

The Bluestick Solution

THE PRINCIPAL PROBLEM for all acoustic instruments in performance situations revolves around the fact that what a player hears is different from what the audience hears.

Unfortunately, no one has come up with an amplification system that doesn't add its own set of colorations and distortions to the mix.

Achieving what the late great audio designer Stewart Hegeman described as "a straight wire with gain" has proved an elusive goal for both electronics and instrument manufacturers. One Swiss company, Schertler, has dedicated itself to conquering this chronic dilemma and has developed several products designed to achieve natural acoustic tone, even when an instrument is amplified.

Have they succeeded? Let's see.

The Theory

Under-saddle pickups have been around for more than 20 years. Up until the Schertler Bluestick, most under-saddle pickups have employed piezo contact pickups. These transducers use the pressure generated by the string's vibrations to produce sound. Their shortcomings are myriad. First and foremost, since they depend on pressure, it's difficult for a piezo-based system to have even sensitivity across its entire frequency range. Because of the different pressures of different gauge strings, piezo systems usually have hot spots and dead zones where the sound levels are not equal. These inequalities create serious sonic colorations that give piezo systems their characteristic "honk."

Under-saddle pickup systems do have several advantages in live situations. They are far less prone to feedback than other systems, such as contact microphones or in-body microphones. Under-saddle installations are also rugged. Unless you subject an instrument to Pete Townsend-like deconstructions, under-saddle systems stay in the same place regardless of what a player does onstage.

Schertler's Bluestick takes the best characteristics of under-saddle pickups and combines them with the advantages of using a condenser microphone. It accomplished this by substituting a minuscule electret microphone in a hermetically sealed sound chamber for the standard piezo element in an under-saddle environment. Using a real microphone (rather than a pressure mic) makes the Bluestick insensitive to differences on string pressure. The Bluestick generates signals based on what it hears rather than what it feels.

Installing a Bluestick is similar to putting in a standard piezo under-saddle

pickup. It occupies a space approximately .9mm ($1/32$ ") thick directly under a guitar's saddle, and needs a small hole under the saddle slot for a wire.

There are two versions; the standard version is active, with a preamp that runs on two lithium batteries rated for 1,000 hours of playing time. This preamp is on a small circuitboard that can be placed anywhere inside the guitar's body. In addition the preamp has a volume control consisting of a small wheel that sits on the edge of your guitar's soundhole. Finally the Bluestick has an endpin for attaching a standard $1/4$ " guitar jack.

A second version, the Bluestick Marine, consists of a passive system without any preamp. It works with an outboard preamp such as Schertler's own Pre-A 11 or a Baggs

with a neatly glued and kerfed interior, perfect exterior finish, finely shaped frets and easy-playing set-up. This is the way a guitar should look and feel right from the factory.

Only two things give away the fact that the DC-16RE has a built-in pickup system; the small volume adjustment wheel tucked into the upper curve of the soundhole, and the metallic blue combination soundhole jack and tailpin. Unlike most acoustic guitars with built-in amplification systems, the Bluestick installation seems to take nothing away from the DC-16RE's acoustic properties. Not only is this guitar as loud as many similarly sized acoustics without built-in pickup systems, but it also sounds wonderful. The DC-16RE possesses excellent sustain as well as very even

levels where the other amplified acoustics start to feed back or howl, the DC-16RE was perfectly behaved. Even when the guitar was situated directly in front of its amplifier, it remained under control. In concert situations this attenuation ability means you can play louder and worry less about feedback than with any other acoustic pickup system I've tried.

Harmonically, the Bluestick is not quite as natural as the Pick-Up The World system. My Takamine 360-S configured with a passive PUTW pickup attached to its bridgeplate has a more acoustic timbre, with more body tone, but it feeds back at a noticeably lower level. The DC-16RE with Bluestick also requires a substantially different tone setting to get a good harmonic balance.

On the PUTW Takamine, I roll off the bass and ramp up the midrange and treble slightly, while with the DC-16RE I needed to turn up the bass and lower midrange while rolling off the upper midrange and treble. Even after these adjustments the DC-16RE has an edgier harmonic balance with a sharper initial attack and more rapid decay than the PUTW.

In ensemble situations, I found the DC-16RE to be a more flexible and usable rig because it seemed to cut through the mix better. This was due to not only to its ability to be played louder without feedback problems, but to its timbral balance. In solo acoustic settings I still preferred the PUTW because it sounded more like an unamplified acoustic guitar.

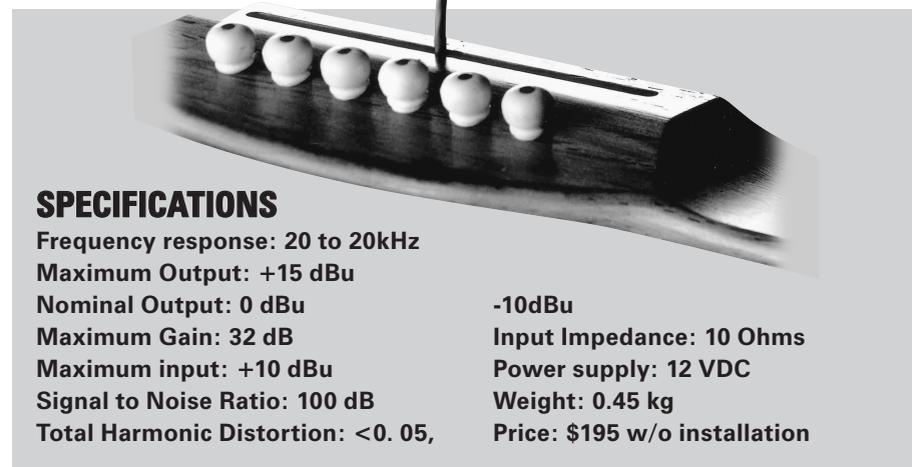
Conclusion

The trick with any tool is to figure out how to use it best. The Schertler Bluestick pickup system provides an acoustic guitarist with a superior alternative to a piezo under-saddle system. The Schertler also offers a practical way to add an acoustic guitar to a mix in a situation where previously it was difficult to obtain adequate volume and cutting power without feedback problems.

While I found the Bluestick not as natural-sounding as some pickup systems I've used, its clarity, balance, and sensitivity make it far more flexible and practical onstage.

If you must play acoustically in an ensemble situation or require an acoustic pickup that can be set up quickly and reliably without fear of feedback problems, the Schertler Bluestick is without peer.

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Para Acoustic D.I.

The Action

Rather than install a Bluestick in one of my own acoustic guitars, Schertler contacted Martin guitars, who sent me a DC-16RE, one of several Martins currently available with a Bluestick pickup system.

Martin isn't the only manufacturer making guitars with Bluestick installed at the factory. Gibson has a Bluestick in its EmmyLou Harris J-200, and Santa Cruz Guitars puts them in its model H. Martin, however, offers the most models with a Bluestick—the DC-16E, OMC-16E, OMC-16RE, JC-16WE, and DC-16RE.

For a \$2,399 list price guitar, the DC-16RE is an outstanding value. Its fit and finish are first-rate and equal far more expensive instruments in the Martin line. I was especially impressed with the wood choices, with beautifully straight, well book-matched Indian Rosewood back and sides, a tightly-grained Sitka Spruce top, and a comfortable mahogany satin-finish low-profile neck. The DC-16RE displayed impeccable workmanship throughout,

harmonic balance. I was quite surprised by how well this guitar performs as a purely acoustic instrument. Single note runs have great clarity and precision while chords are rich without sounding muddy. Only when I really leaned into the DC-16RE with a flatpick does it begin to get a bit compressed when compared with my '51 Martin D-28 or 2001 Randy Lucas Kenny Smith. Fitted with medium instead of light strings, some of this compression would be reduced.

How does the DC-16RE sound plugged in? Well, I'd be lying if I said it is exactly like an acoustic guitar. It's quite different, more electronic sounding, reminiscent of what a good under-saddle pickup system should sound like. I was immediately impressed by how fast and clean the tone was. No matter where you play on the neck or what strings you hit, the volume is even without any dead or hot spots. Also, it's surprisingly sensitive to subtle variations in volume and attack. Its dynamics accurately duplicate the actual range of an acoustic instrument.

I also found the Bluestick-equipped DC-16RE remarkably resistant to feedback. At