designed and created the BriteBurst, which was a larger-format, parabolic searchlight-type fixture with a large aperture, an HMI source, and a color system," he says. "Since it was a big, heavy light, with ColorFader scrolls that needed to be maintained, why not take advantage of modern technology and create something that can do what that light did, but with all the advantages that LEDs offer?"

Enter ten Ayrton MagicRing-R9 units, first engineered by Ayrton in response to a request from Ravitz. "MagicRing

can do a lot more than what we use it for, but, for our purposes, it produces fantastic-looking light and does exactly what we want when we reach for that one extra layer of texture," Ravitz explains. "It just cuts through everything like a hot knife through butter and it has an incredibly smooth field. We try not to overuse it, because it's a really recognizable effect. When we do, whether for a whole song or just one cue, you absolutely know it." The MagicRing-R9 has a 26,000-lumen output and features double continuous rotation on the pan/tilt axes; it also offers programmers several control modes; Ravitz currently has ten of them, providing fat beams of color in "Sherry Darling," "Out in the Streets," and "Badlands."

The audience is always a huge part of a Springsteen performance, and Ravitz has used various instruments to light it over the years. For this production, he wanted something a bit retro. "My thought was to flash back to those nine-lights that were so ever-present in the 1980s. But how could we do a period fixture, in a modern way, that would have the impact that we wanted plus color variety without scrollers, and maybe even a bit overscaled in size, to make it a deliberate part of the system's appearance while still being utilitarian?" Ravitz talked to Morpheus, and the company devised a solution. "We conceived an LED blinder that would look like a nine-light, except bigger and heftier and with all the capability, throttle, and punch of an LED PAR times nine."



"The core band layout hasn't changed," Ravitz says. "They're still in the same places, so I still need to light them in a way that everybody has become really happy with."



Above and below: PRG's GroundControl system eliminates the need for local spot operators to climb up and down 40'.

Thus was born the Morpheus CP-9, an evolution of the CP-7 that the company created for the last Springsteen outing. Ravitz comments, "One thing we noticed about the CP-7 was that its beam characteristic was a little spotty; this time, we inserted one of the specialty Light Shaping Diffuser products from [Torrance, California-based] Luminit—which are actually very efficient spread lenses designed to work with the optics of LEDs—behind the transmitting lens of every light. This spreads the beam just enough to cover the audience beautifully—and when those lights bang on, it's a unique look unto itself. It looks great from out front and it lights the audience so Bruce can see them."

The Morpheus CP-9 blinder was another piece of the big picture. "All of those elements, like the CP-9, contribute to the layering effect that I'm going for," Ravitz says. "It gives me somewhere to go at any given moment, and gets us through a four-hour show with great variety." The CP-9 consists of nine Chauvet Professional COLORado TRI IP LED PARs; there are 16 active units that make their presence known throughout the show.

Since the E Street Band plays in-the-round, the back of the stage can be a bit of a challenge for the designer: "There's no backdrop, there's no background, there's not much scenery or anything that's vertically higher than the band members' heads to catch a little bit of light. Often, if the behind-the-stage audience isn't lit, it can be very murky back there, and I just longed for something to fill the dark void."

Upstage is a raised runway with elegant handrail. "I was going to mount a low-profile LED strip light on each post of the rail," Ravitz says. "I was concerned about management getting on my case about having anything too bulky back there, that might block a sightline, so a





The Morpheus CP-9 (seen above) was created for the tour. "We conceived an LED blinder that would look like a nine-light, except bigger and heftier and with all the capability, throttle, and punch of an LED PAR times nine," Ravitz says.

narrow striplight seemed to be the solution. Paul [Weller, managing partner at Morpheus Lights] had Ayrton MagicBlade-R units available. He said, 'Let's bring them out to rehearsals and if for some reason they don't pass the sightline test, we can always go back to the strip light.' Well, they did pass and now we're getting so many great looks from those lights."

Instead, Ravitz placed two MagicBlade-Rs, one above the other, at every other vertical on the railing. "Sometimes, I use all the cells in all the lights," he says. "At other times, I just glow one or two random cells, frequently, at a really low level—we tried a level of only 0.1%, which gets the emitter to just to barely glimmer in the background behind some dimly lit songs. The fixture's distinctive in-line orientation can be changed, cue by cue, to be all vertical, horizontal, or anything in-between."

The MagicBlade units aren't always used to create a subtle scenic effect. The designer explains, "As we get towards the end of the show, when we're breaking loose and getting into the big end-of-night finish, we let them do some of their wildest tricks—but we have to wait patiently for our moment to do that." The automated lighting package includes 40 Ayrton Wildsun-500 C units, 24 Clay Paky Sharpys, 26 Martin Professional MAC Viper Profiles, 20 Philips Vari*Lite VL3000 Spots, 17 Martin MAC Auras, 14 Vari*Lite VL1100 TSD Spots, and 16 SGM Q7 RGBW strobes. The non-moving portion of the rig includes Philips Color Kinetics ColorBlast 12 TRs [lighting the facades upstage of the drum risers], ColorBurst 6s [on the floor downstage], and two iW Blast TRs to tone the Hammond B3, as well as ETC Selador Desire D60 Lustrs and Chauvet Professional COLORado Zoom Tours. Two MDG AtmosphereAPS hazers supply mist, adding definition to the beams.

For his front spots, Ravitz went in an entirely different direction from retro. The designer explains, "When I was introduced to the PRG GroundControl Followspot System last year, I fell in love with it as a solution to a number of practical issues." It consists of a Remote Spot Luminaire, which is a spotlight-optimized Bad Boy fixture; a GC truss box; and the GC Remote Followspot Controller, an intuitive user interface that can be mastered by local followspot operators almost immediately. The Bad Boys have an HD camera mounted directly below the lens of the fixture. which outputs HD-SDI at 1080p and enables the groundbased followspot operators to see the stage as if they were up in the air. Ravitz says, "It can do anything a regular followspot can do, but a lot of those functions also can be can be controlled by the console operator; for instance, if you want an extremely smooth fade that's in-

CONCERTS

synch across five lights, it can happen in a way that five human-operated lights rarely can do in lockstep with one another. It also allows for some nice cues, like smoothly cross-fading color, like any automated light can do." Ravitz has five active PRG GroundControl Bad Boy followspots on the tour with a sixth spare. He adds, "It's a great advancement for us and we're enjoying the advantages a lot. We're glad to be early adopters of this technology."

Also, Ravitz says, "We did a lot of testing, a few tours back, and the truss spot that worked best for our show was the Robert Juliat Topaze; we use it with a tungsten modification kit [by Morpheus]." The show is balanced to tungsten color temperature for IMAG purposes as well as for the eye. "For the live visual look, we prefer the warmth of tungsten; it is definitely compatible with Bruce's aesthetic," the designer adds. Topaze truss spots are found on the side trusses. For back spots, Ravitz has three Robert Juliat Manons with the standard 1,200W MSR discharge lamp. "They are used to backlight band members when needed as they move all around the stage," he adds.

GroundControl followspots replaced the Topazes that had been top-mounted on the single downstage spotlight/front light truss, which is hung out over the audience. The first benefit of GC was eliminating the 40'plus climb up (and down) rope ladders for the local spot operators. Also, followspot angles can be dramatically improved by mounting GC fixtures on a separate truss hung in tandem with truss loaded with automated wash and profile fixtures. This way, the GC spots' lenses are 5' lower than with the top-mounted Topazes—without interfering with audience sightlines.

Lighting director Todd Ricci controls the show with an MA Lighting grandMA2 console; lighting crew chief Brad Brown operates a second MA2. Ravitz says, "Todd's console operates the intensities of most lights—as a conventional board might do— and he controls which lights are on in any given cue. Our second console changes color and position and does effects. This contributes to a real live-show feel."

This two-console setup has been part of the Springsteen tour for some time, although previously it was done with two different brand consoles. Ravitz confides, "Going all the way back to almost the earliest days, to 1988, we separated out the two functions by having one as the automated and one as the conventional. Now it's all automated, and one is intensities and the other is functions. We're happy with it; there were some growing pains and a learning curve, but we're there."

Bruce Springsteen and the E Street Band's *The River* 2016 *Tour* continues in the US through April; some stadium dates are planned in Europe.