

# sound reinforcement

## A Concert from Far, Far Away

by Mel Lambert

LOS ANGELES, CA—Currently completing its multi-city swing through North America, *Star Wars in Concert* features an 85-piece symphony orchestra and 60-member choir re-creating composer John Williams' majestic scores from the six high-action motion pictures created by George Lucas.

"Our brief was to make it sound more real than real," confides sound designer Fred Vogler from L.A.-based Sonitus, a firm he founded two years ago with Tim Boot. "The organizers wanted us to make it sound like a high-energy rock concert with symphonic music—"Kick it in the pants" they told us." Vogler also serves as sound designer/consultant for the Los Angeles Philharmonic at Walt Disney Concert Hall and the Hollywood Bowl.

The Another Planet Touring/Lucasfilm project, which started last April at the U.K.'s O2 Arena in London, is a two-hour musical program narrated by Anthony Daniels (the actor who played C3PO), accompanied a series of sequences from the *Star Wars* movies that has been edited specifically for the production by Lucasfilm. The orchestra and choir are conducted by Dirk Brosse. For the North American dates, all sound reinforcement has been handled by Solotech (Montreal).

"We prepared a special 4-channel 'sound art' for the audience walk-in," Vogler said. "We programmed a sequence in Ableton Live using location recordings and effects supplied by Lucasfilm to establish a 'walla' sound with slowed-down trains, elevators, mechanical equipment and so on, to build excitement in anticipation of the live concert."

The pre-programmed material is routed through a 128-input/30-fader Studer Vista 5 front-of-house console to the left and right Meyer Sound line arrays, plus the two surround clusters. Live-mixing duties are handled by Steve Colby, while Sylvain Lemay from Solotech oversees the Galileo Series loudspeaker management system that control the PA.

Vogler considers that stage miking for the *Star Wars in Concert* tour is more like a classical scoring date than a conventional

symphony concert: "We needed a powerful, 'in-your-face' mix that would fill the venues with these luscious scores from John Williams. We considered that for many of the audience, this might be their first exposure to live classical music, so it had to sound dynamic and enveloping. I needed to close-mic the orchestra and choir to ensure that intimacy."

Onstage microphones include an array of DPA 4061 omnis on strings, Schoeps CMC6.4s on flutes, Meyer M160s on oboes, clarinets and basses, plus DPA 4099s on saxophones, trumpets, trombones and French horns. "I also specified a central pickup array that I use on scoring dates and classical sessions at the Hollywood Bowl," Vogler notes. "It comprises a set of four identical DPA4023 wide cardioids spaced six feet apart at the front and four feet at the rear, and mounted 9.5 feet above the stage directly over the conductor's platform. I also use a pair of widely spaced mics on either side of the orchestra: Sennheiser MKH800 twin-capsule models



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that I often use at the Bowl. The 800's pattern can be continuously changed between a tight cardioid through omni to figure-of-eight—they are a real life saver." The choir is covered by an array of eight Schoeps CMC6.21 wide cardioids, plus four extras. "These are my 'Oh crap!' mics," the designer concedes. "They saved us a couple of times."

Designing the PA was an integral aspect

of the production. According to Dean Roney, Solotech's VP of business development, "For most venues, we supply a basic system that comprised 18 Milo cabinets per side—17 Milo-90 curvilinear array loudspeakers, plus a single Milo-120 unit at the bottom of the hang—with 14 Milo-90s in the center. The left and right hangs are augmented by nine rear-mounted 700-HP

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## Daisy Festival Digs d&b

LOS ANGELES, CA—"It's bloody huge basically—it's the Los Angeles Coliseum, the Olympic stadium from 1932, and it seats 100,000!" Somehow you can tell production manager Ian Gotts had quite a time at this year's Electric Daisy Carnival (EDC). "The first year we did it there, we only had to cover part of the field; last year we added just the lower tiers, but this year, my brief was to attempt to have good club levels and quality of sound throughout even the furthest upper third tier, where the VIP Cabanas were."

Press reports cite EDC '09, promoted by Insomniac Events, as the biggest dance music festival ever in North America. That reputation said Gotts, meant he had to deliver the required quality of sound that Insomniac demanded. "That is not an easy task considering the huge distance

and differing heights of audience locations. I elected to use 3G Live (3GL), a company I'd used many times for such events. I'd always been really impressed with their main engineer, Julio Valdez. When they told me they had invested in d&b gear, I was sold instantly."

Gotts had used the d&b audiotechnik brand years earlier in his home country of England when working for DJs like Paul Oakenfold and Fatboy Slim. "I loved the sound instantly, especially the huge bottom end, and I've always used it when available over here. In Julio, 3GL has one of the finest soundmen I've ever worked with; he really knows his stuff and always delivers impeccable sound for our events. He plotted out a d&b J-Series rig on ArrayCalc, showed it to me, and said it could be done. I must admit, I was slight-

ly skeptical at first, but do it he did, and it was phenomenal."

Curtis Zavodny was systems engineer for 3GL; he explained the fundamentals of the rig, "We rigged 24 J cabinets each side of the stage, with J8s at the top, and 12 J12s below, in single, long, line arrays. We deployed to cover everywhere; the reason it worked with so many of the wider J12 cabinets was because of the length of the array, and the fact it was virtually flat. Big coupling, longer throws; cabinet intervals were between 0 and 1 degree, almost no curve; and it works fine in this configuration. The throw distance to the very back was 650 feet. We tested the PA the day before opening, and the system performed flawlessly right the way back; it was in your face."

Valdez's design did include delays at the very back of the Coliseum. "There were two arrays of Q1 at the back, 10 cabinets in each line with six B2-SUBs on

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**d&b audiotechnik loudspeakers supplied by 3G Live were used for this year's Electric Daisy Carnival event at the Los Angeles Coliseum.**

## Electric Daisy

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the ground. There were carnival rides back there, and a big VIP section. Mainly for the VIPs, the Qs and B2s just gave a lift to the vocals and a low-end boost."

An even more muscular approach to the low end resided at the stage. "The original intention was to fly two hangs of nine J-SUBs each side of stage," continued Zavodny, "but there wasn't the

rigging capacity, so we hung just one line per side. We ground-stacked the rest along with J-Infra and B2-SUB cabinets. The B2s, 32 of them, were not stacked in cardioid array and although the other boxes are inherently cardioid, it was decided the DJs wanted that big, low-end lobe-ing back on stage. I saw a chair dance right the way across the stage because of it at one point. The DJs really wanted it to wash over them."

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## Star Wars Concert

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subwoofers. For side coverage, we have two hangs of 16 Mica line-array cabinets, with six M'elodie boxes along the stage apron for front fills." Low-frequency coverage is augmented by two stage-mounted M3-D directional subwoofers per side and three CQ-2 cabinets. Delays comprise

"There are four UPI-1P cabinets on each side of the orchestra, seven UPA-1Ps behind, 10 M1-Ds above in the trussing and eight USW-1P subwoofers on the stage," itemizes John McMahon, Meyer Sound's executive director of digital products. "We programmed a Lemur [touch-screen PC controller] with some custom Constellation pages that provided global and group-level controls for the monitor engineer. In general, these don't need to be adjusted very much since the change in distances between the orchestra and loudspeakers remains within a fairly nar-

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*Sound designer Fred Vogler*

three UPQ-1P cabinets per side and three UPQ-2Ps per side for rear surrounds. Working closely with Roney on the tour is Solotech's David Brazeau, who serves as chief audio project manager.

Onstage foldback poses its own unique challenges, Vogler offers. "Orchestral players are not used to playing with headphones, IEMs or wedges," aside

row range. And because of close-miking and directional area mics, the system has remarkable gain before feedback and operates with more than 10 dB of stability margin." The core engine comprises a single MS-Constellation and three MS-VRAS processors.

"As far as I know," Vogler says, "this was the first time that Constellation has



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**Tackling sound like they were bulls-eyeing womp rats are (l-r): FOH mixer Steve Colby; Sonitus co-partners and sound designers Tim Boot and Fred Vogler; and Sylvain Lemay of Solotech.**

from times when they might work with click tracks. "So we needed another solution. While visiting Meyer Sound's HQ during early discussions about the PA system, we heard a demonstration of the Constellation [Electroacoustic Architecture] system. We were very impressed by what it could offer in live performance." Normally configured to provide variable acoustics in a fixed installation, Constellation uses an array of microphones to pick up sound within the space and a series of loudspeakers to re-create a computer-generated environment with user-programmable early reflections and reverberation time.

been used on a live tour. Since the microphone positions do not vary from date to date, and the Constellation loudspeaker positions are fixed by the stage design, we have a predictable and a controllable 'virtual acoustic shell' for the musicians and choir. Reaction has been extremely positive."

**Star Wars in Concert**  
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