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The Eye Has It

Carrie Underwood's latest tour takes a creative approach to the in-the-round format

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Seven-time GRAMMY-Award winning artist Carrie Underwood's *The Cry Pretty Tour 360* represents Carrie Underwood's first collaboration with the design firm Fireplay, alongside veteran creative director Barry Lather. (The Fireplay team includes Nick Whitehouse, creative producer/lighting designer; Kelly Stickse, creative producer/special effects designer; and Josh Zangen, production designer.) According to lighting director Nate Cromwell, who has been with Underwood for six-plus years, the time is right for Fireplay's involvement. "As Carrie has

album, *Cry Pretty*, debuted at number one on the Billboard 200 and Top Country Albums Chart, making it the biggest all-genre debut by a female in 2018.) Zangen says his team took from the album the abstracted form of an eye: "[The design] features the iris and upper and lower forms of eyelids. The performance area takes up the entire arena floor and was designed and engineered specifically so that everybody has a great seat."

Talking about the stage, fabricated by SGPS, Zangen says, "Almost the entire surface, except for a few ramps, is built using automated lifts. There are 15 lifts total; one features an integrated turntable for the iris center; it's a two-



"Carrie and Barry [Lather, creative director] wanted to create an in-the-round, full-360 experience, challenging us to take a different approach from her last tour, which was also in-the-round," Zangen says.

become more of a dynamic artist, her show has become more dynamic as well," he says. "The last two iterations have been in-the-round, which gives her the opportunity to interact with the crowd. The scale of the production exponentially has increased every time we've gone out to tour."

This time around, Zangen says, "Carrie and Barry wanted to create an in-the-round, full-360 experience, challenging us to take a different approach from her last tour, which was also in-the-round. Our team put together a proposal that took inspiration from the album artwork." (The

stage lift, with a rotating center, to highlight and isolate Carrie in the center of the space during some of the show's more intimate moments."

However, Zangen adds, "With so many lifts, we packed the structure with automation equipment, leaving no space in the underworld for other technical equipment and systems. It was a bit of a puzzle, but everyone worked together to get what they needed packed into every available space. With SGPS, we developed a monorail system of support structure for the ramp areas, which allowed the



Above: The tour is loaded with special effects, including lasers, cryo, fog, and pyro, all provided by Strictly FX. Opposite: The SGPS-provided roll drops at work, serving as projection surfaces while also framing the onstage action.

thin stage decks to float; these are great for visibility and an airier feel.

"Barry wanted this to be a dynamic space on the performance side as well," Zangen says, "so most of the band are able to roam the space wirelessly. Drums and keys have homes in stationary positions on lifts, but they also have a couple acoustic moments when they join in on smaller portable sets."

In "Cry Pretty," the first song of the encore, "We have one more physical, decorative prop element hidden in the stage," Zangen says. "It's a flown cylindrical bead curtain [provided by SGPS], representing tears and made of large, sparkling silver beads. We surround Carrie in this chandelier as she comes up on the lift during the build of the song; it floats above her, bringing a strong element to this powerful song."

Visuals

The space is flexible, thanks to 20 SGPS roll drops, in lengths of 10'- or 20', working in tandem with 38 Barco UDX-4K32 31K laser projectors (provided by PRG). "Instead of solid material for the roll drops," Zangen says, "we used scrim, which allow us see through them. There are moments when the scrims are down and the perform-

ance happens in and around them; the visuals are huge, but the focus is still on the band and performers. Carrie has a very large performance space in terms of width, depth, and height; this allows a range of moments, from huge rock show down to Carrie on the central lift—sometimes that's all you need."

Video content, provided by Sila Sveta with direction from Lather, is played back using two disguise [formerly d3 Technologies] gx 2 and four 4x4pro media servers. "We use Notch [the real-time graphics software] quite a bit to enhance moments and create pieces that are more flexible," Zangen says. "In 'Blown Away,' we have a full tornado that follows Carrie around the stage, to show its destructive power as reflected in the nature of the song."

Lighting

"Carrie, management, and Barry had pretty specific lighting requests," Whitehouse says. "Barry created a treatment, which laid them out clearly and provided a fixed idea of what they wanted." The shape of the stage dictated many practical aspects of Whitehouse's design: "Obviously, being in-the-round, we needed to design something that could deliver big air effects while making sure Carrie was lit really well in all directions. We started

from the stage layout, building from that to inspire a way to position fixtures around the arena in a unique way.”

In this layout, Whitehouse says, “There are six pods, which contain the bulk of the fixtures and provide the majority of the lighting looks. Interestingly, we have many different fixtures in each pod; we use [Claypaky] Mythos for beam effects, [Martin by Harman MAC] Viper [Air FXs] for air spot effects; [Vari-Lite] VL3000s over the eye stage to light band members, and [Claypaky Scenius] Unicos for Carrie’s front light. The Mythos do a lot of the effects from the pods and most of the visual eye candy. The Unicos, in the center of the pods, act as her key light. There are areas onstage where they just can’t make it, so we bring in the Viper Air FX. I didn’t think they would work as well as they do as key light.”

The rig also includes GLP JDC1 hybrid strobes. “I’ve used them at festivals, but I’ve never used them in a touring situation,” Cromwell says. “They are great, especially when you have 106 of them in aggressive mode. In addition, Robe Spikie LED WashBeams are located on the floor along the stage’s perimeter, working in tandem with the LED outline of the deck.

BlackTrax, the real-time tracking system from CAST Software, works with a significant portion of the lighting rig,

including Unicos, Viper AirFXs, and VL3000s. “We calibrate 40 fixtures each day,” Cromwell says. “We have six artists that we’re tracking across different zones. We probably have over 70 different zones set up; they’re needed to work around the locations of the soft goods.”

Underwood was one of the first major artists to use BlackTrax. “It has grown by leaps and bounds since the last tour as far as the user interface, the ease of programmability, and the redundancy,” Cromwell says. “When Carrie crosses a certain boundary within BlackTrax, the lights automatically crossfade, so we’re not hitting the projection screens with light—yet we keep the same zooms. We can pick her up in a tight body shot from 60’ away, and we can do things with key lights that a manned operator couldn’t, either with remote system or a physical spotlight.

“From day to day,” Cromwell continues, “the key lights may be in slightly different positions. On the last tour, it was feet and now we’re moving things a matter of inches—making sure the tips of her shoes are lit to about 4” above the top of her head and avoiding contamination with the band or projection surfaces. We’ve taken BlackTrax from an accuracy of feet to an accuracy of inches in some cases.

“Everything is prerecorded as far as the chapters and



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what we're going to do," he says, "but we manipulate it live during the show. We'll go into specific chapters and say, 'This looks great, but if it were 3" diameter less, it would be perfect'." Then we update that during the show live. It's like riding the iris in a spotlight, but we're doing it on a much more precise scale."

The show is mainly run on time code. "This is the first time I've worked with Nick," Cromwell says. "He did an incredible job. He put 3,500 cues in the desk in six days. This is one of the best design teams I've ever worked with." Cromwell runs the show on an MA Lighting grandMA2 console, provided by Bandit Lites, the tour's lighting vendor.

Special effects

The tour is loaded with special effects, including lasers, cryo, fog, and pyro, all provided by Strictly FX. "Everything we do on this show is a reveal and then a hide," Sticksel says. "Very few things stay onstage the whole time; everything you see, including special effects and props, is delivered via a series of lifts around the stage. This includes lasers, cryo, and fog. The only things not hidden by the lifts are the cryojets, which are on the edge of the stage in custom-built mounts."

The laser package includes four 30W Arctos units and 12 Facet audience scanners. The latter "are custom lasers built by Strictly FX; they are amazing," Sticksel says. "We could not do what we do on this show without their unique safety and optical properties. They hang on custom precision mounts underneath the rising platform; we reveal them as the lift goes up with Carrie. It creates this really dense and immersive effect that covers a full 360° around the lift." Since the lift decks also drop to the arena floor, the lasers had to be removable: "They were designed to ride on custom mounts, so they come off quickly after the laser cues. They're mounted and removed in groups of three under the stage. The mounts were designed by Strictly FX and Fireplay; Strictly FX fabricated them."

The cryojets "are found at the lower eyelid and are spaced every 10' or so," Sticksel says. "They are primarily used for 'Blown Away,' the song with the famous tornado." The latter is something of an Underwood tradition and, he notes, the creative team wanted to build on it. "Using Notch and working with the content team, we created a massive video-based tornado driven by Carrie's motion. It follows her around, dancing around her. Lightning bolts strike around her, and we cue the cryojets to fire as the tornado travels about. The cryojets were engineered to be very full and quiet, so you get this nice, fluffy look, instead of a sharp, thin jet. Each jet is lit with a dedicated moving light that coordinates the plume's color with the video content nearby."

Sticksel adds, "We stuck with non-moving devices, so we're using gerbs, flares, pyro strobes, and then airbursts



overhead. In one of my favorite scenes, we use the pyro strobes on the four corners of each lift. We cue them as the lifts dance gracefully up and down with Carrie and her band; we back off a bit on the lighting to enhance the



The stage features 15 lifts, which, combined with the roll drops, allow for striking tableaux like the one seen above.

effect. We also do a similar thing in 'Two Black Cadillacs,' when we replace strobes with flares; you get an 8"-tall, intense red flame jet on each corner of the lift." The pyro units are built flush into the stage deck in custom mounts.

"When the pyro is cued, it looks like the effects are coming from the deck surface itself. We also have a rig up top for two different airburst cues that are used for punctuation. The big one falls at the end of 'Before He Cheats,' when



The lighting rig is dominated by six pods, “which contain the bulk of the fixtures and provide the majority of the lighting looks,” Whitehouse says. The pods contain Claypaky Mythos and Unicos, Martin by Harman MAC Viper Air FX units, and Vari-Lite VL3000s.

we do an aggressive burst chase to wrap the song—it’s a fun cue that always gets everybody’s attention.”

Another favorite, Sticksel says, is “the epic low-fog effect for the center lift. Used during ‘Something in the Water,’ it billows massive amounts of cryo-chilled fog using four Ultratec LSGs, driven through custom Strictly FX stage pops-ups built into the lift. As Carrie rises over 12’ above the stage, the fog pours from the perimeter of the lift, creating a stunning waterfall effect for the duration

of the song.” Also used are eight Chauvet Professional Vesuvio II foggers, which appear under the rising lifts during “Jesus, Take the Wheel.”

A rainbow shot of Magic FX Pixie Dust confetti appears during the finale, “Love Wins.” “It’s a colorful party scene,” Sticksel says. “The cryo dances around the stage as she works her way around, saying goodbye to the audience. It’s a really special thing to be in the pit during this cue because you can see the clear delineation of the colors—



it's like being inside a rainbow." The confetti is delivered via 12 double-barrel Artistry in Motion Big Shot cannons.

Audio

Front-of-house sound engineer Tim Holder mixes Underwood on a Yamaha RIVAGE PM7 console. "In my opinion, It's the best-sounding digital desk on the market," he says. "I love the SSL, too, but there's magic inside the Rivage series." Although not generally a fan of plug-ins, he nevertheless has several on the PM7. "The two that I use most are the [Rupert Neve Portico] 5045 and Dynamic EQ4. When in-the-round, Carrie is surrounded by scream-

ing fans, and more of the audience is closer to the stage; the 5045, when adjusted correctly, helps with the crowd noise. The Dynamic EQ4 is extremely versatile; it's a great de-esser and can be used as an expander as well."

Holder also makes use of several pieces of outboard gear. "Carrie's vocal chain is my favorite—API's The Channel Strip, Empirical Lab's Lil FrEQ, and the Tube-Tech CL 1B opto compressor. The API has a good comp that gets the peaks. I use its EQ for broad shelf-style shaping. The Lil' FrEQ is used for surgical EQ, plus it has a nice de-esser. The Tube-Tech CL 1B [opto-compressor] does the real magic—rounding out her vocal with no pumping artifacts; what a fantastic piece it is." In addition, he uses two bass guitar inputs—DI and SansAmp. "Each gets API's The Channel Strip, creating an incredible bass sound," he adds. For the stereo bus, "I use a Crane Song HEDD-192 [signal processor], for a fat tube sound, and an API 2500 Bus Compressor, which glues it all together and gives some added punch."

One of Holder's biggest challenges has to do with his mix position. "Typically, in a traditional end-stage configuration, the front of house is located in the center of the room, on the arena floor, about 100' – 120' from the stage," he says. "That doesn't exist in our 360 config, so the next logical place would be in the ADA sections on the mezzanine level. But there are so many venue-dependent variables to contend with: The worst is if the mix-position floor is made of a hollow deck, which acts as a passive radiator, creating a massive false low end that makes it impossible to get a true reference of what's happening within the room. Also, there is often a balcony directly over your head and there can be a glass wall behind you, creating problems with reflections and overtones. I use packing blankets to help with those issues. Plus, you never get a mix position in the center of two arrays."

So where is the front of house? "Seventy-five percent of my shows are mixed from the dock area just inside a vom opening, so I can get a sense of the low end and power of the system," he says. "The drapes are closed, and I have a video monitor to see what's happening onstage." How does he make this work? "I have two [Clair Global] CP-6s used as near fields with a CP118 sub. [Clair is the show's audio provider.] I mix the band on this near-field system in rehearsals; they are an excellent reference for me and the way they translate to the main system is absolutely amazing."

In terms of microphones, he notes, "For Carrie's vocal, I'm using the DPA d:facto 4018VL capsule on the Shure Axient Digital transmitter. It has a beautiful flat response that duplicates her voice perfectly—from breathy nuances to powerful and long high notes, it sounds amazing. Carrie has a unique, almost rapper-style mic technique where she grips the mic by the head. This changes the sonic character of most mics, but the capsule is mounted high within



Holder's loudspeaker rig includes ninety-six Clair CO-12 mains, twenty four CXP-6 fills, eighteen CP-218 flown subs, eight CO-10s for the pit, and six CP-118 ground subs.

the windscreen and has little negative effect as long as you keep your hand below the halfway mark. Also, when Carrie belts out long notes, she pulls the mic away at almost an arm's length and the proximity effect does not change; it's an excellent microphone." Throughout the show, Underwood uses several custom-blinged versions of her vocal mic; for a consistent sound, all eight use the same DPA 4018VL capsule. "The song 'Drinking Alone' required a unique old-school look. Matt Stager, of Stager Microphones, custom-mounted a DPA capsule in his SR-2N ribbon enclosure, which is also illuminated internally."

In addition, Holder says, "I have a DPA 2011C on the kick drum, a DPA 4029 on the snare top, DPA 2011Cs on the snare bottom and Snare Two, and DPA 4029s on the two toms. Each cymbal gets a Beyerdynamic MC 930, as well as the hi-hat; we're also using a pair of Stager SR-2N ribbon mics in a stereo configuration for overheads. Monitor engineer Travis White utilizes the Stager mics as a major part of the drummer's monitor mix and I love the soft sound of the ribbons. The tight pattern of the 930s are perfect for the hi-hat and the cymbals sound pure. The drum kit sounds amazing."

The tour features a Clair Cohesion CO-12 PA. "The Cohesion system is so efficient," Holder says. "It requires fewer amplifiers, less cable, less truck space, weighs less, and sounds amazing." His rig includes ninety-six CO-12 mains, twenty-four CP-6 fills, eighteen CP-218 flown subs, eight CO-10s for the pit, and six CP-118 ground subs.

"Unfiltered, the six main CO-12 arrays will produce fre-

quencies below 40Hz," he adds. "In the center of two full-range arrays you will have a power alley; this is accompanied by two nulls on each side. With six arrays in a 360° configuration you will have six power alleys and 12 nulls; that's not acceptable. We want smooth, even coverage throughout the entire arena. To overcome this, we use Clair's proprietary LF60 filters within the Lake-controlled Lab.gruppen digital amplifiers, which Clair helped design, creating a four-way system that utilizes two CP218 end-fire sub arrays flown at the center of both sides of the eye and two cardioid sub arrays at each end or corner of the eye. This creates even low-end coverage of the entire room and it's a defined, punchy low-end, not boomy or mushy."

Key to the equation is Holder's system engineer. "I'm fortunate to have the talented Dave Shatto," Holder says. "We have a great working relationship. I trust Dave's musical ear and working knowledge of the system. He knows exactly what I'm looking for and how to manipulate the Cohesion system to make that happen."

"Nothing about this show is normal," Holder says. "From the unique and massive 360 stage to the 160-plus rigging points to the 20 trucks that move it all, it is one of a kind. None of it would happen without our amazing crew. These men and women are all true professionals and they deserve respect, so I'm giving them all a big shout-out: Thanks for your amazing work."

Carrie Underwood's 55-plus city *Cry Pretty Tour 360* continues in the US through the end of October. 📶