

# ANALOG CORNER

BY MICHAEL FREMER

THIS ISSUE: Mikey auditions a versatile, low-noise phono preamplifier from DSA, aka Dynamic Sounds Associates.

## Dynamic Sounds Associates “Lab Grade” Phono III preamplifier

**F**irst, a power update: The generator and transfer switch bypass plan has been solidified, the town permit has arrived, and the work will commence soon. I’m pretty sure what I’ve learned through this debacle will help other audiophiles improve both their power and their system’s sound.

Now, on to this month’s column: Revisiting an updated product from a small company can be a rewarding experience.

For startups in our competitive, niche marketplace, just remaining in business is a challenge. Many undercapitalized startups founded by well-meaning idealists/hobbyists disappear in just a few years if not faster.

*Stereophile’s* willingness to review a product depends to some degree on a company’s track record and staying power, for good reason: We don’t want readers to get stuck with expensive products they can’t get serviced or supported. There’s more leeway in a column, however; it’s assumed that if you’re experienced enough to be a columnist you can exercise good judgment and take more risks. That can be good or bad for a company: A good review can give a new company a leg up, but a bad one can sometimes kill it.

Dynamic Sounds Associates introduced the Phono-ONE in 2004, which was followed in 2012 by the Phono II, which I reviewed. The Pre 1 debuted in 2014, then in 2016 came the class-A Amp 1 monoblock. Last year, the company introduced the Phono III.

DSA founder Douglas Hurlburt concerns himself more with engineering acumen than with acronym gimmickry, bejeweled or gilded chassis, or memorable product names. DSA’s products are available factory-direct through “à la carte productions,” the company’s sole sales outlet.<sup>1</sup> The Phono III costs \$19,000 and comes with a 30-day money-back offer; if you don’t like it, return it. If you choose to keep it, the purchase includes a 3-year full warranty: Buyer pays shipping, DSA pays return shipping. The company has been around now for 17 years, so it’s a pretty safe bet you won’t be left stranded in “out-of-business land” during the warranty period or beyond.

**The Phono III brought the stage forward and emphasized the attack, which with the Alexander is pleasingly aggressive.**

Hurlburt’s background shares elements with those of many of us, building and modifying Dynaco and Heath kits while in high school. From there though, his path diverges from mine, and from most. In 1962, he got his undergraduate degree in math and physics from Johns Hopkins University, following that in 1964 with an M.Sc. (Master of Science) in solid state physics from McGill University, and in 1972 a Ph.D. from McGill in electrical engineering.

After that, I promise you, he did *not* go to work for a hi-fi company! He got involved in research, first for RCA in Canada and later at MIT’s Lincoln Lab in Lexington, Massachusetts. He also worked at DARPA (the Defense Advanced Research Projects Agency) as a program manager and later as a Defense Department private contractor/consultant. He retired in 2010. There’s far more to his résumé, but that’s sufficient to make the point that he’s a smart, well-educated guy, slumming in retirement in high-performance audio.

Much of his work is classified, so I can’t further elucidate. Let’s just say there’s a reason America manufactures among the best measuring, and best *sounding*, weaponry in the world.

There’s something affirmational for

<sup>1</sup> See alc-pro.com.



PHOTOS: CLIFFORD CREATIVE GROUP

a vinyl record enthusiast like me to know that a scientist retiring from a career focused on the analysis, design, and development of ultrawideband, spread-spectrum communications systems and airborne radar systems would pivot to creating not a DAC but a *phono preamplifier*.

### THE FULL-FEATURED, NO-NONSENSE DSA PHONO III

The Phono III features two pairs of DC-coupled differential gain stages using tightly matched JFETs, two of which can be adjusted to provide the gain required by any cartridge. Each gain stage employs a precision, temperature-compensated, low-noise, constant-current source and a low-noise voltage regulator, which combine to produce the “ultimate in stability, signal control, and isolation.”

The output is class-A balanced differential, push-pull. The circuit employs no loop feedback for either gain or EQ. EQ curves include, in addition to standard RIAA, pre-RIAA curves for Columbia and Decca/ffrr, including for 78s. (That’s five curves altogether.) Each gain stage employs internal feedback designed to keep distortion low. The circuit applies the selected equalization via passive, low-pass networks.

Hurlburt says this approach produces low distortion and very high dynamic range while simultaneously eliminating transient intermodulation distortion, which DSA says is common in circuits where interstage loop feedback is used for both gain and equalization. From input to output, the Phono III has no coupling capacitors in the audio chain, which are said to degrade the sound, yet DSA claims that the design is stable and resistant to DC drift.

Manufacturers tout the advantages of their products’ designs, but few mention the negatives. Hurlburt does. Locating the high-frequency equalization filters between the first two differentially coupled gain stages requires the filters to be precisely matched. DSA balances and calibrates the filters after manufacturing and during factory “break in,” after which, he says, no further adjustment is required.

The Phono III utilizes separate, high-bias-current, class-A output drivers for each polarity that are fully regulated and powered separately from the amplifier’s voltage rails. The output stages are capable of providing in excess of 20 peak-to-peak drive volts without clipping and up to 30mA of distortion-free current. DSA says this gives the Phono III the ability to drive amplifiers with input impedances as low as 1k ohm or long cable runs with capacitance greater than 30nF (at 20kHz; the Phono III can drive significantly higher capacitance values at lower frequencies).

In addition, Hurlburt says, this circuit design provides easy polarity inversion and true monophonic capabilities, both of which are selectable via a front-panel-mounted pushbutton. Polarity inversion is also available using the black-anodized aluminum, chrome-capped remote control, which allows you to “A/B” from your listening position.

The design pays particular attention to eliminating noise, which of course is critical to amplifying

low-voltage signals while maintaining the widest possible dynamic range. The Phono III features a pair of matched, shielded, toroidal transformers, the primaries of which are driven out of phase to one another and which are encased in a magnetically shielded housing designed to “virtually eliminate” residual AC fields within the chassis; the chassis itself is also designed as a Faraday cage connected directly to AC ground.

There’s a great deal more in the manual about noise suppression, but I’m afraid I’ll run out of space if I don’t stop now.

The “lab grade” instruction manual provided all of this information, as expected from such a credentialed scientist. That information-packed manual can, consequently, seem diffuse and difficult to follow, but that’s a small price to pay. You come away from reading the manual with a great deal of useful knowledge beyond how to operate the preamp. I’m just glad there’s no postreview graded exam!

### Setup and use

DSA supplies four patent-pending “Critical Mass” isolation feet and titanium threaded adapters that screw into the chassis underside. The rear panel has three pairs of inputs with a choice of single-ended RCA and balanced XLR inputs and one set of outputs via single-ended and balanced connectors. Each input has a banana plug-type ground lug, and there’s an additional chassis ground lug, useful for turntable





grounding.

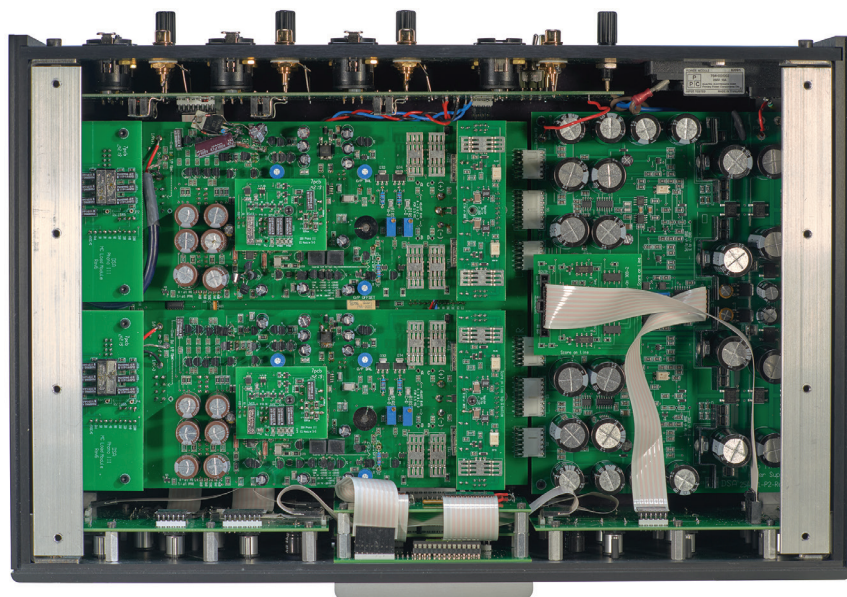
The front panel is a model of well-organized clarity and utility. On the left are three buttons for selecting the input; below that are six more for selecting gain: 40dB, 46dB, 50dB, 56dB, 60dB, and 66dB. Four buttons on the right let you choose stereo or mono, invert absolute phase, and turn the Phono III's rumble filter on or off. The fourth button—for “channel differencing”—is the most interesting, making it easy to adjust azimuth. Just put on a mono recording and toggle the button as you adjust the azimuth until you get the lowest volume possible from both channels. The Phono III's manual argues that this approach is satisfactory in most instances, while a superior approach is beyond the capabilities or resources of many audiophiles. Fair enough. Three more buttons on the front panel's extreme right side select “Standby,” “Run,” and in between them, “Mute.” (“Run” is the preamp's On button.)

In the middle, on the brushed aluminum center panel's top section, a large LED display shows the current resistive or capacitive loading; below this are three blue LEDs labeled “EQ Group,” indicating RIAA (center) or on either side, either of two presets, EQ1 or EQ2. Three vertically arrayed LEDs to the right of the resistive/capacitive loading display indicate “Ohms,” “100k,” and “pF.” More about that coming up.

Swing the invisibly hinged door to the left (a major aesthetic and ergonomic upgrade from the Phono II's vertically oriented door), and you'll find the switches that set the loading, gain, and equalization choice for each of the three inputs, via 12 well-organized toggle switches and a pair of large, blue up/down “load adjustment” buttons. Starting on the left, the first toggle switch in each group sets either MM capacitive loading (up) or MC resistive loading (down).

The second toggle switch applies only to MM mode and selects either 100k ohms or 47k ohms for the resistive loading. The 100k ohm loading option is really useful, because 47k ohm is at best a compromise setting; often, 100k ohms is the correct MM load. There's not enough space to go into this here in more detail.

The third and fourth toggle switch-



es, located in a box labeled “Equalization,” let you choose the desired EQ curve. The left-hand, three-position switch labeled “G2-RIAA-G1” selects RIAA in its center position and either G1 (pre-RIAA) or G2 (pre-RIAA 78) in the two other positions. Once in either G1 or G2 position, the right-most toggle switch lets you choose between EQ1 (Columbia) and EQ2 (Decca/ffrr).

That's five equalization choices (RIAA and four additional ones). DSA should include a handy card describing all this that can be kept under the unit.

The instruction manual includes a 10-page appendix that discusses in great detail both the history and implementation of EQ curves in 78 and 33 1/3 rpm records and how the curves used in the Phono III were designed, implemented, and measured.

The blue “up/down” pushbuttons adjust either the resistive or the capacitive loading, depending on the setting of the first toggle. MC resistive loading can be set from 0 to 2550 ohms in 10 ohm steps. MM capacitive loading can be set from 120pF to 1400pF in 10pF steps. As already mentioned, MM resistive loading can also be set—to either 47k ohms or 100k ohms. The Phono III will remember the gain and loading settings for each input.

Input A is special: Its first toggle switch has three positions, not two. The center one is for a custom resistive or capacitive load (resistive for MC, capacitive for MM). Under a small removable chassis top plate, you can access a set of sockets and insert your choice of resistors or capacitors. When

the switch is in that center position, the large LED screen reads “- - -.” This custom-loading option is laudable, but the available pushbutton settings will be sufficient for all but the most obsessed.

A nice feature: Normally, changes made to loading and gain using the remote control don't change the memorized settings. Thus, you can “play” with loading while listening in order to optimize a given recording (using loading as a “tone control”) and then, if you hear a load setting you especially like, you change the memorized setting by getting up, walking over to the chassis, and pushing a blue button. You can also make gain changes permanent from the remote by making the adjustments when the Phono III is in Mute or Standby mode.

I ran the Lyra Atlas λ Lambda SL mounted on the SAT CF1-09 arm/XD-1 turntable into input A, the Miyajima Labs Infinity Mono mounted on the Kuzma 4 Point (on the XD-1's rear arm pod) into input B, and on the OMA K3 turntable, the Thales X-quisite ST cartridge mounted on its proprietary Schröder arm went to input C.

### Ghost in the machine

I began listening through the SAT/Atlas combo with the loading set to 100 ohms via the blue buttons. About a minute in, the sound changed. What was happening? I looked at the Phono III's display and found that the loading had risen to 740 ohms. Regardless of where I set it (I tried 200 and 400 ohms), it would quickly rise by 640

ohms. I called Dr. Hurlburt, who was surprised and at first perplexed; this unit had undergone a great deal of break in before shipping and had performed perfectly. What changed?

Hurlburt sent a second Phono III, also tested and broken in, and guess what? Same thing!

Hurlburt did not put on his thinking cap, because he never takes it off. He suspected a static electricity buildup and suggested grounding the SAT turntable, which I did—it has a ground lug for that purpose—but that didn't solve the problem. He then suggested that I try a mono cartridge—finally the impedance did not change!

His diagnosis? A static electricity buildup was zapping the memory/logic board (or something), which caused the loading to change. With the mono cartridge, the dual differential circuit “nulled out” the static before it could reach the logic board.

I also tried the X-quisite stereo cartridge, and its impedance setting didn't change. Why? Its one-piece ceramic cantilever/coil former could not conduct a static charge into the Phono III.

Why didn't Hurlburt experience this problem in his own workshop? Because he lives in high-humidity Florida, where static electricity isn't an issue.

A short-term fix was to use the supplied RCA-to-XLR adapters on the SAT arm (thus running it “balanced/dual differential”). I then had three properly functioning inputs.

The long-term fix involved a circuit change to run the preamp balanced-only (originally, it ran single-ended into the single-ended inputs) and to make another small circuit change. Once this static electricity issue had been solved, the Phono III performed flawlessly.

### The sonic overview

If you are looking for a phono preamp with a timbral “personality,” the Phono III might not be for you. It hasn't got one, not that I could identify. But if you want a phono preamp that gets out of the way and lets your cartridge or cartridges express *their* timbral personalities—all transducers have them to one degree or another—the Phono III could be for you.

Was it the sonic equal of the more-than-twice-the-cost CH Precision P1/X1? No. The sonic picture, though generously sized, was not as grand in scope nor as enveloping. The attack was a bit harder and less nuanced,



the sustain not quite as generous. But because of the Phono III's jet-black background and quiet, its decay was the P1/X1's equal.

The just-released remix of John Lennon's first and most consequential solo album, *John Lennon/Plastic Ono Band* (0602507354541), is among the most accomplished and useful of classic rock remixes. (See My Back Pages, p.130.) Lennon didn't like his voice, and at his direction, the original mix puts it in the distance. The reissue's goal was to move it forward in the mix and add the vocal body that's on the multitrack but left behind in the mix.

The production is relatively simple, so there's not much room to mess things up. The remix packs vocal thrills, replacing Lennon's hollow, distant, tape-delayed-and-doubled original vocals with ones that duplicate the tape delay effect but put raw glottal textures almost in your lap as he screams his primal Janov pain. The remix also adds more bottom-end weight; in the wrong phono preamp's hands, that could produce dullness and unwanted lower- and midbass mud. Not here.

The Phono III's rendering of this exciting hi-rez digital remix seemed to me just what the producers and engineers wanted listeners to experience: more bottom-end weight and greater rhythmic insistence to Ringo's drums and Klaus Voormann's bass, and greater vocal expressiveness and (especially) natural texture from Len-

non's vocals.

For last fall's “Black Friday” Record Store Day, Zev Feldman's Resonance Records released a previously unreleased 1982 set by the underappreciated (although not in my home) Jamaican-born pianist Monty Alexander. Criteria Studio owner and Alexander fan Mack Emerman recorded *Monty Alexander Love You Madly: Live at Bubba's* (Resonance RLP 9047) to 24-track tape and then, after the concert, out of love and fan devotion, handed a surprised Alexander the 24-track tape.

It has now been mixed to analog two-track tape and mastered, both by Bernie Grundman. The release was limited to 2000 copies of the double LP. A few are still around, so grab it while you can.

The Phono III brought the stage forward and emphasized the attack, which with the Alexander is pleasingly aggressive. The CH provided a more nuanced attack and more sounding-board sustain on a set-back stage. Bassist Paul Berner and percussionist Robert Thomas Jr. appeared to sit well behind Alexander. But while the staging and attack differed, the two preamps' timbral presentations were quite similar. If you are a tube guy or gal, you probably wouldn't go for either presentation.

### Playing with curves

As Hurlburt's excellent appendix points out, only *older* mono records require non-RIAA compensation, so



I didn't try the Columbia curve on an original, mono *Kind of Blue*, but I did try it on a *really* old Columbia Masterworks LP of Tchaikovsky's Concerto in D Major with violinist Nathan Milstein and the CSO, conducted by Frederick Stock (ML 4053) and released on vinyl in 1948. Applying the Columbia post-78rpm curve made Milstein's violin spring to life, though I wouldn't call it "high fidelity."

By 1954, RCA was issuing from tape "New Orthophonic" recordings like the famous, one-mike *Also Sprach Zarathustra* (LM-1806); the same recording was released six years later in stereo (LSC-1806). The curve was pretty much what a few years later became the RIAA curve, minus the 50Hz "turnover." Playback of that classic was best with the RIAA curve—no great surprise.

Much "curve abuse" is still going on, with claims that these older curves were used by some labels into the '70s and beyond. It's bullshit. As one veteran Columbia Records mastering engineer asked me over the phone, "What are

they smoking, crack?" Those extra curves are nice to have for people who own and play *really* old mono records, but for most of us, it's unnecessary.

### Conclusion

Just as I was about to hand in this column, a new Electric Recording Company release arrived: *A Debussy*



*Recital* (ERC069/[UK] Columbia SAX 2469), performed by Samson François. Limited to 300 copies, it was already sold out when it arrived. (Why doesn't *someone* relicense these great titles and reissue them at lower cost?) On Discogs, five people were listed as owning the original, and 181 wanted a copy. No copies were for sale.<sup>2</sup> I can't imagine what an original might cost.

This solo, stereo piano recording from 1962 is a sonic spectacular,

timbrally, texturally, dynamically, and however else you wish to gauge a great recording. The sensation of a live *piano* recital delivered through the DSA Phono III stared me in the ear. The sonic picture was absolutely spectacular. It left me aquiver. So, earlier in the month, did recordings by The Clash; Peter, Paul and Mary; Floating Points with Pharoah Sanders, and many others. So, forget about comparisons. There's much to like about DSA's Phono III. I can't guarantee you'll love it, but *they* guarantee that if you don't, you can return it. ■

2 Already though—I'm writing this a day after promos were received—seven "mint" copies of the ERC issue are on Discogs, priced at \$579 and up.

### CONTACTS

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ANY CLOD CAN HAVE THE FACTS; HAVING OPINIONS IS AN ART

## MANUFACTURERS' COMMENTS

### Dynamic Sounds Associates Phono III

What we celebrate as "The Analog Lover's Dream Come True" has just received a thorough and engaging review by Michael Fremer in the pages of this magazine. As he indicated, small



companies such as DSA can live or perish at the hands of reviewers, and we are grateful for his efforts. As he dealt with the unexpected issue of the Phono III's loading settings having a mind of their own in his environment, we had some great conversations. These led to identifying and resolving this problem for his and all future units. His willingness to try different options and participate in some "long distance experiments" is a credit to him as a reviewer. When he was wrapping up his write-up, he shared with me how pleased he was with the multitude of options the Phono III provided—especially the ability to "zero in" and store in memory the proper cartridge loading without leaving the sweet spot. He

also suggested that the user manual be updated to make it more "user friendly"; we have added a *Quick Setup Guide* along with an operational cheat-sheet insert for the "magic door."

It is true that I approach projects like this through the lens of a scientist, but I want to make sure that Michael's declaration that the Phono III is "Lab Grade" does not distract from why I entered into this industry in the first place: my love of music. Our philosophy at DSA has always been "First, do no harm to the music." As Michael observed in his comments, the Phono III has lived up to this goal.

Douglas Hurlburt,  
Founder and Chief Designer  
Dynamic Sounds Associates