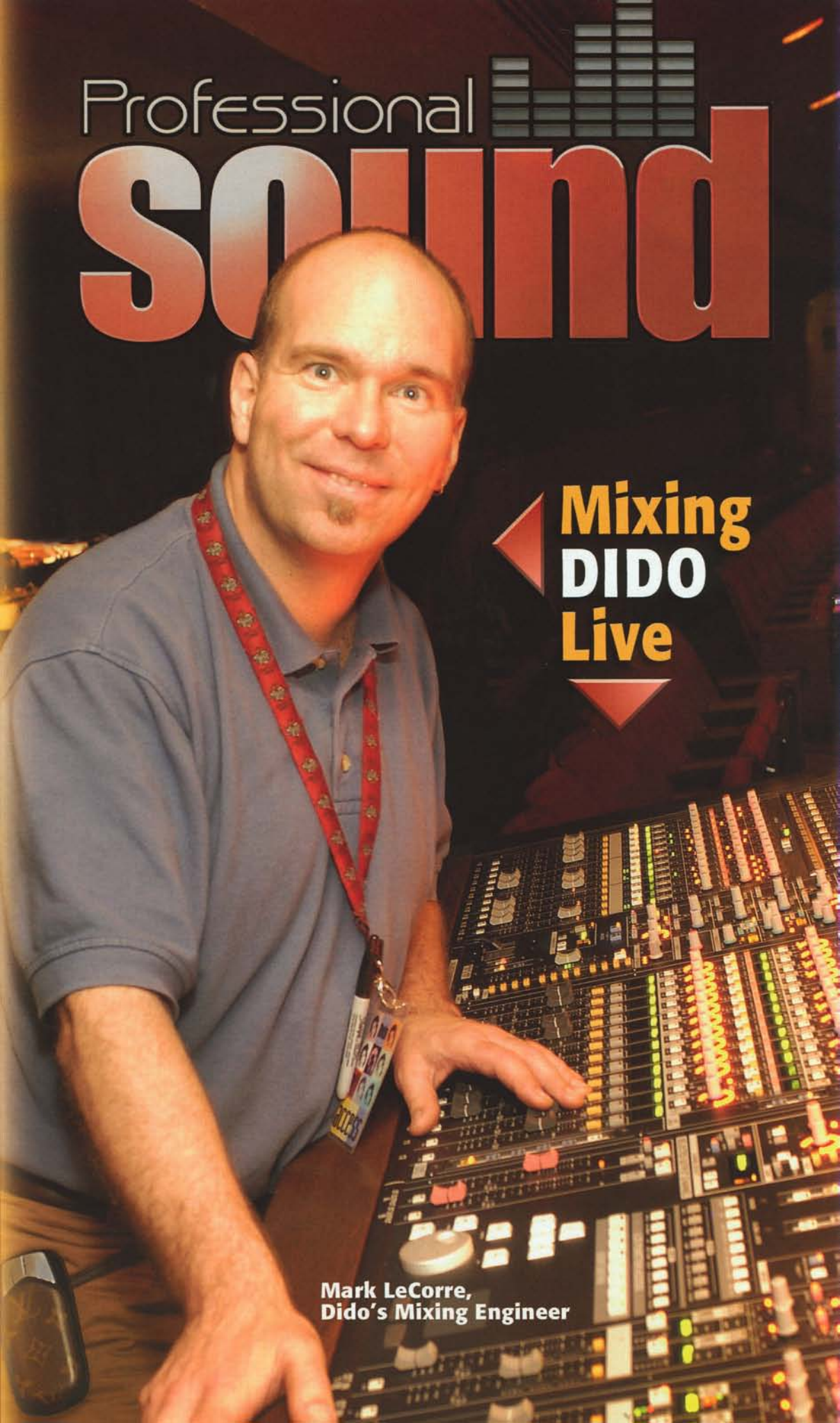
Professional sound

Mixing DIDO Live



Mark LeCorre,
Dido's Mixing Engineer

When British singer/songwriter Dido's second and latest album, *Life For Rent*, debuted last fall, worldwide sales figures ensured that an international tour would be a sure thing this year. After selling millions of copies of her two albums, Dido has secured her place in the music industry.

Sound System

Sound Art Canada was chosen as prime supplier for the audio system to be used for Dido's tour, which included both North America and Europe. For the North American leg of the tour, the equipment list featured:

Mix:

- 2 Yamaha PM1D mixing consoles
- 1 56-channel Pro Tools HD system
- 6 TRUE Precision 8 mic preamps
- 2 Apogee Big Ben word clocks
- 1 TC Electronic 6000 reverberation processor
- Various Sennheiser, Neumann, and Shure microphones – details below

Loudspeakers (all from Meyer Sound):

- 20 MILO 90 loudspeakers running main left and right
- 4 M3D subwoofers flown on left and right sides
- 8 M3D subwoofers stacked left and right
- 6 UPA-2P loudspeakers for front-fill and out-fill
- 6 UPM-1P loudspeakers for stage-lip fill
- 2 MSL4 loudspeakers cross-firing into the "cleavage zone" which is rows 3-7.

Control and measurement system:

- 3 XTA DP-226 loudspeaker processors, for zone control
- 1 dbx Quantum II multiband limiter
- Computers running SIA Smaart Live, Meyer RMS, and XTA Audiocore
- Wireless tablet computer for remote operation of the above
- Wireless data network

The European leg of the tour used the same mix and control systems, but hired loudspeaker systems from overseas suppliers.

A Day In the Life of A System Tech

Setup for a typical Dido show begins around 7:30 a.m. when system engineer Jamie Howieson inspects the venue to make a rigging plan. "I go in to check out the venue to have a look at where they normally rig the PA and inspect all of the loads," explains Howieson. "I have to figure out if the PA is too heavy or not for the particular venue."

As soon as rigging loads are confirmed, he breaks out his computer and starts MAPP Online, Meyer Sound Laboratories' acoustical prediction program. MAPP can predict coverage pattern, frequency response, impulse response and maximum SPL for single or arrayed loudspeakers. Howieson says, "I use an OptiLogic 800 distance and angle meter to create a basic architectural elevation sketch of the room. From that sketch, I enter certain key dimensions into MAPP." He then adds the PA speaker positions into MAPP, which can then predict coverage.

MAPP connects online to a computer at Meyer Sound that performs the complicated system performance calculation. The results show up as multicoloured graphs on the screen which indicate SPL levels and frequency responses in the audience areas. By running MAPP several times, Howieson can arrive at optimum loudspeaker positions for the venue. Once he's done that, he can tell the rigging crew where to position the hanging points for the array, and he knows what angle settings will be needed on the loudspeaker array when it is flown.

With array calculation out of the way, Howieson has time for the next important procedure: breakfast! Once the crew has eaten, the truck is unloaded and the PA is marshalled to the front of the stage. Howieson continues, "I print out the angle settings between all the boxes. My two associates and I use those printouts when we assemble the PA." Once the system is in the air, it must be tilted to the correct vertical angle, to agree with the MAPP analysis. "We use angle sensors built into the top boxes to measure the tilt angle of the speaker stack," Howieson explains, "so we can set it to agree with the MAPP prediction."

The final check is the "eyeball test" ... "After it's all up, I double-check it in the venue with my binoculars. Even with all of the math and computers, you still have to check it by eye."

Once the rig is perfectly hung, it's time for a complete loudspeaker box check. For that procedure, Howieson uses Meyer's RMS (Remote Monitoring System), a digital network that links all the speaker boxes and reports status to a central computer. Howieson explains, "I test every box to make sure it's working correctly. With our control system, I can run diagnostics of the speakers and amplifiers that will tell you what's working and what isn't."

After he's sure that everything is working correctly, Howieson time-aligns the system. The idea is to adjust signal delays feeding the various loudspeakers so that all the sound leaves the stage at the same time. "*Then* I can start to EQ the system," he states matter-of-factly. "I throw pink noise through each zone then walk the room with my wireless test mic and tablet computer." Howieson's control and measurement system runs on a central host computer at Front of House. The host is networked to his wireless tablet, which can go anywhere in the venue. "I can go to a particular zone of the PA to get a 'shot' of it, measure delay, and look at transfer functions. That way, I can EQ a zone while I'm listening to it. It's better than working only from one point, because I can hear it while I'm seeing the curves on my screen at the same time."

Once he's completed the initial EQ pass, he then checks for interaction between zones to make sure there are no surprises once everything's operating simultaneously. His last test is to play recordings he's familiar with. "I use my ears a lot because you can't totally rely on what's on the screen. You need a bit of both."

When the show starts later that evening, Howieson's ears are hard at work as he listens to the performance. His wireless capabilities allow him to venture into all audience areas, and adjust the system from where he stands. This freedom allows him to compensate for acoustic changes in the venue caused by the 5,000 or so warm bodies: "It's going to change the sound once it's filled with people, no matter what!"

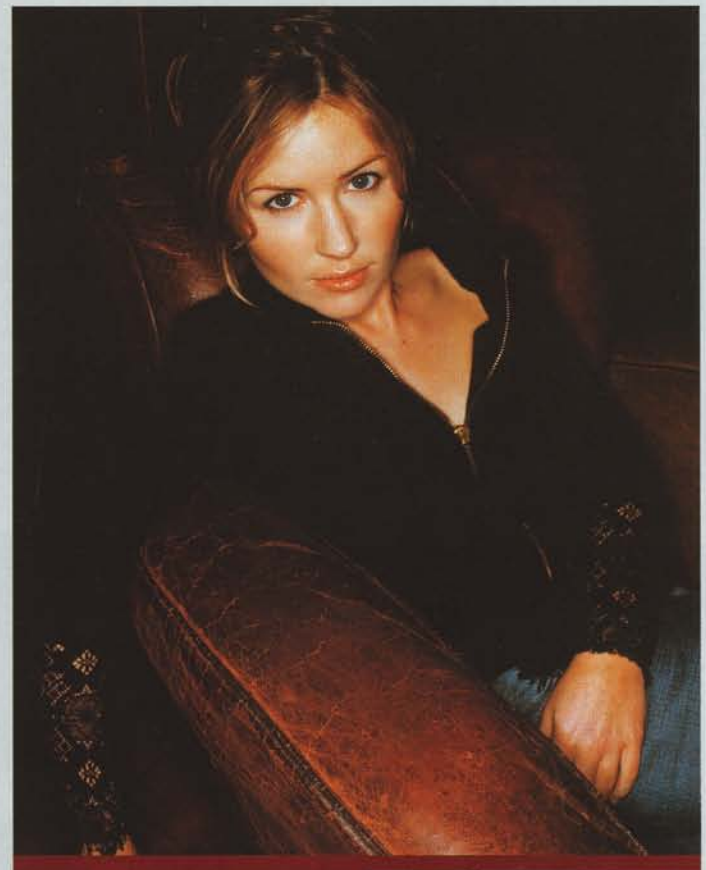
Howieson is definitely not flying solo when it comes to making Dido sound her best. "We're brothers in arms," he says of Mark LeCorre, Mixing Engineer for Dido's tour. "Everything starts with the Mixing Engineer. What I do is create a canvas for him to paint on. Whatever he wants to use … rough grain, fine grain, leather … that's what I'm manipulating for him. That's my job."

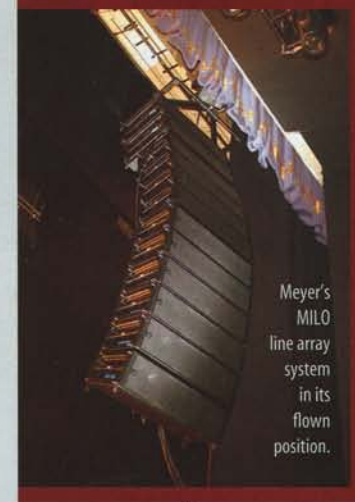
"It's probably the best-sounding theatre tour I've worked on," Howieson says. Even so, there have been challenges. "We've had to deal with 60-foot deep balconies with the Front of House position at the back wall. Some of the theatres have extremely

by Jeff MacKay

DIDO

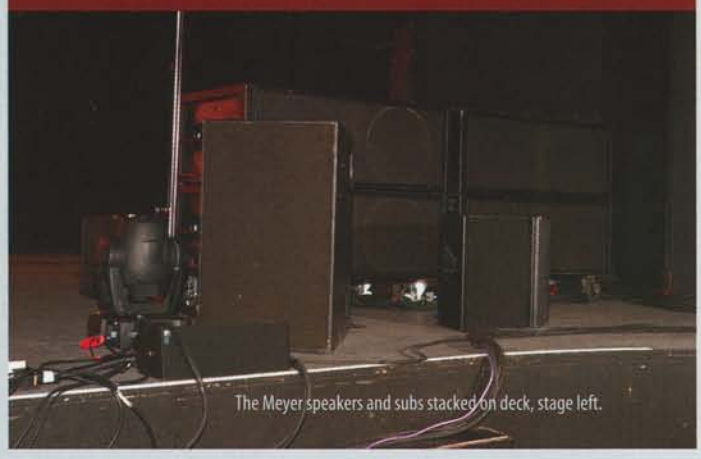
ON TOUR WITH





Meyer's MILO line array system in its flown position.

System Engineer Jamie Howieson, with his wireless tablet, tests the system from a theatre seat at Toronto's Hummingbird Centre.



The Meyer speakers and subs stacked on deck, stage left.

Photos by Roy Timm

DIDO ON TOUR WITH DIDO

high ceilings and some theatres that have domes underneath the balconies. These theatres were designed for un-reinforced, acoustic music."

In some venues, the tour hasn't been able to use the whole system, due to weight or space restrictions. "It's a real conundrum. North America's been really great, but we can be limited to how much of the system we can fly or how much can be placed on the stage. My theory is to bring in the entire PA for every show. If it's in the room I can simply shut off boxes individually if they're not needed."

Front of House Mixing

Dido's Mixing Engineer, Mark LeCorre, has been behind the console for her since 1999, which is pretty much the beginning of her career as a touring artist. LeCorre, who has spent years travelling as a FOH mixer, has mixed the likes of Avril Lavigne, 54·40, Patricia Conroy, Jann Arden (monitors) and Lilith Fair's "B Stage". Using a digital Yamaha PM1D console for this tour, LeCorre prefers the digital realm because "There's a lot going on in the show," he explains. "There's a lot of delay cues, many instruments and a tonne of effects. Everything is orchestrated by Rollo – Dido's brother and producer. The PM1D was the first console out of the chute with a large-scale, large-format digital desk with a good track record. I find it to be very reliable." LeCorre does use some external preamps to augment the system – True Systems Precision 8 preamps. He doesn't use outboard effects for this tour, with the exception of some vocal reverbs which he uses the TC Electronic System 6000. This naturally leads to the question of what effects does LeCorre rely on night-to-night? "I use a lot of the onboard stereo delays on the PM1D for the drums, percussion, guitar and vocals. I also use a phase shifter effect on the Wurlitzer keyboards. I use a bit of a 'short room' and a 'large hall' from the TC 6000 for the vocals," explains LeCorre.

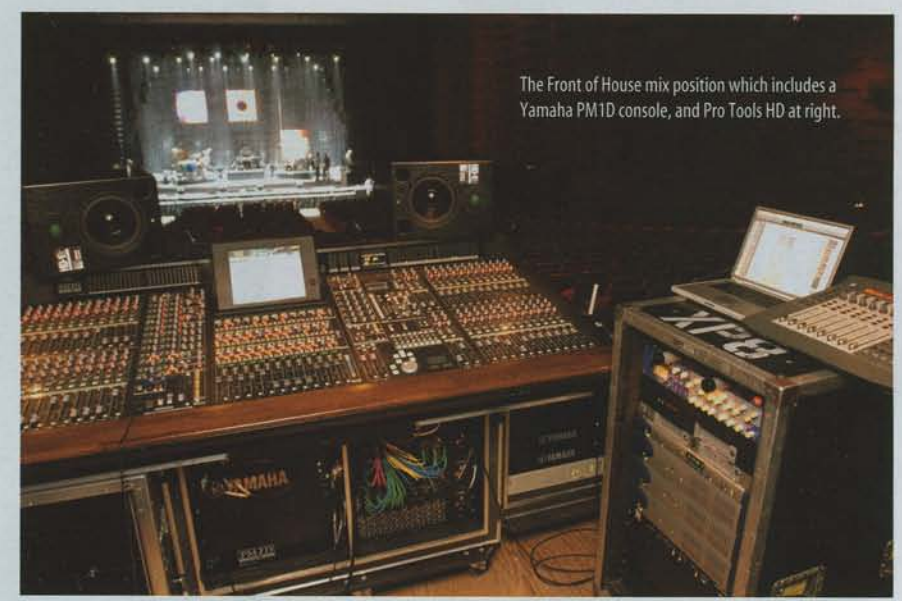
He was involved in the selection of the Meyer MILO rig as well, and had some past experience with Meyer's M3D rig on Dido's last tour. "That was a couple of years ago," he recalls. "I really like the M3D system, but it was simply too big for the theatres that we're doing in North America. It's not as flexible as the MILO system in terms of weight either. I knew that I wanted to use Meyer again for this tour. I like the top end that Meyer boxes have."

LeCorre has evolved to appreciate the benefits of a line array system. "Line arrays are totally the way to go. With line arrays, it's really even across the venue and it allows us great control over what we can do with the system. Jamie [Howieson] has several zones going at once – two boxes per zone – so we can shave off the top end a bit and not kill people in the front row while at the same time the top end is making it all the way to the back of the venue." It has given LeCorre the confidence that his mix will be consistent throughout the entire room.

Consistency is certainly a theme for this tour, from Dido's setlist night after night to some of the mixes LeCorre can save in the Yamaha PM1D. "It's an interesting blend because a lot of the vocals and instruments are very delicate, but [Dido] wants a lot of low end – almost a dub style with a heavy bass drum and bass tone. The bass player has a very reggae tone – no high frequencies. We use a subharmonic synthesizer and a Moogerfooger on the bass to give a big round sound but at the same time we don't want to lose any of the definition so it's an interesting mixture…" LeCorre does have to change some of his saved mixes from one show to another as the venue changes. The show also includes some use of samples which are triggered by the musicians onstage, but the show is basically all produced live. "I just gives us that loopy feeling in some of the songs," explains LeCorre.

Dido uses Sennheiser's 500 series of wireless microphone transmitters, specifically with the 865 capsule. "We tried a couple of different mics, but this one was good for the rejection because of the loud drums directly behind Dido. She's wearing Westone custom bi-amped in-ear monitors. We tried the Neumann 105 – a great mic – but she started asking 'How come I can hear Alex and Jody so well?' (the drummer and percussionist). It was picking up so much of the background and stage noise. The 865 is a nice combination of rejection and quality. It still has that condenser open top end, but without picking up as much of the other things that were going on," explains LeCorre.

Other mics being used onstage for the tour include more Sennheiser product. "We have a Sennheiser endorsement going on," states LeCorre. "It's all pretty much Sennheiser and Neumann. The drum kit uses an e602 and SM91 on the kick, an e604 and e602 on the toms, an e604 on the piccolo snare, a Shure SM57 on the snare, an e609 on the bottom and KM184s on the overheads, hats and ride. The congas and bongos have Shure Beta 98s on them, e604s on the timbale, an e903 on the cowbell and an e602 on the gong drum and KM194s for percussion overheads and shaker mics." All the other instruments are either DI'ed or direct. The drummer also plays djembe and udu hand drums miked with Beta 98s. Both the guitar and bass players run Line 6 POD Pros – the rackmounted versions. The keyboard player runs his keyboards into a Mackie 1604 mixer onstage which feeds us two stereo mixes.



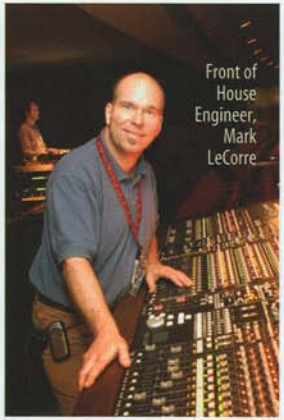
The Front of House mix position which includes a Yamaha PM1D console, and Pro Tools HD at right.

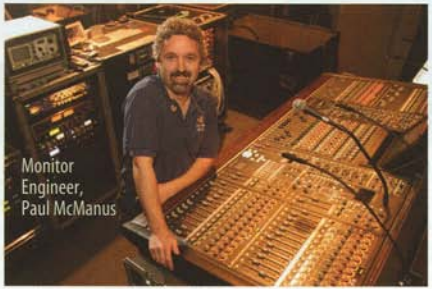
Also setup at Front of House is a Pro Tools HD rig. LeCorre is recording all of the shows, running 56 tracks to Pro Tools. "I'm recording direct to Pro Tools, but I'm also using Pro Tools for processing. I return all the channels from Pro Tools with dynamic processing on them. This gives me the ability to use whatever compressor is going to do the best job for each instrument without carrying a whole rack of expensive outboard gear. Sure, I'd love to have real LA2As and 1176s, but the plug-in versions sound very close. Dido's vocal chain starts with a Focusrite ISA 110 mic-pre on stage, then goes to a ISA 220 at FOH which I use

for compression and EQ. In Pro Tools I use a Waves C4 multiband compressor and de-esser, and a Bombfactory LA2A. Working with females, you want to keep the top end and upper mid-range present, but it can also tear off your head when they start to really belt so I use the multi-band compression to even it out," explains LeCorre.

In terms of monitoring, there's a second Yamaha PM1D console being used by Monitor Engineer, Paul McManus. The entire band is on in-ear monitors, so the stage volume should be relatively consistent from night to night. The rest of the equipment used is identical to what LeCorre is using at Front of House, including the PM1D, True Systems Precision 8 preamps, an Apogee Big Ben clock to synchronize all of the digital devices and a TC Electronic M2000.

So what exactly is LeCorre listening for when he mixes a show? "The vocals are where the money's at! I want it to be as clear as possible. Dido's very concerned that her arrangements make an impact on the audience so you want to make sure there's a good bottom end and bass, while making sure everything's clear up top. There's a lot going on with this band so I have to glue it all together. I want the audience to have a great experience."


Front of House Engineer, Mark LeCorre


Monitor Engineer, Paul McManus

LeCorre is happy to have Howieson on tour with him to help tweak the system to make the show a great experience for ticketholders. "It's a team effort. I think everyone's mixed shows where they know that there are going to be uneven spots here and there, but it's kind of nice to know that the sound is going to be the same all over the room with Jamie walking around with his wireless tablet."

He worked closely with SoundArt Canada to assemble the system that they're using for this tour. "We've worked with them for a long time now. Nettwerk Management, Dido's management company, has a good relationship with them. When I was working on Avril Lavigne's tour, we had talked to a few different companies and realized we think similarly to SoundArt. Anyone can buy boxes – it's the people that make the difference," muses LeCorre.

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Jeff MacKay is Editor of Professional Sound.