

START YOUR ENGINES



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Formula 1's inaugural Las Vegas race kicks off
with typical Sin City panache

By: David Barbour

Photo: Courtesy of DX7 Design



AS readers of this magazine well know, the arrival of Formula 1 racing in Las Vegas is one of the biggest things to hit the city in years. (Among other things, it forced the LDI Show into the month of December.) Although Formula 1 races have been staged in cities ranging from Adelaide to Zeltweg (Austria), the event, held the week before Thanksgiving, marked its Vegas debut. Of course, what happens in Vegas must be bigger

than anything seen anywhere else, hence the spectacular opening ceremony, performed for a live audience and seen on YouTube, featuring a galaxy of pop stars spread across eight outdoor stages plus a panoply of lighting, video, and effects gear, including an army of drones, from the company Sky Elements Drone Shows, that formed a replica of the iconic Welcome to Las Vegas sign.

The something-for-everyone talent lineup featured

Andra Day, Bishop Briggs, J Balvin, Journey, Keith Urban, Steve Aoki, Thirty Seconds to Mars, will.i.am, Tiësto, Kylie Minogue, and John Legend, plus appearances by Blue Man Group and Cirque du Soleil. With the performances staged across an expanse of roughly 1,000', the extensive use of LED panels allowed each star to be seen by the full audience. For a grand finale, the racing teams took to the stages for a highly theatrical introduction.

That the event was without precedent was part of the creative challenge. Indeed, says production designer Ray Winkler, of the entertainment architects' firm Stufish, when he came onboard the project, it was a less than fully formed idea. "I met the team at Formula 1 headquarters in Las Vegas in February of last year. We sat around a large table, with lots of people on Zoom, talking about this unique event. We aspired to do a sort of Super Bowl half-time-level show, celebrating the sport. We were all very excited, but it wasn't clear how one would do it. In subsequent conversations, it was obvious that you couldn't do it because of health and safety. We settled into the notion that if you took that pressure away, this could be a fantastic event."

The ceremony was scheduled for November 15, three days before the race. The creative team included executive producer/show creator Brian Burke and lighting designer Tom Sutherland, all of whom are well-versed in live one-off events. Winkler says the methodology was to "throw the cards into the air, see how they land, and then pick up the

ones we liked and then throw them up in the air again. Eventually, it shook itself out into something that fit the format of a one-hour show staged on a racetrack that was about four football pitches long but only 40' wide, with a grandstand holding 30,000 people."

Still, he notes, "It was difficult to conceive a show that didn't end up looking like what it did because we had to stretch it out, like a string of pearls, over a very long distance. Hence the multiple stages. There was no way to focus everything in the center; with the extremities of the seating, [many audience members] would have been 200 yards away." Staging the ceremony elsewhere in the city wasn't an option, he notes. "There's a symbolic significance to being at the start/finish line, taking advantage of the existing grandstands and VIP suites in the Formula 1 paddock. Also, track access was very good; there were garages right behind us, giving us power and data connections that we wouldn't have had anywhere else."

The staging solution, showcasing each star and dealing with the extremely wide footprint, proved to be seven cube-shaped mobile stage units (MSUs), their sides and tops covered with LED panels, which could be driven on- and off-site as needed. "Each stage had six wheels and a driver operating a joystick," Winkler says. "Each one operated pretty much like a tank but was incredibly agile. They were really beautiful." The units were stored nearby. "We had a big boneyard where we parked and maintained everything. About an hour before the broadcast, we drove them onto





Opposite: MDG theONE atmospheric generators and Look Solutions Viper deLuxe fog machines provided the necessary atmospheric effects. Above: The event concluded with the introduction of the participating racers.

the track, hooked them up, and then the show started.”

Each MSU was covered in INFiLED Titan X 8mm LED panels. “They’re 75% transparent, which allowed us to put lighting through; it was very dramatic,” says Randy Hutson, CEO of PRG’s music group. [PRG supplied scenery, lighting, video, and sound for the project.] The top floor of each MSU, seen in overhead shots taken from helicopters featured YES TECH 5mm video panels. Hutson notes that the MSUs, which were connected via a proprietary optical fiber network from PRG, each contained a lift controlled by PRG’s StageCommand automation system. “We also had a stage on top of the paddock where Tiësto and John Legend performed,” he adds. “That had to also be on the fiber ring; getting it connected was another area of difficulty.”

The choice of video gear, Winkler says, “began in conversation with the client, identifying the priorities and understanding the scope of what they want to do. Then concepts very quickly got turned into dimensionally correct 3D models, which led to specifying materials. LED screens were an important part of the specification because you have several considerations, such as weight and power consumption, especially when dealing with mobile units.

Another consideration was resolution.”

Echoing Hutson, Winkler says, “And then there were Tom’s lighting requirements. We were completely aligned, early on, that there should be a level of transparency [in the video panels], so he could blow light through the back of each unit; this worked very nicely on some of the acts. That specification happened after a video shoot-out, allowing the client and producers to visit a warehouse and look at two or three products side by side. Of course, the budget was a deciding factor but, in the end, I think we balanced it very well. The panels were very bright, they looked very crisp on camera, and they gave Tom the ability to light from the inside out.”

Video content for the performances was created by Montréal-based Silent Partners Studio, who, in addition to input from Brian Burke, “interacted with each of the acts” says Sutherland. “There were also late additions: Kylie Minogue was added only the week before. It was a scramble to put that all together.” Imagery was delivered via five disguise vx 4 media servers. One of the most startling effects was seen during will.i.am’s number, when a group of dancers wielded flags on which video imagery appeared

SPECTACLE



Kylie Minogue (left) and will.i.am (center) appearing on their respective stages. Each mobile stage unit was covered in INFILED Titan X 8mm LED panels.



to be projected. Sutherland says the flags were video products developed by the Chinese company Mplusplus. “Basically,” he says, “they have their own servers that send content to each flag, individually, all triggered by time code. It’s a really cool technology.”

The event kicked off with Jared Leto’s group Thirty Seconds to Mars, then jumped from stage to stage in no obvious order. “That,” Winkler says, “was the genius of Brian Burke and [executive producer] Kelley Parker, putting together a show flow that worked for the audience as well as the camera.” Each act appeared on top of its stage unit via the built-in lift. “Some units had one lift and others had two independent lifts,” he notes, adding that careful preparation was needed “so that the performance could happen within the sanctity of the camera view, not distracted by the adjacent stage being set up. Right there, it was a massive jigsaw puzzle. In the end, the beauty of the design was that it was very uniform and very simple.”

Winkler cites scenic fabricator PRG’s “prowess in delivering things that are quite complex if very simple in terms of a concept. The trick was designing the MSUs so they had everything they needed and [for reasons of weight] not too much more, allowing each act to be well-supported. It was all rental gear, with very few custom pieces apart from the chassis and handrails.” In terms of power, he adds, “Everything was battery-generated, which was, for me, a very important message. We didn’t want to turn up with a

smelly diesel vehicle; the production was very clean in terms of its environmental impact. The battery packs supplied all the lighting.”

Lighting

Sutherland’s process was similar to Winkler’s. “A phone call came in, about 18 months out,” the lighting designer says. “Nobody quite knew what it was at that stage. About ten months out, we got the green light, and still nobody knew exactly what the show would be. We knew it would be in front of the paddock building and it would stretch approximately 1,000’, the length of three football fields; we also knew we’d have people watching it in the grandstands and, of course, people watching it at home. So, we needed to design a show that would stretch across that entire distance. It also had to strike in minimal time because they had to do track testing immediately after.”

The first challenge involved the ultra-long footprint, Sutherland notes: “When we were brought onboard and went to get a feel for the place, I said, ‘Where are we going to hang lights? You need a backdrop of some sort for the ceremony, and there’s no place to hang it’.” We had to work with the architects and the construction team to re-engineer the building; we took the paneling off, drilled holes, and figured out how to attach lighting pipes. That actually happened after the buildings were done. Alen Sisul [a gaffer] worked closely with [associate lighting



Adding extra pizzazz were, from ER Productions, 32 AT-30 and 26 Beam ER lasers. "The size of the laser setup meant some long fiber runs, where our new 18-way safety distros, with integrated fiber switches and 300m redundant fiber links, allowed us to quickly deploy the lasers over the large venue setup," Wright says.

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In terms of preparation, Sutherland says, "We had about a month of tech, rehearsal, and programming in Vegas. We did two weeks at PRG where we figured out the timings and other details. Then they drove the MSUs across Vegas to the paddock site, where we had only two days of rehearsal on-site to pull it all together. There were a couple of late nights."

The creative challenge involved creating a distinctive event that also supported a range of performing artists, the designer says. "We wanted a design that could stand up to the backdrop of Vegas, which probably has more lights than any other city. We also wanted to tell a story not only of Vegas but of Formula 1, which was taking over the entire city."

As you might imagine, the event required massive amounts of gear, including 166 Claypaky Mythos 2 spot units, 28 Vari-Lite VL2600 Profiles and 114 VL3600 Profile IPs, 130 GLP impression x4 units, and 54 ACME Lighting Geist Beams; strobing effects were provided by 198 GLP JDC1s and 70 TMB Solaris Flare Q+s. Additional LED gear included two Astera Titan Tubes and four ETC Source Four LEDs, with 15 PRG GroundControl Best Boy HPs picking out the talent. Providing all-important atmospheric effects were 20 MDG theONE atmospheric generators, 31 Look Solutions Viper deLuxe fog machines, and 28 Martin AF1 fans. Lighting was controlled by an MA Lighting grandMA

3 console running 2 software.

Each unit had a different role to play. The Mythos 2s were hung on the paddock building, where they provided big-beam effects. The VL3600s, placed along the race-track lighting truss and the top level of the paddock building, functioned as key lights. "That was a tricky one for us," Sutherland says, "because the racetrack lighting truss is a specific type controlled by the FIA [Fédération Internationale de l'Automobile], the governing body for racing. But that was the only position where we could hang key lights. We couldn't go in at traditional angles; we had to figure out how we could light from that truss position." In contrast, the VL2600s were hidden inside scenic units and trucks to provide spot effects. The GLP units were placed along the length of the track, which meant they had to be set and struck nightly in the run-up to the show. The ACME fixtures were used in the climax when Legend and DJ Tiësto appeared on the roof of the paddock building. "We created a kind of iconic beam to match the last song," Sutherland says.

Adding extra pizzazz were, from ER Productions, 32 AT-30 and 26 Beam ER lasers. "The AT30s spanned the whole length of the grandstand, over 1,000' long, with lasers on level one and level four," says Lawrence Wright, general manager of ER Productions. "Locations were limited due to rigging but the final look and design from Tom Sutherland with the lighting looked incredible! The Beam-

ER fixtures were mounted above the rooftop stage in a line providing a stunning backdrop to those performances.”

He adds, “The lasers were used heavily with Steve Aoki, J Balvin, and Kylie Minogue; the acts on the roof position utilized all the lasers, including the Beam-ERs, with performances from John Legend and Tiësto. For the closing ceremony, [the DJ] Martin Garrix’s team took control to add to their performance.”

The lasers “were controlled from ER Productions’ new front-of-house control racks and [High End Systems] Road Hog 4 for Beam-ERs and atmospherics. [ER also supplied the previously mentioned Viper deLuxe units.] All aspects were pre-programmed and time-coded.” The ER team also had to deal with the extreme length of the footprint: “The size of the laser setup meant some long fiber runs, where our new 18-way safety distros, with integrated fiber switches and 300m redundant fiber links, allowed us to quickly deploy the lasers over the large venue setup.”

Also featured were PixMob LED wristbands, a popular feature for audiences at events of this nature. “For the opening ceremony, the show design team had the idea of lighting up zones of fans in the grandstands,” says Hila Aviran, PixMob director of tours and entertainment. “To achieve that, we pre-programmed each section into a zone and triggered them one by one to create racing stripes, chase effects, and other multi-layered visuals to the show. We collaborated for this with DX7 Design and eighteen-twentysix who are our longtime creative and production collaborators and were amazing to work with for both technical and creative integration.”

Given the production’s unusual layout, where was the front of house? “That was the issue,” Sutherland says. “When we were programming, we were in a temporary position in the center of the grandstand. For the show, we had to move down to underneath the grandstand.”

Because of the scale and location of the event, the show had a cruelly short amount of time to fall into place. “There were two nights,” Sutherland says, “We did one night of tech rehearsals, just blocking things with stand-ins. The second night, which was Tuesday, we had the artists and then we had one rehearsal in daylight just before the show on Wednesday. The teamwork was really great in pulling everything together in a really short amount of time.”

Sound

“It’s kind of like a Super Bowl on steroids,” says Hutson, who became the de facto sound designer on the project. It’s an apt comment because, like the Super Bowl, the Formula 1 event had to unfold on the field of play; the challenge was to make a spectacular impression without damaging the footprint. “Everything had to be carefully calculated and choreographed. The production parameters and logistics—getting around the track and getting set up—were difficult and time-consuming.” For example, he



Above: The interplay of lighting and video. Opposite: The Las Vegas sign, courtesy of Sky Elements Drone Shows.

notes, “The audio design was unique because, in a situation like that, which is like a football or soccer field, there was no way to have an umbilical [connection] thousands of feet long.” At the same time, he adds, “The wireless RF transmission environment was very, very difficult. We wanted to create a sound system to be used for the race, the pre-race, the closing, and the podium.” The performers used Shure mics.

Hutson’s big challenge involved delivering sound across a width of 1,000’ while also reaching VIP suites 60’ above ground. Helpfully, his team was allowed to hang loudspeakers off the race-course trusses. Formula 1 officials feared that loudspeakers would block sightlines, but as Hutson notes, “You’ve got cars going by at 200 miles per hour; I pushed hard to get us to hang boxes there.”

The loudspeaker rig consisted entirely of L-Acoustics products, including 114 KARA II long-throw line-array elements, 33 KS28 flyable subwoofers, sixteen X12 passive two-way coaxial units, and 69 LA12X amplifiers. “We were very, very happy with the result,” Hutson says. “The client was ecstatic about the sound.” Control was handled by one DiGiCo SD10 and two Yamaha PM5 consoles. “We ended up using every input and output on all three,” he adds.

“I had a great team of 12 engineers,” Hutson says. We also handled communications tying into the broadcast truck and the live podium feed in the paddock building.” Communications were handled by Riedel’s Bolero, a 2.4GHz wireless intercom system that can handle up to 250 belt packs and 100 antennas in a single deployment. Among other features, the company says it can be flexibly used as a wireless belt pack, a wireless key panel, or a walkie-talkie. “It was the first Bolero in the country,” Hutson says. “Riedel sent a technician to provide support; without his help, it would not have been as successful.”

Again, it was a very difficult environment because there were so many wireless frequencies in the air," especially since each racer was connected via radio to receive updates about the state of play. "I think there were almost 1,800 panels around the track for the cars," he notes.

In another wrinkle, Hutson says, "We mixed the sound from underneath the grandstands, using near-field monitors. I spent most of my time in the grandstands, relaying back to the engineers. Caram Costanzo [A1/front-of-house mixer] really did a great job. The entire team was phenomenal." Other key audio personnel included Stan Dickerson (A1 mix—production); Matt Sullivan (A1 monitor engineer, music); Pete Erskine (comms engineer); Shawn Loftus (project manager, site audio); John Kendrick (comms assistant); Radouan Assadi (comms assistant, Riedel); Whitney Day (RF coordinator); Frank Clayton (RF A2); Andre Roy (audio systems engineer); Dylan Ely (playback tech); Steve Thom (front-of-house tech/PA tech); Devon Nutty and Taylor Pescatore (entertainment A2s).

Indeed, the project was a massive act of coordination. "We had three different sound companies involved," Hutson says. "Clair Brothers was working in the suites, and we had Carlson Audio working on the track audio; we

had to tie all those together. When F1 came in for the race, it was a completely different production company."

According to a statement from Clair, its Cohesion loudspeakers were chosen for three areas; the VIP/race suites, the fan zones (both of which were in use during the opening ceremony) and the festival stage.

Other key personnel included Mark Stepp (broadcast director); Jasmine Lesane and Hunter Selby (associate lighting designers); Harry Forster and Nate Files (lighting directors); Chris Roseli (gaffer); Travis Snyder (PRG lighting account manager); Bryan Besterfeldt (fiber network designer and manager); Loren Barton (screens producer); Joe Bay (screens programmer); Stefan Zubovic (PixMob programmer); Michael Anderson (technical producer); Nappytabs (co-executive producer); Kathleen Smyth (supervising producer); Louanne Madorma (producer); Kris Pooley (music director); eightentwentsix (producer/event production services); Pyrotecnico (fireworks).

The opening ceremony introduced Formula 1 to Las Vegas with plenty of panache. With the racing organization having committed to several years in the city, the only question is: What does next year's opener look like? 📡

