Radial Engineering

JDX amplifier direct box
Phazer phase adjustment tool

As some of you know, I've got quite a collection of tools from Radial (*Tape Op* #36, 38, 45, 49, 50)—from various DIs to re-amping devices to signal distributors. Why am I such a huge fan? Because their products are designed with unique, killer features and second-to-none build quality. Everything from the heavy-gauge steel cases being flanged to protect the controls, to the recessed power jacks, to the full sheet of non-slip rubber on the bottom, to the informative stenciling—all of it is well thought out. Furthermore, Jensen transformers, Class A circuitry, and high-quality components throughout make for top-notch sound. My two latest purchases from Radial, the *JDX* and *Phazer*, follow these same design philosophies, and in the past six months, they've made themselves just as indispensable as the other Radial products in my toolkit.

The *JDX* is a direct box that connects between an instrument amp's power output and its speaker via 1/4" jacks. It provides no load on its own, so you must plug a speaker (or a separate load box) into the speaker jack of the *JDX*. An XLR output is designed to feed a mic preamp, just like a standard instrument DI does. But unlike an instrument DI, the *JDX* allows you to record the output of an amp, with all the character of that amp—distortion, speaker interaction, compression, limiting, tube saturation, etc.—in the recorded signal. The manual states, "A proprietary reactive circuit follows the constantly changing interaction between amp and speaker to capture the dynamic response of the amp. Then an active multi-stage filter processes the signal to emulate the frequency response of a loudspeaker." All that geeking aside, what this means is that the signal coming out of the *JDX* sounds amazingly like a guitar amp, minus the interaction of the amp with the room. I've tried the *JDX* with a variety of amps (Fender Bassman, Marshall JCM800, Carr Mercury, Carr Viceroy, Ampeg SVT), and each time, upon first listen, I had to double-check the patches to make sure I was actually recording the *JDX* instead of a mic; that's how unreal (or should I say "real") the *JDX*'s ability to capture the amp sound is. But there's more to my excitement than that. What really makes the *JDX* stand out is that unlike a mic, the *JDX* picks up zero bleed and zero room interaction. Your track ends up super clean and incredibly focused—to the point that anything recorded through the *JDX* sounds so up front that you can mix its track much lower in volume and still have it punch through a dense mix. This behavior is especially true for loud, distorted guitars and basses. There's no "room suck" or muddiness, and the additional perceived volume you can capture with the *JDX* without signal overload is phenomenal. It's unholy.

But what if it's too much, and you want to dilute the *JDX* or add depth with a bit of actual mic'ed signal? Well, that's where the *Phazer* comes in. Because the signal from the *JDX* exhibits no delay as a result of sound traveling between speaker and mic, when you mix in a mic, you get phasing. By inserting a *Phazer*, you can adjust the phase of the *JDX*'s output relative to the mic's to reduce the destructive cancellation that thins out the sound when two sources of different phase (or delay) are combined. In principle, the *Phazer* is similar to the Little Labs IBP Junior. Both allow you to sweep phase from 0 to 180 degrees and flip polarity. But unlike the IBP Junior, which has a facility to choose different phase curves (because both of these boxes, being 100% analog, do not have linear phase response), the *Phazer* instead has an active low-pass filter with a sweeapable cutoff frequency. I find this filter incredibly useful for a number of reasons. For example, when I'm searching for the fundamentals of the tones I want to match in phase, I filter out the harmonics so I can better focus on the fundamentals. Once aligned, I disable the filter or move it higher in frequency. Or sometimes, I'll use the filter to round out the sound of an instrument DI that's too bright before mixing it in with a mic'ed signal. Or if I want to use a *JDX* just to add some clean low end to an amp mic'ed at medium distance, I'll tune the *Phazer*'s filter so I can utilize the lows from the *JDX* and the mids/highs from a mic on the amp; this is a great trick for getting bigger-than-life amp sounds without flabbiness or mud but with real ambience and depth. The *Phazer* interfaces at +4 dBu levels via XLR and 1/4" TRS jacks, and the latter can be used with unbalanced 1/4" cables at –10 dBV levels as well. Note that neither a *JDX* nor any kind of DI is required to realize the *Phazer*'s benefits. The *Phazer* is also useful when you have two mics at different distances to the source; you can insert it on the closer mic's signal. Also, the *Phazer* is a very creative tool for tweaking a mid-side matrix; adjusting one side of the matrix can drastically change the perceived space in the stereo signal.

(JDX $250 MSRP, Phazer $350; www.radialeng.com) –AH

Cascade Microphones

Gomez Michael Joly Edition ribbon mic

The *Gomez* results from a collaboration between Cascade microphones, headed by CEO Michael Chiriac, and Michael Joly (*Tape Op* #59) of OktavaMod. Its single-ribbon motor is enclosed in a single-layer, open-grill headbasket to minimize internal reflections. Due to the short ribbon and wide magnets, the mic's figure-8 pickup pattern is broad, with very little off-axis coloration, and its frequency response is fairly flat from 20 Hz only up to 6 kHz, where it begins to fall early, with a 13 dB dip near 16 kHz. According to Cascade, this voicing is suited for mic'ing guitar amps and vintage-sounding "soft top" vocals. The build-quality of the mic and the included shockmount is top-notch, and the shiny bits look hand-polished and very bling. Inside is a Lundahl LL2913 ribbon-mic transformer and Evidence Audio's top-of-the-line Lyric HG wiring. A rubber and foam–lined aluminum suitcase as well as a microfiber cleaning cloth are included. Unfortunately, a mic sock to protect the ribbon while moving the mic isn't. Each mic comes with a signed letter of inspection/verification and two pages of test results conducted by Cross-Spectrum Labs. The $599 price belies the quality of engineering and construction that's immediately evident when you open the suitcase and plug in the *Gomez*, but the Cascade website clearly explains that the low pricing is a result of direct sales without any markups nor commissions for distributors, dealers, advertising agencies, marketing reps, and sales staff.

The *Gomez* does indeed sound fantastic on guitar amps, especially when positioned 8" or more from the speaker cone. At this distance, there's no chuff and no boxiness, nor does the sound get thin, and the backside of the ribbon picks up just enough room to give the guitar track some depth. Closer in, the amp starts to sound bigger than life, as the low end is augmented from proximity effect, but compared to a Royer R-121, there's less tendency for the amp to sound "scooped" due to both the lows and highs sounding more pronounced than the mids. The midrange seems to hold its own better with the *Gomez*, even as its lows get much tubbier at close distances. Further out, where most mics start to sound thin and unfocused, the *Gomez* still sounds full. There is some loss of "bite" on distorted guitars, but when the *Gomez*-mic'ed guitar tracks are mixed in with other tracks, that just means there's more room for the other tracks (like percussive acoustic guitars, snare drum, cymbals, etc.). It also means that the ringing tones characteristic of some amps don't sound as piercing and icy (which may or may not be your cup of tea). In summary, for guitar amps, the *Gomez* captures a warm but nicely balanced sound, and with a smooth ramp-up in proximity effect, it's easy to vary the timbre, especially in the lows and lower mids.

On vocals, I was initially expecting the *Gomez* to sound too dark, given Cascade's use of "soft top" in reference to a vintage sound. It indeed sounds dark when positioned 6" or less from the singer; there's way too much low-end buildup at close proximity. At 8-12", vocals open up nicely, and depending on the acoustic treatment in the room, you get a sense of depth and space without the loss of lows and lower mids evident in mics voiced for closer-in work. Because of the early high-end rolloff, there's no chance of sibilance, and because of the greater working distance, no pesky mouth noises get picked up. Also, at 12" out, with the mic at forehead level, no pop filter is needed, so wind noise and loss of detail from a filter is a non-issue. Interestingly, despite the mic's lack of crispy highs, the quality of articulation and the subtlety in expression the mic captures are startling. Plus, you can boost the highs as much as you want to get back some amount of "air"; even boosting everything from 6 kHz on up by 15 dB doesn't bring up any sibilance or sharp edginess.

My favorite use of the *Gomez* is for room mic. Drums sound incredible with a Gomez positioned at head level, 6 ft in front of the kick drum. (When placed on the floor 6 ft out, there's even more oomph to the sound, especially on transients, but placing a ribbon near the floor scares me because the motor will pick up any magnetic crap on the floor.) Two *Gomez* mics arranged as a Mid-Side pair take this technique to the next level. (Although the *Gomez*'s headbasket is not front-to-back symmetric, its ribbon motor is; therefore, its figure-8 pickup pattern is symmetric.) Or using one *Gomez* about 4 ft out from the floor tom, pointing at the snare, and one *Gomez* out in front of the kick and snare so that both mics are equidistant (about 6 ft) from both the beater head of the kick and the center of the snare head results in a huge but very natural drum sound. Adding ambience with the *Gomez* also works well with piano and acoustic guitar. And believe it or not, tambourine mic'ed with a *Gomez* at a distance of 3 ft sounds good too, and slots easily into a mix with conventionally mic'ed drums and cymbals, without sounding brittle or unnatural as is often the case when close-in condensers are used for handheld instruments in the shaker family.

($599 direct; www.cascademicrophones.com, www.michaeljolyeditions.com) –AH