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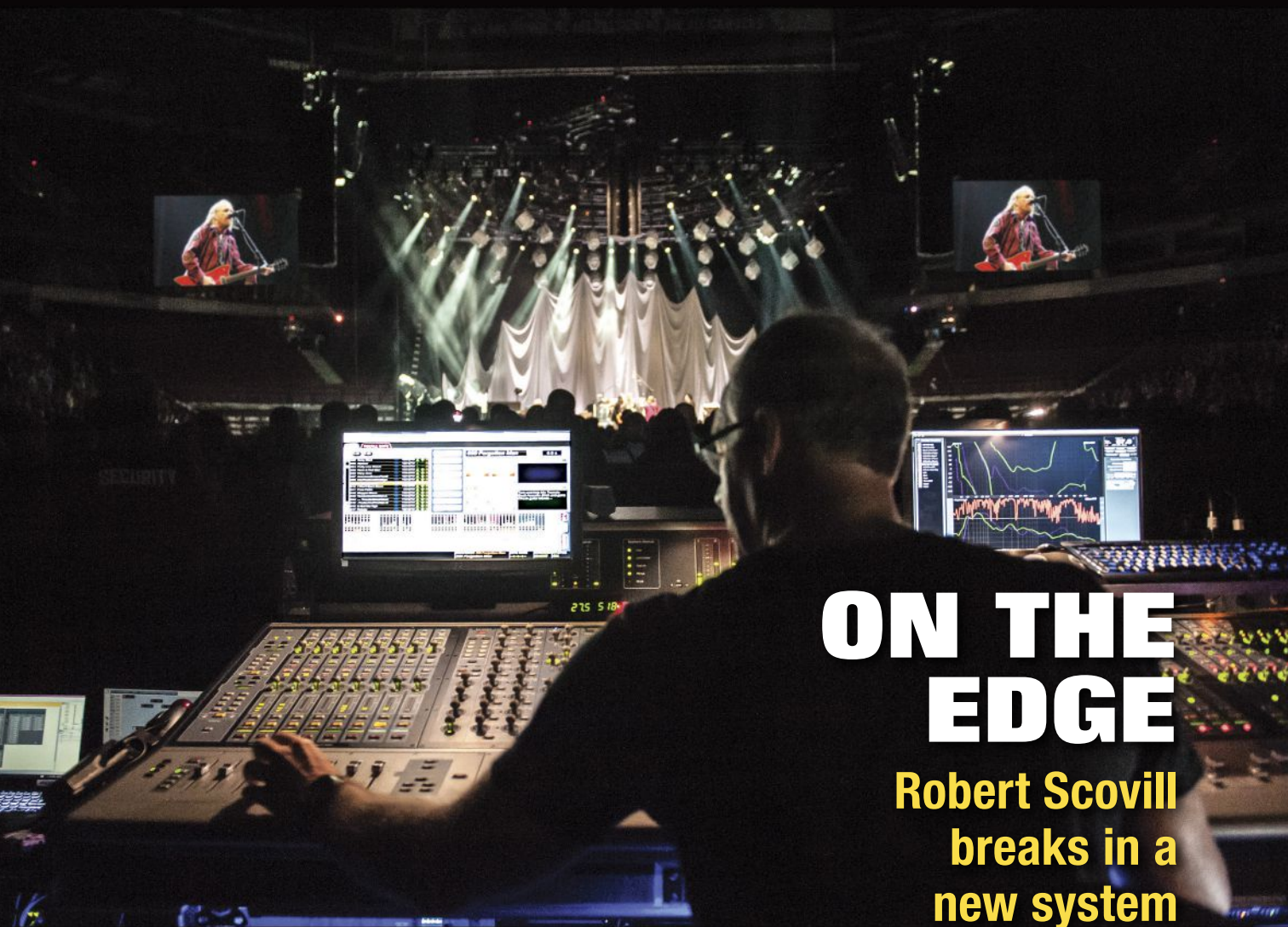
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# SOUND

I N T E R N A T I O N A L



## ON THE EDGE

**Robert Scovill  
breaks in a  
new system**

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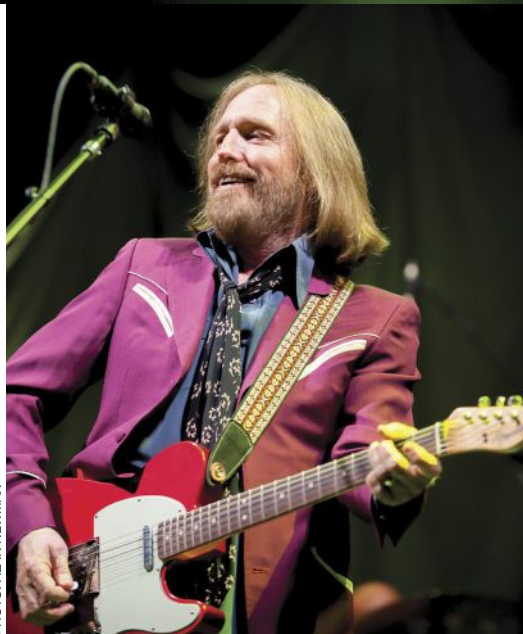
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# On The EDGE

»»»» New concert sound directions for  
»»»» Tom Petty and The Heartbreakers.

by Keith Clark

PHOTO: ALAN NEWMAN



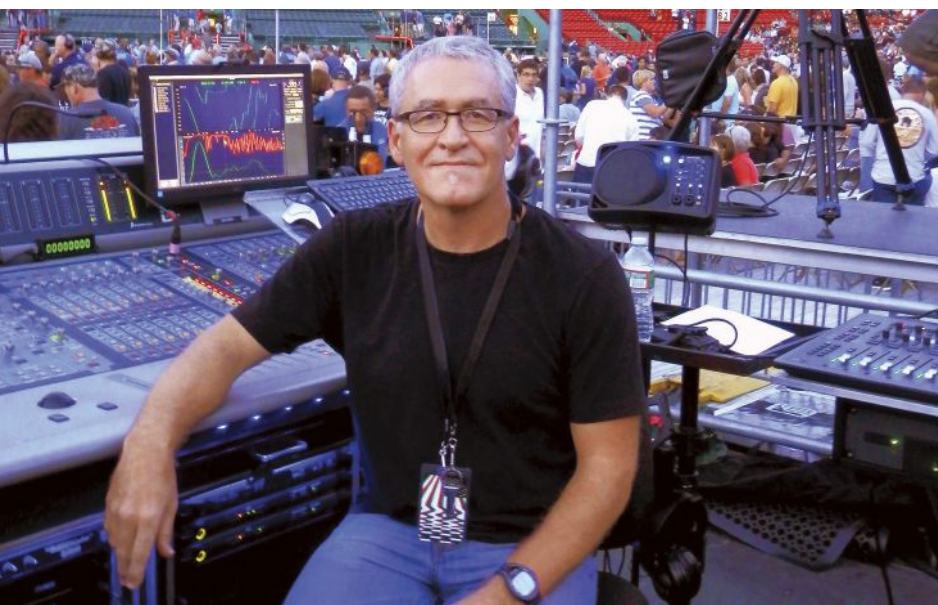
**T**here's leading edge, and there's bleeding edge. The difficulty is striving for the first while avoiding the second, often a very fine line, and one that was straddled with great success by the sound team in deploying a new main system for Tom Petty and The Heartbreakers on the Hypnotic Eye concert tour of North America, which wraps up in mid-October with dates at the Forum in Los Angeles.

The tour visited a variety of venues, including sheds, arenas, the Gorge and Red Rocks amphitheaters and even venerable Fenway Park in Boston, and as usual with TP & HB, enjoyed great success in packing the house in whatever form it happened to be. The music is largely straight-up classic rock 'n' roll, sometimes with interesting deviations, always served up by a cohesive, talented group in garage band style. Petty's

unique vocal timbre fits perfectly within a tapestry created by Mike Campbell (lead guitar), Benmont Tench (keyboards), Ron Blair (bass), Scott Thurston (guitar, keys, multi instruments), and Steve Ferrone (drums).

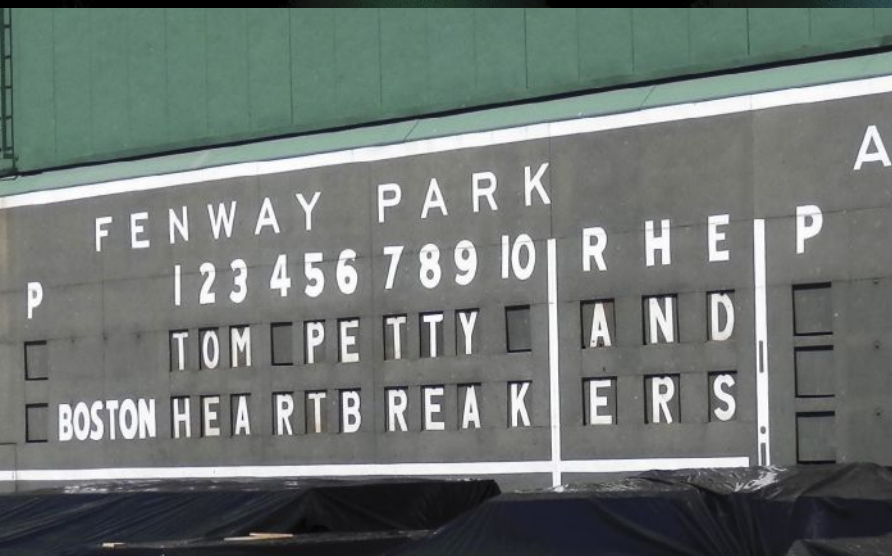
Hypnotic Eye marks front of house engineer Robert Scovill's 20th year with TP & HB, first taking the helm for the Wildflowers tour in 1994. This time out he was backed up by systems engineer Andrew Dowling, who despite his relative youth has racked up service with an impressive list of top tours. "When I first moved into this gig, I was already a big fan of the production quality of the records," Scovill notes. "But it wasn't until I moved behind the console that I 'got it' as far as who they truly are from a musical standpoint. I was able to clearly see where the music they make really comes from, and that's informed how we support them in the concert realm."

A great deal of mutual respect has been established in successfully collaborating over two decades, and it's borne out on Hypnotic Eye, with Scovill choosing to utilize a new EAW Anya system – the very first tour to do so, and a high-profile one at that, to say



Robert Scovill at front of house prior to the Fenway Park show, leaning on his Avid VENUE D-Show console.





Left to right, Tom Petty performing on the Hypnotic Eye tour, a warm Fenway welcome, and Petty jamming with lead guitarist Mike Campbell.

PHOTO: ALAN NEWMAN

the least. “It’s a bit of a risk, no doubt,” he confirms. “There has to be a lot of trust there for them to be OK with it. But we see eye to eye on so many things after working so closely over the years.”

### Doing The Homework

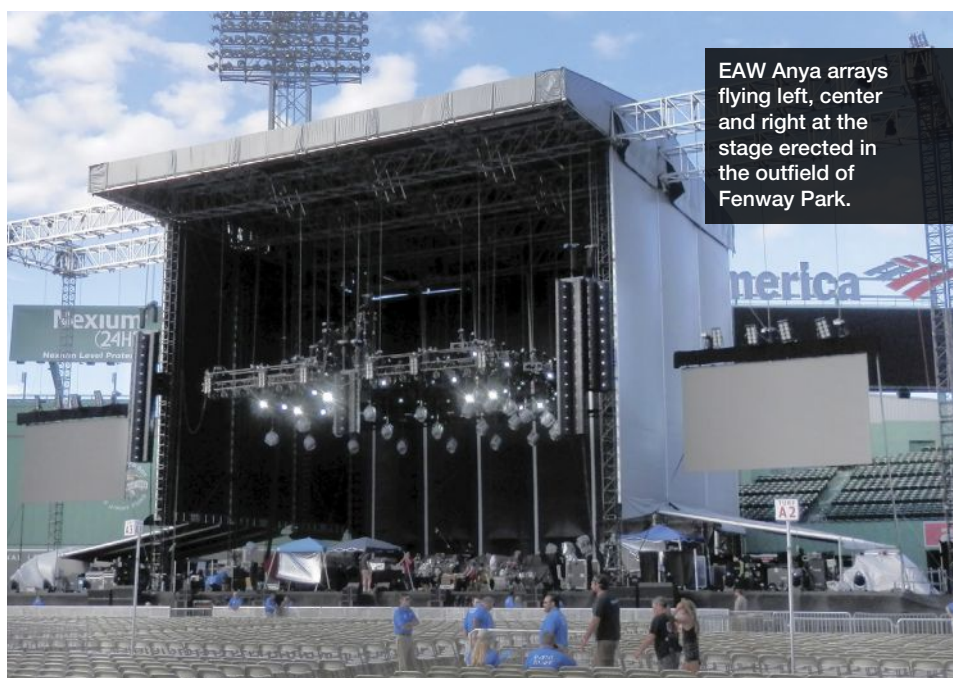
The decision wasn’t made lightly. He first spent a great deal of time with a demo system – looking it over, flying it, mixing on it, performing extensive FFT measurements with arrays in the air, and so on. Only after that did he speak with Dave Shadoan and the team at Sound Image (Escondido, CA and Nashville), the tour’s long-time sound company, about adding the system to their inventory.

Briefly, Anya is based on a concept that EAW calls Adaptive Performance, designed to generate virtually any three-dimensional wavefront surface. Loudspeaker modules incorporate 22 transducers, each independently driven by its own amplifier and DSP channel. The array columns hang straight down, allowing out fill arrays to fly directly adjacent to the mains. Input to the system’s Resolution software interface generates DSP parameters to simultaneously adapt the wavefront surface and optimize

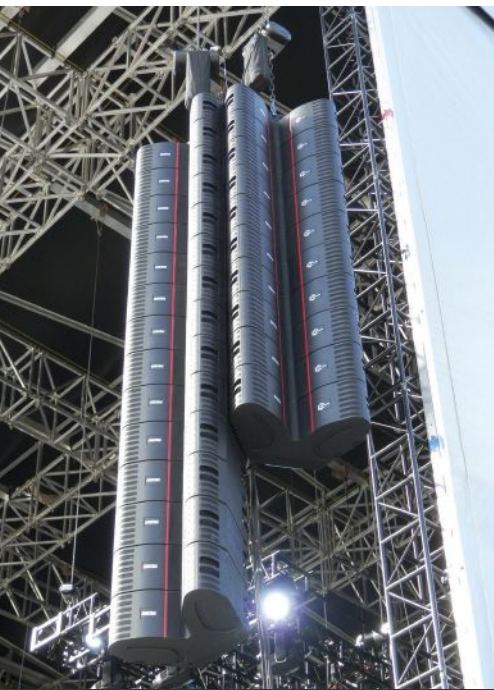
the system’s frequency response to match the specific requirements of the venue. (For more about Anya, see *Designer Notebook* in February 2014 *LSI*).

I caught up with the tour at Fenway Park for what surely would be one of the most difficult venues on the itinerary – plenty of asymmetrical angles, throw distances approaching 400 feet, and an audience of more than 35,000 distributed from the front of the stage to

the highest portions of the grandstand, fanning out at about 180 degrees horizontally. “If you’re a fan of baseball, you know that the name Fenway is Latin for odd geometries,” Scovill notes with a laugh. “We had this date circled on the itinerary as one that would need special attention, but the story of the day is that we did the show with the same rig as the others, in a somewhat modified configuration, with an exceptional result.”



EAW Anya arrays flying left, center and right at the stage erected in the outfield of Fenway Park.



Above, one of the main Anya array sets at Fenway. Below, systems tech Andrew Dowling taking care of some interconnect at front of house.



### Thinking Differently

Deployed under the direction of crew chief Marcus Douglas and systems tech Chris Houston, the loudspeaker configuration for most dates had three columns per side (left and right), with 12 modules in the main column, 6 modules in the middle, and 6 more on the sides. It may seem like a lot, but the narrow span of the boxes (about

45 inches wide), arranged in a straight vertical line (no “J” in the array) makes for a relatively trim footprint.

“A way to understand this system is to think of an array just hanging there. It really has no coverage pattern, and for all intents and purposes, it’s just audio in space,” Scovill says. “So it needs to have data input into it. What you’re providing, via the software, are directivity coordinates. Enter a seating plan and all of the elements to cover, and the software back-maps that into the system – phase, amplitude, EQ, and so on for every component, optimized for that seating geometry.

“Several people have asked what’s the difference between this approach and just aiming the boxes,” he continues. “The difference is that the polar is completely optimized for every seat in the building, for both SPL and for frequency response. Think about it this way: we could use four cabinets on one side of the stage and cover the entire geometry of Fenway Park if we wanted to do it, in terms of frequency response. Obviously that’s going to eat up all of the energy, trying to get the throw to the longest part of the venue, so that’s why we add more cabinets, to attain a more even distribution of energy and headroom.

This capability proved handy at Fenway Park in attaining the desired imaging despite the numerous odd angles, as well as at the Gorge amphitheater, which presents a different and perhaps even more difficult coverage puzzle. “The bottom line is that it sounds incredible too, and that’s a function of all of this really good, well-executed math that is going on in this system,” he says.

Scovill is also operating the Anya system without flown or grounded subwoofer support. At Fenway, 16 large-format subwoofers were on hand but ultimately weren’t needed. A series of smaller subs on the ground

were very low level and in balance with the front fill loudspeakers, not in support of Anya.

### Center Of Attention

A staple of Scovill’s designs for years has been a center loudspeaker array, accomplished on this tour with a column of six flown Anya modules. The left-center-right (LCR) array approach came about in the late 90s, when the line array system he was using at the time couldn’t deliver primary coverage to portions of seating on the far sides, particularly a problem in wide venues like sheds.

His solution was to turn the main arrays outward about 10 to 15 degrees, and add an array in the center to enhance the horizontal coverage there, which would make the displacement distance within the bounds of what he wanted to achieve. It also improves the overall low-frequency phase by eliminating the need for displaced side arrays trying to cover small sections of seats. “Another advantage to this design is that people who are off-center of the room don’t get into that weird thing where they’re looking at someone sing on stage and hearing the sound of the voice coming from a completely different direction,” he adds.

One challenge to LCR designs is that there’s currently not a console available to do the divergence correctly if the engineer subscribes to using audio sub groups, which are often deployed in digital consoles to assist in getting input resolution signal correct as well as to facilitate things like parallel compression. Another challenge is that with traditional line sources, it takes a long line to attain sufficient control, but an extended center array isn’t desirable, to say the least, for sonic and aesthetic reasons.

In addition, output from all three arrays needs to be in phase (time



coherent) throughout the projected coverage area, and without interfering with front fill. Further, a really long center line source with the goal of improved low-frequency control results in poor coherence at the far center of the room.

"Anya helps overcome this challenge because you have so much control over the directivity that it doesn't

matter how many of them you fly," he says. "You can tell the system (via the software), 'I want you to start coverage 15 feet from the barricade, and to go just past the mix position, and then I don't want any more audio up in the bowl from that center array.' And it does exactly that. It's breathtaking how well it can be done, to have so much control."

## Keeping It Simple

Monitor engineer Greg Looper, who first joined TP & HB in 2005 as front of house tech before moving to his current role, does his mixing on an Avid VENUE D-Show console, as does Scovill, who has an affiliation with the company. Assisted by monitor systems technician Chuck Smith, Looper strives to keep things simple on stage, which is the way the band likes it.

The microphone approach leans to old school. Looper notes, "The band has a very straightforward philosophy: If it doesn't sound good with a (Shure) SM57 on it, change the source. They're all about having proper sources. Change the guitar and/or change the amplifier, rather than changing the mic or throwing a foot pedal into things."



Scovill's front of house cockpit in full, with the VENUE D-Show console joined by an Avid S3L modular mix system at right.

That said, there are mic changes from time to time, with Looper, Scovill and studio engineer/producer Ryan Ulyate, who's also on the tour, working together on these decisions. Case in point is a switch to Telefunken M80 supercardioid dynamics for all vocals. Scovill favored the M80 in helping to get Petty's vocal on top of the mix, and it's proven to work out well for all parties.

There have also been some mic evaluations with Steve Ferrone's drum kit,

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