

THE BOTTOM LINE®

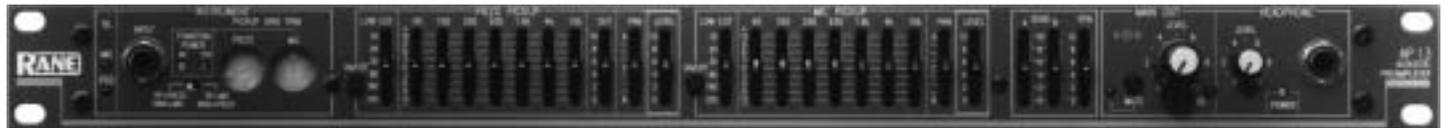
PERFORMANCE TESTING BY TOM MULHERN & ASSOCIATES, CAMPBELL, CA (408) 374-1353

AT A GLANCE: Making an amplified acoustic guitar sound good has never been easy, but Rane's AP 13 simplifies the task by providing separate piezo and mic/pickup channels, plus extensive EQ and signal-routing in a single rack-mountable unit.

By Tom Mulhern

Perhaps the most wonderful aspect of an acoustic guitar (or mandolin, banjo, etc.) is the closeness you feel when you play it. You hear every nuance, whether it's a slide along the string, the gruffness of a hard strum, or any of the millions of things that make up your style. And every aspect of what comes out of the instrument is controlled by you.

Unfortunately, when guitarists plug their pickup-equipped instrument into a P.A. system to get loud onstage, they often give up a lot of control, and if they plug into a standard guitar amp, they're



immediately up to their neck in EQ problems that can't easily be tamed. Rane's AP 13 puts amplified acoustic sound back into the hands of the performer. After all, who would know better how an instrument should sound than the one playing it?

The AP 13 allows the acoustic guitarist—or player of any other pickup and/or microphone-equipped acoustic instrument—to precisely shape their sound without lugging around a mixer and a bunch of signal processors. And even though it offers a broad selection of functions and connection options, the AP 13 is very straightforward to operate. Let's take a look at it, beginning with its front-panel features.

The single 1/4" input is a tip/ring/sleeve variety, so you can use a stereo cable to send both piezo and mic (or piezo and magnetic pickup) signals from your guitar to the AP 13. Since all acoustics aren't wired the same way, there's a tiny switch set into the panel for choosing whether the piezo or the mic input is on the tip or ring (and vice versa).

The next step is setting the gain. At first, I wasn't sure why Rane used recessed trim pots on the front panel to set the pickup gain. After all, you need a screwdriver, a guitar pick, or an agile finger to adjust them. Then I realized that you'd probably only set these one time—the first time you plugged in your acoustic. That way, you wouldn't be twiddling knobs every time you plugged in, just to get your pickups' temperament and the AP 13's in sync. (And no matter how careful you are when you move your equipment, knobs are almost guaranteed to move from where you last set them.) Adjust your level by whacking a chord and watching the mic and piezo

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Rane AP 13 Acoustic Preamplifier

overload-indicator LEDs. When the trim pots are properly set, the LEDs no longer glow when you smack a furious chord.

I like the flexibility built into the AP 13's two input sections because I play both 6- and 12-string acoustic guitar, and aside from the obvious sonic differences due to the variation in the number of strings, the instruments have different pickups with their own personalities. The 12-string has an extremely bright sound with lots of pick noise. It also has a piezo pickup with a poor ground and consequently a bit of hum. No problem. I

simply adjust the low-cut slider between 35 Hz and 80 Hz and pull down the 40 Hz EQ slider until hum is no longer a problem. I also pull down the 4kHz and 10kHz sliders a bit, since my 12-string piezo's output has enough highs to cut glass. When I plug in the 6-string with its internal mic and piezo bridge pickup, I adjust the EQs in a far different fashion. Luckily, I can make quick adjustments on the AP 13. (Note: If you always switch between a couple of different instruments onstage, or if you want to preset many different EQ and routing schemes, Rane also makes the MAP 33, a programmable, MIDI-controllable unit with features similar to the AP 13's.)

You'll want to experiment with different ways to get your best combined sound, and each player is bound to come up with personalized shortcuts. I like to set the magnetic pickup's or mic's characteristics first, and then bring up the piezo's level with its EQ sliders at their flat positions. Next, I deal with the piezo's brightness and "support" (more pick noise, more bottom, etc.). Then I fiddle with the pan controls on both channels to create the stereo spread I want. I generally mix them almost in mono, with the piezo slightly off center to accentuate its pick-attack sound. As the magnetic and piezo outputs are spread from the center, their phase relationship changes, so you may find that you either have to punch in or deactivate the invert switch on one of the channels, or fine-tune the EQ sliders (especially in the midrange bands). Now, if your guitar only has a magnetic pickup, a piezo, or a microphone, your job will be simplified. In fact, if you use a stereo-to-dual-mono cable, you can plug two different guitars into the AP 13—one with a piezo transducer and another with a mic or magnetic pickup. Then just bring up the appropriate level slider when you change guitars.

The AP 13 has some terrific interconnection features. For instance, you can choose the XLR or 1/4" main outputs (mic-

Rane AP 13 Acoustic Preamplifier

and line-level, respectively), and use the mono switch to combine the A and B channel outputs. The separate piezo output—with its own front-panel level control—is a perfect monitor feed that you can keep separate from your main output. Then if your monitors are too low, and the person at the main mixer isn't paying attention to your panicked look, no problem; reach over and bring the piezo output's level up a little. There's also a tuner output that taps the post-EQ/pre-level piezo signal. You can connect a tuner and leave it connected, without having to hog another output. Nice touch.

The sends and returns for patching effects give you a lot of options. For example, send A and send B can be used as level-controlled outputs for recording or sending to multi-channel monitor systems. Of course, you can send them to effects and then return through the return A and return B jacks (I like using a bit of chorus to soften the piezo and low-level echo on the magnetic pickup). The insert jacks—one for each channel—are tip/ring/sleeve 1/4" jacks that come after the other loops. These don't have level controls, but that's just fine. I patch them into the two channels of a stereo reverb, which has both input and output level controls, as well as mix controls for blending reverbed and straight sounds.

As if the AP 13 weren't flexible enough, Rane added an extra pair of inputs on the back labeled Expand In. These let you connect another mono or stereo source into the AP 13 before its master levels. I found a couple of uses for this right away. First, you can plug in a drum machine or tape player, if that's the accompaniment you want. Second, you can plug in an additional AP 13's outputs if you're using multiple guitars and AP 13s (for example, if you play in a duo with another acoustic musician). That way, once you've set your levels, you only need to adjust one

master level on the way to the P.A. Note: The jacks are wired so that if you only use the A input, the AP 13 directs its signal to both channels, saving you the trouble of using a Y-cord splitter.

Anything else? Well, if you find that there's a ground-loop hum in your system, you can set the back-panel signal ground-lift switch, and if you have a microphone requiring phantom power, you can flip another 3-position switch that sends 6 or 15 volts DC via the mic portion of the main input. Speaking of power, the unit has a large external power supply that provides ample power while keeping the transformer (and possible stray hum) away from the AP 13. And unlike the lumpy transformers that always fall out of wall sockets, Rane's is designed specifically to sit on the floor or be screwed to the inside of your rack enclosure (it has two flanges for holding the screws). It also has a 6'-long cord to plug into the AC socket, as well as another 6'-long cord that connects the transformer to the AP 13.

Aside from the multitude of patching options and extensive EQ control, a very appealing feature of the AP 13 is that it's extremely quiet. The last thing you want to add to your acoustic sound is a bunch of hiss or buzz, and the AP 13 makes sure that your tone doesn't pick up undesirable elements on the way to the recording or P.A. mixer. And if it's flexibility you want, the AP 13 has it. Perhaps the most appealing aspect of the AP 13 is that you can adjust your piezo pickup's level and EQ separately from your mic's or magnetic pickup's and then mix them, adjust their phase, and set their panning and overall levels. The tuner output is also a nice touch, and the compact size—a single rack space—makes it easy to stow with your other gear, whether you're alone or with a large band. In all, Rane's AP 13 should be as much a part of every acoustic musician's onstage gear as their instrument, pick, capo, and strap. 

INSIDE RANE'S AP 13 ACOUSTIC PREAMPLIFIER

Type of unit: Rack-mountable preamp for acoustic instruments

Features: Two independent channels (piezo and mic/magnetic pickup), tuner output, XLR and 1/4" outputs, stereo patch loops, low noise, compact size

Dimensions: 5 1/8" D x 1 3/4" H x 19" W

Weight: 5 lbs.

Frequency response: 15 Hz to 40kHz

Signal-to-noise ratio: 81dB at maximum gain

Equivalent input noise (EIN): 120dB

Total harmonic distortion + noise: .03%

Front panel (L-R):

Instrument section: Overload-indicator LEDs for mic and piezo, 1/4" tip/ring/sleeve input for piezo/mic, 6-volt and 15-volt phantom power indicator LEDs, input selector switch for assigning piezo and mic to either ring or tip of input, recessed separate pickup gain trim pots

for piezo and mic

Piezo pickup section: Phase-invert switch, low-cut slider (10 Hz to 250 Hz), 7-band graphic EQ with center-detent sliders set at 40 Hz, 100 Hz, 250 Hz, 630 Hz, 1.6kHz, 4kHz, and 10kHz frequency centers (each with 12dB of boost and cut), output slider, pan slider with center detent, level slider

Mic pickup section: Phase-invert switch, low-cut slider (10 Hz to 250 Hz), 7-band graphic EQ with center-detent sliders set at 40 Hz, 100 Hz, 250 Hz, 630 Hz, 1.6kHz, 4kHz, and 10kHz frequency centers (each with 12dB of boost and cut), pan slider with center detent, level slider

Send/return section: Send A level slider, send B level slider, return level slider

Main output section: Mute switch with LED, concentric level control

(inner knob controls A level; outer knob controls B level), overload LED

Headphone output section: Level control, power-on indicator LED, 1/4" output jack

Rear panel (L-R): Channel A 1/4" line and XLR mic main output, channel B 1/4" line and XLR mic main output, mono switch, expand in A 1/4" jack, expand in B 1/4" jack, insert A 1/4" jack (tip/ring/sleeve send and return), insert B 1/4" jack (tip/ring/sleeve send and return), return A (mono) 1/4" jack, return B 1/4" jack, send A (mono) 1/4" jack, send B 1/4" jack, 1/4" piezo output, 1/4" tuner output (piezo), ground-lift switch, power input jack, phantom power switch (off/6 volts/15 volts)

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