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## 40 Days in the Dirt

June 26, 2007

**There's as many headliners as cowboys at the Houston Livestock Show.**

*Well it's bulls and blood  
It's dust and mud  
It's the roar of a Sunday crowd  
It's the white in his knuckles  
The gold in the buckle  
He'll win the next go 'round  
— Garth Brooks, "Rodeo"*



Almost everyone has a picture in their head of what a rodeo looks like. For most, an image of a bull-rider probably comes to mind. But be they death-defying clowns or hairpin chuck-wagon turns, your image of rodeo is about to change.

### Rodeo: Texas-Sized

The Houston Livestock Show and Rodeo is the world's largest rodeo. With an annual attendance that well exceeds one million spectators, the event takes place over 20 days (and 20 nights) every year starting in March.

Reliant Stadium is home to HLSR and Houston's NFL Franchise, the Texans. The stadium is the only facility in the world that has been specifically designed to offer premier facilities for both a major-league sports team as well as an annual rodeo event, and it sits on a footprint of nearly two million square feet.

Each day includes a full roster of rodeo events, beginning in the early evening, where competitors vie for their piece of a \$1.275 million purse. But after the last calf has been roped the crowd still isn't at capacity, and only then do you begin to see the indicators of what is still to come.

As the sporting events come to a halt, fans continue to pour in and take their seats for the conclusion of the night's entertainment. A close eye on various parts of the Texas-sized room reveals an army of people and equipment taking their places quickly and (for the most part) calmly.

The first people to hit the dirt are a team of shovel-wielding cowboys at a dead run. Their goal: to quickly remove the eight inches of packed dirt and clay concealing a trap door in the stadium's buried floor.

As feeder cable, audio snakes and data lines are pulled up from below, a 70-foot wide lighting rig begins to descend, complete with an octagon of high-resolution LED video screens, eventually coming to rest at its show elevation in the center of the stadium. A 40-foot wide stage propels itself slowly across the trampled rodeo soil to its in-the-round position at center-dirt.

As connections are made to the stage and the lighting rig above, the lighting systems begin to come online, with various fixtures turning quickly on and off, indicating a last-minute positioning and lamp check. Then suddenly, the banks of stadium lighting go out. As the stadium is bathed in darkness, three men can be found behind their lighting desks at the south end of the stadium, variously standing, sitting or bouncing in their dust-laden chairs.

As a brief multimedia presentation plays, fingers can be seen making last-minute adjustments to cue-lists and sending a reset command to the latest fixture that has succumbed to the ever-present grime. This team of designer/programmers will shortly be thrown into their own version of an eight-second bull ride. From the first note played on stage, they will punt their way through a nonstop hour of music, playing back cues they have never seen to songs they have never heard, all the while

making it look like a well-rehearsed touring show.

And that's just the first night.

### Design

Jim Brace, head of the lighting department at Houston-based LD Systems, is the crew chief for HLSR's lighting crew. Brace's touring background with Lynyrd Skynyrd, Foreigner, Peter Frampton and Stevie Ray Vaughan, gives him a seasoned and steady perspective on a show that can be brutally demanding on the easiest of days. As the crew chief and lighting designer, Brace is responsible for the evolution of the rig every year. Not reinventing so much as enhancing, the design of each year's system focuses on the implementation of new technologies in combination with tried-and-true techniques.

Says Brace, "This year's design process focused mainly on the addition of Vari\*Lite VL3000 Spots and High End Systems Studio Command 1200s as well as Coemar LED PARs for truss warmers. There's not a specific design criteria for each year's show as much as a want to keep up with the latest in technology while working within a budget."

The lighting rig is broken into three independent systems: an automated lighting system and a conventional system share space on the 70-foot diameter "mother-ship"; a perimeter system that consists of automated lighting mounted throughout the stadium; and the main lighting grid — a square center section and four trapezoidal "wings" — that consists entirely of 26-inch by 30-inch pre-rig truss.

The stage that is rolled in place each night includes a scenic backed turntable that constantly rotates throughout each concert. Since the stage (and the artist) is never in a fixed position, focuses are designed as symmetrical washes without any fixed specials. And while the rig is very complex, the underlying theory is not. Brace says there is a simple idea driving the shape and the placement of every piece of the system.

"Create a big look. It simply has to be big for such a big stadium."

### Load-In (Day One)

By the middle of February, the stadium's palletized grass has been removed to a dedicated outdoor lot, while truckloads of dirt have replaced green with brown for an annual motor-cross event. With the retractable roof locked in its closed position, load-in for rodeo is set to begin.

From Day One, Brace and his crew have about 10 days to get roughly 200 moving lights and another 200 conventional fixtures in place and working amidst a barrage of vendors and topsoil laden dump trucks.

As Brace assists in the installation of a combined total of 100+ audio, video and lighting points, the rest of the lighting crew make their way through miles of concourses and seats, mounting the moving-mirror fixtures to the concrete ledges of each seating level. These fixtures will form concentric rings of lighting that rise through the building.

Roughly 10 stories above the rodeo dirt, another two dozen High End Systems Cyberlights and an equal number of Syncrolite fixtures will be installed to wash the entire stadium in texture and color. The 7000-watt xenon fixtures are over four feet tall and weigh 250 pounds each. To ease the installation and maintenance of these fixtures, LD Systems custom-manufactured moveable steel support arms for each fixture. These assemblies are just a few of the many features in this stadium that exist solely for this annual event.

Rounding out the perimeter system are another dozen Syncrolites installed on the floor, with three at each corner of the competition dirt. As the crew races to complete the perimeter system, the truss grid for the stage lighting systems has taken shape and installation of the other two lighting systems can begin. To simplify installation and reduce cable requirements, all of the power distribution and dimming equipment is mounted on the truss structure along with the 300+ light fixtures. Along with the complexities involved with any system of this scale, a handful of the fixtures and equipment will arrive near the end of the load-in schedule, having just been used for two weeks at the San Antonio Stock Show & Rodeo, another client of LD Systems.

As load-in nears completion, a 40-foot-wide set of tiered scaffolding is set up at the south end of the stadium. The lighting department will eventually take up almost a quarter of this structure with an array of consoles, data distribution racks, motor control systems and at least one refrigerator.

### Programming (Day 10)

Programming for a show of this scale is a daunting effort and is one of the driving factors behind the division of the three lighting systems. As crew chief, Brace is responsible for the day-to-day oversight of the entire lighting crew and system. He also handles the operation of the entire conventional lighting system on a nightly basis.

LD Systems lead programmer John Dickson, who plays an active role in the design process of each year's system and fixture specification, leads the two-person team handling automated lighting programming. To his left sits Matt Mills, touring LD for 3 Doors Down, who handles operation of the perimeter lighting rig.

Dickson, whose career has included tours with many notable acts, including ZZ Top and Pat Green, made a major programming shift this year, spec'ing the company's brand new MA Lighting grandMA consoles to control both of the automated lighting rigs. With only four nights available for preprogramming before opening night, the speed and reliability of a programming environment are imperatives on which Dickson is always focused. With the growing channel counts of the rig, Dickson made a strong argument to the company's management during last fall's LDI tradeshow, convincing them to make a capital expenditure on the new consoles.

Says Dickson, "LD Systems was pioneering the use of Compulite's Animator desk back in the day, and we eventually purchased Whole Hog IIs due to client demand. With so many designers requesting the grandMA, we felt it was time to follow

suit and purchased them in November 2006. I specified the desk for rodeo due to the overwhelming feedback I have been given from colleagues regarding the flexibility of the programming layout."

Especially important, Dickson added, "Striping time-code is a breeze. Editing your time-code is as simple as dragging and dropping cues or button presses in an easy-to-read window of events."

With roughly four nights left before opening night, Dickson and Mills disappear from the ongoing daytime preparations, arriving at the stadium after dark each night and programming into the wee hours of the morning. Starting with focus palettes on the first night of programming, both of the programmers must work quickly, setting positions that will hopefully offer them enough variations to keep the shows fresh for 20 straight days. By the end of the first night, the pair have these down, as well as a time-coded multimedia show laid in. Two to three techs, assisting the programmers, will move about the pitch-black stadium throughout the night, working on uncooperative fixtures and attempting to minimize the effects of dirt on the operation and output of each fixture.

Night Two of programming includes the time-coded national anthem sequence, while the next night is dedicated to building punt pages and generic looks for each show. Night Four is their last chance to do touch-ups and prepare a little bit for the next night's show.

### The Show (Day 15)

For the next 20 days, the goal of the entire crew is to do things the same way every day. Sometime before lunch, the techs arrive to fire up the system, do basic fixture checks and fix any problem fixtures from the night before. Brace, Dickson and Mills arrive a little later and, after a stop at catering, make their way to FOH to meet with the LD who has arrived with tonight's artist. They go over the set list, taking notes on color palettes and important cues for each song.

Following the meeting, the programmers will only have two to three hours to program looks for a 60–90 minute concert, and they will never see the looks with the house lights out. Very similar to a large festival setup, guest LDs can take a couple of approaches to working with the programmers, the simplest of which are the most successful says Dickson.

Dickson says that People like Gayle Haas (Reba McEntire), Larry Bolster (Brooks & Dunn), Chris Stuba (ZZ Top), Pat Brennan (Beyonce), Carter Fulghum (Gretchen Wilson), Eddie Connell (Toby Keith), Mike Frogge (Alan Jackson) and Will Anglin (Pat Green) know how to pull off a great show at HLSR.

"When we see one of these guys walk up to FOH after lunch, we know it's going to be a good show. They give us some basic input on each song. They go over any crucial moments in the show. Then they leave the rest up to us because we know what the rig can and can't do."

By 5 o'clock, the programmers have set all of their cues and retreated to the "bus" — the Texans locker room retrofitted with road cases stacked on their sides to emulate the bunks in a tour bus — for a couple of hours of naptime prior to the show. One of the programmers will return briefly to FOH around seven to fire off the national anthem cue lists on the consoles. Shortly before 8:30 p.m., Brace, Dickson and Mills take their places, hoping the cures programmed for tonight's show look decent once the house lights are doused.

At 9 o'clock, the night's show kicks off. Each night brings a new performer to the stage and with it a new set of looks. By 10:30 p.m., the show is over. The programmers cover their consoles for the night and walk across the football field of dirt, exiting the building to return a mere 12 hours later.

### Clean-up (Day 35)

Over the course of 20 days, Brace, Dickson and Mills will light shows for performers of all types. Country, rock, hip-hop and Tejano music will bring more than one million spectators through the stadium. Rivaling the scale of all but the largest touring productions, the rodeo is, by all measures, one of the most challenging and impressive shows around.

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