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» DECEMBER
2017



**SOLO
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S3 Mk 2



MAGICO

AS WE SEE IT

BY ROBERT SCHRYER

THIS ISSUE: How strong is the bond between audiophiles and their systems?

Why I Can't Stop Being an Audiophile

“Why can't you stop being an audiophile?” The question took me off-guard. It didn't come from one of the usual suspects—a hostile anti-audiophile, or a non-audiophile who simply can't fathom why we should care so much about something as nonessential as sound reproduction—but from Louis, a sharp dressed, goateed, middle-aged man who was known, among his audio repair shop's clientele, for not only his virtuosity as a classical solo violinist, but his expertise—some would say his preternatural ability—in setting up turntables to sound their very best.

Which explains why, on the day he asked me the question, Louis was in possession of my Rega Research Planar 5 turntable. An hour earlier I'd brought it to his shop, where he had partially dismantled and laid it out on his worktable. He was going to equip it with my new Denon DL-103 cartridge and headshell, the aluminum-lithium version modified by Audio Musikraft with ipe-wood inserts,¹ after which he was to thoroughly, meticulously fine-tune my turntable, as only he can.

Despite his stooped, slender frame, Louis's reputation has made of him an intimidating, larger-than-life figure, and in my surprise at his question I responded like a babbling idiot. “It's about the playback equipment, right? It smells good and feels good and has, uh, good shapes.” I could feel heat vapors emanating off my face. I was *blushing*, for heaven's sake. “And the audio, right? Hearing new things. New meanings. All that good ol' audiophile stuff.”

At the heart of my blathering clichés was a fact: Nothing I can buy, unpack, and insert into some aspect of my daily life, in any other product category, has the power to make everything seem right with the world to the extent that audio gear can—just as discovering new fragments and meanings of musical art through better sound can still overwhelm me with rapture, wonder, and gratitude.

Louis would have none of it. “*Mais non*,” he said, rising from his stool to point a bony finger at me. “Find me the answer, or I will not return your turntable to you, *compris*?” Before I could protest, he said, “But! I promise you that once I'm done with it, your turntable will sound better to you than any audio component you've ever heard. Do we have a deal?”

He extended a hand. Grudgingly, I shook it.

Come next day, I thought I'd found the answer to Louis's question. Surely it had to do with the fact that audio was my most consistent companion. I could count on it—count on it more, in some ways, than the people closest to me in life.

Chalk it up to pragmatism. As audio technology has made it easier for me to enjoy better sound quality when, where, and how I want it—to have, in effect, liberated my audio-listening experience—it has made it possible for me to never have to feel completely alone. Wherever I am, at any given

time of day, audio has my back. I called Louis to tell him so. He was not impressed. “Wrong answer, *monsieur*,” he rasped.

I called him early next morning to try my luck again. “Community!” I shouted into the receiver. “Our sense of *community* with other hobbyists is why we can't stop being audiophiles.” I heard a guttural sigh. The line went dead.

Over the next few days, growing feelings of dejection and desperation had me, far more than usual, seeking solace in the process of listening to music through quality hi-fi. *Ah-ha!* I thought. *The answer must lie in how audio makes us feel.* Another audiophile cliché, to be sure—except that I could not, at that moment, imagine a better explanation of why we keep listening to and upgrading our hi-fis: A high quality of sound reproduction makes us feel good. And, naturally, what makes us feel good we then crave more of.

Alas, Louis had other ideas. Like a deadeye assassin, he shot me down with a single bullet: “*Non!*”

I was beginning to lose sleep. My appetite shrank. I picked fights with my wife and children over nothing.

I had finally had enough. Screw the Rega—at this point, more than wanting my turntable back, I needed to know, as soon as I could—for the sake of my sanity and my family's well-being—the answer to Louis's question.

I barged into his shop. He sat cross-legged on his stool facing me, my turntable already boxed up, neatly taped, and sitting next to him on his worktable. I demanded to know the answer.

He cocked an eyebrow. “The answer is scurrying up your windpipe at this instant,” he said. “Do you feel it?”

I did. Then it stopped, and my voice took over. “Audio defines me.” I paused, wondering if my words would continue without me. They didn't. “Audio has been a part of my life for so long that it is now inseparable from who I am. Audio owns . . .” My bottom lip trembled.

“Sssay it,” Louis hissed.

“Audio owns . . . *my soul*.” I burst out in an awkward laugh. “Audio owns my soul!”

There it was, inside me all along—the answer to Louis's question. And, suddenly, it was all over.

“*Voilà!*” With a sparkle in his eye, Louis handed me my turntable. “It will be the best thing you've ever heard.”

I smiled, and nodded appreciatively. I couldn't wait to hook it up. ■

As much fun as Robert Schryer (Stletters@enthusiastnetwork.com) is having with today's newfangled playback systems, he's confident he'd have even more fun if he could afford to buy whatever he wants.

Audio has been a part of my life for so long that it is now inseparable from who I am.

¹ See www.stereophile.com/content/listening-176-musikraft-cartridge-bodies-emia-phono-transformer.



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SEE OUR EXCLUSIVE EQUIPMENT REPORT
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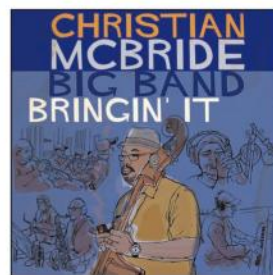
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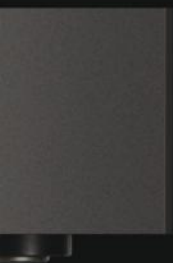
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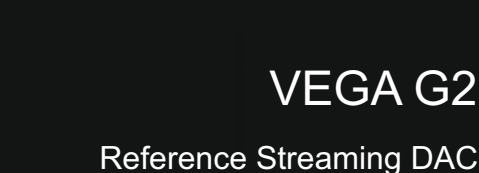
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LETTERS

FEEDBACK TO THE EDITOR

What if digital had never happened?

Editor:

Regarding Steve Guttenberg's "What If Digital Had Never Happened?" ("As We See It," October 2017): Thank goodness for digital! I believe that, as a result of digital, the designing of turntables, cartridges, step-up transformers, phono preamps, etc., is now far better than ever—not to mention the manufacture of vinyl.

Let's be honest: Just prior to digital hitting the mass market, most LP manufacturers had become complacent, quality control had become nonexistent, and, as a result, a lot of the vinyl pressed from that era, especially in the US, sounded like crap. Turntable and cartridge design for the most part had stagnated. Who used outboard phono preamps back then?

No wonder listeners salivated over digital. Digital raised the ante, begged for competition, and got it. The best audio engineers in the business had the fire lit under their collective loafers, shifted their focus, and went to work designing consumer analog equipment that today far exceeds previous designs in unimaginable ways and, in my opinion, also exceeds digital. Yeah, I'm afraid if digital had never happened, I'd still be listening to warped Dynaflex vinyl on my Philips 312 turntable.

—Art Grasso

Manhattan Beach, CA
gra12xu@verizon.net

Economic privilege vs diversity

Editor:

Steve Guttenberg's thought experiment about how things could have been in a world without digital music (October 2017, p.3) seemed mostly an exercise in nostalgic romance. But it also was (inadvertently, I'm sure) an expression of economic privilege. Steve forgets how narrow the keyhole of music appreciation was for those without means in those analog days. The \$9 LP of my youth, adjusted for inflation, would cost \$20 today. At those rates, the average American music fan would be lucky to afford a dozen new albums each year. In most other countries, citizens could afford far fewer than that. And while FM radio would presumably fill some of the gap, the FM radio of our youth was never very diverse, nor was it easy for artists without a major label to get any airtime.

The FM radio of our youth was never very diverse.

Today, free, ad-supported services like Spotify and YouTube let music fans explore the wide diversity of our musical heritage, past, present, and future. (Plus, those ad-supported services actually pay royalties to the performers and copyright owners for playing recordings, something FM radio has never done.) And for those fortunate enough to be able to afford it, \$10 a month eliminates the ads and offers up the full diversity of our collective musical history—something the analog age never gave us.

—Fred von Lohmann

San Francisco, CA
fred@vonlohmann.com

Wine tasting vs audio testing

Editor:

In a footnote to his article in the October 2017 "Industry Update" (p.15), Jim Austin implies that because the wine industry rarely does A/B/X testing, its blind testing is not "rigorously employed," and therefore not so different from what is done in high-end audio publications.

This is false. The majority of blind tests are not A/B/X. The wine industry routinely performs blind A/B/C/D testing, usually with multiple subjects, in order to establish subjective preference while eliminating bias. Similar procedures are the norm in audio research. This bears little resemblance to what is done in high-end audio publications, where one reviewer listens to a product and compares it against others in sighted conditions with little attempt to eliminate bias.

A wine expert who insisted on knowing the identity of the wine he was tasting before declaring his judgment would be

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laughed out of his industry. —Ellis Craig
ellisraig169@yahoo.com

Thank you for writing, Mr. Craig. Define rigorous. From a strictly scientific perspective, wine tasting's common methodology has several shortcomings. Such tests are often subject to experimenter's bias: The experimenter knows which wine is which and can influence the results of the test, consciously or unconsciously. Without statistical analysis, the expertise of the tasting panel cannot be established. Crucially, the objective of such tests is to characterize in terms of vaguely defined subjective concepts. Should I give this wine an 89 or a 91? With no established, rigorous criteria as to what makes one wine superior to another, how can you decide? It has been alleged that Pepsi won the "Pepsi Challenge" by making their cola a little sweeter—which tastes better when you sip it, but doesn't wear well to the end of the can (or, especially, the 16oz bottle). To me, that seems quite relevant to wine tasting: Is swishing, smelling, and taking a small taste a reasonable proxy for enjoying a bottle of wine with dinner? I'm not a wine expert, but my experience says it's not. Enjoy a bottle with dinner, sighted or blind, then keep your scores to yourself and write me an essay. If you're a poor judge—or if your tastes differ from mine—I'll know it before I get to the end of the bottle.—Jim Austin

Grasping

Editor:

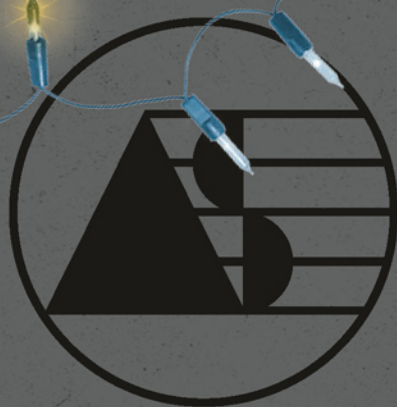
I thank Jim Austin for replying! He originally dismissed the wine industry's testing methods because they are not A/B/X. Deprived of that argument, he offers alternative criticisms of wine tasting, although he praised wine tasting in his article. And he still avoids the issue: the wine tasting he claims as analogous to high-end audio testing is done blind, yet high-end audio publications refuse to employ blind testing.

His article continues the long tradition of high-end audio publications grasping for anything that might justify their methods. If they employed blind testing, they wouldn't have to. —Ellis Craig
ellisraig169@yahoo.com

The demand made on audio critics to perform blind testing is as old as high fidelity. See our thoughts on the subject at www.stereophile/content/simple-everything-appears-simple and www.stereophile.com/asweseet/894awsi/index.html.—John Atkinson

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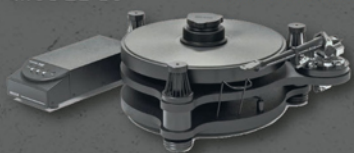


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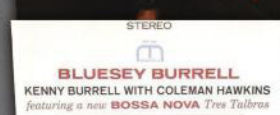
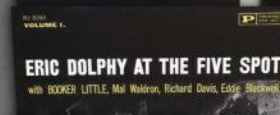
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INDUSTRY UPDATE

AUDIO NEWS & VIEWS

DENMARK: AARS

Paul Messenger

I mentioned in an April 2017 report that cast iron makes an exceptional loudspeaker enclosure material because of its very effective self-damping due to a high content of carbon in graphite form, its only real disadvantage being its high density and, thus, mass. Jern APS (<http://audioform.dk>; “jern” is Danish for “iron”) now makes



five versions of its original Jern14 loudspeaker, four of them designed to be used with REL T/5i subwoofers, and the company's number of related components continues to grow.

The latest example, the w8000, is actually a quite slim, on-wall, two-way speaker. It's also entirely circular—partly, perhaps, because such a shape is very difficult to execute in

wood! There's also a cast-iron tweeter waveguide that's aimed at the DIY market, adding a useful combination of mass and depth, to improve the phase relationship at the crossover point.

UK: BISHOPS STORTFORD, HERTFORDSHIRE

Paul Messenger

The British cable maker QED has just published “The Sound of Science,” a 40-page white paper that distills into one document most of the research it has published since 1973. Naturally enough, the content has something of a QED spin, but it makes interesting reading for those interested in the sounds of audio cables. Long sections discuss the ins and outs of such tricky topics as HDMI cables and biwiring, and do so in ways based on science and measurements, with a refreshing lack of passion. The 40-page paper is posted online at www.qed.co.uk/downloads/pdf/soundofscience.pdf.

GERMANY: PULHEIM

Paul Messenger

Is there a trend toward single-driver loudspeakers? Some recent signs seem to point that way. In my report in June on the 2017 edition of Sound & Vision, the audio show held each year in Bristol, I described a new single-driver

SUBMISSIONS: Those promoting audio-related seminars, shows, and meetings should e-mail the when, where, and who to JAtkinson@enthusiastnetwork.com at least eight weeks before the month of the event. The deadline for the February 2018 issue is November 20, 2017.

speaker, the Pearl Acoustics Sibelius. I described the Sibelius a bit more in the October issue, so here I'll just say that I've just spent two months listening to a pair, and am still impressed by the sheer immediacy of their sound, despite some bandwidth limitations.

Loudspeakers with only a single full-range drive-unit have a history that goes back to the very birth of recorded sound. And although such speakers have existed as long as recorded sound, they've also invariably suffered from imbalances of frequency response that audiophiles generally find unacceptable, usually with a peak in the upper midband followed by a lack of true treble.

That could be about to change. I've been finding the frequency balance of the Sibelius largely acceptable. It's not by any means perfect—a +6dB peak is visible at 8kHz—but the 3.75" (95mm) diameter of the Mark Audio driver's metal cone gives a frequency response of 40Hz–10kHz, ±6dB (in-room, averaged), alongside the immediacy that stems from the absence of a crossover. Further investigation has revealed a number of different but similar full-range drivers produced by Mark Audio and available in the UK from a company called KJF Audio.

This report was triggered by a press

CALENDAR OF INDUSTRY EVENTS

ATTENTION ALL AUDIO SOCIETIES:

We have a page on the *Stereophile* website dedicated solely to you: www.stereophile.com/audiophile-societies. If you'd like to have your audio-society information posted on the site, e-mail Chris Vogel at info@XLinkAudio.com.

Please note that it is inappropriate for a retailer to promote a new product line in “Calendar” unless this is associated with a seminar or similar event.

CALIFORNIA

■ Saturday, November 18, 1–5pm: The **Los Angeles & Orange County Audio Society** will hold its monthly meeting at **Sunny's Audio Video** (1370 E. Cypress

Street, Suite D, Covina 91724). Sunil Merchant and his crew will demonstrate top-of-the-line equipment designed to maximize your musical enjoyment. This meeting will feature **Naim Audio's** Statement series with **Wilson Audio Specialties' Alexandria XLF** speakers, and will introduce Naim's Uniti series. In addition, Wilson's Alexia Series 2 will be featured. For those fascinated by new products, emphasis will be given to new gear from **Arcam, AudioQuest, Audio Research, Brinkmann Audio, HRS, Rega Research, T+A Elektroakustik, Technics**, and more. Representatives of many of these companies will be on hand to answer questions. A raffle is planned and an extraordinary lunch will be served, including excellent food from

India and most excellent beverages. Free parking is nearby. Guests, visitors, and new members are invited. For more information, visit www.laocas.com or call Bob Levi at (714) 281-5850.

■ Sunday, December 3, 11am–3:30pm: The **Los Angeles and Orange County Audio Society** will host its 24th Annual Society Gala and Awards Banquet in the Grand Ballroom of the Holiday Inn, Buena Park (7000 Beach Boulevard). **John Grado**, president of Grado Labs, will receive the Founder's Award, the Society's highest honor. The award will be presented by **Michael Fremer**, of *Stereophile* and *AnalogPlanet.com*, and **Owen Kwon**, president of Astell&Kern. They will recognize John Grado's groundbreaking contributions to phono

release from a major German speaker brand, Heco, which introduced the third model in its Direkt range. Known as the Direkt Einklang (one sound), it has a single full-range drive-unit with an 8" twin cone. Crucially, Heco's press release contains the following sentence: "The development of this new 20 cm driver (and particularly the profile of its HF cone) has been made easier through the use of powerful modeling & simulation software allied

Multiway speaker systems have now achieved a level of maturity.

to far more precise measurement systems (Klippel) than would ever have been available in the last century."

This is the fundamental reason I believe we may be about to see a new trend. Multiway speaker systems have now achieved a level of maturity at which much of their evolution now focuses more on enclosures than on drive-units. However, although the single full-range driver still has a long way to go, the relatively recent

cartridges and headphones, and his newest achievements. **Paul Seydor** of *The Absolute Sound* will present the pre-note speech, on the topic of personal listening. The first 300 people to reserve a seat at the Gala will receive a complimentary copy of *TAS's Headphone and Personal Listening Special Edition*. The Society's executive vice president, **Marine Presson**, general manager of the L.A. Audio Show, will present the Big News about the 2018 edition of the show. Bob Levi, president and CEO of the Society, will be master of ceremonies. Past honorees on the dais will include **Ray Kimber**, president of Kimber Kable, and **David Robinson**, editor of *Positive Feedback*. **Eastwind Import** will bring LPs and CDs to sell. Enjoy the renowned, magnificent Gala Raffle, with \$50,000 worth of prizes, including a grand prize worth \$12,000—our biggest ever. Dinner is a lavish holiday NY strip buffet; vegetarian choices available. Buy your tickets at the Society's website, www.laocas.com. Guests, visitors, and new members are invited; parking is free. For more info, visit our website or call Bob

Levi at (714) 281-5850.

■ Sunday, January 14, 2018, 1–4 pm: The **Los Angeles & Orange County Audio Society**, in concert with the **San Diego Music and Audio Guild**, will hold a joint meeting at **Manley Laboratories**, in Chino (13880 Magnolia Avenue). Made in Chino, Not China! Once again, Manley Labs will open its factory doors to Society members for a day in which everyone will get to see the intricate details and processes that go into hand-building vacuum-tube audiophile amplifiers and preamplifiers in America. EveAnna Manley will personally conduct factory tours for Society members throughout the afternoon, demonstrating tube selection, parts matching, quality control, transformer winding, metal machining, and assembly and soldering techniques. **Eastwind Import** will be on hand to offer personally selected vinyl and CDs for sale. A raffle is planned, and an extraordinary lunch will be served. Free parking is nearby. Guests, visitors, and new members are invited. For more information, visit www.laocas.com or call Bob Levi at (714) 281-5850.



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FLORIDA

■ Thursday, December 14, 7pm: **Audio Advisors** (2271A Palm Beach Lakes Boulevard, W. Palm Beach) will host an evening with **Richard Vandersteen**, who will demonstrate the Vandersteen Audio Treo CT and Quatro CT loudspeakers. RSVP: (561) 478-3100.

ILLINOIS

■ Thursday, November 30, 4-9pm: **Holm Audio** (2050 W. 75th Street, Woodridge 60517) hosts a musical evening with representatives from **Bluesound, NAD, Nordost, and PSB** showcasing their latest offerings. Nordost will feature their new QKore grounding units and demonstrate their effect on system performance. They will also demonstrate the difference USB cables make, as well as power cords and resonance-control systems. A door prize will be given to each attendee, and over \$1000 worth of goodies will be raffled off to multiple winners. Refreshments provided. Join us for a fun and informative evening! Details at HolmAudio.com, or call (630) 663-1298.

MINNESOTA

■ Tuesday, November 21, 6:45-8:45pm: The **Audio Society of Minnesota** will present our monthly meeting at the Pavak Museum of Broadcasting (3517 Raleigh Avenue, St. Louis Park 55416). Refreshments will be served, and guests, visitors, and new members are always welcome to attend. For more information, visit our website: www.audiomn.org.

NEW JERSEY

■ Saturday, December 16, 12pm & 3pm: **Audio Connection** (615 Bloomfield Avenue, Verona) will host **Richard Vandersteen** demonstrating Vandersteen Audio's System Nine: the Model Seven Mk.II loudspeakers and M7-HPA amplifiers. RSVP: (973) 239-1799.

TEXAS

■ Tuesday, December 12, 6:30pm: **Timbre** (2245 1/2 Portsmouth Street, Houston) is hosting an evening with **Vandersteen Audio's** System Nine: the Model Seven Mk.II loudspeakers and M7-HPA amplifiers. RSVP: (713) 523-6044.

availability of computers and software programs could well have a dramatic effect on their development.

The driver in Heco's Direkt Einklang has a significantly larger diameter than the Mark Audio drivers, and therefore a correspondingly higher sensitivity specified as 94dB, though I remain somewhat suspicious of the EQ network that's apparently part of this speaker system.

UK: MAIDSTONE, KENT
Paul Messenger

Chord Electronics has expanded its range of mobile audio products with the Poly, claimed to be the world's first portable streamer. Somewhat smaller but still more than half the size of Chord's Mojo portable DAC and headphone amplifier that John Atkinson reviewed in February 2016,¹ the Poly is effectively an add-on streaming module for the Mojo. It has Wi-Fi, AirPlay, and Bluetooth connectivity, integrates Spotify, Tidal, and Roon, and an SDcard slot is included for adding one's own music collection. The Poly costs \$629. ■

¹ See www.stereophile.com/content/chord-electronics-mojo-da-headphone-amplifier.

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Number **2** PrimaLuna Education Series

Maybe It's Preamp Fairy Dust?

Preamps are a profit center for some manufacturers. There. We said it. While tube amps are expensive to build, a decent tube preamp can be built and sold for \$1500; at a profit. Shocked? People see a pretty faceplate and never look under the hood. But if you did look, you might be bummed out to see a lot of empty space. If it isn't the parts inside, what exactly are you paying so much for? Fairy dust?

\$4 chips as a volume control, a few tubes, a **weakling power supply**, all **wave soldered** by contract factories overseas to a **flimsy printed circuit board**. What's *high-end* about that? Oh, but the lofty stories! **There's always a story.** The preamp may sound fine; even great. *But is it worth it?*

READ THIS: The best preamps in the world, and the most expensive, all have a few things in common. Always. They use more tubes... **no FET's**. They are **dual-mono** with no shared circuits between channels. They use **analogue volume controls**, not chips. They most certainly do not use solid-state rectification; *they are tube rectified* using 5AR4 rectifier tubes for **TRUE** tube glory.

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High-quality capacitors	High-quality capacitors	German-made Mundorf EVO Silver/Gold + Oil
Single C-core transformer	(2) potted toroidal	(2) potted toroidal w/AC Noise Filter
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ANALOG CORNER

BY MICHAEL FREMER

THIS ISSUE: John Grado's Lineage Epoch moving-iron cartridge is taken for a test drive.

A New Epoch!

Brooklyn-based Grado Labs has been in business for 64 years, manufacturing moving-iron phono cartridges, headphones, and, for a while, even a unipivot tonearm with a wooden armwand, as well as the sophisticated, S-shaped Signature Laboratory Standard arm.

The company's founder, Joseph Grado, who well deserves the appellation "legendary," died in 2015, at the age of 90. He began as a watch builder at Tiffany & Company, and started making phono cartridges in 1953, as the hi-fi boom took off. He retired in 1990 and sold Grado Labs—still located in the same Brooklyn building where he'd begun in 1953—to his nephew John Grado Jr., who by then had put in more than a decade at Uncle Joe's company, pretty much running it after Joe had returned to what he liked best: inventing things.

At the time, Grado Labs manufactured some 10,000 cartridges annually. It's not as if Joe's new invention—three models of costly, handmade headphones—was an attempt to diversify because the cartridge business was bad. Joe also invented the highly regarded, limited-edition Grado HMP-1 omnidirectional microphone, a favorite of veteran recording engineer Peter McGrath, who is currently director of sales for Wilson Audio Specialties.

The headphones, hand-built by Joe and John, were an immediate success among audiophiles and recording professionals. Grado Labs' move into headphones has proved prescient, given the subsequent boom in that market, and with the vinyl resurgence, Grado today is poised for continued growth in both arenas, even as John Grado reaches retirement age (though it's doubtful he'll retire any time soon).

There are more Grados in the pipeline. Recently, it was announced that John's sons, Jonathan and Matthew, have joined the company.

The Core Business Expands

Grado Labs' cartridge line recently expanded from three series to four: the familiar, low-cost Prestige models (\$75–\$260); the midline Reference 2s (\$350–\$1500); the former flagship series, the Statement 2s (\$350–\$3500); and their new Lineage family of cost-no-object models, which currently has one member: the Epoch (\$12,000).

All are moving-iron designs of varying outputs that use a range of materials for coils and cantilevers, as well as various stylus profiles and construction techniques. Over the years, all have

diocre, and excellent examples of *every* method used to turn the motions of a stylus into electricity.

With the Lineage series, Grado is clearly aiming to put itself back at the top in terms of sound, technology, and, unfortunately, price. The Epoch costs \$12,000. The Aeon, to be released in early 2018, will cost \$6000. The Aeon was actually designed first, but having heard the results, John Grado decided



The Epoch's cantilever is made of solid sapphire—a first for Grado.

had major interior design overhauls, while their exteriors look generally unchanged. Except for the Prestige models, all have bodies of wood.

In my March 1999 column, I wrote that Grado's Reference cartridge was "among the finest cartridges I've ever heard at any price."¹ But since then, even as Grado and others continued refining their moving-iron (MI) lines, designers of moving-coil (MC) cartridges upped their game and, more important, so did designers of phono preamplifiers. I've since been hooked on MCs, though there are poor, me-

to take it to the limit and launch the Epoch first.

These new cartridges make use of Grado's patented Flux-Bridger generator system and other technologies that, Grado claims, are taken to new levels of sophistication in materials and construction in the Lineages. In the Flux-Bridger, four fixed coils are associated with a fixed magnet and multiple pole pieces that create four magnetic gaps bridged by a single lightweight iron element attached to the innermost end of the cantilever. As the stylus moves the cantilever, the element moves between opposed magnetic flux gaps, creating an increase in flux in one gap and a decrease in the opposite gap. The change in flux generates voltages in the coils.

¹ See www.analogplanet.com/content/analog-corner-44.

Grado says that the four magnetic gaps create an efficient and perfectly balanced generator, and that, thanks to more efficient magnets and other developments, its coils now require fewer turns of wire to produce a given output voltage than do other systems. The result is lower overall mass and electrical inductance, which makes phono-cable capacitance far less of a problem than in typical moving-magnet designs.

While the lower-cost Grados have a telescoping, multi-alloy cantilever whose hollow and solid sections are bonded together, then coated with a damping material, the Epoch's cantilever is made of solid sapphire—a first for Grado. A sapphire cantilever isn't necessarily costly: Ortofon's Quintet S cartridge has one, and costs only \$999. Grado gets its sapphire cantilevers from a "standard supplier," then individually heat-treats each one and coats it with a special damping material.

The Epoch's diamond stylus, which Grado says is "specially" made for them, looks similar in shape to the variable-radius, line-contact styli of the flagship models from Audio-Technica, Dynavector, and Lyra, with one easy-to-spot difference: While the styli in

all of those cartridges are attached to a mounting plate that is then attached to the cantilever, Grado's stylus is affixed directly to the cantilever—there's no plate, which must slightly reduce the mass. It looked neatly and symmetrically done, without the gob of glue sometimes seen.

As in other MI cartridges, the Epoch's generator doesn't require the cantilever to teeter-totter on an elastomer pivot, with the stylus at one end and the generating element at the other. Instead, the cantilever terminates in a fixed axial pivot that supports the entire cantilever.

The ultra-light moving element is attached to the end of the cantilever at the axial pivot, and so its relatively smaller movement than seen in a cantilever with a teeter-totter pivot is theoretically more immediate, and arguably more linear and precise, than the movements of coils or magnets—which, in a typical system, are a greater distance from the pivot point and thus move farther. Anyway, that's according to Grado. We all know of *many* great-sounding teeter-totter cartridges.

Each Epoch and Aeon is hand-built by John Grado using coil-winding

techniques passed down from Uncle Joe. Each of the four coils is wound, Grado says, of "the finest properly sized and annealed 24-karat solid gold wire, which is the ultimate conductor for the transmission of the music from your record." All parts of the Epoch's magnetic circuit are "Swiss screw machined or molded metal, which have tolerances on the order of the best Swiss-made watches."

Nothing in the Epoch, John Grado assured me, is an off-the-shelf part. The magnet is formed and shaped to Grado's specifications, with all magnetization done in-house. The front and rear metal poles in the magnetic circuit are molded from powdered metal, while the 16 other parts in the circuit are manufactured on "Swiss screw machines and heat treated."

Grado buys raw rubber to make the grommets used in the Epoch's suspensions. First they cure the rubber for more than two years, then mold it into thin sheets, from which they punch out grommets of the desired size.

Grado claims that the Epoch and Aeon "feature a unique system that has the lowest effective moving mass of any cartridge." The new generator

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system is housed in an unusually large body of cocobolo wood, the body's shape and weight also contributing to the sound quality, per Grado. Cocobolo is a superhard wood from tropical Central America, so dense that it doesn't float. Grado carefully damps the body with four different materials, and a good thing too—when struck sharply, a cut block of cocobolo will produce a clear musical tone, which is why it's sometimes used instead of the usual grenadilla, or African blackwood, to make oboes, clarinets, and bagpipes.

How to install a \$12,000 cartridge...

Very carefully!

I first installed the Epoch in the Reed 3P tonearm.² It proved an outstanding match. The combination's vertical and horizontal resonant frequencies were about 8Hz. I used the CH Precision P1 phono preamplifier in MM/MC mode,³ and, using its test record and setup wizard, 47k ohms provided a ruler-flat response. (A 47k ohm load-



Nothing in the Epoch, John Grado assured me, is an off-the-shelf part.

ing is more of a "convenience" default setting for a MM phono preamp than necessarily the correct setting for every MM or MI cartridge.) The P1's setup wizard suggested 65dB as an optimized gain.

For the Lineage Epoch, Grado specifies an output of 1.0mV; a frequency response of 5Hz–75kHz; average channel separation of 33dB, 10Hz–30kHz; inductance of 8mH; resistance of 90 ohms; and a mass of 12gm. The recommended vertical tracking force (VTF) is 1.5–1.9gm.

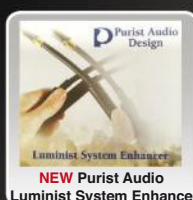
One issue that must be addressed with a low-output MI that produces the flat-test *measured* response when loaded at 47k ohms is the choice of phono preamplifier. If your phono preamp offers only low impedances for

² See my review in the November 2017 "Analog Corner."

³ See "Analog Corner," April and June 2017.



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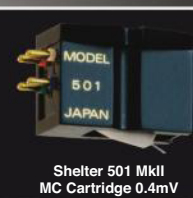
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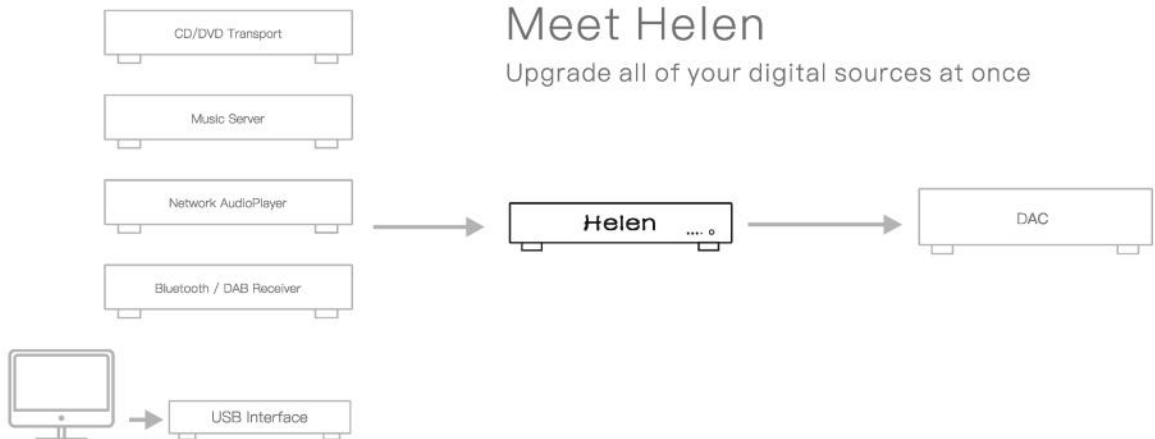


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its MC input(s), you're probably out of luck—or at least you won't maximize the Epoch's performance. That's also probably true if your MC input is transformer-coupled, depending on what resistive load the cartridge would "see." You could try the Epoch into the MM input of your phono preamp (if it has one), but with this cartridge's 1.0mV output, chances are good that you'll have a problem with noise with the 40–45dB of gain offered by most MM preamps.

In any case, I'm once more glad that I withdrew a hefty amount from my retirement fund to buy the CH Precision P1/X1 (\$48,000, combined). It's the perfect phono preamplifier (though not the only one) to use with this ultra-high-performance cartridge.

In the Reed 3P tonearm, the Epoch tracked best at 1.8gm. I measured 30dB of separation with a difference of 0.5dB between channels with the cantilever's azimuth just a sliver to one side of perpendicularity. The stylus rake angle (SRA) was 92° with the 3P slightly below parallel to the record surface. In other words, you get the build integrity and measured performance you should get for your \$12,000.

The Epoch's cantilever is tucked *way* back in its cocobolo body. This means that the cantilever and stylus are well protected against mishaps but it also makes alignment tricky, particularly zenith angle.

Sound

I hadn't listened to a premium Grado cartridge in a long time. My 1999 comment quoted at the beginning of this column might have been the last thing I'd written about one. While the Grados of that era were tonally neutral, smooth, and worthy of respect—and, like the Shure V15xMR, tracked really well compared to their MC contemporaries—they were kind of boring.

The Grado Lineage Epoch was the opposite of boring. Fresh out of the box, its sound was close to "Wow!" After proper setup and about 50 hours' worth of break-in, it was "Wow!"

The Epoch thrived in the smooth—and somewhat rich-sounding Reed 3P arm, but really came alive and into ideal focus in Graham Engineering's new Phantom III, (about which more next month).

First, the Epoch took the tracking of grooves to new levels of quiet. It glided silently and smoothly through the groove like no other cartridge I've

heard—as if every record I played had been treated with Gruv Glide or some other dry lubricant. The Epoch sailed through the "Tracking ability" bands of the recently reissued *Ortofon Test Record*, which contain a 315Hz test signal recorded at increasing peak amplitudes, up to lateral modulations of 100µm.

Better yet, what emerged from the "black" void combined what sounded to me like a smooth, flat frequency response with exceptional transparency—the kind of nonmechanical sound you hear from strain-gauge and optical cartridges.

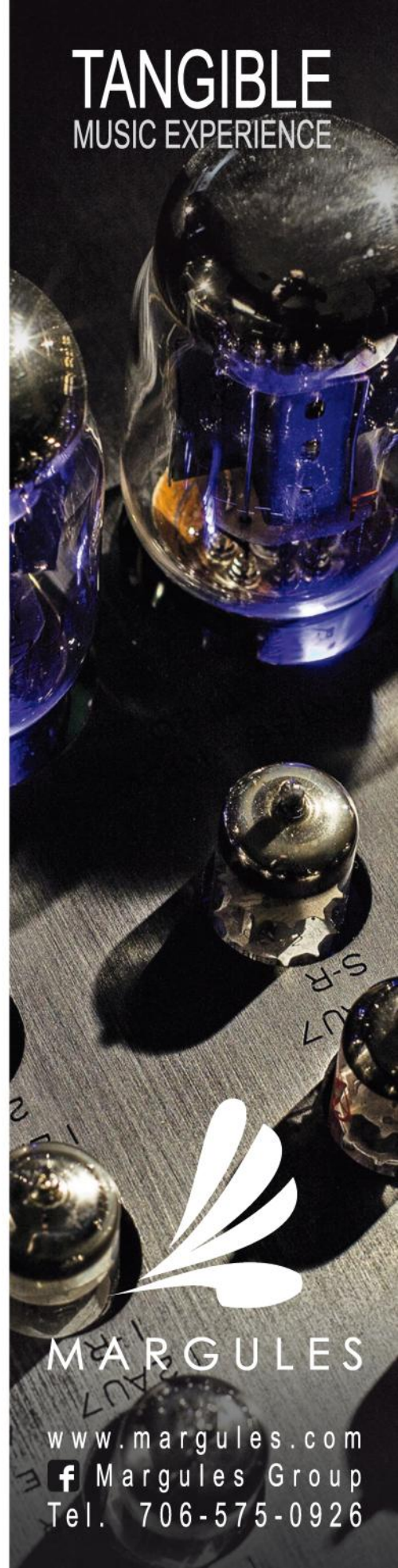
The Epoch's reproduction of transients was nearly ideal. It avoided the overly soft, burnished attacks and polite upper frequencies some cartridges produce in the service of "easy" listening and romanticized versions of what music actually sounds like. At the same time, it completely dispensed with unnaturally hard edges, mechanical brittleness, and high-frequency bleach.

The Epoch's bottom end was full-bodied, very well controlled, and free of romantic midbass bloat. Its starting and stopping abilities in the low end were among its most impressive qualities, and helped produce its quiet backgrounds. Yet the bass was not overdamped.

With the 30dB, ± 0.5 dB of channel separation I measured, you might expect a wide, deep soundstage, and that's what I heard. On those stages were solid, well-focused images of natural specificity. I just wanted to lean into those pictures to take it all in.


What the Epoch did in decoding Cécile McLorin Salvant's absolutely superb *Dreams and Daggers* (3 LPs, Mack Avenue MAC 1120LP), mostly recorded live at the Village Vanguard, was nothing short of hair-raising and astonishing. This album was engineered last September by ValveTone (aka Damon Whittemore) and Todd Whitelock, both of whom have impressive résumés (for ValveTone's, see www.valvetone.com). It puts the listener pretty close to the stage. Salvant's trio—pianist Aaron Diehl, double bassist Paul Sikivie, and drummer Lawrence Leathers—are respectively arrayed at the left, center, and right of the stage.

This warm, intimate recording is destined to be a classic, like the two famous Bill Evans sets recorded at the Vanguard almost 60 years ago. What the Lineage Epoch did with it was magical in every respect: tonally,



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spatially, dynamically, however you want to judge it. The sassy, exuberant Salvant began to sing, and she was right *there* in 3D, as solidly placed in front of the trio and as believable as any live recording I've ever heard. The textures of her voice were silky and natural. The ambience of the club seemed to envelop and surround her, as if heard live. Her sibilants sounded natural, 100% nonmechanical. The double bass's attack, sustain, and decay just sounded *right*—no need to analyze. If the drums were a bit warmer than live, so what? The rest was so convincing and nonmechanical that I could sit back and feel as if I were at the show.



Dreams and Daggers, mastered for vinyl by Kevin Gray from high-resolution digital files and pressed at RTI, is so good it might sound as convincing played through a Crosley Cruiser, for at least one play. Okay, that's hyperbole.

Playing this album with the Lyra Etna SL (\$9995) or Atlas SL (\$12,995) provided somewhat different but equally convincing tonal and spatial perspectives. It was like the difference between the CH Precision P1 (\$31,000) and, say, the Audio Research Reference Phono 3 (\$14,000).⁴ The Etna through the Phono 3 probably would sound similar to the Epoch through the CH Precision. I don't think I'd like the Epoch into the Ref 3. Too rich! But your experience, system, and taste might make that combo just right.

My point is one I always try to make to people who wonder why anyone would want to hear vinyl pressings of digital masters: It's *your* system, and what's "right" really is how you wish to hear it. However, given the option to have both approaches, I'd go with the Epoch for classical and jazz, though it was more than great with *The Clash*

(CBS 82000) and Eric Clapton's *Unplugged* (2 LPs, Reprise 468412-1). For rock, percussion, and bluegrass—and particularly the midbass, where kick drums reside—I'd go for the somewhat leaner, faster, more dynamic Etna SL or Atlas SL. But again, the Salvant album was convincing and thrilling through the Lyras.

Conclusions

There is no perfect cartridge or loudspeaker or anything else in audio—not even a DAC. While Grado Labs' very costly Lineage Epoch doesn't give you *everything* (you can get better overall dynamic slam and greater bass dynamics, for instance, from a few other cartridges), it is a dazzling- and exceptional-sounding performer that also measures well. Its overall musical balance is as knowing, sophisticated, and musically involving as that of any

cartridge I've heard.

The Epoch did things I hadn't heard any cartridge do, especially in terms of how smoothly and quietly it tracked the groove, its remarkable freedom from mechanical artifacts, and a harmonic and textural richness laid on without too thick a coating of aural honey. It had enough bite to make brass convincing, cymbals sizzle, and air abundant, where appropriate.

The Lineage Epoch is obviously a labor of love for John Grado. If you want it, you'll pay dearly for it. Here's hoping that the Lineage Aeon, to arrive in the next few months, will be able to produce 75% to 80% of the Epoch's greatness at half the price. But for now, install the Epoch in the right system, put on an LP of the right music, sit down . . . and you're done. ■

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⁴ See my review in the January 2017 "Analog Corner."

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LISTENING BY ART DUDLEY

THIS ISSUE: The Swissonor TA10 tonearm is given a thorough workout.

Loving Arms

Everything you know is wrong.

—The Firesign Theatre

The Swissonor TA10, a contemporary tonearm designed for the Thorens TD 124 turntable (1959–1970), challenged me to set aside some of the things I thought I knew about phonography. On at least one of those counts, it succeeded.

Handmade in Switzerland and modeled on the Thorens TP 14 tonearm of the 1960s, the TA10 (\$3990) improves on its predecessor with an effective length of 240mm, which Swissonor says is the longest that can be achieved with a stock TD 124 armboard (the TP 14's effective length was only 210mm), and replaces the non-universal plug and socket of the TP 14's removable headshell with the more common SME standard found on most contemporary headshells, pickup heads, and tonearms. The TA10 also replaces the TP 14's stamped-steel bearing housing with one machined from aluminum, and adds their own original arm-lift design: a chunky, cam-style mechanism that provides non-abrupt cuing without the need for damping fluid.

The TA10 is a J-shaped tonearm with an offset of 35.5°; its vertical bearings are oriented with an identical offset, to ensure a full range of vertical arm movement without changes in cartridge azimuth. Two counterweights are supplied: one for cartridge/headshell combinations of 18–30gm, the other for those weighing 30–50gm. The downforce is static, and set by leveling the arm, then adjusting the position of the counterweight for the desired downforce. (The TP 14 offered dynamic downforce by means of an adjustable spring.) Within each counterweight, a rubber O-ring adds a degree of compliance to the interface of weight and armtube; four user-adjustable setscrews, spaced around the perimeter of the weight, apply variable pressure to the ring, and thus a means of fine-tuning compliance—a nice touch.



I guess paranoiac high-enders aren't the only ones who worry, after all.

Sounds like a straightforward, conservatively engineered product, doesn't it? Yes, indeed. Now fasten your seatbelts.

Seriously

Swissonor, many of whose products are sold by the Thorens-refurbishing specialists at Schopper AG, also based in Switzerland (see “Listening” columns passim), is a company with a vision: these guys are *serious*—about the Thorens TD 124 in particular, and about their distinctly music-oriented and altogether uncompromising approach to domestic audio in general.

The first Swissonor product to cross my attention was their replacement platter for the TD 124,¹ precision-machined from a non-ferromagnetic alloy, and marked with the same

strobe markings as the original. (Original Thorens platters were made of magnetically permeable iron alloy, to which most phono cartridges feel an unhealthy attraction.) I shudder to think how much it must have cost Swissonor to tool up to make such a thing, just as I wonder if they've sold enough to recoup that investment. (The Swissonor platter is still available, for an eminently reasonable \$1100.) For a small, independent, audio-only company to invest in the design and manufacture of such a thing for a turntable that hasn't been in production since Igor Stravinsky walked the Earth is remarkable—and that's not to mention Swissonor's replacement for the TD 124's shell-like upper platter, made from aluminum by means of spin-forming, a lost art on a par with the winding of transformers. As I said: *serious*.

It wasn't until I saw a TA10 in person that I could fully appreciate that seriousness. The arm is shipped in a

¹ See the May 2008 “Listening”: www.stereophile.com/artdudleylistening/508listen/index.html.

specially made, two-part box of dense fiberboard held together with staples and rivets. It comes preinstalled² on a proprietary Swissonor armboard (I'll return to that in a moment) that is itself bolted to three wooden supports fastened to the box's bottom half. The arm rest and cuing device are also pre-fastened to the board, as is a roughly L-shaped underboard bracket that provides support and strain relief for the phono cables, which are presoldered and neatly dressed. The shipping box is topped with a label bearing that arm's version number, something I didn't notice until I'd received my second review sample (but I'm getting ahead of myself).

Cheered by how much of my usual tonearm-setup work had already been done for me, I unfastened the Swissonor armboard from the packing, noting that one of the three wooden supports had come loose—yet the armboard and arm were still held tightly in place, and the wandering support appeared not to have wreaked any havoc. I was face to face at last with a tonearm that, until June 2017, I had only read about—and I was shocked to see that the armboard's three bolt-holes were fitted with soft,

rubbery grommets that protruded below the board's surface: The Swissonor board, which is machined from a composite of fiber and phenolic, is meant to be mounted on the turntable *compliantly*. Recovering Linnie that I am, this bit of apostasy made me feel like a Roman Catholic (I'm one of those, too) whose parish priest has just invited him to a bar to attend a combination orgy and swearing contest during Lent: surely, any degree of compliance between tonearm and turntable will result in the dreaded condition known across Earth's flat expanse as *Loss of the Tune*. I resigned myself to using the product as the manufacturer intended, but made a mental note to try it *without* the grommets before the review period ended, and set about installing armboard and arm on my own TD 124.

It was then that I had another surprise: The Swissonor didn't fit. My TD 124 is mounted on a stacked-plywood plinth of my own making, and though I'd drilled the right-rear corner of my plinth with an opening large enough to accommodate the undercarriage hardware of various other tonearms, the TA10's pillar and

cable bracket wouldn't clear. (Most original and contemporary TD 124 plinths, the latter including Schopper's most popular model, are frame-style structures with generous openings under the turntable's armboard area.) Swissonor's thorough and reasonably well-translated instruction manual anticipates this, informing the user that the TA10's phono-cable bracket can be rotated to alter its position and thus clear solid "consoles." That helped a little, but my plinth still obstructed the arm pillar. Installation was halted until I could whittle, grind, and file away enough plywood to make things work. It was my own darn fault. I never anticipated needing to create an open area beneath the rearmost end of the TD 124's armboard—but that's the very portion of the board that Swissonor must press into service to make a 240mm tonearm fit where a 210mm arm usually goes.

After that chore—the last big mess I made in my Cherry Valley workshop before our move to a new home!—I installed the armboard and arm with ease and fitted the TA10's large counterweight, along with a lingering review sample of the Ortofon SPU #1S pick-

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up head. (The Ortofon got my vote for Budget Component of 2017; as I write this, I don't yet know how it fared in the voting overall.) Because the TD 124 was still on my bench, I decided to assess the tonearm's bearings before carrying the player back upstairs and putting it in my system.

Twist my arm

My first really good turntable—indeed, the first high-end audio product I ever owned, not counting the vintage McIntosh tuner I bought in the early 1970s and kept for only a short time without fully appreciating just how good it was—was a Rega Research Planar 2, purchased new in 1979 or so.

At the time, the Planar 2 was bundled with a Japanese-made Lustre tonearm, which I came to regard as the weak link in that budget-perfectionist record player. (The titanicly superior RB300 tonearm, designed and made by Rega themselves, wouldn't appear until 1983.) My Planar 2 sounded better overall than the budget turntable it replaced, but on dynamic peaks I nevertheless heard from it a hard-sounding distortion not unlike the sound of a mistracking phono cartridge—and my

entry-level Dynavector cartridge had never produced such a sound before being installed in the Lustre. It was during my efforts to diagnose the problem that I hit on a repeatable and reliable method of detecting excess friction in a tonearm's vertical bearings: “floating” an arm by setting its down-force mechanism (if any) to zero and adjusting the counterweight to achieve perfect balance, then watching carefully to see if the tonearm tube, when nudged up or down, returns to the same resting position, and noting the speed and apparent ease with which it does so.

The Lustre arm failed that test—*miserably*. As I described in this space more than 11 years ago,³ I learned a valuable lesson when I tried to solve my problem by returning to my Rega dealer and trading in my Planar 2 for a Planar 3, on the assumption that the Lustre arm on the more expensive Planar 3 would be of better quality than the one on the Planar 2. It was a naïve assumption, of course, and one that I never had the chance to test: When I returned to my apartment and unpacked my new Rega, I realized that my salesman, the store's turntable

specialist, had swapped my old arm onto the new turntable.

Shouted epithets, not all of them from me, followed in short order. Reached by phone, the hi-fi salesman began by lying. (I know what you're thinking, and you may rest assured that I, too, was shocked.) But when he realized that I had him to rights, he changed tactics and blamed *me*: “Why can't you stop obsessing about audiophile nonsense and just enjoy the music?”

In other circumstances, that salesman's condescension might have been justified. Heck, I've thought and said and written the same thing myself when confronted with hobbyists who readjust tonearm height for each record they play, or devise elaborate systems for adjusting speaker toe-in from their seats. I intend to have his advice carved on my tombstone. I'll even instruct my survivors to dig a hole that goes all the way to hell and post a sign: “DEPOSIT SYSTEM DEMAGNE-

2 A boardless version is available for those who wish to use the TA10 on turntables other than the Thorens TD 124.

3 See the October 2006 “Listening”: www.stereophile.com/artdudleylistening/1006listening/index.html.

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TIZERS HERE.” But objecting to being stuck with a defective product is *never* nonsense. For a person who knows the value of a dollar, it’s the only reasonable response.

Back to modern times: I’m sorry to say the Swissonor TA10 was as poor as the Lustre in this regard. After floating the armtube, I found that, within a small range of movement concomitant with that of normal record playback, the armtube would stay wherever I put it, unfazed by such theoretical constructs as gravity and static balance. Obviously, one or both of its vertical bearings were sources of considerable friction.

Once again, the reviewing assembly line shut down (and I rushed into production a different November-issue “Listening” column, about coffee). I contacted the head of Swissonor, Urs Frei, who agreed that something was amiss. His wife, Anne-Marie, mailed out a different sample the next day.

When this second sample arrived, I noted that its container—which arrived in perfect shape—was marked TA10 2.09. Only then did I take a closer look at the first box, which I now saw was marked TA10 2.06. The two arms looked outwardly identical.

But they weren’t. The vertical bearings were definitely better in the second sample. Still, when I floated the armtube of the new sample, though it wasn’t egregiously sticky, it was a teensy bit slow in returning to its zero-downforce position. Given my hope that the TA10 would prove to be, in essence, a vintage tonearm with modern, ultra-high-quality bearings—my own hope, not Swissonor’s claim—I was slightly disappointed. Nonetheless, I pressed on.

I was glad I did: The first few records I listened to with the second sample sounded magical—a word I don’t use lightly, and meant to suggest that the TA10’s three greatest sonic strengths were among those aspects of playback most important to me. To wit:

1) Spatially, with mono and stereo records alike, the Swissonor TA10 brought forward things that needed to be brought forward—voices, instrumental solos, and the like. Not only did it bring those elements forward, the Swissonor arm seemed to enhance their presence in ways that weren’t entirely spatial: there was a little extra kick to the attack components of notes from Tim O’Brien’s fiddle in “Durham Reel,” and in banjoist Pete Wernick’s kickoff to “Midnight on the Highway,”

both from Hot Rize’s first, eponymous album (Flying Fish FF206).

2) Trebles were meaty and substantial, not phasey and excessively, unrealistically airy. Flutes and violins in Lorin Maazel and the Vienna Philharmonic’s recording of Sibelius’s Symphony 7 (Decca SXL 6236) really dug into every note—never in a harsh or screechy way, but with a great deal of human physicality.

3) Musical lines had momentum and drive. To illustrate this I could name almost any record I played with the Swissonor arm, but “Gloria’s Step,” from the remarkable new reissue, on a MoFi Ultradisc one-step pressing, of the Bill Evans Trio’s *Sunday at the Village Vanguard* (Riverside/Mobile Fidelity Sound Lab UD1S 2-002), deserves special mention. It’s always instructive to hear how a piano recording can come alive through gear that doesn’t blunt or distort the music’s forward momentum, and I can think of no better example than this.

On top of all that, this arm sounded huge. (Okay, so that’s four.) Ruggiero Ricci’s solo violin in the Sibelius Violin Concerto, with Matthias Kuntzsch leading the Bochum Symphony Orchestra (Turnabout QTV 34722), had the sort of scale I associate with hearing the performance from a front-row seat: The instrument was almost breathtakingly resonant, present—and big. And the sheer orchestral *expanse*, for lack of a better word, on the above-mentioned Sibelius Seventh (August was Sibelius month around here) was astonishingly wide, high, and deep.

The Swissonor TA10 delighted me with every record I played—and not once during its time in my system did I hear any of the sorts of distortion associated with a misbehaving tonearm.

It never lost its Lustre

Let’s back up for a moment and return to the topic of installation—a small matter, inasmuch as Swissonor does most of the work for the TD 124 owner, but also a large matter, in that the user still has some control over the minutiae of installing and aligning a cartridge.

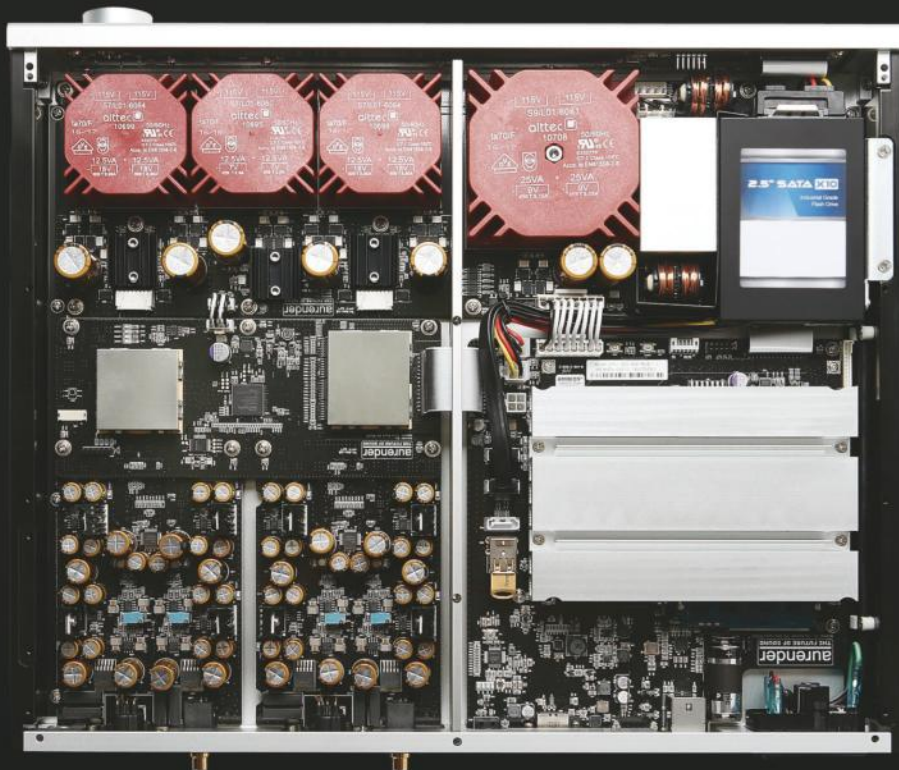
The TA10 is supplied with a detachable headshell of the usual sort that appears to be an off-the-shelf OEM item, the likes of which are supplied with any number of arms from other manufacturers. Most photos on Swissonor’s website and elsewhere online show TA10s being used with an Ortofon G-style SPU pickup head—the longer

of the two SPU varieties, and far more common today than the shorter, A-style SPU. While I won’t reopen here the whole snoozy subject of variations in stylus-to-mounting-flange dimensions, I must mention that a number of sources have, over the years, stated that those measurements should read 50mm for a G-style SPU, and 32mm for an A-style. My own measurements suggest that that is incorrect, and that the actual dimensions are 52mm for G-style and 30mm for A-style. I have found some G-styles with stylus-to-flange dimensions of as little as 51.5 and as great as 52.5mm; that said, I admit that I ceased making those measurements a while back, if only because I was starting to bore myself.

There are two points to this little side trip: First, as noted in their instructions, Swissonor has apparently made the same observations as I, and has designed the TA10’s geometry for a pickup head with a stylus-to-flange dimension of 52.5mm—which, of course, I think is very wise. Second, also as mentioned in Swissonor’s instructions, the arm-mount hole in the TA10’s armboard is very slightly oversized, thus making it possible for the user to loosen the main mounting nut (the appropriate wrench is included) and fine-tune the arm’s spindle-to-pivot distance and thus precise cartridge alignment.

Other adjustments are possible. Antiskating force, though uncalibrated, can be fine-tuned by moving a weighted thread to any of 10 ridges along the rod that supports it, with positions closer to the bearing housing resulting in lesser degrees of anti-skating force. By loosening and then retightening two setscrews on the arm pillar’s mounting collet, the TA10’s armtube can be raised or lowered relative to the armboard, thus offering the chance to fine-tune the vertical tracking angle (VTA). But the TA10 and the headshell supplied with it lack any means of adjusting cartridge azimuth. That, too, disappointed me, as the azimuth of my second sample was notably off: Viewed head-on, every pickup head and headshell I connected to the TA10 was tilted counterclockwise, to 11:59 instead of 12:00.

Noticing two tiny setscrews on the underside of the TA10’s armtube, just behind the headshell-locking collet, I wrote to Urs Frei and asked if the arm could be adjusted for azimuth. He replied that it could not, and that “SPUs



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with azimuth assembly error cannot be compensated.” Then he added the following:

Philosophically spoken, you can get two kinds of listening experience: A) You are a high-ender. You fear all these and many more imperfections in sound reproduction. You finally will listen with high concentration to find out any kind of issue. It will crisp you . . . You will become a frustrated, paranoid, high-ender. High-end hell. B) You love life and music. You enjoy listening to Sinatra singing in your home . . . You will become a happy man. Music heaven.

It’s pretty much the same argument used by that Rega salesman of 35 years ago. This is not to equate Swissonor with the dealership that pulled a fast one on me, but I would point out to Urs Frei that there exists a third category of record lover: C) You are a music lover, not a frustrated paranoid, but you nevertheless chafe at paying healthy prices for products with avoidable defects.

Forced compliance

While looking for an explanation for that azimuth anomaly, and before concluding that it was the fault of the TA10 tonearm itself, I took a long, squinty look at the Swissonor armboard and wondered: Could those rubber grommets be tilting the board relative to the turntable, and thus be causing the error? Because that seemed possible, and because I wanted to try the Swissonor gear without those grommets *anyway*, I decided to uninstall tonearm and armboard, remove the grommets, then reinstall arm and board—carefully, with all due care taken in the *even* tightening of the three armboard bolts.

Before doing so, I settled in with a great new LP: a reissue of Michel Legrand’s *Legrand Jazz* (Columbia/Impex CS 8079), featuring Miles Davis, John Coltrane, Paul Chambers, and 28 other jazz giants. As I wrote to Michael Fremer the evening after first hearing this very impressive record, “Holy shit!” (I can say those sorts of things to Mikey. He doesn’t get offended.) “Vivid, tactile, colorful, and surfaces so quiet that the loudness of the opening notes was shocking. One of the most technically accomplished reissues I have heard.” He wrote back saying that he agreed.

The Swissonor TA10 brought forward things that needed to be brought forward.

This is when I removed the grommets from the armboard. Then I listened again to “Wild Man Blues,” from the Legrand album. It was good—but not as magical as when the grommets were fitted. Eddie Costa’s vibraphone no longer popped out of the mix as before, Paul Chambers’s bass was a bit anemic, and Herbie Mann’s flute wasn’t as meaty. (You there, in the back of the classroom—stop sniggering!)

I reinstalled the grommets—not as easy as taking them out. Every little bit of the lost magic returned. And the performance was no less tuneful, nor was it lacking in anything else. The sound was incontrovertibly better when armboard and arm were compliantly—some would say *loosely*—mounted.

Finally: All of the above observations were made with my mostly original TD 124, which I rebuilt perhaps 11 years ago, cleaning and lubricating as I went and replacing worn parts with new and NOS parts from Schopper AG. This turntable departs from stock in only one regard: I retrofitted its motor-mount bracket with the superior double-grommet isolation kit that Thorens introduced in 1966, in the TD 124 Mk.II.⁴

But in correspondence after shipping me TA10 sample two, Urs Frei asked if I’d tried the arm with 1) his company’s new #2.0 main platter bearing, which, along with TA10 sample one, had been sent to me by Swissonor’s US distributor, Fidelis Music Systems; and with 2) Swissonor’s nonmagnetic replacement platter, one of which I long ago purchased from Schopper AG but until recently had been mounted on my daughter’s TD 124.

I look forward to trying the new Swissonor bearing, in which elements originally made of polymer are replaced with parts precision-machined from bronze, but I haven’t yet had time to install it—something I intend to do in the latter half of September, when I’ve settled in to my new listening room. But after my daughter returned to college, I swapped my turntable’s iron platter for her Swissonor platter. After readjusting the tracking force—all else being equal, one observes a decrease in downforce with the nonmag-

netic platter, owing to the decrease in magnetic attraction—I listened again to some of the tracks described above. The differences were slight—slighter, by far, than when I compared the TA10 armboard with and without grommets. But with the Swissonor platter I heard better definition: note attacks, and thus playing and singing techniques, seemed clearer; and with double bass in particular, there was greater clarity of pitch.

Of course, even if a TD 124 equipped with a nonmagnetic platter sounded the same as one equipped with an original, iron platter, there are those who would consider the Swissonor alternative worth every penny, simply for offering freedom from worry that one’s phono signal is being modulated or compressed or otherwise dicked with by the proximity of a large, magnetically friendly *thing* under the cartridge. I don’t disagree. I guess paranoid high-enders aren’t the only ones who worry, after all.

If you own a Thorens TD 124 and are looking for a vintage-friendly tonearm whose sound will complement rather than counter your turntable’s best characteristics—and one that looks the part, and is pleasant to use—I think the Swissonor TA10 is an excellent choice. I’m not too put off by the azimuth discrepancies—there’s plenty of evidence that this company has some serious engineering cred, and they’ve made a name for themselves by serving a small but passionate vintage-audio niche. But buy it through a dealer you trust and that offers a liberal returns policy, just in case. ■

Art Dudley (ADudley@Enthusiast-network.com) offers a final review from his current home before he moves to a new home—and a new listening room.

⁴ See footnote 1.

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GRAMOPHONE DREAMS

BY HERBERT REICHERT

THIS ISSUE: Auditions of HiFiMan Susvara headphones and EF1000 headphone/integrated amplifier.

HiFi Men

I spend my days comparing cartridges and speaker stands, arguing about imaging and microphone placement, speculating about DAC filters, and lately, sometimes, very secretly listening to headphones connected not to commercially available headphone amplifiers but directly to the outputs of basic tubed and solid-state power amplifiers. No person in his right mind would or should try this—it's too easy to destroy a pair of delicate, expensive headphones. But for me, it's been worth the risk.

My unauthorized experiments have been revelatory, and I have learned two things: 1) The sounds of today's best headphones are considerably more nuanced, weighty, transparent, and microscopically descriptive than I ever imagined. For me, this makes it obvious that 2) All of the regular headphone amplifiers I knew of were masking, blurring, and obscuring recorded information.

Right from my first hand-trembling experiment, as I turned up the preamp volume, hoping to hear not exploding diaphragms but nice music, I experienced a surreal *Twilight Zone* of enhanced three-dimensionality, ear-opening clarity, and hypertactile corporeality.

The more I experimented, and the more I heard such uncanny unveilings, the more I realized that the cause of this newly discovered verity would not be so easy to determine. But it seemed to me that my headphones liked power amps with high-voltage power supplies that can exhale current into reluctant drivers. It seemed that the best unveilers might be amplifiers that use little or no feedback, while amplifiers with low parts counts and those parts of very high quality might sound the most vivid.

Best of all, I was able to experience what a great headphone amplifier *could* and *should* sound like—especially when

If my system can't deliver pleasurable Roy Acuff, it's a crap system.

driving less-sensitive headphones like my reference JPS Labs Abyss AB-1266 Phi's (\$4595, 88dB/mW), and HiFiMan's new Susvaras (\$6000, 83dB/mW). The Susvaras are reviewed below.

Do not try these experiments at home

But if you feel compelled to experience what I've just described, connect your best headphones to Rogue Audio's robust RH-5 preamp-headphone amp, which I reviewed in the November 2017 issue of *Stereophile*; that will get you most of it. Or, better still, try HiFiMan's superpowered EF1000 headphone amplifier, also reviewed

below. It's a basic tube-and-solid-state power amplifier that also happens to be perfectly appropriate for use with headphones. *That* will get you *all* of it.

HiFiMAN SUSVARA PLANAR-MAGNETIC HEADPHONES

The latest creation of Dr. Fang Bian, founder and chief engineer of HiFiMan, is the new Susvara headphones (\$6000). These are "full-size," over-ear headphones with planar-magnetic drive-units, and they cost almost precisely twice as much as HiFiMan's HE1000 V2 headphones (\$2999), which I reviewed in my April 2017 column.¹ While similar in looks, the Susvaras' earcups are round, not oval like the HE1000 V2s'. Their fit and finish seem more finely wrought, and they felt cozier on my head than the HE1000s. Both are elegantly styled in that unique HiFiMan way.

When I opened the Susvaras' box, all I could see was the owner's manual—a sumptuous hardbound book with a slick, satin-finish dustjacket and thick, glossy pages. On cover and jacket, "SUSVARA" is printed in gold in a delicate font. The thin gold letters hint at Fang Bian's latest invention: his thinner-than-ever, Nanometer Grade Diaphragm, coated with gold.

According to the manual, "when sound waves generated by the diaphragm pass through the magnet, there is interfer-

ence that degrades sonic purity." The Susvaras' new Stealth Magnet endeavors to correct this. Instead of having right-angle edges on all their exposed surfaces, the individual strip magnets that comprise each driver's magnet grid have

¹ See www.stereophile.com/content/gramophone-dreams-15-audioquest-niagara-1000-hifi-man-he1000-v2.



rounded edges on their surfaces that face away from the diaphragm. This convexity supposedly lets waves of pressurized air—soundwaves—pass through the grid relatively unmo-
lested, thus preserving the waveform integrity of the diaphragm's output. To further preserve this integrity, the Window Shade grilles on the earcups' outer surfaces have been "painstakingly optimized to avoid any resonant frequencies."

I doubt that the gold on the Susvaras' diaphragms is the cause, but though they're smaller than the HE1000 V2s, the Susvaras, at 15.9oz, weigh 1.1oz more. And speaking of more, the Susvaras present an amp with a nominal impedance of 60 ohms—almost double the HE1000's 32 ohms. The most noticeable difference between these premier stablemates is their sensitivity: a low 90dB/mW for HE1000 V2s, while the Susvaras are really low at 83dB/mW.

The Susvaras' cable comprises a "single crystalline copper wire alongside a single crystalline silver wire." Super-supple, it never twisted or knotted up. It's the most elegant, durable, user-friendly headphone cable I've

ever used.

WITH THE PASS LABS HPA-1: The Pass Labs HPA-1 (\$3500) is a reference-quality preamp and headphone amplifier² that first revealed to me the ultratransparency of HiFiMan's HE1000 V2 headphones. The HPA-1 and HE1000s manifested an extremely refined and superbly musical presentation. Now, with the Susvaras, that same HPA-1 gave me all the effortless flow, natural detail, and spatial descriptiveness that Fang Bian's new headphones are capable of. Unfortunately, I did most of my listening to highly dynamic, uncompressed recordings played at moderate volumes. For this, the HPA-1's volume control had to be set between three and six o'clock. Due to the combination of the HPA-1's 8dB gain and the Susvaras' low sensitivity, listening at higher volume levels was not possible.

WITH MYTEK HIFI'S MANHATTAN II: Voltage gain is not a limitation of Mytek HiFi's Manhattan II DAC and headphone amp (\$5995).³ In fact, if you're not careful, it can produce *too much* gain. But, luckily for the Susvaras, a front-panel menu lets the Manhattan II's user select among *eight* voltage-gain

settings. This feature let me enjoy music via Tidal streaming while precisely adjusting the Manhattan's Volume Trim until I liked the way the music sounded (dynamically), and the volume control operated in a good place.

Through the HiFiMan Susvaras connected to the Manhattan II in balanced mode and with the Mytek's Volume Trim set to maximum gain, "Come Over," from Morphine's *At Your Service* (CD, Ryko/Rhino RH2 520603), was beyond impressive: strong, completely open, and fully expressive. Mark Sandman's lines on two-string electric bass were psychedelic, tight, and just begged to be followed. There was plenty of punch and bite, no mud or hesitation. Following Sandman's twisting bass notes and pithy vocals is extremely important—combined, they're the soul and the poetic content of these Morphine outtakes. In "It's Not Like That Anymore," the drums seemed pitch-perfect and properly scaled. The baritone saxophone was just above me on stage, clear, foghorn rich, and achingly plaintive.

The Mytek Manhattan II DAC-amp showed me how transparent, liquid, and resolving the Susvaras could be.

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WITH THE ROGUE AUDIO RH-5:

I don't see how anyone can fully evaluate headphones while listening *only* to overcompressed pop, rock, or hip-hop. Of course, such recordings will reveal plenty about the quantity of bass, basic midrange character, and high-frequency tolerability of entry-level headphones—and that might be all you *need* to know. But at \$6000, HiFiMan's Susvaras are the opposite of entry-level 'phones, and demand more sophisticated musical program *and* an amplifier capable of unraveling complex recorded events.

With the exception of the HiFiMan EF1000 (\$15,000), discussed below, the Rogue RH-5 (\$2495) is currently the best amp I have for driving the Susvaras. It has the gain, the raw power, and the wide-open tube liquidity the Susvaras require to achieve the full force and flower-like beauty of their sound.

For some sophisticated music, I chose J.S. Bach's *Orgelbüchlein* (Little Organ Book), in an arrangement for chamber ensemble performed by the Ensemble Mare Nostrum under the direction of Andrea De Carlo (CD, M•A Recordings M076A). Imagine several bass and tenor viols, a portative organ,

an arclute, a boy soprano, and the enchanting soprano of Celine Scheen. Imagine, next, how breath-releasingly, stress-removingly natural the Rogue and Susvaras could possibly make this organ tutorial sound. Imagine a precisely drawn spatial perspective. Imagine all that is joyful in Bach unfolding in an easy, quiet flow, with copious luster and organic textures. That's what I experienced. The Susvaras were better than any other headphones I know at delivering music at low volumes with acuity and scintillating dynamics.

And especially this 70-minute Bach CD. Using the Rogue RH-5 with Schiit Audio's Yggdrasil DAC,⁴ I played it all the way through, comparing its sound through the Susvaras to its sound through JPS Labs' Abyss AB-1266 Phis. The Susvaras were a smidgen more relaxed, which made these charming chorales sound slightly more artful and flowing. The music glowed with the Susvaras, but was better sorted and more corporeal through the Abysses. The Susvaras fully captured the atmosphere of the recording space, but the Abysses provided a more direct and intimate perspective that made Bach's counterpoint more coherent.

I know that some of you would like me to declare that one of these headphones is better than the other, but as of now, I can't. The Susvaras and Abysses are the two most refined, balanced, and revealing headphones I've heard. Both operate in a rarefied realm I am only just now beginning to comprehend. The Susvaras' exquisite transparency, luster, and rhythmic flow presented me with one vision of Bach's genius. The vivid corporeality of the Abyss AB-1266 Phis revealed another. Together, they surpassed all other headphones I've used at exposing the corporeal and temporal aspects of recorded musical events. And both sound very non-hi-fi. It might take me a while—and even better headphone amplifiers—before I can fully understand what I experienced while listening to the Susvaras for this review.

Speaking of better headphone amps...

2 See John Atkinson's review of the Pass Labs HPA-1 in the July 2016 issue: www.stereophile.com/content/pass-labs-hpa-1-headphone-amplifier.

3 See my review of the Mytek Manhattan II in the September 2017 issue: www.stereophile.com/content/mytek-hifi-manhattan-ii-da-preamplifier-headphone-amplifier.

4 See my review of the Schiit Yggdrasil in the February 2017 issue: www.stereophile.com/content/schiit-audio-yggdrasil-da-processor.

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- 2007:** Intro of ARC Room Correction Technology, the professional audio tool for the rest of us
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- 2004:** Signature Series, first use of Beryllium cone material, the reputation grows...
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- 2000:** Cinema Series, a blockbuster in multi-channel audio
- 1999:** All-weather outdoor Stylus
- 1996:** Audiophile Reference Series debuts, patented material & design innovations
- 1994:** PS-1000 (first powered sub) shakes up the industry
- 1993:** Paradigm Advanced Research Center (PARC) opens, expands research into "The Paradigm Sound"
- 1992:** Atom introduced, outperforms more expensive speakers
- 1991:** Titan model introduced, many patented technologies
- 1990:** Paradigm voted "#1 Best Price/Value" by audio press, for next 20+ years!
- 1989:** Innovative in-wall speakers: AMS-200
- 1986:** Die-cast chassis improves efficiency over standard designs
- 1985:** Paradigm is a hit with dealers, customers and audio press, the reputation builds...
- 1984:** Paradigm revolutionizes the audio sales model, streamlines production & distribution
- 1982:** Models 7 & 9 garner acclaim at Toronto Audio Show, first Paradigm dealers sign on, the journey begins...



HiFiMAN EF1000 HEADPHONE AND INTEGRATED AMPLIFIER

According to the HiFiMan Susvaras' manual, "The Susvara is a low sensitivity headphone meaning it will require more than an average amplifier to drive it properly. Matching the Susvara to a potent amplifier is critical to allowing it to reach its full potential. To aid users in finding a perfectly complementary amplifier we have developed the EF1000." HiFiMan sells the EF1000 amplifier (\$15,000) and the Susvara headphones (\$6000) together for \$18,000, a \$3000 saving.

I've probably heard a thousand different audio amplifiers. What I've learned is that designing an amp seems more like cooking than like science or engineering. Most amp designers simply choose an existing circuit topology or a slight variation thereof, some transformers, some active devices (transistors or tubes), some capacitors and resistors, all from an à la carte engineering menu. After a computer designs the chassis and circuit boards, they throw all their decisions into a blender, then pour the result into a fancy case. The finished product comes out neatly boxed, and those boxes are stacked on a skid.

That's how I imagined Dr. Fang Bian's "potent" new headphone amplifier, the HiFiMan EF1000 (\$12,000), coming into being. I was wrong.

The author of the HiFiMan EF1000 circuit is not a famous audio chef. He's an old friend of Fang Bian's named Dehua Liu—a talented audio DIY guy from Shandong Province, China. A team of engineers supervised by Bian turned Dehua's amplifier design into a real-world product that appears to be one of the most intelligently engineered and exquisitely executed audio components I have seen or heard.

The EF1000's separate audio-circuitry and power-supply enclosures came packaged in seemingly indestructible Pelican cases and cushioned with lots of foam. Ten Russian Electro Harmonix 6922/E88CC tubes are included (four are spares). The input and voltage amplifier stages use three 6922s per channel in a shunt-regulated, push-pull configuration. Each channel's current output stage uses six pairs of Hitachi MOSFETs biased into class-A. Coupling capacitors are German-made GAD-vivas, and every part, electrical or mechanical, appears to be 100% top quality. The audio case weighs 29.7 lbs, and is connected to the 24.7-lb

power supply by two Cinch connectors. Inside the power supply I saw an immense, 19-lb mains transformer and eight 10,000µF ELNA capacitors.

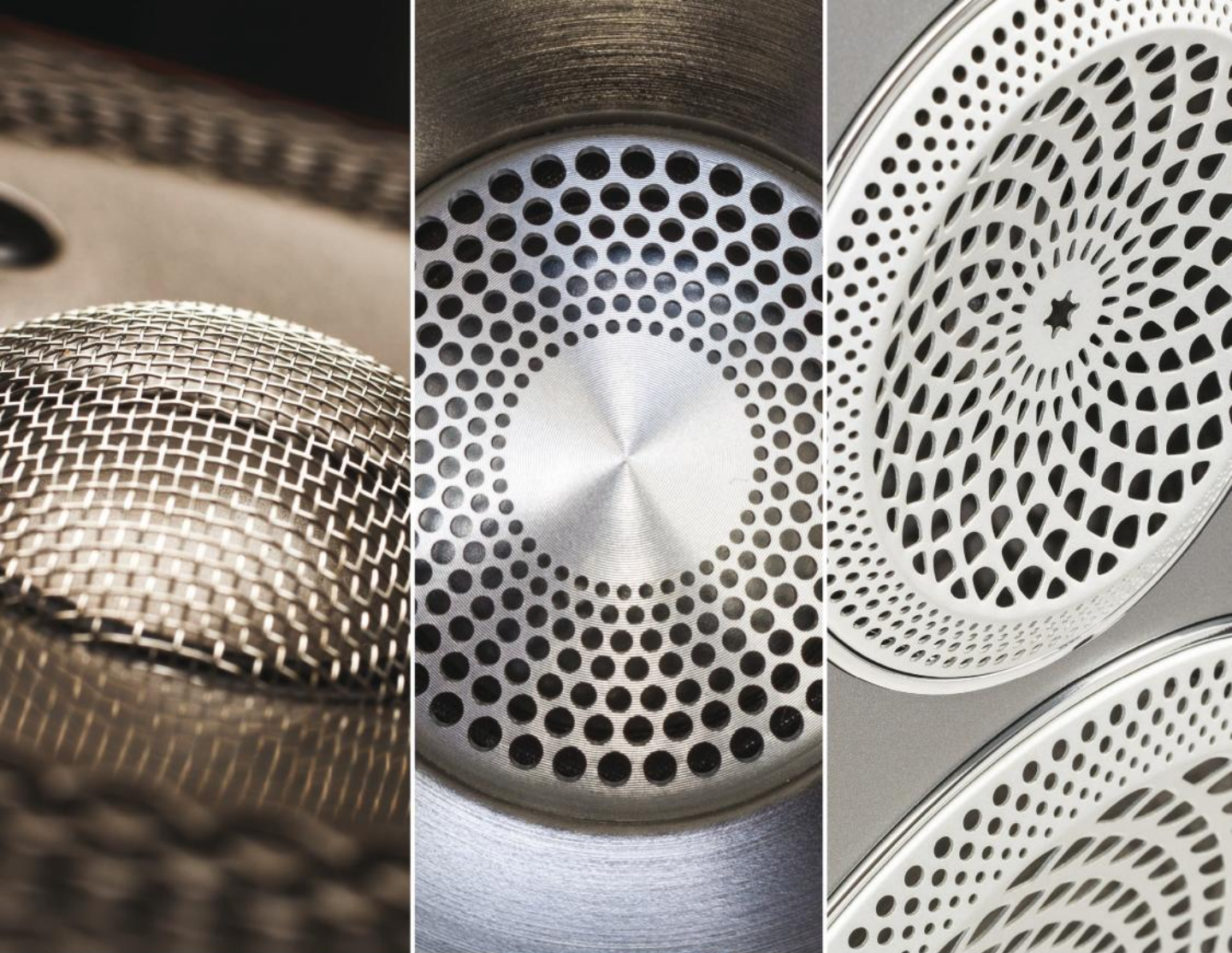
The EF1000 is the most powerful headphone amplifier I know. It outputs up to 20Wpc class-A into a 35-ohm headphone load! The EF1000 is also a full-function integrated amplifier with volume control, offering 50Wpc in class-A or 110Wpc in class-AB into an 8-ohm loudspeaker load. Its three line-level RCA inputs (CD, Aux, DAC) can be selected by pressing a button on the front panel. A second button lets you alternate between headphone and loudspeaker output.

Everyone knows that an acoustic piano or baritone sax can sound rich and powerfully expressive—but what about "Sixteen Chickens and a Tambourine," from Roy Acuff's *The King of Country Music* (2 CDs, Bear Family BCD 15652 BH)? For me, the best hi-fi system is the one that plays the *most* records, revealingly and enjoyably, without sonic distraction. And lordy lord, if my system can't deliver pleasurable Roy Acuff—if it can't properly present a kazoo solo, a honky-tonk piano, or a slapped bass—well, it's a crap system.

"As I run across the tater patch / see if my ol' hen had hatched . . ." Roy Acuff, the Schiit Yggdrasil DAC, the HiFiMan EF1000 amp, and the Susvara headphones played "Sixteen Chickens" with a level of insight and natural tonality that let me examine and enjoy every note. Unfortunately, this Roy Acuff collection sounds a little digital-steely; nevertheless, through the EF1000 and Susvaras, harmonica, fiddle, and tambourine had surprisingly natural tone and realistic texture. Details were never overemphasized, they were just very *there*. I could sense the microphones on the pedal steel and Acuff's voice. The spoons sounded like real spoons as they tapped and scraped the washboard. What I most loved was how this combination made the tonalities of fiddle and voice into something sweet, exciting, and poetically comprehensible. This combination of world-class headphone components made Acuff's musical accomplishments feel important and accessible.

Power and Glory

Unfortunately, I had to return the EF1000 after only a few weeks. But to celebrate the joy it brought me and to mourn its imminent loss, I played one



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last disc, the best-sounding LP I own: Dom Um Romão's *Saudades*, produced and engineered by Kavichandran Alexander (LP, Water Lily Acoustics WLA-CS-16). Sonically, this all-tube, all-analog, Blumlein-miked jazz recording has few peers, if any. It delivers an expansive, perfectly recorded space in which the five musicians do not appear as ghosts—I do. As I listened in my dark room, I felt like an invisible intruder at an actual musical event. The clarity was . . . paranormal.

Saudades blends complex Afro-American and Afro-Brazilian elements into new musical forms. The Portuguese word *saudades* has no precise English equivalent, but is expressive of melancholy, longing, yearning, nostalgia. It suggests spiritual ennui. It is synonymous with the Portuguese musical tradition of fado. I played both sides of this fantastic LP on the AMG Giro G9 turntable-tonearm combination, with an EMT DST 75 cartridge and Auditorium 23 step-up transformer driving the all-tube Tavish Design Adagio RIAA stage, which in turn drove the EF1000's tube input and MOSFET output, which ultimately drove the Susvaras. The result was a hypnotizing, body-shaking musical experience. When it was over, I sat in near silence. The only sound was the stylus clicking in the lead-out groove of side 2.

This gear playing this superbly produced record showed me a level of I-was-there reality that I may never experience from digital or loudspeakers.

Driving Loudspeakers

I used the HiFiMan EF1000 with a variety of speakers, beginning with my reference KEF LS50s (\$1499.99/pair). I switch speakers so often that I often forget how all-around well-balanced the LS50 is. The HiFiMan EF1000 made sure I will never forget again.

Romão's *Saudades* came through the LS50s with striking detail and an attractive, burnished-copper tint. This subtle coppertone sheen was especially apparent with Chico Freeman's saxophone, but it was also noticeable on the top octaves of Izio Gross's piano. But the LS50s' exposed midrange/woofer cones are copper-colored—I had to ask myself, Is what I'm seeing influencing what I'm hearing? Maybe, but . . .

Even through speakers, the incomparable sound spaces recorded on *Saudades* were described with CNC-type precision. The KEFs had never sounded more detailed, dynamic, or

transparent. Best of all, the EF1000 gave the LS50s a sort of locomotive-like vigor that I found extremely appealing.

But the speaker the HiFiMan loved most was my newest Brit-fi love: Stirling Broadcast's LS3/5a V2 (\$1990/pair).⁵ Like all versions of the LS3/5a made over the last four decades, the Stirling is a small speaker with limited bass capabilities, but oh my god—the truth of tone it delivers exceeds that of all speakers I know. To my ears, the Stirling LS3/5a V2 is more musically satisfying than either my 1984 Rogers or 2016 Falcon Acoustics versions of this classic BBC design (\$2995/pair) because, through it, voices and instruments sound closer to real life. The Stirling's sound is less tactile and transparent than the Falcon's, but it's richer, more relaxed, more natural sounding.

In fact, the HiFiMan EF1000 driving the Stirling LS3/5a V2s sounded very close to the EF1000 driving the HiFiMan Susvara headphones. I have no higher compliment.

In the end

I am no avatar of conspicuous consumption. I prefer a faded '64 Chevy pickup to a glossy new Porsche. That's why I mostly review affordable gear.

Don't laugh. I think that expensive headphones—*especially* ones like the Abyss AB-1266 Phis and the HiFiMan Susvaras—are actually high-value high-fidelity products. They give me more of what I desire from recorded music. They unmask more of what's hidden on recordings than do loudspeakers costing five or even ten times as much.

To my knowledge and taste, HiFiMan's Susvara planar-magnetic headphones and companion EF1000 amplifier are at the leading edge of what is possible in two-channel audio. ■

When Herb Reichert (STLetters@enthusiastnetwork.com) isn't outside writing in his booth, he's indoors auditioning headphones in his bunker in Brooklyn's hip Bedford-Stuyvesant 'hood.

5 See John Atkinson's review in the April 2007 issue: www.stereophile.com/content/bbc-ls35a-loudspeaker-stirling-ls35a-v2-2007.

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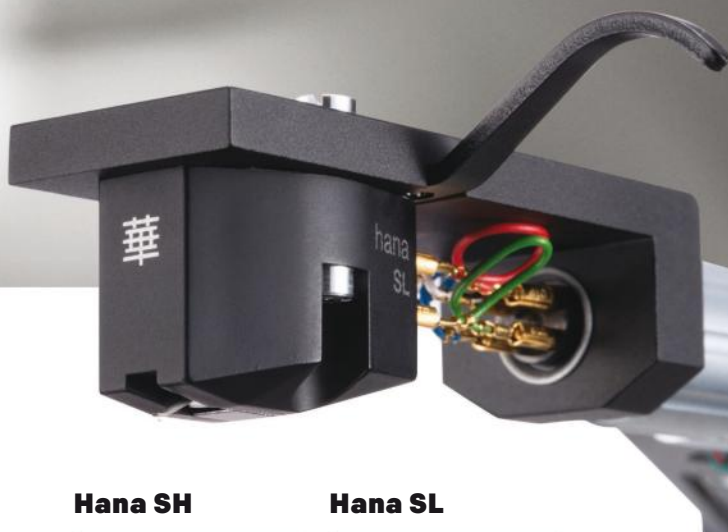


HANA PHONO CARTRIDGES

Hana, translated as “brilliant and gorgeous” from Excel in Japan, features both high and low output moving coil cartridges. These cartridges represent the best materials, including alnico magnets, cross-shaped armatures, and proprietary manufacturing processes. Hana has excelled at creating MC cartridges noted worldwide for their sound and value, which retain their “musical magic” regardless of their phono stage pairing.

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Hana SH

\$750.00

Stylus : Shibata

Output : 2mV

Internal Ohms:

130Ω/1kHz

Loading : 47kΩ

Weight : 5.0 grams

Tracking : 2.0 grams

Magnets : Alnico

Hana SL

\$750.00

Stylus : Shibata

Output : 0.5mV

Internal Ohms:

30Ω/1kHz

Loading : >400Ω

Weight : 5.0 grams

Tracking : 2.0 grams

Magnets : Alnico



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PRODUCTS OF THE YEAR 2017

BY
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DUDLEY

T

he mice in the walls call summer to close while nets come down and leaves turn dead red, but by the time you see this there'll be holiday music in the air . . . and some generous soul might, just *might*, sneak a few looks through this issue of *Stereophile* to see what gifts to buy before the tree goes up and presents are opened—and all will be nice!

And what better way to serve those possible givers of audio gifts—and, at the same time, honor our hobby's most deserving designers and manufacturers—than with our annual Product of the Year awards?

When it's all said and done, some of us will remember 2017 not only as the year when the vinyl renaissance became more entrenched and MQA began making serious inroads, but as the year *Stereophile* revived a category in our annual competition: Headphone Product of the Year. No more will headphones and headphone amplifiers suffer the indignity of being lumped in with cable suspenders and quantum-field hollerers!

By the same token, some of us will remember this year's competition for results that are . . . *interesting*. Our first-ever Headphone Product of the Year is not a pair of headphones. Our Accessory of the Year is something so intangible it lives in a cloud. And our Overall Product of the Year won by an Electoral College-style fluke. Well, dog my cats.

WHAT HAPPENED

How did we do it? The process began in early September, when editor John Atkinson asked my colleagues and me for nominations in each of eight categories: Loudspeaker, Amplification Product, Analog Component, Digital Component, Headphone Product, Accessory, Budget Product, and Overall Product of the Year. Eligible products were those that were reviewed in the November 2016 through October 2017 issues.

The candidates were limited to products that were, in the pages of those

12 issues of *Stereophile*, the subject of a full Equipment Report or Follow-Up, or were written about in a column by me or my colleagues Michael Fremer, Michael Lavorgna, Herb Reichert, or Kal Rubinson. We did not consider products that took top honors in any previous year's PotY celebration.

In the next step, JA compiled and distributed a list of every component that was nominated by at least three *Stereophile* contributors, the idea being to ensure that every one of those finalist

products was heard by as many of our reviewers as possible. Then each *Stereophile* contributor's job was to cast three votes in each category: to give three points to his first choice, two points to his second choice, and one point to his third. In that manner, the results reveal a certain density of information: Surely there are distinctions between the product that receives three first-place votes and the one that receives nine third-place votes.

Beginning two years ago, we writers, we band of brothers, have been asked to select our own personal Product of the Year, in which each honors the one item that impressed him beyond all others. These are listed at the end, under "Editors' Choices."

The final step: John Atkinson asked me to compose this essay, and allowed me to tart it up with jokes about manufacturers, politicians (one swipe each at a Republican and a Democrat), and corporate food-product manufacturers. Indeed, it is JA who tallies the votes, so it is JA to whom the noncomplacent should send notes of praise and approbation. (See his comments on the voting process at www.stereophile.com/asweseeit/1207awsii/index/html.)

The prices listed below were current as of August 2017. To order any back issue mentioned in this article, call (888) 237-0955, or visit shop.stereophile.com (MasterCard and Visa only). "WWW" indicates that the review is available free of charge in our online Archives.

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Joint Loudspeakers

DEVORE FIDELITY ORANGUTAN O/96

(\$12,000/PAIR; REVIEWED BY ART DUDLEY & JIM AUSTIN, DECEMBER 2012, JANUARY 2013, SEPTEMBER 2017, VOL.35 NO.12, VOL.36 NO.1, VOL.40 NO.9 WWW)

WILSON AUDIO SPECIALTIES ALEX

(\$109,000/PAIR; REVIEWED BY MICHAEL FREMER, MAY 2017, VOL.40 NO.5 WWW)

Looking for evidence of diversity of opinion among *Stereophile's* editors? I think you've found it: This year's Loudspeaker of the Year award is shared by an easy-to-drive, two-way stand-mount and a four-way floorstander that, as JA observed in his measurements, "will stress amplifiers."

The former is the DeVore Fidelity Orangutan O/96, which combines a silk-dome tweeter and a large (10") paper-cone woofer in a reflex-loaded enclosure made of three different types of wood and endowed with a distinctly wide baffle. Since its introduction in early 2012, the high-sensitivity, high-impedance O/96 has found its way into many vintage-vibe systems featuring low-power tube amplifiers, and has gone on to become DeVore's most popular model.

The latter, which sells for nine times the price of the O/96, is the Wilson Audio Specialties Alexx, whose tweeter and two differently sized midrange

drivers are mounted in individually adjustable subenclosures, and its 10.5" and 12.5" woofers in a reflex-loaded main enclosure. All cabinetry is made of Wilson's proprietary phenolic-composite X-Material, and the whole kit and caboodle stands just over five-feet-two (and, as the song says, Oh, what those five feet can do!).

NOTES ON THE VOTE: John DeVore will be horrified to see me say this, but with this win, the O/96—which I first reviewed in the December 2012 *Stereophile*—gets our Ronald Reagan award for having been on the ballot the greatest number of times before taking the top prize. (I proudly admit that I voted for the O/96 every time such a thing was possible.) By now, enough *Stereophile* staffers have heard the O/96s at shows and dealer events that it was able to earn four second-place votes alongside two first-place votes; the Wilson Alexx, which has also made a name for itself on the strength of numerous public demos—not all by Wilson themselves—earned the same total number of votes with a different point spread, including one more first-place win than the DeVore. Neither of the closest runners-up—the Kii Audio Three or the Bang & Olufsen BeoLab 90—came close to earning as many votes as the two winners.

FINALISTS

(in alphabetical order)

◆ AUDITORIUM 23 HOMMAGE CINEMA (\$49,995/PAIR, PLUS \$5495 FOR FIELD-COIL

POWER SUPPLY; REVIEWED BY ART DUDLEY & JOHN ATKINSON, NOVEMBER 2016 & JANUARY 2017, VOL.39 NO.11 & VOL.40 NO.1 WWW)

◆ BANG & OLUFSEN BEOLAB 90 (\$84,990/PAIR; REVIEWED BY KALMAN RUBINSON, JANUARY 2017, VOL.40 NO.1 WWW)

◆ FOCAL SOPRA NO.3 (\$19,999/PAIR; REVIEWED BY KALMAN RUBINSON, APRIL 2017, VOL.40 NO.4 WWW)

◆ KEF REFERENCE 5 (\$19,000/PAIR; REVIEWED BY JOHN ATKINSON, OCTOBER 2017, VOL.40 NO.10 WWW)

◆ Kii AUDIO THREE (\$13,255/PAIR INCLUDING KII CONTROL UNIT; REVIEWED BY KALMAN RUBINSON, SEPTEMBER 2017, VOL.40 NO.9 WWW)

◆ MAGICO S5 MK.II (\$38,000–\$42,750/PAIR; REVIEWED BY JOHN ATKINSON, FEBRUARY 2017, VOL.40 NO.2 WWW)

◆ MARTINLOGAN MASTERPIECE RENAISSANCE ESL 15A (\$24,995/PAIR; REVIEWED BY JON IVERSON, JANUARY 2017, VOL.40 NO.1 WWW)

◆ MONITOR AUDIO PLATINUM PL300 SERIES II (\$14,495/PAIR; REVIEWED BY ROBERT DEUTSCH, NOVEMBER 2016, VOL.39 NO.11 WWW)

◆ ROCKPORT TECHNOLOGIES AVIOR II (\$38,500/PAIR; REVIEWED BY JOHN ATKINSON, AUGUST 2017, VOL.40 NO.8 WWW)

◆ VOLTI AUDIO RIVAL (\$7900/PAIR; REVIEWED BY KEN MICALLEF, JUNE 2017, VOL.40 NO.6 WWW)

◆ WHARFEDALE DIAMOND 225 (\$449/PAIR; REVIEWED BY HERB REICHERT, KEN MICALLEF, ART DUDLEY, MARCH, JUNE, OCTOBER 2017, VOL.40 NOS. 3, 6, 10 WWW)



Amplification Component

BOULDER AMPLIFIERS 2150 MONOBLOCK POWER AMPLIFIER

(\$99,000/PAIR; REVIEWED BY MICHAEL FREMER, FEBRUARY 2017, VOL.40 NO.2 WWW)

A quick spin through the archives at Stereophile.com will show that, for whatever reason, very-high-power solid-state amplifiers don't often take our top honors in this category: the last time that happened was in 2011, when we honored the Classé CT-M600/CA-M600 amps. Yet the Boulder 2150 monoblock isn't just any high-power amplifier: This 220-lb beast delivers 1000W into 8 ohms, and every one of those watts is claimed to be pure class-A, thanks to a microprocessor-based circuit that adjusts bias in accordance with input-signal voltage and loudspeaker load at any given millimoment. Yet for all that, said JA, "the Boulder 2150 runs relatively cool"—thanks in part to integral (non-fin) heatsinking created in Boulder's own machine shop. In a word, also courtesy JA: "extraordinary."

NOTES ON THE VOTE: The big Boulder outdistanced the runners-up by a relatively modest number of votes, second place being taken by the class-D Bel Canto e.One REF600M, which charmed both Kal Robinson and Herb Reichert. But here's the thing: third place was a four-way tie among three tubed products and one perhaps inspired by thermionic valves: respectively, the Audio Research Reference 6 preamplifier, PrimaLuna Prologue Premium power amplifier, Shindo Monbrison preamplifier, and Pass Labs INT-60 integrated amplifier.



FINALISTS

(in alphabetical order)

- ◆ **AUDIONET MAX MONOBLOCK POWER AMPLIFIER**
(\$30,500/PAIR; REVIEWED BY JASON VICTOR SERINUS, JULY 2017, VOL.40 NO.7 WWW)
- ◆ **AUDIO RESEARCH REFERENCE 6 PREAMPLIFIER**
(\$14,000; REVIEWED BY MICHAEL FREMER, DECEMBER 2016, VOL.39 NO.12 WWW)
- ◆ **BEL CANTO DESIGN E.ONE REF600M MONOBLOCK POWER AMPLIFIER**
(\$4990/PAIR; REVIEWED BY KALMAN RUBINSON & HERB REICHERT, OCTOBER 2016 & SEPTEMBER 2017, VOL.39 NO.10 & VOL.40 NO.9 WWW)
- ◆ **DAN D'AGOSTINO MASTER AUDIO SYSTEMS PROGRESSION MONOBLOCK POWER AMPLIFIER**
(\$38,000/PAIR; REVIEWED BY JASON VICTOR SERINUS, OCTOBER 2017, VOL.40 NO.10 WWW)
- ◆ **DARTZEEL AUDIO NHB-18NS MK.II PREAMPLIFIER**
(\$38,000; REVIEWED BY MICHAEL FREMER, JUNE 2017, VOL.40 NO.6)

- ◆ **LAMM INDUSTRIES L2.1 REFERENCE PREAMPLIFIER**
(\$22,790; REVIEWED BY ART DUDLEY, JULY 2017, VOL.40 NO.7 WWW)
- ◆ **PASS LABS INT-60 INTEGRATED AMPLIFIER**
(\$9000; REVIEWED BY HERB REICHERT, DECEMBER 2016, VOL.39 NO.12 WWW)
- ◆ **PEACHTREE NOVA300 INTEGRATED AMPLIFIER**
(\$2499; REVIEWED BY ART DUDLEY, JUNE 2017, VOL.40 NO.6 WWW)
- ◆ **PRIMALUNA PROLOGUE PREMIUM POWER AMPLIFIER**
(\$2199; REVIEWED BY HERB REICHERT, NOVEMBER 2016, VOL.39 NO.11 WWW)
- ◆ **PS AUDIO BHK 300 MONOBLOCK POWER AMPLIFIER**
(\$14,998/PAIR; REVIEWED BY MICHAEL FREMER & JIM AUSTIN, FEBRUARY 2016 & AUGUST 2017, VOL.39 NO.2 & VOL.40 NO.8 WWW)
- ◆ **SHINDO LABORATORY MONBRISON PREAMPLIFIER**
(\$12,500; REVIEWED BY ART DUDLEY, SEPTEMBER 2017, VOL.40 NO.9 WWW)

Joint Analog Components

SUTHERLAND ENGINEERING DUO PHONO PREAMPLIFIER

(\$4000/PAIR; REVIEWED BY BRIAN DAMKROGER, SEPTEMBER 2017, VOL.40 NO.9 WWW)

VPI PRIME SCOUT TURNTABLE WITH JMW 9 TONEARM

(\$2199; REVIEWED BY ART DUDLEY, OCTOBER 2017, VOL.40 NO.10 WWW)

First place in our Analog Component of the Year competition is a tie be-

tween two solid and solidly American audio components, one the upmarket refinement of a well-proven design, the other a product whose perfectionism is tempered with enough thrift that it also tied for second place in the category of Budget Product of the Year.

Sutherland's Duo phono preamplifier is as dual-mono as dual-mono gets: two separate, identical enclosures, each with its own power supply, gain and loading adjustments, solid-state voltage amplifiers—even two separate shipping cartons. If you could talk Ron Sutherland into selling you just a single Duo, it would be perfectly at home in any

monophile's system.

With the Prime Scout turntable, VPI nudges their well-loved, budget-priced Scout in the direction of their more upmarket Prime (darned if I know where they got the name). The result is a belt-drive turntable with a curvy solid plinth, a damped aluminum platter, and a sturdy outboard motor. It's bundled with VPI's JMW 9 tonearm, an aluminum-and-stainless-steel unipivot with an effective length of about 9.5".

NOTES ON THE VOTE: There was a big drop in the number of votes—around 33%, appropriately enough—from the two first-place winners to the

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Absolute Audio, NM
USA Tube Audio, AZ
AVWORX, UT

Audio Video Solutions, NV
Sweet Spot Audio & Records, TX
Hi-End Theater & Audio, TX
Alma Audio, CA
Audio Center, FL

product that took second place, Audio Union's Döhmman Helix 1 turntable with Schröder CB tonearm. The drop from there to the number of votes won by our two third-place winners was no less precipitous, and it's a remarkable pairing, given their drastically different prices: CH Precision's P1 phono preamplifier, which so impressed Mikey, and the half-century-old Denon DL-103 cartridge, which has found favor with Herb Reichert, Ken Micallef, and me, among others.

FINALISTS

(in alphabetical order)

- ◆ **AMG GIRO TURNTABLE WITH 9W2 TONEARM**
(\$10,000; REVIEWED BY HERB REICHERT, OCTOBER 2017, VOL.40 NO.10)
- ◆ **AUDIO RESEARCH PHONO REF 3 PHONO PREAMPLIFIER**
(\$14,000; REVIEWED BY MICHAEL FREMER, JANUARY 2017, VOL.40 NO.1)
- ◆ **AUDIO UNION DÖHMANN HELIX 1 TURNTABLE WITH SCHRÖDER CB TONEARM**
(\$40,300; REVIEWED BY MICHAEL FREMER, MARCH 2017, VOL.40 NO.3)
- ◆ **BOB'S DEVICES SKY 40 MC STEP-UP TRANSFORMER**
(\$1250; REVIEWED BY ART DUDLEY, MARCH 2017, VOL.40 NO.3 WWW)
- ◆ **CH PRECISION P1 PHONO PREAMPLIFIER**
(\$31,000; REVIEWED BY MICHAEL FREMER, APRIL & JUNE 2017, VOL.40 NOS. 4 & 6)
- ◆ **DAN D'AGOSTINO MASTER AUDIO SYSTEMS MOMENTUM PHONO STAGE**
(\$28,000; REVIEWED BY MICHAEL FREMER, FEBRUARY 2017, VOL.40 NO.3)
- ◆ **DENON DL-103 PHONO CARTRIDGE**
(\$379; REVIEWED BY J. GORDON HOLT, ART DUDLEY, STEPHEN MEJIAS, KEN MICALLEF, SEPTEMBER 1975, OCTOBER & DECEMBER 2007, APRIL 2010, JUNE & AUGUST 2017, VOL.3 NO.9, VOL.30 NOS. 10 & 12, VOL.40 NOS. 6 & 8 WWW)



- ◆ **KUZMA STABI M TURNTABLE WITH 4POINT 14" TONEARM**
(\$28,220; REVIEWED BY MICHAEL FREMER, NOVEMBER 2016, VOL.39 NO.11)
- ◆ **REGA RESEARCH PLANAR 3 TURNTABLE**
(\$1145; REVIEWED BY HERB REICHERT, FEBRUARY 2017, VOL.40 NO.2 WWW)

Joint Digital Components

AYRE ACOUSTICS QX-5 TWENTY DIGITAL HUB D/A PROCESSOR

(\$8950; REVIEWED BY JOHN ATKINSON, SEPTEMBER 2017, VOL.40 NO.9 WWW)

MYTEK HIFI BROOKLYN D/A HEADPHONE AMPLIFIER

(\$1995; REVIEWED BY JIM AUSTIN, KALMAN RUBINSON, HERB REICHERT, NOVEMBER 2016 & MAY 2017, VOL.39 NO.11 & VOL.40 NO.5 WWW)

Our 2017 Digital Component of the Year competition was also a tie—and both winners are the sorts of products that stretch our thinking on what to expect from a digital processor.

More than just a digital source component—a label more suited to their USB-only QB-9 DAC, which took top honors in this category in 2009—Ayre Acoustics' QX-5 Twenty Digital Hub D/A processor can take the place of a preamplifier in a digital-music playback system. That distinction owes as much to the Ayre's 100-step digital-domain volume control as to its abundance of analog and digital inputs—the latter including Ethernet connectivity and adherence to DLNA/UPnP protocols, for playing locally stored files and streaming music from the Internet—and the QX-5 Twenty is certified Roon Ready.

The no-less-flexible Mytek HiFi Brooklyn DAC, which handles DSD and PCM natively and independently, offers digital and

analog volume controls, and—remarkably—supplements its inputs with a moving-magnet/moving-coil phono stage. The Brooklyn's good-quality headphone amp is also a plus—but to both Jim Austin and Herb Reichert, the Mytek's real calling card



THE PROGRESSION SYSTEM.



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is its ability to decode MQA files. A heck of a package for just under \$2000.

NOTES ON THE VOTE: Once again, the runners-up weren't terribly close to the winners in numbers of votes won. Second-place honors went to Mytek HiFi's Manhattan II—yes, that company's \$1995 processor edged out the newest version of their own \$5995 processor—while third place was a tie between two products also made by the same company: dCS's Rossini DAC and Rossini Player.

FINALISTS

(in alphabetical order)

- ◆ BRINKMANN AUDIO NYQUIST D/A PROCESSOR (\$18,000; REVIEWED BY MICHAEL FREMER, AUGUST 2017, VOL.40 NO.8 WWW)
- ◆ BRYSTON BCD-3 CD PLAYER (\$3495; REVIEWED BY ART DUDLEY, AUGUST 2017, VOL.40 NO.8 WWW)
- ◆ BRYSTON BDA-3 D/A PROCESSOR (\$3495; REVIEWED BY LARRY GREENHILL, DECEMBER 2017, VOL.39 NO.12 WWW)
- ◆ CHORD ELECTRONICS DAVE D/A PROCESSOR (\$10,588; REVIEWED BY JOHN ATKINSON, JUNE 2017, VOL.40 NO.6 WWW)
- ◆ DCS ROSSINI D/A PROCESSOR (\$23,999; REVIEWED BY JASON VICTOR

SERINUS, JANUARY 2017, VOL.40 NO.1 WWW)

- ◆ DCS ROSSINI PLAYER (\$28,499; REVIEWED BY JOHN ATKINSON, DECEMBER 2016, VOL.39 NO.12 WWW)
- ◆ MERIDIAN ULTRA DAC D/A PROCESSOR (\$23,000; REVIEWED BY JOHN ATKINSON, MAY 2017, VOL.40 NO.5 WWW)
- ◆ MYTEK HIFI MANHATTAN II D/A PROCESSOR (\$5995; REVIEWED BY HERB REICHERT, SEPTEMBER 2017, VOL.40 NO.9 WWW)
- ◆ SCHIIT AUDIO YGGDRASIL D/A PROCESSOR (\$2299; REVIEWED BY HERB REICHERT, FEBRUARY 2017, VOL.40 NO.2 WWW)

Headphone Component



PASS LABS HPA-1 HEADPHONE AMPLIFIER

(\$3500; REVIEWED BY JOHN ATKINSON & HERB REICHERT, JULY & DECEMBER 2016, VOL.39 NOS. 7 & 12 WWW)

In an era when planar-magnetic headphones are increasingly common, it's fitting that our first Headphone Product of the Year is an amplifier unfazed by difficult loads. Indeed, the Pass Labs HPA-1, which also functions as a two-input, line-level analog preamplifier, is

comfortable with loads ranging from 15 to 600 ohms—and, as John Atkinson discovered, this MOSFET-based design plays with *authority*.

NOTES ON THE VOTE: Not content with a single win, Mytek HiFi's Brooklyn D/A headphone amplifier—our Joint Digital Product of the Year—took second place for its talents as a headphone amplifier, winning almost as many first-place votes as the Pass Labs amp. Earning just as many first-place votes as the Mytek but fewer second-place votes were the Abyss 1226 Phi headphones, which so impressed Herb Reichert. Thus

we were spared the chagrin of having *no* headphones place in our very first headphone competition.

FINALISTS

(in alphabetical order)

- ◆ ABYSS 1226 PHI HEADPHONES (\$4495; REVIEWED BY HERB REICHERT, AUGUST 2017, VOL.40 NO.8 WWW)
- ◆ AUDIOQUEST NIGHTOWL CARBON HEADPHONES (\$699.99; REVIEWED BY HERB REICHERT, JUNE 2017, VOL.40 NO.6 WWW)
- ◆ FOCAL ELEAR HEADPHONES (\$999; REVIEWED BY HERB REICHERT, DECEMBER 2016, VOL.39 NO.12 WWW)
- ◆ HIFIMAN HE1000 V2 HEADPHONES (\$2999; REVIEWED BY HERB REICHERT, APRIL 2017, VOL.40 NO.4 WWW)
- ◆ MYTEK HIFI BROOKLYN D/A HEADPHONE AMPLIFIER (\$1995; REVIEWED BY JIM AUSTIN, KALMAN RUBINSON, HERB REICHERT, NOVEMBER 2016 & MAY 2017, VOL.39 NO.11 & VOL.40 NO.5 WWW)
- ◆ SHURE KSE1500 ELECTROSTATIC HEADPHONES (\$2999; REVIEWED BY JOHN ATKINSON, NOVEMBER 2017, VOL.39 NO.11 WWW)
- ◆ SONY SIGNATURE SERIES MDR-Z1R HEADPHONES (\$2299.99; REVIEWED BY HERB REICHERT, JUNE 2017, VOL.40 NO.6 WWW)



Accessory



ROON 1.3 MUSIC APP

(\$119, ONE-YEAR SUBSCRIPTION; \$499, LIFETIME); REVIEWED BY KALMAN RUBINSON, JULY & SEPTEMBER 2017, VOL.40 NOS. 7 & 9 WWW)

Although some of this year's wins surprised me a little, and at least one shocked me all the way into the next county, I don't mind telling you: I totally saw this coming. The cloud-based Roon music app, created by some of the folks who were behind Sooloos, has few peers

when it comes to organizing the user's digital-music collection, and it enriches the listening experience by streaming metadata—liner notes, bios, lyrics, photos, and more—that's continuously updated. Best of all, it sounds great—and, with the advent of Roon 1.3, it

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**Brian Hudkins,
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**Leon Shaw,
Audio Advice**

“The Imagine T3 loudspeaker takes PSB to a whole new performance plateau. It's not just 'good for the money' — it's just stunning all on its own.”

**Alan Goodwin,
Goodwin's High End**

“The PSB Imagine T3 is truly exceptional in every important way. At \$7500 per pair, our customers will take full advantage of this high end bargain!”

**Ralph Cortigiano,
Take 5 Audio**

“With the Imagine T3, PSB now stands for Pure Sonic Bliss. Paul Barton hits another home run with this world-class speaker.”

**Alan Jones,
HiFi Buys**



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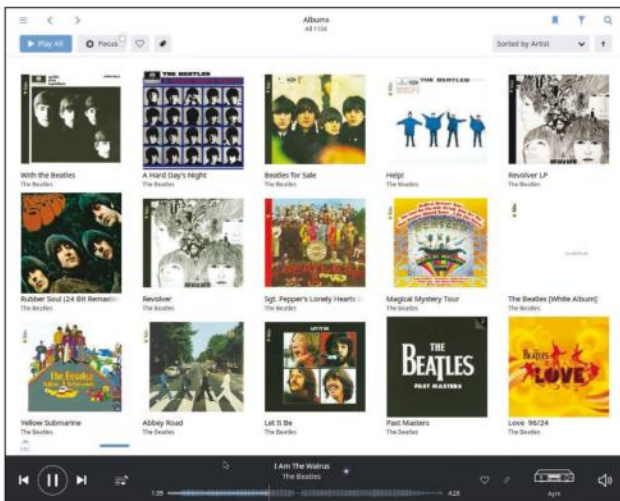
supports MQA.

NOTES ON THE VOTE: Roon 1.3 received more first-place votes than were received by any other nominee in any category in this year's Product of the Year contest—nothing else came close. That said, the second-place winner—the recently introduced Pro version of the Audiodesksysteme Gläss Vinyl Cleaner—is notable for being a true niche product, albeit a popular one. Third-place honors go to AudioQuest's Niagara 1000 AC power conditioner, or Low-Z Power/Noise-Dissipation System as AudioQuest prefers to call it, which received votes from no fewer than six *Stereophile* editors.

FINALISTS

(in alphabetical order)

◆ AUDIODESKSYSTEME GLÄSS PRO VINYL CLEANER (\$4199; REVIEWED BY ART DUDLEY, APRIL 2017,



VOL.40 NO.4 WWW)

◆ AUDIOQUEST NIAGARA 1000 AC POWER CONDITIONER (\$995.95; REVIEWED BY HERB REICHERT & KALMAN RUBINSON, APRIL & SEPTEMBER 2017, VOL.40 NOS. 4 & 9 WWW)

◆ AUDIOQUEST NIAGARA 5000 AC POWER CONDITIONER (\$3995.95; REVIEWED BY KALMAN RUBINSON, SEPTEMBER 2017, VOL.40 NO.9 WWW)

◆ JRIVER MEDIA CENTER (\$69.98; REVIEWED BY KALMAN RUBINSON, MAY 2017, VOL.40 NO.5 WWW)

◆ SHUNYATA RESEARCH HYDRA DENALI D2000/T & D6000T POWER CONDITIONERS (\$3495 & \$4995; REVIEWED BY MICHAEL FREMER, JUNE 2017, VOL.40 NO.6)

◆ TORUS POWER TOT AVR POWER CONDITIONER (\$2299; REVIEWED BY LARRY GREENHILL, MARCH 2017, VOL.40 NO.3 WWW)

Joint Budget Components

ROON 1.3 MUSIC APP

WHARFEDALE DIAMOND 225 LOUDSPEAKER

Once again, Roon 1.3 finds itself in the winner's circle, this time sharing the honor with a distinctly overachieving stand-mounted loudspeaker: the Wharfedale Diamond 225. The diminutive Wharfedale, which combines a 1" tweeter and a 6.5" mid/woofer in a reflex-loaded cabinet made of MDF, was described by Herb Reichert as "a connoisseur-level audio component," and was similarly hailed in Follow-Up reports by Ken Micallef and me. Some day, this review pair will make its way beyond New York State!

NOTES ON THE VOTE: Again Roon earned a healthy number of first-place votes: five. The Wharfedales won the same number of votes overall, but in a spread that included one fewer first-place vote than Roon. Second place was a tie between the AudioQuest Niagara AC power conditioner, which took third place in the Accessory of the Year voting, and the VPI Prime Scout, this year's Analog Component of the Year. Third place was also a tie, between the AudioQuest

NightOwl Carbon headphones and the Denon DL-103 phono cartridge. That's right—two third-place showings for a 52-year-old product in a category that was supposed to be dead 20 years ago. Is this a great industry or what?

FINALISTS

(in alphabetical order)

◆ AUDIOQUEST NIAGARA 1000 AC POWER CONDITIONER

◆ AUDIOQUEST NIGHTOWL CARBON HEADPHONES

◆ DENON DL-103 PHONO CARTRIDGE

◆ EMOTIVA XPA GEN3 TWO-CHANNEL POWER AMPLIFIER

(\$999; REVIEWED BY HERB REICHERT, AUGUST 2017, VOL.40 NO.8 WWW)

◆ REGA RESEARCH BRIO INTEGRATED AMPLIFIER

(\$995; REVIEWED BY KEN MICALLEF, OCTOBER 2017, VOL.40 NO.10 WWW)





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Overall Component

Kii AUDIO THREE LOUDSPEAKER

As Kal Robinson wrote when he reviewed our 2017 Product of the Year in the September 2017 *Stereophile*, "almost everything about Kii Audio's Three loudspeaker is a refreshing splash of cool water." That's especially true if one defines *refreshing*—and *splash* and *cool*—as meaning "different." And my oh my, is this year's winner ever different. The three-way, six-driver Kii Three is distinct from most other loudspeakers—and all previous Products of the Year, as far as I know—inasmuch as it is self-amplified and -preamplified, DSP-controlled, and German. And, at \$13,900/pair (stands additional), the Kii Audio Three is far less expensive than other products that have sat atop our annual vote. Take that, conformity!

NOTES ON THE VOTE: The voting in this category was closer than in all others except for Amplification Product of the Year—and only a single vote separated the second- and third-place products. This is an unexpected—some might say peculiar—outcome. What's interesting is that the Kii Audio Three won by racking up lots of second-place



votes. By contrast, the runners-up in this field—the DeVore Orangutan O/96 and Wilson Audio Specialties Alexx speakers—both had more first-place votes than the Kii Three. One can parse this in any number of ways, but to me, all those second-place votes speak of voters who may have lacked full confidence in the Kii's ability to take top honors, but who nevertheless said to themselves, while pulling the lever, "Maybe this one isn't as crazy as we think?" Can't think what that reminds me of...

FINALISTS

(in alphabetical order)

- ◆ AUDIODESKSYSTEME GLÄSS PRO VINYL CLEANER
- ◆ AUDIO RESEARCH REFERENCE 6 PREAMPLIFIER
- ◆ AUDIO UNION DÖHMANN HELIX 1 TURNTABLE WITH SCHRÖDER CB TONEARM
- ◆ AYRE ACOUSTICS QX-5 TWENTY DIGITAL HUB D/A PROCESSOR
- ◆ BANG & OLUFSEN BEOLAB 90 LOUDSPEAKER
- ◆ BEL CANTO DESIGN E.ONE REF600M MONOBLOCK POWER AMPLIFIER
- ◆ BOULDER AMPLIFIERS 2150 MONOBLOCK POWER AMPLIFIER
- ◆ DCS ROSSINI CD PLAYER
- ◆ DEVORE FIDELITY ORANGUTAN O/96 LOUDSPEAKER
- ◆ MAGICO S5 MK.II LOUDSPEAKER
- ◆ MYTEK HIFI BROOKLYN D/A HEADPHONE AMPLIFIER
- ◆ MYTEK HIFI MANHATTAN II D/A PROCESSOR
- ◆ SUTHERLAND ENGINEERING DUO PHONO PREAMPLIFIER
- ◆ VPI PRIME SCOUT TURNTABLE WITH JMW 9 TONEARM
- ◆ WILSON AUDIO SPECIALTIES ALEXX LOUDSPEAKER

Editors' Choices

AUDIODESKSYSTEME GLÄSS PRO VINYL CLEANER

(\$4199)

Without playing a note, the Audiodesksysteme Gläss Pro Vinyl Cleaner rocked my listening world. This wonderfully designed car wash for LPs accomplishes far more than I expected: reduction in noises of all kinds, and a magical lifting



of yet another veil from the music. Brilliant! —*Sasha Matson*

BANG & OLUFSEN BEOLAB 90 LOUDSPEAKER & Kii AUDIO THREE LOUDSPEAKER (JOINT AWARD)

(\$84,990/PAIR & \$13,255/PAIR)

These remarkable products prove that the traditional loudspeaker paradigm has a successor. While not indisputably superior to all passive or powered speakers, they compel all speaker designers to consider the acoustical advantages of DSP or risk being surpassed by those who do. Both are outstanding, but the Kii is more so, simply because it's much smaller and costs far less than the B&O. —*Kalman Robinson*

BRYSTON BDA-3 D/A PROCESSOR

(\$3495)

While it was frustrating not to be able to decode MQA files, that didn't stop the Bryston BDA-3 from being the most



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Editors' Choices (continued)

versatile and the best-sounding DAC I've heard in my listening room. It delivered superbly effortless, delicate, subtly revealing, tube-like output from a wide variety of digital formats, including, via its HDMI input, DSD64 datastreams from SACDs. Its unusual flexibility makes it an ideal reviewer's tool for evaluating other high-end gear. I had no choice but to buy the review sample. —**Larry Greenhill**

CH PRECISION P1 PHONO PREAMPLIFIER

(\$31,000)

Aside from thoroughly enjoying the P1's sound (or lack thereof) and exceptional background quiet, its multiple inputs, two of them based on current amplification and one based on voltage amplification, make a reviewer's life so much easier. Owning the solid-state P1 and the tubed/LCR-based Ypsilon VPS-100 gives me the best of all phono-preamplifier worlds. —**Michael Fremer**

DAN D'AGOSTINO MASTER AUDIO SYSTEMS PROGRESSION MONOBLOCK POWER AMPLIFIER

(\$38,000/PAIR)

Even amid outstanding new products from dCS, Mytek, and Wilson, Dan D'Agostino's Progression monoblocks stand out for their superb bass control, imaging, detail, and musical authority. They are truly "Master Audio Systems" achievements that, in my system, bring me closer to the source of artistic creation and inspiration than ever before. —**Jason Victor Serinus**



DCS ROSSINI D/A PROCESSOR

(\$23,999)

The dCS Rossini D/A processor is one of the two finest-sounding DACs I've heard. —**Michael Lavorgna**

DEVORE FIDELITY ORANGUTAN O/96 LOUDSPEAKER

(\$12,000/PAIR)

The Orangutan O/96 is not what you'd expect, given its old-school morphology. Its midrange is its best feature, as you might expect. But, in contrast to its vintage shape, its highs are punchy and extended, and its lows are natural and relaxed, but not tubby. Unorthodox, but a complete and satisfying package. —**Jim Austin**

KEF REFERENCE 5 LOUDSPEAKER

(\$19,000/PAIR)

It was difficult choosing a personal product of 2017, as I have reviewed several superb-sounding loudspeakers and some wonderful DACs in the past 12 issues. But by a small margin I'll go for KEF's Reference 5, which, in the three



months the review samples lived in my listening room, continually seduced me into wanting to play just one more album before I went to bed. —**John Atkinson**



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Ken Kessler, Hi-Fi News (April 2016)

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Editors' Choices (continued)



MARTINLOGAN **MASTERPIECE** **RENAISSANCE ESL 15A** **LOUDSPEAKER**

(\$24,995/PAIR)

This speaker can truly hang with the high-end crowd, but at a fraction of the price. No speaker is perfect for everyone—some may not like the outright honesty of a panel speaker like this—but here in a single package are powered subs, soundstage for miles, life-size imaging, and a midrange as clear as a bell. Flat-out gorgeous, too. —**Jon Iverson**

MONITOR AUDIO **PLATINUM** **PL300 II** **LOUDSPEAKER**

(\$14,495/PAIR)

"Let those that play your clowns speak

no more than is set down for them." Hamlet's Advice to the Players can be applied to loudspeakers. The ideal speaker would reproduce recorded music without adding any sound of its own. Of all the speakers I've reviewed over the years, the Monitor Audio Platinum PL300 II came closest to this ideal. So I had to buy them. —**Robert Deutsch**

MYTEK **HI-FI MANHATTAN II** **D/A PROCESSOR**

(\$5995)

I had no choice but to nominate the Mytek HiFi Manhattan II as my personal Product Of 2017. More than any other 21st-century audio component, the Manhattan II changed how I perceive the relative merits of headphones, of digital, of streaming, and of MQA.

—**Herb Reichert**

SHINDO LABORATORY **MONBRISON PREAMPLIFIER**

(\$12,500)

A 6.5"-tall monument to the idea that the best hi-fi products are the ones that have a point of view, and a bearer of not-so-mute testimony to the endurance of Shindo Laboratory following the death of its founder, the new Shindo Monbrison preamp is a thing of beauty—and it's here in my system to stay.

—**Art Dudley**

SUTHERLAND **ENGINEERING DUO** **PHONO PREAMPLIFIER**

(\$4000/PAIR)

My choice of Ron Sutherland's Duo phono preamp as my personal Product of 2017 was an easy one to make. The Duo was beyond excellent, beyond



superb or sublime. It was perfect. Every aspect, every detail, everything about it was exactly as it had to be.

—**Brian Damkroger**

VOLTI AUDIO **RIVAL** **LOUDSPEAKER**

(\$7900/PAIR)

In no uncertain terms, the Volti Audio Rival loudspeakers created a personal audio revolution that continues to echo around my cranial orb to this day. The

Volti Rival's superior traits are many, and form a singular whole that I found intoxicating. Allying horn purity, sensitivity, and projection to midrange transparency and a low end that I at first thought was lacking but soon realized was exceptional, these large speakers "disappeared" from my small listening space, and defined every strain of the audioband with ease and lovely clarity. For the base asking price of \$7900, a pair of Rivals constitute one of today's great audio bargains.

—**Ken Micallef**



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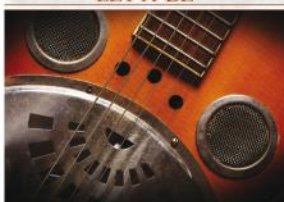
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SOLO BLUES GUITAR
JIMBO MATHUS PERFORMS
THE REPLACEMENTS' LET IT BE



hile it hasn't always made money or hit records, the music business has never been short on ideas. Most are nonsense, but every once in a while—the gramophone, onstage monitors, Les Paul's overdubbing—the biz comes up with a winner.

Many of the craziest ideas I've heard in 30 years of writing about music have been expounded on at the South by Southwest Music Festival, held each year in Austin, Texas. At SXSW, hope springs eternal. Secrets are whispered. Buzz bands gain momentum. Rumors ripple through crowds. Everyone has visions of morphing into a mogul. There's an intoxicating energy to it all.

Last March, in the midst of mingling and rattling on about the Loudness Wars or the soulless hell that pop music has become, Scott Ambrose Reilly, a fine fellow and utter character better known among intimates as Bullet-head (for his bald noggin, which does indeed resemble a



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projectile), sidled up to me and began talking about a new project he'd been working on. A onetime manager of madman Mojo Nixon who went on to work for such going concerns as Amazon and now The Orchard (a distributor of music, video, and films), Reilly knows all about fascinating ideas good and bad. His project, he explained, is called Solo Sounds.

"Four or five years ago, there were a lot of bad covers and computer-generated stuff selling at iTunes and getting streamed at Spotify," he says months later, over a plate of tacos in New York City. "It was great songs done poorly. It was crappy sound. The artwork was crappy. Even the stores started saying it was bad. Some of it got to the point where it was misleading casual fans. I wondered: Could we do a quality version of solo instrumentalists recording an entire album? The idea, on paper, reads just as horrible as it reads well. Many people read it on paper and went 'Ewww!!!!'

"I knew from the start it had to be iconic: iconic songs, iconic artists, iconic albums."

For advice on how to make this admittedly left-field notion into a reality, Reilly turned to an old friend, Eric "Roscoe" Ambel. A guitarist, producer, and recording-studio owner who's fashioned a varied career in music, Ambel has played with Joan Jett, Steve Earle, and the Del-Lords. Since 1999 he's been partners in a recording studio, Cowboy Technical Services, which recently relocated to a new facility in Greenpoint, Brooklyn. And, until it closed in 2012, Ambel owned the much-beloved East Village bar, Lakeside Lounge.

SOME STUFF LENDS ITSELF BETTER TO THIS THAN OTHERS. FOR INSTANCE, WE HAVEN'T DONE ANY BOB DYLAN.

HE RARELY HAS A BRIDGE IN A SONG, AND WITHOUT THE LYRICS, IT'S HARD.



"Scott had this idea," Ambel tells me: "What if we had this label that was just solo instrumental versions of classic records? I played him some tracks I had recorded with Nashville guitarist Ben Hall playing a solo acoustic version of the Beatles' 'I Feel Fine,' Chet Atkins style, and I said, 'You mean like this?' And he said, 'Exactly.'"

"When I talked to Roscoe about it, I was just trying to get my head around what it would cost," Reilly says. "For him, a light bulb went off, and he said, 'I love this idea. I wanna do this at scale, do a volume of stuff.'"

"It was amazing how some artists got

Cowboy Technical Services
and some of its gear.

it—like, immediately," Reilly continues. "It's not easy for anybody. Even people who

have played in bands that did those songs, they just played their part. So it's hard work. Some of the musicians actually loved it and thrived on it. But some sessions just fell apart in the studio—like, almost to the point where it made people angry because it was beyond their capabilities. I could give you a list of people we approached, and they were like, 'Nah-uh.' Some players have said, 'Oh yeah, tell me about it.' And once you'd tell them, you would never hear from them again."

Most of the players in the Solo



Harpist Katie Curley (left).
Eric Ambel and Mike
Brenner recording Velvet
Underground and Nico.



Sounds series are sidemen—or players, like cellist Trevor Exter, who revel in unconventional approaches to their instruments. Most have come from Ambel's circle of musical friends and acquaintances. A few, like accordionist and keyboardist Charlie Giordano, who plays with Bruce Springsteen's E Street Band, are better known than others. The danger inherent in the idea is that it can devolve into what Reilly and Ambel call "hipster Muzak."

"A lot of it is sort of, what if?" Ambel says. "Like, what if we did Leonard Cohen on classical harp? So then we'd reach out to the musicians to see if they can do it. From the musician side, it definitely takes preparation. And there has to be joy in it. We don't specifically say, 'Hey do this record.' We're trying to find a something that the player is connecting with."

"The whole point is, there's humans playing these," Reilly says. "How do we take this sort of cottage industry of computerized, electronically generated instrumental covers and put humans in it? It's hard to capture the humanness and yet it not have errors."

Needless to say, with 70 titles now in the series, split between compilations of hits and covers of entire albums, with more on the way, not everything works or is even worth a listen. But when the match of artist and work clicks, the results can be unexpected and enlightening. A few—*Solo Steel Drums: Arthur Lipner performs John Coltrane's Ballads*; or *Solo Wurlitzer Electric Piano: Rob Arthur Performs Steely Dan's Aja*; or my own favorite, *Solo Piano: Charlie Giordano Performs Tom Waits' Rain Dogs*—work on all levels. Some of the mashups, *Solo Country Guitar: Ben*

IT'S NOT EASY FOR ANYBODY. EVEN PEOPLE WHO HAVE PLAYED IN BANDS THAT DID THOSE SONGS, THEY JUST PLAYED THEIR PART. SO IT'S HARD WORK.

Hall Performs The Clash's London Calling, verge on genius. And while it can take a moment to train your ear to accept just a solo instrument, titles like *Solo Fender Rhodes Piano: Rob Arthur Performs Top Hits of Rihanna* are so weird it's nearly impossible not to smile. Check out the custom Solo Sounds playlist at www.stereophile.com.

"[For the musicians,] you want it to be about passion," Reilly says. "I never thought we'd end up with [*Solo Harp: Katie Curley Performs Johnny Cash's At Folsom Prison*]. I think up some crazy stuff, and I never could have thought that up—but that's what's somebody wanted to do. *The Red-Headed Stranger* on cello? Trevor Exter, the stuff he has done pizzicato has been great. He thanked me when he met me for getting him into that album at that level, and the surprises that happened."

"When you're doing it, you're basically looking under the hood of the song," Ambel says. "It does really make you look at the essence of a song and what you wanna pick. Then you're working with the limitations of the instrument, to try to give it a little

more of an arrangement. Some stuff lends itself better to this than others. For instance, we haven't done any Bob Dylan. He rarely has a bridge in a song, and without the lyrics, it's hard. One of my favorite records of all time is the *Pat Garrett & Billy the Kid* soundtrack, but that has instrumentals on it. When it's one instrument, those bridges really count, you know."

Another strong point of this project is the sound quality. Ambel, who's overseen much of the recording at his studio, has recorded everything in lossless high-resolution files that can be downloaded or streamed from iTunes, HDtracks, and most other major music e-commerce sites. As of yet there's no vinyl, and only a few titles were converted to CD, for use in promotions.

"We went out of our way to do everything at 192kHz/24-bit, to have it sort of audio future-proof," Ambel tells me. "They all have a very clear, uncluttered sound. With digital, it's all about the quality of the conversion. There are converters that are pretty ubiquitous in studios, the Avid converters, that people haven't upgraded in years, and they're not that great. We recently got a Burl Mothership, which is 24 in and 32 out, and to me, it's my favorite-sounding converter."

"We had a little bump in the road. For a while we were mixing this stuff in the box, and one of the software companies that we were using, it turns out that they used some kind of aliasing product. The folks from HDtracks

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said this stuff is labeled 192 but it cuts off at 48k. So we did all this research on it, and we found what plug-ins were stopping us, and we had to go back and redo some of the stuff.”

While Ambel has produced a majority of the Solo Sounds recordings, his partner in Cowboy Technical Services (CTS), Tim Hatfield, and Jimbo Mathus, formerly of the Squirrel Nut Zippers, have also been producing. Various engineers were also used. “No matter who recorded it, [CTS engineer] Mario Viele and I mix them to give it a continuity. It’s important that this stuff is mixed to a standard, so we can kind of repurpose this stuff later.”

By repurposing, Ambel means licensing the rights to the recordings, which Reilly and Ambel own outright, for use in films and television. While that hasn’t happened yet, they see it as a possibility. “When they do discover it,” Ambel says, “we have a really deep catalog for people to go through.”

“Recording these is more like a jazz record, because it’s a performance,” Ambel says. “The production part of it is helping the artist with arrangements or helping to pick the right take, sort of coaching them through it. It’s not like things that could be done later. These are whole takes. Only the very occasional edit. The recording is more about capture.”

Seventy titles in, Reilly and Ambel are discovering that the hardest part of having a cool idea is how to market it. The more esoteric the idea, the harder it is to find an audience that will get it. “Something like solo country guitar doing Nirvana’s *Nevermind*—where’s it going?” Reilly says. “It’s not going on the rock page, and it’s not going on the country page.”

The partners’ focus has turned to finding the best way to get Solo Sounds in front of people who might care, and to get the word out they’ve been making videos and animations to post on YouTube. On Twitter and elsewhere, they’ve been tagging these to, say, the anniversary of a specific album’s original release date, or the birthday of the artist covered. The most popular title so far has been *Solo Blues Guitar*:

Jimbo Mathus Performs The Replacements’ Let It Be, which received placement on iTunes’ Blues home page.

“Some instruments lend themselves to it a little more naturally,” Ambel says; “mostly the guitar or the piano, because those are polyphonic instruments, right? There are a couple of really wild ones. There was one where we were trying to do Beethoven on Surf guitar. But even if you had a really good player and a classic surf guitar setup, a Gretsch, outboard Fender reverb unit and a Fender Bassman, that classic surf guitar sound it didn’t necessarily translate to the music. There’s not a enough space

thing they ever think about. There are a lot of people who listened to a lot of music in their 20s and 30s and now listen to less, but want to put on something cool and hip. What’s amazing is when these come on a playlist, people will go, ‘I know this! . . . Do I know this? Wow, what’s going on?’ And they are done with heart. They are not offending fans of the originals. I’m surprised, in listening, some of it’s almost novelty, but some of it is incredibly poignant in ways that surprise even me.”

“It’s been great for us on the tech side,” Ambel says. “And all the musi-



WHAT’S AMAZING IS WHEN THESE COME ON A PLAYLIST, PEOPLE WILL GO, ‘I KNOW THIS! . . . DO I KNOW THIS? WOW, WHAT’S GOING ON?’

in the Beethoven licks for what we think of as surf guitar to shine.

For the listener it may sound a little jarring at first, but then they get it in their head that it’s just a single instrument. As soon as I got some of these Solo Sounds things recorded, I put it them on at a party, and used them at gigs as between-set music, and invariably people are like, “What is this?”

Encouraged by the feedback they’ve received so far, Ambel and Reilly were busily recording Christmas-themed compilations when I spoke to them for this piece. There was even talk of a solo bagpipe record: *Let It Bleed*, perhaps?

“Some people have turned their nose up, and then they listen,” Reilly says. “Instrumental covers is not some-

cians have really enjoyed it. People, when they hear it, they connect with it. The hardest thing has been trying to describe it without using a phrase like ‘hipster Muzak.’

“As soon as I did Ben Hall doing Nirvana’s *Nevermind* in the Chet Atkins style, I really felt like if I put that on a boom box, hoisted it on my shoulder, and walked around Williamsburg, Brooklyn, I’d be like the Pied Piper in half an hour.”

“In his autobiography Rod Stewart said that having to sing ‘Da Ya Think I’m Sexy’ every night was like wearing a pink toilet seat around his neck. But it made his career,” Reilly says. “And then I think of when Stax had to record a whole new catalog of music after they lost theirs to Atlantic Records, and at the last minute Isaac Hayes said he’d do a record and that’s the one that became the hit. That’s the way I think of Solo Sounds, I want a pink toilet seat or Hot Buttered Soul! And the only way to achieve that is to push musicians to have fun with this and capture some magic.”

Hipster Muzak indeed. ■

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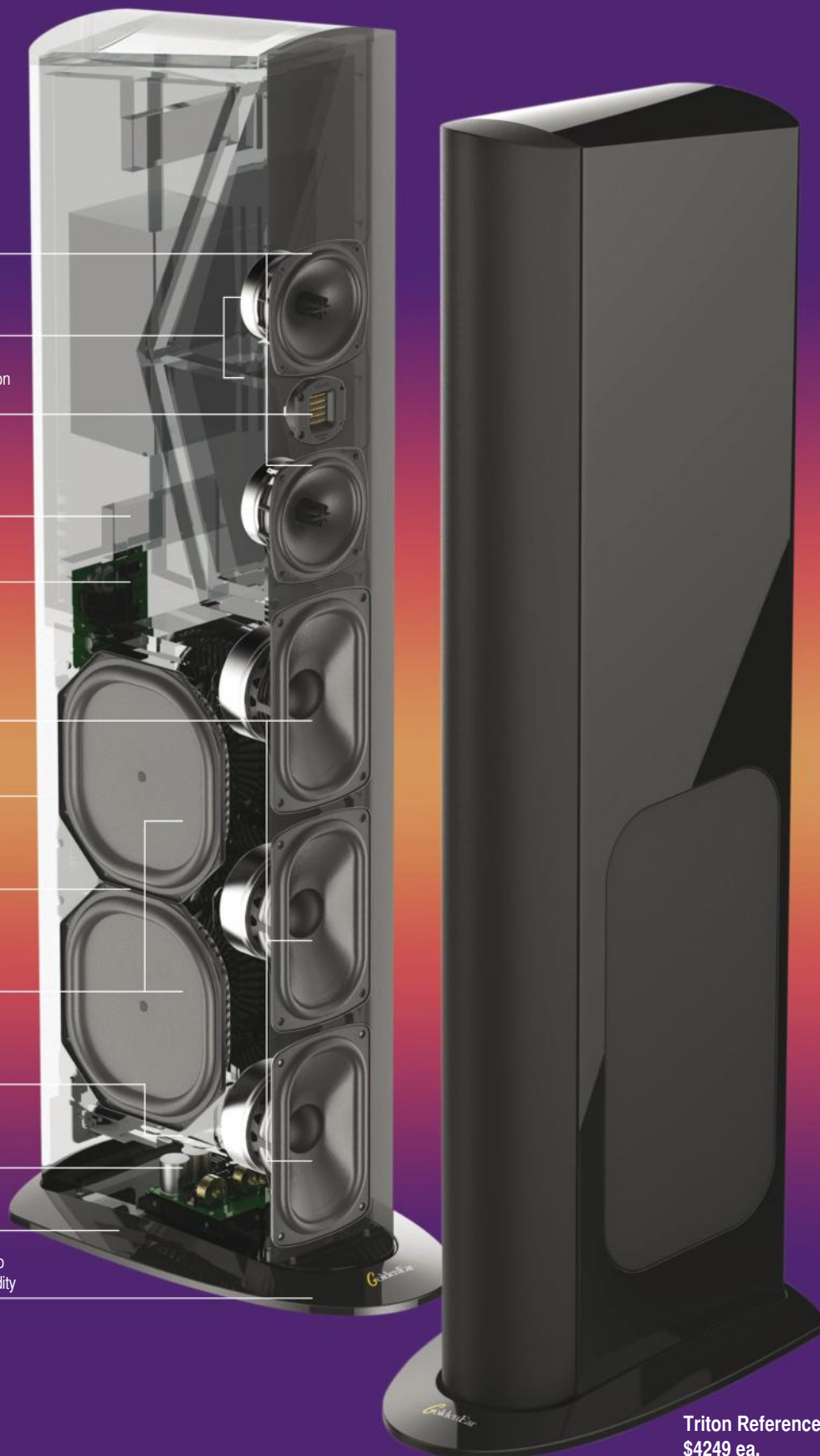
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GoldenEar’s Triton One is one of the best selling high-end loudspeakers ever, consistently thrilling listeners and reviewers alike and winning an enviable and unmatched collection of the industry’s most prestigious awards, including “Loudspeaker-of-the-Year” and “Product-of-the-Year” from key publications all around the world.

Clearly, we knew that the One would be a very hard act to follow. There was a spirited discussion within our product development group about an all-out assault on the ultimate, cost-no-object, state-of-the-art, to produce a six-figure loudspeaker to do battle with the most esoteric and expensive loudspeakers on the planet. However, after much soul-searching, rational minds won out, and the decision was made to create a new GoldenEar flagship, positioned above the Triton One (of course still current and available), that would joust with the best, but still stick to our trademarked slogan, “We Make High-End Affordable.” We are pleased and proud to introduce the new Triton Reference. The Reference has begun gathering its own collection of honors, winning the prestigious and coveted CES Innovations Design and Engineering Award, Digital Trends Best Home Audio Tech at CES, HD GURU Best High Fidelity Loudspeaker at CES and What HiFi Stars of CES!

A grand slam ... all 4 Absolute Sound writers at CES 2017 honored Triton Reference as their “Best Sound (for the money)”!

The Triton Reference is an evolution of everything that we have achieved with the Triton One, but taken to a stunning new level of sonic performance and sophisticated visual design. All the components in the T Ref: including larger, more powerful, active sub-bass drivers with huge “Focused Field” magnet structures, upper-bass/midrange drivers with “Focused Field” magnet structures, and High-Velocity Folded Ribbon tweeter with 50% more rare earth neodymium magnet material, are brand new, and have been specifically developed for use in the Reference. The powerful 1800 watt subwoofer amplifier, with level control to fine tune the bass to your room, and 56-bit DSP control unit are a significant evolution of those in the Triton One and our SuperSubs.

There are a myriad of other significant upgrades and refinements, including: new internal wiring with a specially developed twist, further development of our signature balanced crossover including film capacitors bridged across the high-pass section on the upper-

bass/midrange drivers, a unique proprietary mix of long-fiber lamb’s wool and Dacron for more effective internal damping, intensive work with a high-resolution accelerometer to determine the most effective implementation of complex internal bracing, a 3/32”-thick steel plate built into the mediate base to further stiffen it for increased stability, new stainless steel floor spikes and cups, all of which results in higher resolution of subtle details ... and the list goes on and on.

“Undeniably stellar ... Yes, it does deliver the sort of performance previously delivered only by cost-no-object speakers.” – Dennis Burger, *Home Theater Review*

Visually, the Reference offers a strikingly beautiful upgrade to the classic Triton styling, with a gorgeous hand-rubbed piano gloss-black lacquer finished one-piece monocoque cabinet. Sleek, statuesque and refined, the Reference is simply an elegantly gorgeous statement piece that will excite listeners with its dynamic visual presence, as well as its extraordinary sonic performance.

Sonically, the Reference has been engineered to perform with a dramatic and authoritative voice, comparable to speakers that sell for ten and more times its surprisingly affordable price. T Refs completely disappear, with superb three-dimensional imaging that will open up your room, stretching from wall to wall and beyond, and depth that makes the wall behind them seem to vanish. The astonishing bass is rock-solid, with low-frequency performance that is tight, quick, highly impactful and musical with extension flat to 20Hz and below. Another GoldenEar signature is a silky smooth high end that extends to 35 kHz with a lifelike sheen but no trace of fatiguing hardness, sibilance or stridency so common with lesser tweeters. Tremendous time and energy has been put into the voicing of the speaker and the seamless blending of the drivers, for unmatched musicality with all types of music, and home theater perfection. Rarely do speakers excel at both, but with their world-class neutrality, the Reference absolutely does. A special bonus is the Reference’s extremely high 93.25 dB sensitivity, which gives them tremendous dynamic range and allows use with almost any high-quality amplifier. You must experience T Ref for yourself!

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HERB REICHERT

Outlaw Audio RR2160

TWO-CHANNEL RECEIVER

For audiophiles of a certain age, the mere mention of NAD Electronics' original 3020 integrated amplifier (1980, designed by Erik Edvardson), or Adcom's GFA-555 stereo power amplifier (1985, designed by Nelson Pass), conjures up happy memories of audio's last Golden Age—an idyllic time when working stiffs could luxuriate in the same audio arcadia as bankers and brokers. Since then, few, if any, audio components have achieved that level of iconic high value. Which caused me to wonder: What would it take, nowadays, to manufacture a genuinely high-value audiophile product: one that delivers exciting, satisfying sound at a price most audiophiles can afford?

Just a few weeks ago, as a result of my time spent with Outlaw Audio's RR2160 receiver (\$799), I learned the answer to that question: It takes a group of persons with the desire and ability to make a product that sounds conspicuously good, combined with the will to sell that good-sounding product at a reasonable price.

These days, such people are rare. Too many of today's audio manufacturers are toadies who aspire to sip Château Lafite Rothschild 1787 with princes and robber barons, not swill draft beer with the lumpenproletariat. Too many manufacturers would rather sell five pairs of loudspeakers for \$500,000 each than 5000 pairs for \$500 each. This type of Madame Déficit-style audio elitism currently rages out of control. I believe it is time for a revolution. *Liberté, égalité, fraternité!*

Outlaw Audio's founder, Peter Tribeman, has been a friend to the working class since his time at NAD, during the inception of the legendary 3020. In his 15 years with Outlaw, Tribeman has conscripted for his audio-manufacturing cadre people who recognize good sound and have a desire to sell it at a price that he, his partners, and every Outlaw Audio employee can actually afford.

Description

Outlaw Audio's website refers to the RR2160 as a "Retro Receiver," as "The Last Great Stereo Receiver," and as "the proud successor to the RR 2150." I never heard the RR 2150¹ but my trusted peeps tell me it was "amazing for the price."

The solid-state RR2160 is built to supply up to 110W into 8 ohms and 165W into 4 ohms. These class-AB watts can be directed, alternatively or simultaneously, to two different pairs of loudspeakers. The RR2160 also has two subwoofer outputs, both with analog bass management. As a "retro" receiver, the RR2160 has an FM/AM tuner, a moving-magnet/moving-coil phono stage, tone controls, and speaker equalization to provide bass emphasis from 55, 65, or 85Hz down; as a modern receiver, it has front and rear USB inputs, an Ethernet port, an MP3 input, HD Radio, and a DAC.

The RR2160's most obvious retro feature is its pseudo-art deco faceplate, whose naïve elegance and intelligent layout have seduced me. Every button, knob, and jack is clearly labeled. Everything a user might need to do—including network setup and display brightness—can be easily intuited

without ever opening the well-written owner's manual or picking up the remote control.

The front panel is arranged in ziggurat-like steps that are interrupted, in the right-most section, by a graceful arc that corrals the most frequently used controls: the large Volume knob, and buttons for Mute, Source, Record, Menu, and Enter. To the left of this arc, at the top of the panel, are the display and the attendant up and down buttons for selecting from the menu. Below the display are analog Bass, Balance, and Treble knobs, with a Tone Off button to remove these

The Outlaw RR2160 reminded me just how cozy and human old-school radio can feel.

¹ See: www.stereophile.com/integratedamps/306outlaw/index.html.

SPECIFICATIONS

Description Solid-state stereo receiver with phono, HD Radio/FM/AM tuner, moving-magnet/moving-coil phono stage, subwoofer outputs, bass management, speaker equalization, tone controls, headphone amplifier with independent volume control. Inputs: 4 line-level (RCA), 1 phono

(RCA), 24-bit/192kHz digital, 2 optical, 2 coaxial, 2 USB, 1 Ethernet. Outputs: 2 loudspeaker; 1/4" headphone; pre-out variable (RCA); 2 subwoofer. Power output (20Hz–20kHz, <0.05% THD): 110Wpc into 8 ohms, 160Wpc into 4 ohms. Frequency response: 20Hz–20kHz, +0/–0.5dB. Signal/

noise: 96dB, unweighted. Input sensitivity (into 47k ohms): line-level, 200mV; MM phono, 3.3mV; MC phono, 600µV. **Dimensions** 17.1" (435mm) W by 5.75" (145mm) H by 15" (380mm) D. Weight: 27 lbs (12.25kg). **Finish** silver. **Serial number of unit**

reviewed 1703 02182. **Price** \$799. Approximate number of dealers: not disclosed. Warranty: 2 years, limited. **Manufacturer** Outlaw Audio, PO Box 975, Easton, MA 02334. Tel: (866) 688-5292. Web: www.outlawaudio.com.



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controls from the signal path. Running along the bottom of the faceplate, from left to right, are: a Standby button, a 1/4" headphone jack, a headphone volume-control knob, a 3.5mm Aux jack for line-level input from a portable audio device, buttons for Speaker, Speaker EQ, and External Loop (the last for an external processor), and a USB port for storage devices of up to 16GB max. A small blue pinlight at the center of each button (though not the knobs) indicates that its function is active.

Listening

I powered up the Outlaw RR2160 and let it cook for five days. Then, to get a feel for the quality of its amplifier, tone controls, and Speaker EQ, I used front-end components with which I was familiar. I connected Schiit Audio's Yggdrasil DAC (\$2299) and AMG's Giro G9 turntable (\$10,000), with an EMT DST 75 MC cartridge (\$1950) driving an Auditorium 23 step-up transformer (\$999) and Tavish Design Adagio tubed phono stage (\$1690) into the Outlaw's line-level analog inputs. That's \$16,938 worth of palace-level music sources prompting a working-class, \$799 audio receiver! I then wired the Outlaw to a pair of the most yeomanlike, true-of-tone, small loudspeakers I know: Stirling Broadcast's LS3/5a V2 (\$1990/pair).

The first record I played was the Grateful Dead's 1970 classic, *American Beauty* (LP, Warner Bros. WS 1893). I use this record frequently to check gear for naturalness of tone

and low distortion. Unfortunately for the humble Outlaw, it had been immediately preceded in my system by HiFiMan's EF1000 amplifier (\$12,000; see "Gramophone Dreams," p.40), and in my ensuing automatic and unavoidable comparisons, the RR2160 sounded small and uncolorful. Voices and instruments were sculpted, slightly forward, and tangibly present, but in a jukebox-like way.

Happily, after a few hours, the RR2160's power supply seemed to get more traction, and those initial shortcomings were replaced by a generously big, warm, articulate sound. Fully broken in, the Outlaw's sound through the Stirling LS3/5a V2s wasn't as spacious or as solid as those speakers usually sound with the First Watt J2 or PrimaLuna ProLogue Premium amplifiers, but it was equally rich and luxurious.

As usual for a small speaker, what there was of the LS3/5a V2s' bottom octaves was noticeably low-energy—until I pushed the Outlaw's Speaker EQ button, which boosts the output by 6dB "at and below a selected frequency": 55, 65, or 80Hz. The RR2160's manual recommends that you "Select an EQ setting that is either at the speaker's lowest frequency or one notch above it." The 65Hz choice made Jerry Garcia and Pigpen sound more like they should.

The next night, again with the Stirlings, I played Puente Celeste's *Nama* (CD, M•A Recordings M084A), but now the RR2160 had too much bass—the sound was fat and bilowy. I turned off Speaker EQ, listened again, and now every track on *Nama* felt nicely formed and naturally detailed.

MEASUREMENTS

I measured the Outlaw Audio RR2160 using my Audio Precision SYS2722 system (see the January 2008 "As We See It"). After I'd run the amplifier for an hour with both channels driving 1kHz at one-third power into 8 ohms, its top panel above the internal heatsinks was very hot, at 122°F (50°C). The maximum voltage gain at 1kHz from the speaker terminals into 8 ohms measured 42.1dB for the line inputs. The line inputs preserved absolute polarity (ie, were non-inverting), as did the phono input set to both MM and MC and all the digital inputs. The line-input impedance was a usefully high 48k ohms at low and

middle frequencies, dropping inconspicuously to 39k ohms at 20kHz.

To my surprise, the volume control for the headphone output is in series with the main volume control. It can therefore be used to set the RR2160's gain for a specific pair of headphones, with the main volume control used as normal for headphone listening. The output impedance from the headphone jack was an extremely low 0.5 ohm, which will be optimal for driving low-impedance 'phones. Measured at the speaker terminals, the output impedance was low at 0.16 ohm at 20Hz and 1kHz, rising slightly to 0.19 ohm at 20kHz. As a result, the variation in

the RR2160's frequency response with our standard simulated loudspeaker,² taken with the volume control set to its maximum, was just ± 0.1 dB (fig.1, gray trace). The other traces in this graph show the response into 8, 4, and 2 ohms. The left channel (blue and cyan traces) was 0.24dB higher than that of the right (red, magenta), and this slight channel imbalance was consistent at lower settings of the volume control. The amplifier's output drops by 3dB at a high 150kHz, and as a result, its

1 See www.stereophile.com/content/measurements-maps-precision.

2 See www.stereophile.com/content/real-life-measurements-page-2.

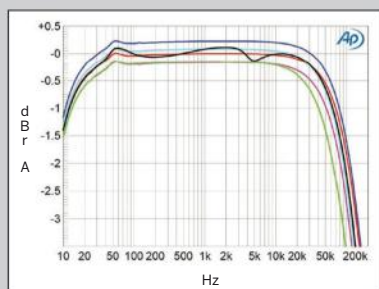


Fig.1 Outlaw RR2160, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (0.5dB/vertical div.).

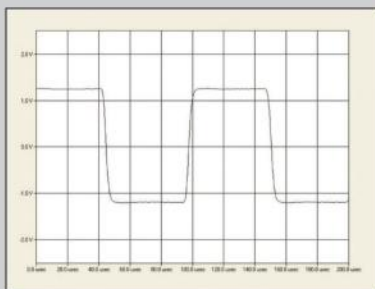


Fig.2 Outlaw RR2160, small-signal 10kHz square-wave into 8 ohms.

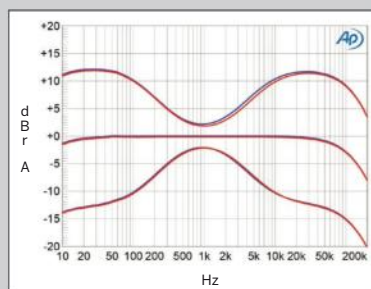


Fig.3 Outlaw RR2160, tone-control response at 2.83V into 8 ohms with volume control set to "20" and treble and bass controls each set to "0" and "±10" (left channel blue, right red; 5dB/vertical div.).

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Bass was clean but lean. As I listened, I speculated about the Outlaw's reproduction of bass energy.

I was still meditating on the subject of woofer control when my aging but unusually sturdy Russian neighbor knocked at my door. Vladimir, who speaks very little English, was clutching a Ball jar of home-distilled vodka and a sack of ribs he'd smoked. He wanted to show me the new axe he'd forged. I was down with that.

As I studied the axe, I let Vladimir slip under the hypnotic spell of Puente Celeste. For a long time he rocked his head, chewed ribs, listened, didn't speak. Then he pointed at my system, smiled broadly, and raised both thumbs. I drew sketches of the Outlaw and the Stirling speakers, and next to them jotted down their prices. He looked shocked. "Too many *babki*!" he said loudly. I shook my head. "No—not enough!"

The last contents of the Ball jar were disappearing behind Vladimir's collar when I pointed to a pile of CDs. "What should I play?"

He slammed down the jar. "Straight, No Chaser."

I laughed. That track was easy to find. I'd recently bought the Thelonious Monk Quartet's *The Complete Columbia Studio Albums Collection* (6 CDs, Columbia/Legacy 88697957682 1-6). By the time we hit "Japanese Folk Song (Kojo No Tsuki)," the Russian was snapping his fingers, and I was feeling very drunk on tenor sax and piano. The sound through the LS3/5a V2s was fast and realistically toned.

Monk's piano notes were slightly soft, but strong and artfully expressive. All his swinging grooves were available for our delectation, and Vladimir looked unusually happy. The harmonics of plucked double bass notes were something to enjoy, and Larry Gales's playing was easy to follow. Charlie Rouse's sax was delivered with a stirring dose of blatty-tenor textured presence. By the time we got to "We See," Vladimir had morphed into drummer Ben Riley. And by "Green Chimneys," I was making mental notes of the RR2160's profoundly good way with rhythm and momentum. Monk's music was as tasty as Vladimir's smoked ribs.

I can't remember how many times I've told people that flamenco guitar records are mostly boring showpieces devoid of soul, earth, and bodily fluids. Then one day, at Tower Records, I picked up a couple of \$1 LPs by Carlos Montoya and fell in love with his hugely popular and expressive *exultations*. Those records are long gone, but recently I discovered a fun little soft-core version of Tao Ruspoli's *Flamenco*, on Pierre Sprey's notorious label (CD, Wild Child/Maple-shade 10452). Ruspoli's playing is interesting and enjoyable, but still lacking in Romany lust and primitive fire. The fun with this record is Mapleshade's extraordinary audiophile sound, resulting from Sprey's placements of his PZM microphones, which are perfect: not too close and annoying, not too distant and boring. The Outlaw receiver and my KEF LS50 speakers made Ruspoli's guitar sound surprisingly real and tactile. Lower-priced amplifiers seldom generate this

measurements, continued

reproduction of a 10kHz squarewave into 8 ohms (fig.2) had short risetimes and was free from overshoot or ringing. Figs. 1 and 2 were taken with the tone controls bypassed. Engaged, the bass and treble tone controls offered up to about 12.5dB boost or cut, centered on 30Hz and 3kHz (fig.3).

Channel separation via the line inputs (not shown) was good rather than great, at 72dB in both directions below 5kHz, decreasing very slightly at 20kHz. The unweighted, wideband signal/noise ratio, ref. 1W into 8 ohms with the input shorted but the volume control set to its maximum—the worst-case situation—was okay, at 70.7dB (average of both channels).

Restricting the measurement bandwidth to the audioband improved the ratio to 79.3dB, while switching in an A-weighting filter gave ratios of 82.3dB (left channel) and 81.7dB (right). Fig.4 shows the low-frequency spectrum of the RR2160's output as it drove a 1kHz sinewave at 1W into 8 ohms. AC-supply-related components at 60Hz and its odd-order harmonics can be seen in both channels, probably due to magnetic leakage from the power transformer. While some spurious can be seen in this graph at 120Hz and its harmonics, which will be due to internal grounding issues, these are all very much lower than the odd-order supply harmonics.

Specified as delivering 110Wpc into 8 ohms (20.4dBW) and 165Wpc into 4 ohms (19.2dBW), both at <0.05% distortion, the RR2160 delivered significantly more power at our definition of clipping (1% THD+noise). Figs. 5 and 6 show how the THD+N percentage in the Outlaw's output varied with power into 8 and 4 ohms, respectively, and reveal that, with both channels operating, the amplifier clipped at 150Wpc into 8 ohms (21.75dBW) and 230Wpc into 4 ohms (20.6dBW). The THD+N percentage is very low below 10W into 8 ohms and 20W into 4 ohms.

Fig.7 shows how the THD+N percentage varies with frequency at 12.5V, which is equivalent to 19.5W into 8

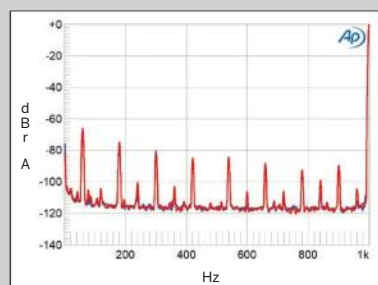


Fig.4 Outlaw RR2160, spectrum of 1kHz sinewave, DC-1kHz, at 1W into 8 ohms (left channel blue, right red; linear frequency scale).

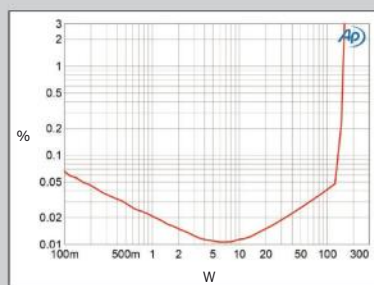


Fig.5 Outlaw RR2160, distortion (%) vs 1kHz continuous output power into 8 ohms.

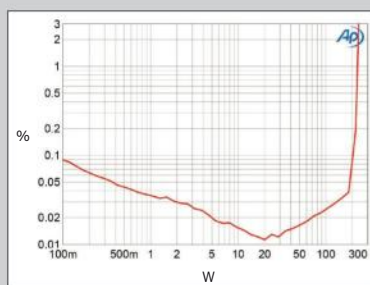


Fig.6 Outlaw RR2160, distortion (%) vs 1kHz continuous output power into 4 ohms.

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level of body and texture. Vladimir was impressed. So was I.

An Outlaw DAC

The Outlaw RR2160 uses a Burr-Brown PCM1792a 24-bit/192kHz DAC chip with NE5532 dual op-amp filters. I was curious to hear how that combo would compare with my reference DACs.

I connected my Integra DPS-72 DVD-A/CD player to the RR2160's coaxial input, and for an entire day, CDs sounded smaller, thinner, weaker, more canned and mechanical. It was annoying, depressing. My reviewer's ego lamented: *Why me, Lord?* The second day was a bit better, but nowhere near the sound of my Schiit Yggdrasil or Mytek Manhattan II DAC.

But on the third day the Outlaw RR2160's DAC rose up to sing, with quivering reverberant believability, the 10th song Elvis Presley ever recorded: a cover of a 1948 hit by Lonnie Johnson, "Tomorrow Night," included on Elvis's *A Boy from Tupelo: The Complete 1953–1955 Recordings* (3 CDs, RCA/Legacy 88985417732). This track was mastered



Voices and instruments were sculpted, slightly forward, and tangibly present.

directly from Sun Records' 30ips (!) "reference tapes." I was now using the Magnepan .7 speakers, and everything felt BIG and lush and *extremely* direct. These are

Elvis's very first recordings, and I'd never heard the King sound this humble, tender, or vulnerable. I felt I was finally experiencing the real Elvis. I've been playing "Tomorrow Night," track 10 of disc 1 of *A Boy from Tupelo*, 10 times a day for three days. The loping double bass, the mournful background of barely touched pedal steel, and a perfect mist of spring reverb make "Tomorrow Night" a sublime example of Presley's heavenly singing and producer Sam

measurements, continued

ohms (blue and red traces) and 39W into 4 ohms (cyan, magenta). The rise in THD at higher frequencies is minimal, and the nature of the distortion is predominantly the subjectively innocuous second-harmonic (fig.8). Even at high power into 4 ohms, the RR2160 produced a low level of intermodulation products when driving an equal mix of 19 and 20kHz tones (fig.9), the 1kHz difference product lying at -84dB (0.006%).

Turning to the digital inputs, I examined their performance using the AP's coaxial S/PDIF output and the USB port of a MacBook Pro running Pure Music 3, measured at the Outlaw's fixed Tape Out outputs with

the volume control set to its minimum so that I wouldn't run the risk of damaging the receiver's output stage. A full-scale 1kHz tone resulted in a level of 1.91V at the Tape Out jacks and 2.43V at the Preamp Out jacks. With the volume control set to -20dB, the full-scale tone gave a level of 20.43V into 8 ohms at the speaker terminals, equivalent to 52.2W (17.2dBW). Given the amplifier's clipping power of 150W into the same load (21.75dBW), this suggests that the gain of the digital circuitry is higher than it need be, with a possible effect on the digital inputs' noise floor.

The RR2160's optical inputs operated with datastreams sampled up to

96kHz, the coaxial inputs up to 192kHz. The MacBook's AudMid and USB Prober apps revealed that the Outlaw's USB input operated with 24-bit integer data sampled at rates from 44.1 to 192kHz in the optimal isochronous asynchronous mode. The reconstruction filter is a conventional finite impulse-response (FIR) type (fig.10) with a response that rolled off rapidly above the audioband, reaching full attenuation at 24kHz with 44.1kHz data (fig.11, magenta and red traces). The aliased image at 25kHz of a full-scale 19.1kHz tone (cyan and blue traces) is almost completely suppressed, and while the second harmonic of the tone is visible in this graph, it lies at -86dB (0.005%). The frequency

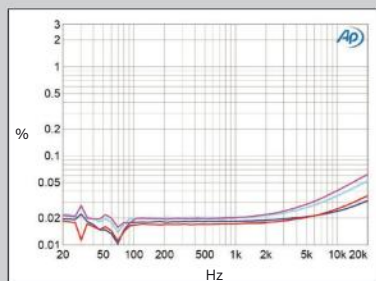


Fig.7 Outlaw RR2160, THD+N (%) vs frequency at 12.5V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta).

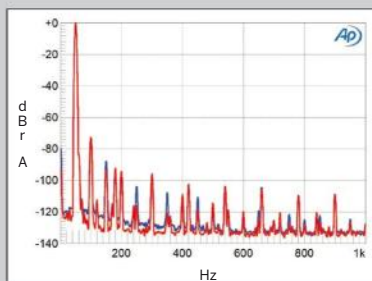


Fig.8 Outlaw RR2160, spectrum of 50Hz sine wave, DC-1kHz, at 100W into 4 ohms (left channel blue, right red; linear frequency scale).

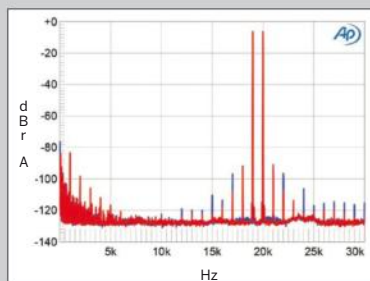


Fig.9 Outlaw RR2160, HF intermodulation spectrum, DC-24kHz, 19+20kHz at 100W peak into 4 ohms (left channel blue, right red; linear frequency scale).

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Phillips's crystalline recording. Through the Maggie .7s stimulated by the Outlaw RR2160 and its onboard DAC, *A Boy from Tupelo* surprised me with its unfettered verity. Consider this a very recommendable combination.

An Outlaw Phono Stage

To evaluate the RR2160's MM phono section, I used an EMT TSD 75 MC cartridge with an Auditorium 23 step-up transformer. I've been rolling with the sound of that combo for months now—I know it well, and felt it would give me a good measure of the character of the Outlaw's MM phono stage.

The RR2160's phono stage gave me pleasure with a variety of LPs, but the one that left me wide-eyed and stuttering was the Electric Recording Co.'s reissue of *Music for Viola and Cello*, recorded in 1963 by 53-year-old violist Herbert Downes and 17-year-old cellist Jacqueline du Pré (LP, HMV CSD 1499/ERC 028). This fascinating recording represents one of the supreme combinations of high-quality recorded sound and inspired music making. An audiophile friend brought over a copy of this very expensive (£500), limited-edition (300 copies) LP to hear how it would sound on my system. After I apologized for the budget nature of the Outlaw RR2160 and KEF LS50s, I turned out the lights and lit candles. We listened in silence to both sides. I have no adjectives to describe the experience, but if ever in your life your system plays this level of music making at this level of sophistication and naturalness of sound, the gods

have blessed you. Aural images were drawn on soundstages with surprising precision. The high frequencies were sweet and unobtrusive. Bass, without Speaker EQ was full and taut, never pondering or hesitant. The midrange was lucid. Transients were slightly rounded—but only compared to the Parasound Halo JC 3+ (\$2995) and Tavish Design Adagio (\$1490) phono stages.

When I ran the EMT MC cartridge straight into the RR2160's phono stage set to MC, which loads all MCs at 47k ohms, I fell back to earth. While rhythmically satisfying and spatially well described, the sound was considerably less supple and viscous than it was with the Auditorium 23 step-up transformer driving the Outlaw's phono input set to MM.

The taut richness of the RR2160's MM section suggests that it will be sonically compatible with a wide range of budget cartridges; but the inability to adjust the MC loading to anything other than 47k ohms could make finding a good match problematic.

An Outlaw Tuner

I've owned a lot of FM/AM tuners, including, most recently, a Kenwood KT-990D hooked up to a Magnum Dynalab ST-2 FM antenna. But one day a few years ago, the reception of FM in my bunker sucked so bad that I abandoned tuners for streaming. The Outlaw RR2160 reminded me just how cozy and human old-school radio can feel in my room. It was like reconnecting with an old friend. In a direct

measurements, continued

response of the Outlaw's digital inputs, measured with data sampled at 44.1, 96, and 192kHz (fig.12), followed the same shape above the audioband, interrupted by a sharp rolloff just below the two lower rates' Nyquist frequency (half the sample rate).

Channel separation via the digital inputs was around 85dB over most of the audioband, and the noise floor again had spurs at 60Hz and its odd-order harmonics, though these all lay at or below -102dB. These spurs can be seen at the left side of fig.13, which shows the spectra of the RR2160's Tape Out jacks while it reproduced a

dithered 1kHz tone at -90dBFS with 16-bit (cyan and magenta traces) and 24-bit (blue, red) data. The increase in bit depth dropped the noise floor by up to 15dB, suggesting resolution of just over 18 bits. The waveform of an undithered tone at exactly -90.31dBFS was symmetrical (fig.14), with the three DC voltages described by the data well defined, though a slight degree of DC offset is visible in this graph. With undithered 24-bit data, the Outlaw output a well-defined, if rather noisy, sine wave (not shown).

As was seen in fig.11, the RR2160's digital inputs offered low levels of har-

monic distortion, and intermodulation was similarly very low. However, when I tested the inputs for their rejection of jitter with 16- and 24-bit J-Test data, the results were disappointing (fig.15), with accentuation of the sideband pair at ± 229 Hz and other sideband pairs above or below their correct levels, which are shown by the slanting green line in this graph.

I also examined the performance of the phono input at the fixed Tape Out jacks. The gain at 1kHz was 33.5dB in MM mode and 48.7dB in MC mode. The input impedance in MM mode ranged from 45k ohms at 20Hz and

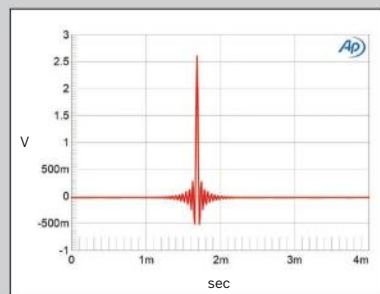


Fig.10 Outlaw RR2160, digital input, impulse response (one sample at 0dBFS, 44.1kHz sampling, 4ms time window).

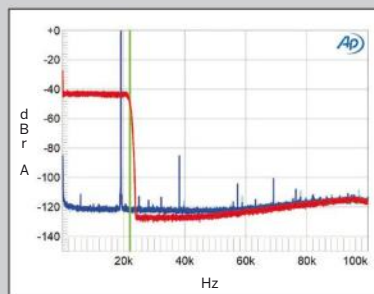


Fig.11 Outlaw RR2160, digital input, wideband spectrum of white noise at -4dBFS (left channel red, right magenta) and 19.1kHz tone at 0dBFS (left blue, right cyan), with data sampled at 44.1kHz (20dB/vertical div.).

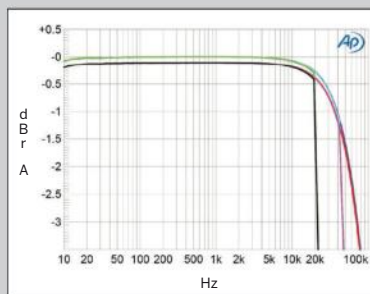


Fig.12 Outlaw RR2160, digital input, frequency response at -12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), 192kHz (left blue, right red) (1dB/vertical div.).

Hygge.

Who says it needs to be all about lamps and couches?

“What are you doing for your 40th?”, everyone asked. We thought about it and decided that since we aren't wild about lavish cakes (although we do love a tasty fastelavnsbolle), we'd celebrate a little differently. Even the *thought* of making new speakers makes us warm and fuzzy, so that's what we chose to do.

Meet the Special Forty: hygge for your ears.

Laurels aren't for resting on, which is why we gave Dynaudio Labs free rein to play. (It gave our accountants a heart attack). Our only instruction: take our classic tech and see what you'd do differently this time. Their design was nothing short of genius.

They took our classic Esotar 28mm soft-dome tweeter design, put our DSR* precision coating on it and then **machined an aerodynamic vent** into the powerful neodymium magnet. Then they added more damping material and another pressure-release conduit. Take it apart and look behind it: it's a work of art (except please don't take it apart; we spent ages putting it together).



We made the drivers' frequencies overlap so we could keep the first-order crossover simple. After all, why add things that might affect the signal if you don't have to?

We called the new tweeter the Esotar Forty, and it's exclusive to this speaker.

We also gave the Special Forty a new woofer, made from our own super-stable Magnesium Silicate

Polymer material. Its dome is coupled directly to the voice-coil for incredibly precise midrange performance, and it's aided by the **new AirFlow Basket** – an aerodynamically shaped chassis that optimizes rear airflow and isolates the driver from unwanted vibrations and resonances.

The woofer also has a **custom magnetic field**, one we created in the lab, thanks to a unique hybrid magnet system. It's part ferrite, part neodymium, and it physically manipulates flux to bend it around the voice-coil for greater power and efficiency.



The magnet sits inside the voice-coil (others put it outside). That lets us beam its energy to where we want it to go – not where it wants to go.

Those innovations mean the tweeter can reach down to 1000Hz, and the woofer up to 4000Hz. That overlap means smoother integration between treble and bass, and **performance that borders on the mesmerizing.**

We could explain it using maths, but here it is in English: the extra air movement and flux containment means we have more control over the tweeter and woofer. And that means **a more detailed, precise and honest performance.** Just what we (and you) want.

This is a simple-looking speaker. Sure. But wait until you see its Grey Birch High Gloss and Red Birch High Gloss finishes. We painstakingly laminated Finnish Birch veneers many, many, many times and cross-cut them to

achieve this striking pattern. Then we used special stains to bring it out even further. Nice, isn't it.



The biggest decision you'll make today: Red Birch High Gloss or Grey Birch High Gloss? (Or just get one of each. You know it makes sense.)

We want to know what you think.

Join our Special Forty group and together we'll take our technology to the next level. That's right: you can be actively involved in shaping the future of our R&D. And you might even find your idea making it into our next-generation speakers. There's a fastelavnsbolle – and warm feelings of hygge – in it for you if you do.

www.dynaud.io/SpecialFortyForum

**Special occasion.
Special speaker.
Special Forty.**



*Wondering what 'DSR' stands for? It's Dynaudio Secret Recipe. And that's all you're getting out of us – apart from a fantastic tweeter, of course.

comparison of the Kenwood and Outlaw, using only the RR2160's supplied antennas, the Outlaw pulled in a lot more stations than my old Kenwood. With the Outlaw, my favorite stations—WBGO FM (88.3), WNYC FM (93.9), and WFAN AM (660)—came in stronger, cleaner, richer in tone.

An Outlaw Headphone amp

Like its DAC, tuner, and phono sections, the RR2160's headphone output far exceeded my expectations. First, it played the hardest-to-drive headphones in my collection, HiFiMan's Susvaras (\$6000, again see "Gramophone Dreams")—they have an impedance of 60 ohms and a sensitivity of 83dB/1mW—with a youthful, red-cheeked tonality, moderate dynamics, and excellent detail. Best of all, I didn't have to turn the Outlaw's separate/dedicated headphone volume control all the way up to enjoy it. More impressive was how well the Outlaw worked with AudioQuest's NightOwl headphones (\$699.99). It was such a fabulous, well-balanced, natural-sounding match that I kept wondering: Could the Outlaw's headphone output be even better than its loudspeaker outputs?

Clearly, the people at Outlaw have worked really hard to make all of the RR2160's sources sound equally enjoyable.

Negatives

The only things that audibly hinted at the Outlaw's modest price were an ever-present softness of transients, some imaging vagaries, and occasionally, with its own DAC or phono stage, a momentary flash of unnatural brightness. But as I type these words, I'm listening to Nusrat Fateh Ali Khan and Party's *Back to Qawwali* (CD, Long Distance 122083), and my musical pleasure meter is pegged all the way into the red.

Vive la revolution!

Outlaw Audio's RR2160 receiver was a joy to use. With every source and output transducer I tried, it reproduced trumpets and kazoos, guitars and pianos, saxophones and harmonicas, Scotty Moore and Miles Davis, Elvis and Thelma Houston, with accurate tone, taut bass, scrumptious detail, and satisfying dynamics. Outlaw's Retro Receiver is a conspicuously good-sounding audiophile product at a ridiculously low price. Highly recommended. ■

measurements, continued

1kHz to 39.3k ohms at 20kHz, but to my surprise was higher in MC mode, at 57.5k ohms at 20Hz and 1kHz, and 47k ohms at 20kHz. The RIAA error is shown in fig.16; the two channels match fairly closely, but the error increases at ultrasonic frequencies, suggesting that the Outlaw's phono stage incorporates the so-called "Neumann fourth pole," which I think can emphasize LP clicks, though the degree of boost at 100kHz is only about one third of the theoretically correct amount.³

Channel separation via the phono input (not shown) was very good, at >80dB in both directions, and the phono-input S/N ratios were also very good, at 75.7dB MM and 59dB MC (unweighted, wideband), 78.1dB MM and 62.2dB MC (unweighted, audioband), and 86dB MM and 69dB MC (A-weighted), all ref. 1kHz at 5mV MM and 500 μ V MC, and taken with the inputs shorted to ground.

The Outlaw's phono input featured very low distortion. With a 1kHz tone at 21mV input, 12dB higher than the standard MM level of 5mV and equivalent to an output at the Tape Out jacks of 1V, the only distortion harmonic that could be seen above the low noise floor was the second, at -110dB (0.0003%)! Intermodulation distortion (not shown) was also very low in level, the difference product at 1kHz resulting from an equal mix of 19 and 20kHz tones lying at -100dB (0.001%). The phono-overload margins, ref. 1kHz at 5mV,

were the highest I have measured, at 32dB MM and 37dB MC, these margins consistent from 20Hz to 10kHz.

The Outlaw RR2160 offers a lot of power and considerable flexibility for an affordable price. I was somewhat

disappointed by the measured performance of its digital inputs, but this was offset by the behavior of its superb phono stage. —John Atkinson

3 See www.stereophile.com/content/cut-and-thrust-riaa-lp-equalization-neumann-4th-pole-sic.

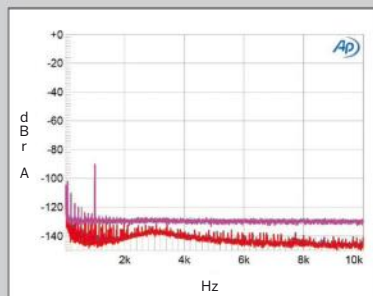


Fig.13 Outlaw RR2160, digital input, spectrum with noise and spurs of dithered 1kHz tone at -90dBFS with: 16-bit data (left channel cyan, right magenta), 24-bit data (left blue, right red) (20dB/vertical div.).

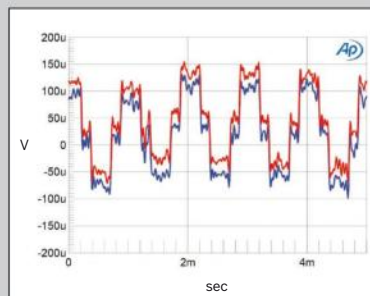


Fig.14 Outlaw RR2160, digital input, waveform of undithered 1kHz sinewave at -90.31dBFS, 16-bit TosLink data (left channel blue, right red).

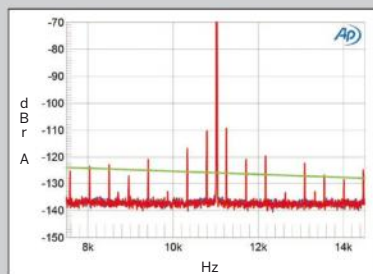


Fig.15 Outlaw RR2160, digital input, high-resolution jitter spectrum of analog output signal, 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit TosLink data (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, ± 3.5 kHz.

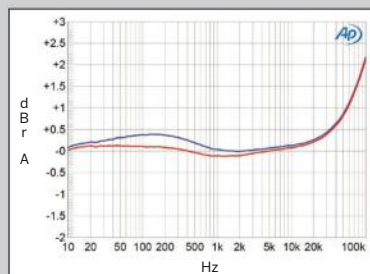


Fig.16 Outlaw RR2160, phono-stage response with RIAA correction (left channel blue, right red; 0.5dB/vertical div.).



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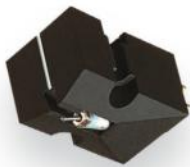
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JIM AUSTIN

Pass Laboratories XA60.8

MONOBLOCK POWER AMPLIFIER

Years ago, when I was young and foolish (instead of old and foolish, as now), I was hanging out with a friend at a strip-mall strip club in a small southeastern city. A youngish lady approached our table in G-string and pasties and did a tableside dance. My friend's jaw scraped the floor; I, noting her lack of enthusiasm, was unmoved. The stripper noted my impassivity and stated, with irony that at the time I somehow missed, "You're a hard man."

John Atkinson, too, is a hard man, at least when it comes to audio gear. When, in January 2014, he reviewed the Pass Laboratories XA60.5 monoblock amplifier, he concluded, "It is the best-sounding amplifier I have ever used."¹ High praise.

But years later, when a pair of the XA60.5's successor, the XA60.8, arrived for review in JA's Brooklyn abode, he promptly stuck them in a closet. Apparently, he doesn't fall in love too easily.

Many months later, in midwinter, it became clear to JA that his dance card was still full and he wasn't going to get to the XA60.8 monoblocks "anytime soon." He asked me to give them a listen. It took a few more months for me to make it out to Brooklyn to pick up the XA60.8s. On returning home, I promptly put them in my own closet for a while.



Think of these amps as delicate little flea-watt flowers scaled up—way up.

When I finally hooked up the XA60.8s, it was August. In New York, August's only saving grace is that bridges out of town are not far away, and

neither is fall, with its promise of new love² and cooler weather. In August, most of my neighbors have fled to various hills and Hamptons—anywhere there might be a cool breeze. I, lacking funds and rural real estate, embrace my fan and nurse cool beverages.

Obsessive *Stereophile* readers will

¹ See www.stereophile.com/content/pass-labs-xa605-monoblock-power-amplifier.

² Hear www.youtube.com/watch?v=NO2lj1eO-GQ.

SPECIFICATIONS

Description Class-A, solid-state, monoblock power amplifier. Inputs: 1 unbalanced (RCA), 1 balanced (XLR). Outputs: 2 pairs, can accommodate spades or bananas. Power output: 60W into 8 ohms (17.8dBW), 120W into 4 ohms (17.8dBW). Frequency range: 1.5Hz–

100kHz. Voltage gain: 26dB. Input sensitivity: 2.83V RMS output for 150mV input. Input impedance: 100k ohms balanced, 50k ohms unbalanced. Output impedance: not specified. Signal/noise: >85dB, ref. level 2.83V RMS. Power consumption: 375W. Trigger input, 12V DC (RCA).

Dimensions 19" (480mm) W by 7.5" (190mm) H by 21.25" (540mm) D. Weight: 88 lbs (39.9kg) net, 107 lbs (48.5kg) shipping.

Finishes Anodized aluminum faceplate, powder-coated black case.

Serial numbers of units reviewed 28984, 28985.

Price \$13,500/pair. Approximate number of dealers: 18. Warranty: 3 years.

Manufacturer Pass Laboratories Inc., 13395 New Airport Road, Suite G, Auburn, CA 95602. Tel: (530) 878-5350. Web: www.passlabs.com.



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recall that in the December 2016 issue I wrote a Follow-Up³ on Lamm Industries' M1.2 Reference Signature mono-blocks, which JA had originally reviewed in April 2012.⁴ I called the Lamms "awesome music machines," but my apartment, which has no AC, was oh, so hot. The Lamms' weight, size, prohibitive cost (\$27,390/pair), and—especially—the heat they produced offset their considerable musical merit. They "literally do not fit into my life," I wrote, concluding that "I want my stuff to work *with* me, to complement the way I like to live."

After I wrote that quasi-review of the Lamms, one perceptive online commenter made a compelling point: When you're in love, you don't care if your partner (in this case, identical twins) is hard to live with—you just want to be with them all the time. And surely, the hotter they are, the better.

So, will I fall in love? Listen in.

Point 8

The Pass Labs XA60.8s do have some logistical—that is, non-audio—advantages over the Lamm M1.2 References. At \$13,500/pair, they cost less than half the Lamms' price, and put out significantly less heat.

But at 88 lbs, the XA60.8 is even heavier than the Lamm, which makes *each* of them the heaviest component I've had in my system, not counting loudspeakers. And because, at 19" wide by 7.5" high by 21.25" deep, the Pass monos are low-slung, deep, and wide, they take up more floor space than the Lamms.

If you consider only its size and weight, you might conclude that the XA60.8 is a powerhouse designed to drive difficult loudspeaker loads. But that size is deceiving. As the model number implies, it's specified to produce 60W RMS (120W peak)—almost 1.5 lbs of heavy metal per watt, and easily the greatest ratio of weight to power of any amplifier I've directly experienced.⁵

Brute force, apparently, isn't the XA60.8's nature. "We approached the development of the XA series with an eye to creating a warm/sweet X amplifier, or conversely, a powerfully dynamic Aleph,"⁶ said Nelson Pass in an article⁷ quoted in JA's review of the XA60.5. It might be best to think of these amps as delicate little flea-watt flowers scaled up—way up—to provide enough practical class-A power to drive reasonable loudspeakers. The sonic goals are touch, texture, delicacy, sweetness, vividness, corporeality.

Then why are they so heavy? "The weight is mainly in the massive aluminum heatsinks and the steel power transformers," Nelson Pass told me in an e-mail. In contrasting the .8 with the .5 series, Pass Labs' ad copy focuses on refinements that yield synergy, but the most obvious change is the increase in mass: Each XA60.8 has the same power as its predecessor but is 22 lbs heavier. "When you start making all things equal, the amplifier with the bigger hardware seems to have the advantage," Pass told me—a subjective observation, but surely one based on long experience, and it has a certain appeal. As an old engineering friend who raced motorcycles used to say, there's no substitute for cubic inches.

Bigger hardware, though, can bring downsides, Nelson Pass told me. "[Y]ou can find yourself trading off other qualities, so you have to be careful what you might be giving up."

3 See www.stereophile.com/content/lamm-m12-reference-monoblock-power-amplifier-jim-austin-december-2016.

4 See www.stereophile.com/content/lamm-m12-reference-monoblock-power-amplifier.

5 The XA60.8's younger sister, the XA30.8, has half the power but weighs just as much. Is there an amplifier out there with a higher ratio of weight to power than 3 lbs per watt?

6 Muse Kastanovich reviewed the Pass Labs Aleph 3 in the April 1997 issue: www.stereophile.com/solidpoweramps/674/index.html.

7 See www.firstwatt.com/pdf/art_peanut_butter.pdf.

MEASUREMENTS

Before performing any measurements, I ran one Pass Labs XA60.8 (serial no. 28984) for an hour at one-third its specified maximum power of 60W into 8 ohms—thermally, the worst case for an amplifier with a class-B or -AB output stage. By the end of the hour, the top panel was warm, at 96.4°F (35.8°C), and the side-mounted heatsinks were a little hotter, at 109.1°F (42.8°C). (Temperatures were measured with a Mastercool infrared thermometer.) The XA60.8 ran a little cooler than the XA60.5 I reviewed in January 2014, probably due to its larger heatsinks.¹

I performed a full set of measurements using my Audio Precision SYS2722 system (see the January 2008 "As We See It"²). The voltage gain at 1kHz into 8 ohms was 25.3dB for both the balanced and unbalanced inputs (for unbalanced drive,

pins 2 and 3 of the XLR jack were connected with a jumper), meaning that the XA60.8 will output 1W into 8 ohms with a drive signal of 155mV. The amplifier was non-inverting (*ie*, it preserved absolute polarity) with both inputs. Its input impedance was usefully higher than that of the XA60.5, at 49k ohms unbalanced and 100k ohms

balanced at 20Hz and 1kHz, dropping to 38k ohms at 20kHz for unbalanced signals. (The balanced input impedance at 20kHz was 92k ohms.)

The XA60.8's output impedance,

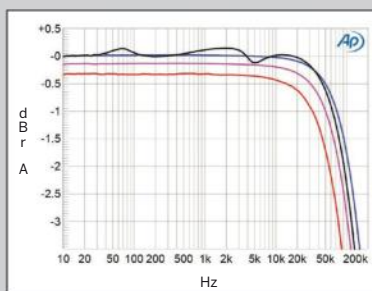


Fig.1 Pass Labs XA60.8, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (blue), 4 ohms (magenta), 2 ohms (red) (0.5dB/vertical div.).

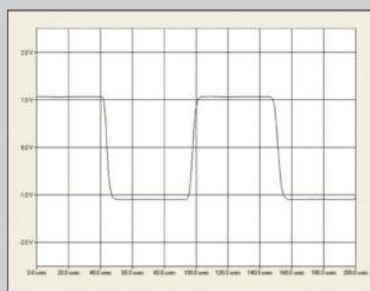


Fig.2 Pass Labs XA60.8, small-signal 10kHz squarewave into 8 ohms.

1 See www.stereophile.com/content/pass-labs-xa605-monoblock-power-amplifier-measurements
2 See www.stereophile.com/asweseet/108aws/index.html.

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Listening

I currently have in my system a pair of Alta Audio's Titanium Hestia loudspeakers, in for review. The Titanium Hestias replaced the DeVore Fidelity The Nine speakers with which I started my auditioning of the XA60.8s, and are big and produce a lot of bass. With appropriate recordings, they cast a huge soundstage: wide, tall, stable, and—especially—deep.

I've long been ambivalent about recordings with a lot of venue sound, as they tend to mix up the acoustics of the original venue and the listening room, causing sonic confusion. I've generally preferred close-miked recordings that deliver intimacy and texture and put musicians in the room with me, instead of transporting me to a different space. With such recordings, there's only one main acoustic involved, so the opportunity for aural confusion is minimized.

That preference, I now realize, was partly a result of a dearth of experience: I'd never had speakers in my home that could convincingly reproduce the illusion of a big space. You can't completely get rid of the local room—I wouldn't want to⁸—but you can tilt the balance toward the recording venue in a convincing fashion.

Pass Labs' ad copy emphasizes the XA60.8s' accurate reproduction of recording venues. I speculate that this goes back to something Nelson Pass said in my interview with him in the September 2017 issue.⁹ He noted how his First Watt experiments with amplifiers based on static-induction transistors (SITs) led to an insight into the subjective effects of second-harmonic distortion, particularly its phase, and in turn influenced his design of his big Pass Labs amps. "The SIT being very much like a triode, it is easy to make a single bias adjustment which affects the second harmonic distortion of the device, ranging from a relatively large amount

[of] *positive phase* second [harmonic] through a null point with no second [harmonic], to large, *negative phase* second-harmonic distortion," he said. "Negative-phase second harmonic tends to expand the perception of front-to-back space in the soundstage, separating instruments a bit. Positive phase does the opposite, putting things subjectively closer and 'in your face.'"

The changes Pass was describing were first implemented years ago, in the amps in the X, Xs, and XA series, but according to a Pass Labs marketing brochure, "The Point 8 amps present a more accurate representation of the recording venue." Having heard the XA60.8, my ears tell me that Nelson Pass must have gone with negative-phase distortion. When I put the Pass Labs monoblocks in my system, the Alta Titanium Hestias' ability to create a huge, convincing soundstage was enhanced not a little but a lot. I couldn't help but hear it. I'd never heard an amplifier make such an obvious difference.

Now that I live in New York, I interact often with other audiophiles. On separate occasions, two audiophile friends who are familiar with my system noticed the change as soon as they walked through my door. (My listening chair is just a few feet away.) That big soundstage was bigger and more precisely rendered, and images on it were more vivid, precise, and real. To walk into this room while a good recording was playing through this system was to enter an immersive aural space. There was synergy here—the Pass amps were accentuating these speakers' best qualities.

During his auditioning of the XA60.5s, JA listened to a

8 An aural image is an illusion; the space I listen in is real. Overzealous attempts at room correction, especially the digital kind, can take us too far out of what's real. Fix the flaw in your listening room, but don't bury the character.

9 See www.stereophile.com/content/nelson-pass-circuit-topology-and-end-science.

measurements, continued

including 6' of speaker cable, was 0.07 ohm at 20Hz and 1kHz, rising to 0.1 ohm at 20kHz. The modulation of the amplifier's frequency response, due to the Ohm's law interaction between this source impedance and the impedance of our standard simulated loudspeaker,³ was just $\pm 0.1\text{dB}$ (fig.1, gray trace). Into an 8 ohm resistive load (blue trace), the XA605's response was flat up to 20kHz, then rolled off to reach -3dB around 120kHz. The

response rolled off a little earlier into lower impedances, but was still just 0.3dB down at 20kHz into 2 ohms (red trace). With this wide a small-signal bandwidth, the amplifier's reproduction of a 10kHz squarewave into 8 ohms featured short risetimes and a well-squared shape (fig.2).

The unweighted, wideband signal/noise ratio, ref. 1W into 8 ohms and taken with the input shorted to ground, was an excellent 80.9dB. This

improved to 81.8dB when the measurement bandwidth was restricted to the audioband—and further still, to 93.6dB, when the measurement was A-weighted. This is a quiet amplifier. Fig.3 indicates that both the odd and even harmonics of the 60Hz power-supply frequency were present, though these all lay at or below -100dB ref. 1W into 8 ohms.

3 See www.stereophile.com/content/real-life-measurements-page-2.

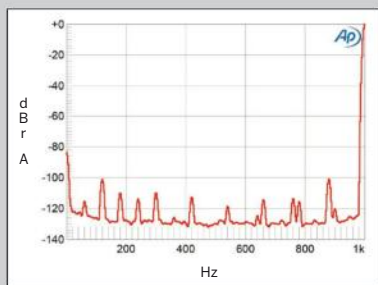


Fig.3 Pass Labs XA60.8, spectrum of 1kHz sine wave, DC-1kHz, at 1W into 8 ohms (linear frequency scale).

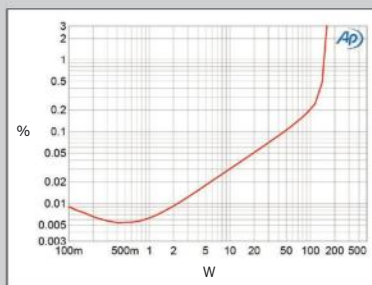


Fig.4 Pass Labs XA60.8, distortion (%) vs 1kHz continuous output power into 8 ohms.

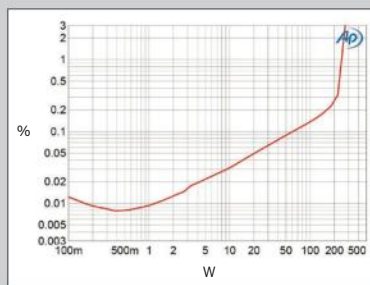


Fig.5 Pass Labs XA60.8, distortion (%) vs 1kHz continuous output power into 4 ohms.

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high-resolution recording of Mahler's Symphony 2, "Resurrection," with Benjamin Zander conducting the Philharmonia Orchestra and Chorus (24-bit/192kHz ALAC files, Linn CKD 452). It was, he noted, "recorded by the team responsible for some of Telarc's great-sounding orchestral recordings, including Elaine Martone as co-producer and Robert Friedrich of Five/Four Productions." He went on, "The 'Resurrection' is an enormous, episodic work with huge orchestral climaxes contrasted against chamber-scaled sections in which a single solo instrument, a violin or a woodwind, takes the lead. Despite their modest power rating, the XA60.5s had no problem coping with the work's huge dynamic range." In my room, with this system and the XA60.8 monoblocks, the orchestra *was* huge, even as voices and solo instruments were reproduced with impact, sweetness, body, and texture. There was no hint of hardness.

I frequently attend concerts, from lieder, chamber music, and small-ensemble jazz to operas and big symphonies. I know what live music sounds like. Since moving to New York, I've had some great experiences, from the Jazz Standard club through the 92nd Street Y to the Metropolitan Opera and Carnegie Hall. I also regularly attend, at a neighbor's place, house concerts by professional musicians who are preparing for a competition, tour, or recording date. Usually I sit in a folding chair near the right elbow of a string player, or a few feet behind the Steinway's lower keys. Always a great experience. But I've never had a seat at an orchestral performance that could match the experience of hearing this Mahler recording, its intensity and sense

of envelopment, in a system with the Pass Labs XA60.8 monoblocks.

More listening

The improvements rendered by the Pass Labs XA60.8s weren't only in the soundstage; the sound was now, when called for, sweeter, warmer, more delicate—as, for example, with the voices and tenor sax on *Getz/Gilberto*, an oh, so familiar recording I explored with new interest with the XA60.8s in the system.

That album's huge hit, "The Girl from Ipanema"—with João and Astrud Gilberto, Stan Getz, and pianist and composer Antonio Carlos Jobim—is one of the best-selling jazz tracks in history, and won a Grammy for Record of the Year. I've loved it at least since early adolescence, when its image of a beautiful, bikini-clad girl swaying gently as she walks toward the ocean was embedded in my brain: "he smiles, but she doesn't see." That image is still in there, but my relationship to it has grown more complicated as I've aged. To paraphrase T.S. Eliot's J. Alfred Prufrock, I do not think that she will sing to me.

The principal sounds in "The Girl from Ipanema" are all



measurements, continued

Specified as putting out 60W into 8 ohms and 120W into 4 ohms (both 17.8dBW), the XA60.8 considerably exceeded that power, delivering, at 1% total harmonic distortion (THD), 150W into 8 ohms (21.8dBW, fig.4), 240W into 4 ohms (20.8dBW, fig.5), and 380W into 2 ohms (19.8dBW, not shown). The THD begins to rise above the noise floor at high powers, but remains at or below 0.1% below the

specified output power. The percentage of THD then slowly rises with increasing power, suggesting that the XA60.8 has only a small amount of corrective feedback.

I examined how the percentage of THD+noise changed with frequency at 9V, a level where I could be sure, from the earlier measurements, that I was looking at actual distortion rather than noise. The THD+N was extremely

low in the midrange into 8 and 4 ohms (fig.6, blue and magenta traces), and only just above 0.1% into 2 ohms (red). It rose linearly as the frequency increased, the three traces converging in the high treble—which suggests that the circuit has limited open-loop bandwidth.

Fortunately, the XA60.8's distortion is predominantly the subjectively innocuous low-order variety. Fig.7 shows

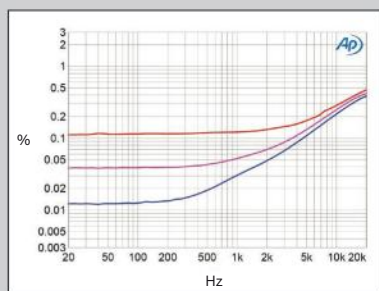


Fig.6 Pass Labs XA60.8, THD+N (%) vs frequency at 9V into: 8 ohms (blue), 4 ohms (magenta), 2 ohms (red).

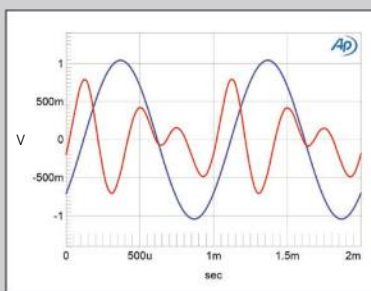


Fig.7 Pass Labs XA60.8, 1kHz waveform at 20W into 8 ohms, 0.072% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

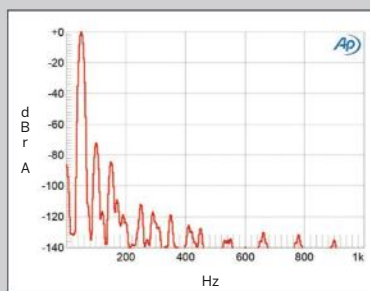


Fig.8 Pass Labs XA60.8, spectrum of 50Hz sine wave, DC-1kHz, at 40W into 8 ohms (linear frequency scale).

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delicate, fragile, vulnerable, human—another reason that I and, presumably, other audiophiles interested in the evocation of emotion by recorded music, want to hear them. Many versions of this track are available; Tidal offers seven versions of the album, and Discogs lists 174 separate releases of it. Those include at least a handful of different remasterings, the provenance of which isn't always clear.

Just for fun, I decided to compare seven digital versions of the song (despite my long history with *Getz/Gilberto*, I own only one vinyl edition of it), from: the original CD (Verve 810 048-2); the Mobile Fidelity Sound Lab CD (MFSL-607); a 1989 four-CD Stan Getz set, *The Girl from Ipanema: The Bossa Nova Years*, which also includes a live version of the song (Verve 823 611-2); and the *50th Anniversary* edition (Verve V6/V-8545, B002074902), which adds remastered stereo and mono versions, plus the one that was released as a single, without João Gilberto's singing in Portuguese. There's also an SACD/CD (Verve/Analogue Productions CVRJ 8545 SA), but I don't own that.

Listening to the better versions of this recording through the XA60.8s, I heard more humanity from it than I'd ever noticed before, and the differences among the versions were easy to hear. To me, the best is the one on the MoFi CD, closely followed by the version from the boxed set. The original CD runs a close third. All three are very good, but the MoFi has a bit more spatial definition, and the voices are reproduced with a nice touch of resonance—not too much. Both mono and stereo versions on the *50th Anniversary* reissue have too much of a good thing, exaggerating that same resonance and making it hard to hear the texture in João's voice; the bass, too, loses definition. And the single version excludes João's voice—'nuff said.

At the end of disc 4 of *The Girl from Ipanema: The Bossa Nova Years* is a sequence of three tracks recorded live in

Carnegie Hall: “Eu e Voce,” “Corcovado,” and that live version of “The Girl from Ipanema.” At the end of “Eu e Voce,” Getz introduces João: “The husband must always put in his two cents,” Getz says, just months before stealing Astrud away. What follows is easily worth the price of the entire set. In “Corcovado,” first João's quiet guitar enters, then Astrud's delicate voice, then João's voice, then Getz's tenor sax—each in turn possesses a deep, aching fragility that I've listened to at least a dozen times since I discovered it a week ago. It sounds natural and live. Oh, how lovely indeed.

The live version of “The Girl from Ipanema,” which follows, has problems: there's microphone feedback; Astrud misses an entrance (or maybe the sound man was slow to turn her volume up), and she struggles to match her husband's slow pace, singing well ahead of his guitar. But João's performance toward the beginning of the track—as he tunes his guitar, slows the tempo, speeds it up again, and begins to sing, very softly, behind the beat—is simply gorgeous. The mistakes in Astrud's part just serve to make it seem more real.

This is *not* a remarkable recording. Its technical quality is good but not uncommon. What makes it special is that it's characterful music played by skilled musicians, recorded as well as it needs to be. The vast archive of recorded music contains many such pleasures. If you work at it, you can hear these things through any good system. But better systems dig out the emotion, make it more clear, and thus heighten your experience.

Maybe it's not all about that bass after all

John Atkinson may have called the XA60.5 the best-sounding amplifier he'd ever used, but he did report a flaw. With the XA60.5s driving Wilson Audio Specialties' Alexia¹⁰ and

10 Reviewed by JA in December 2013: www.stereophile.com/content/wilson-audio-specialties-alexia-loudspeaker.

measurements, continued

the waveform of the THD spuriae at two-thirds the specified power; it suggests that the third harmonic is predominant, though at low frequencies at this power (fig.8) the second harmonic is highest in level, at -72dB (0.02%). With a 1kHz signal, the second harmonic remains at this level, but the third has risen to -63dB (0.07%, fig.9). Some higher-order harmonics can also be seen in fig.9, but all are

much lower in level than the second and third harmonics.

As with the XA60.5, the XA60.8's top-octave decrease in linearity seen in fig.6 was associated with some higher-order intermodulation products that were fairly high in level when the XA60.8 was asked to drive an equal mix of 19 and 20kHz tones at a level just below visible clipping on the oscilloscope screen (fig.10). However, the subjec-

tively more objectionable second-order product at 1kHz is almost 20dB lower, at -78dB (0.012%). At lower powers, the intermodulation products were all much lower in level (fig.11).

The measured performance of the Pass Labs XA60.8 is very similar to that of the XA60.5. Both are well-engineered amplifiers that deliver more usable power than their modest specifications suggest. —John Atkinson

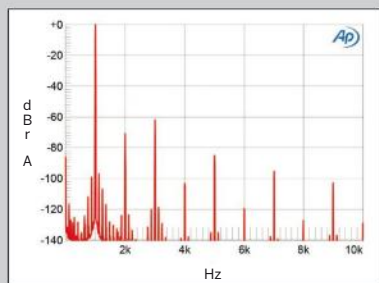


Fig.9 Pass Labs XA60.8, spectrum of 1kHz sine wave, DC-10kHz, at 40W into 8 ohms (linear frequency scale).

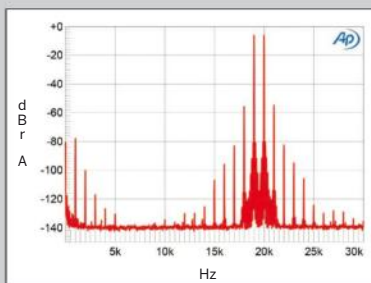


Fig.10 Pass Labs XA60.8, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 40W peak into 8 ohms (linear frequency scale).

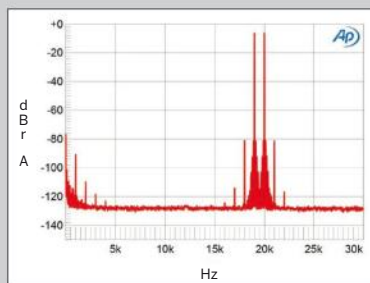


Fig.11 Pass Labs XA60.8, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 2W peak into 4 ohms (linear frequency scale).

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Vivid Audio's Giya G3¹¹ speakers, he found the bass under-controlled. With a pair of 60W amps, this is understandable—either speaker will challenge an amplifier, the Wilson more so.

JA was comparing the XA60.5s to Classé's CT-M600 monoblocks, his reference at the time, and specified to output 10 times the Passes' power. Stepping up to a more powerful monoblock from Pass's XA series—say, the XA100.5 or XA160.8—might well have solved the problem, but that wasn't the point of the comparison. The point was to determine whether the meager 60W RMS output of the Pass Labs monos could hold its own in the bass in an absolute sense with speakers that were moderately difficult to drive. JA's conclusion: not quite. And yet he put the XA60.5 at the very top of his lifetime amplifier list. Best-sounding he'd ever used.

What about the XA60.8? Was it as good as the XA60.5, or even better? Could it handle the bass better than its predecessor did? It has the same rated power, but more metal: bigger transformers, bigger heatsinks. Are those differences enough to provide that bit of extra oomph? Nelson Pass suggested they might be.

This isn't a perfect test, as I'm not using the same speakers JA used. The Alta Titanium Hestia's resolution in the bass may not be as good, and we won't know how hard they are to drive until JA measures them for the forthcoming review.

In his review of the XA60.5, JA used two tracks to test the XA60.5's bass. First was "Deck the Halls," from male-voice choir Cantus's *Comfort and Joy: Volume 2* (CD, Cantus CTS-1205), which JA engineered, edited, mixed, mastered, and played bass guitar on. In this track he overdubbed sampled drums and added a bass part, equalizing and compressing the sound of his Fender Precision bass to get just the balance he wanted of body and definition. Through the speakers he was using, JA found that the Classé amps reproduced that sound exactly as he'd intended; with the XA60.5 monoblocks, the balance tilted toward bass weight and away from definition.

I repeated this test, not only with "Deck the Halls" but also with a file JA sent me containing just the drum and bass tracks. I listened with both the XA60.8s and PS Audio's powerful BHK 300 monoblocks (specified to produce 1000W into 2 ohms), and lowered the volume to compensate for the PSA's higher gain. I heard differences in the sounds of these two amplifiers, but no difference in bass resolution. In particular, I didn't hear the change in the balance of bass weight and definition that JA described in his XA60.5 review.

JA also tested the XA60.5's bass with the Zander-Philharmonia recording of Mahler's Symphony 2: "In one Maxellian moment almost 10 minutes into the third movement, *In ruhig fließender Bewegung*, the immense scare chord blew the wind past my ears even with the less-sensitive Vivid speakers. However, the rumbling bass drum in this movement needed a little more control than the Passes could bring to bear."

I listened to this passage, as well as to a similar passage starting about 10:40 into the long fifth movement, when a quiet sequence of three harp notes gives way to successive crescendos, now with both bass drum and snare. Listening first with the XA60.8s, I indeed heard a lack of definition: The rumbling bass drum was indistinct, more a mass of tone than a well-defined instrument. But when I listened with the much more powerful BHK 300 amplifiers, I heard the same thing.

I switched the cables back to the Pass Labs amps just to

ASSOCIATED EQUIPMENT

Analog Sources Thorens TD 124 turntable (reconditioned by Schopper AG); Ortofon RMG-212 (rebuilt), Thomas Schick 12" tonearms; Ortofon 90th Anniversary SPU cartridge.

Digital Sources MacBook Pro computer (early 2015); Room Optimized Core Kit running on Intel NUC computer with SSD drive; Benchmark DAC 1, Meridian Explorer2 USB, Mytek HiFi Brooklyn, PS Audio DirectStream DACs.

Preamplification Auditorium 23 Standard step-up transformer, EAR 834P phono stage, PS Audio BHK preamplifier.

Power Amplifiers Benchmark AHB-2 bridged for use as monoblocks), PS Audio BHK Signature 300 Mono monoblocks.

Integrated Amplifier Leben Hi-Fi Stereo CS-600.

Loudspeakers Alta Audio Titanium Hestia (review forthcoming), DeVore Fidelity The Nine.

Cables USB: AudioQuest Carbon & Cinnamon & Coffee, Comprehensive Connectivity DXLRP-DXLRJ-6EXF. Interconnect: Auditorium 23, Chord (UK) Chorus & Chameleon Silver Plus, Mogami Gold, Sescam/Canare, Sescam/Mogami (XLR). Speaker: Auditorium 23. AC: Belden 14-gauge shielded, HOSA 14-gauge IEC, stock IEC.

Accessories PS Audio PowerPlant P10 power conditioner, Oswalds Mill slate plinth (under turntable), Chilton's Durham media console in cherrywood, Auralex ProPanel Fabric-Wrapped Acoustical Absorption Panel (4' by 2' by 2", beveled).—Jim Austin

make sure, then back to the PS Audios again—and kept alternating them, again and again, listening to both amps at least half a dozen times each for differences in the character of that rumbling percussion. I heard no difference in bass resolution—surprising, considering the large difference in these amps' rated power.

As I wrote before, it wasn't a perfect test. It could be that these speakers are less demanding, or less resolving than the ones JA was using. Room resonance could be limiting the system's resolving ability. Or maybe the extra metal in the XA60.8 makes all the difference. Whatever the reason, I didn't hear what JA heard with the XA60.5s.

When She Passes

John Atkinson has heard vastly more amplifiers than I have, but in this conclusion I'll echo what he concluded about the XA60.5 monoblock. The Pass Laboratories XA60.8 monoblock is the best amplifier I've heard. What's more, for whatever reason, I didn't hear the single fault he identified in the XA60.5.

So . . . is it love?

I may be too old and crusty to fall in love—especially that new, fresh, giddy kind of love. And, given my lifelong infatuation with a certain delicate-voiced Brazilian girl, frozen in time at age 17, it seems especially unlikely that I'd fall in love with a pair of heavy, wide-bodied twins. Yet I find myself dreading the day, a week or so hence, when JA will double-park his wife's Land Cruiser outside my front door and haul these low-slung beauties away to his test bench. Will I ever hear them again?

I am smitten. ■

11 Reviewed by JA in April 2014: www.stereophile.com/content/vivid-audio-giya-g3-loudspeaker.



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KEN MICALLEF

Heed Audio Quasar

PHONO PREAMPLIFIER

As a kid growing up in Milford, Michigan, my big brother always had the classiest clothes, latest records, and sharpest gear. He danced in Cuban-heeled leather boots, I climbed trees in lace-up Keds. He spun Rolling Stones vinyl on a fabric-wrapped Zenith portable with detachable speakers, I blasted the Beatles from a tinny transistor radio. Ten years my senior, big bro drove a Buick bomb (which, late one night, mysteriously caught fire in the garage) and had a girlfriend, Gail, whose plump cheeks and smart clothes embodied modern mid-century Midwestern appeal. I like to think that my brother and I have both aged gracefully. And lately, he's taken to high-end hi-fi with a passion.

First, I gave him a battered Thorens TD 166 Mk.II turntable and Cambridge Audio amplification. More recently, a pair of Snell J/Type II speakers pushed aside his old Tannoys. Then he sprang for a Music Hall MMF-73 turntable. My brother's endless questioning of every corner of my supposed audio expertise has made me rethink long-settled opinions.



Those descriptors look mechanical and artificial on the page. The Quasar was anything but.

Searching for information about the Quasar phono preamplifier and its Q-PSU power supply (\$1200 for both), made by the Hungarian company Heed Audio,

sent me down a path similar to my brother's quest for hi-fi. Luckily, the Quasar's designer, Zsolt Huszti, was able to answer a few of my questions.

Design

The Quasar is a dual-mono phono stage with an outwardly identical standalone power supply, the Q-PSU. Each of the two oblong, sleek'n'slender steel cases has a stark black faceplate with a single blue LED and four rubber feet. Each unit has a screw-in receptacle for the 1m-long, four-pin DIN umbilical cable that links them. Like the Heed Elixir integrated amplifier, the Quasar is well built and feels very solid.

SPECIFICATIONS

Description Solid-state moving-coil/moving-magnet phono preamplifier with standalone power supply. RIAA accuracy: 20Hz–20kHz, ± 0.5 dB. Frequency response: 3Hz–150kHz, ± 3 dB. Voltage gain: 50dB (MM), 62–78dB (MC). Moving-coil sensitivity: 100, 220, 600 μ V. Input impedance: 47k ohms (MM); 100/470/1000

ohms (MC). Output voltage: High Out, 775mV (0dBm)/22 ohms; Low Out, 220mV/100 ohms. Maximum output voltage: 7V (p-p). Output impedance: 50 ohms (High Out), 600 ohms (Low Out). Signal/noise (A-weighted): 80dB (MM), 66dB (MC). Channel separation: >90dB. Distortion (THD, 1kHz, 100mW): <0.08%. Power

consumption: <10W.

Dimensions Quasar & Q-PSU power supply (each): 3.75" (95mm) W by 3" (75mm) H by 8.7" (220mm) D. Weight (combined): 6.6 lbs (3kg).

Finish Black.

Serial number of units reviewed

Quasar: 213030542.

Q-PSU: 261030156.

Price \$1200. Approximate

number of dealers: 20.

Warranty: 3 years.

Manufacturer Heed Audio Kft., Reviczky Gyula u. 9-11, Budapest H-1181, Hungary. Tel: (36) 1-294-7401.

Web: heedaudio.com.

US distributor: Profundo, 2051 Gattis School Road, Suite 540/123, Round Rock, TX 78664.

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Inside the Q-PSU is a single 117V/60V toroidal transformer. The mains transformer has two sets of output windings, each of which drives its own regulated power supply, starting with two independent rectifier sections, with two Jamicon 10,000 μ F electrolytic “smoothing” capacitors (wrote Zsolt). On the rear panel are an On/Off switch and an IEC inlet for the removable power cord.

Inside the Quasar itself is a single circuit board densely populated with: two German-made, polypropylene, 10 μ F Mundorf MCaps; six smaller 47,000 μ F capacitors; various resistors; and a series of minuscule, square jumpers for selecting the moving-coil (MC) input's impedance (100, 220, 470 ohms) and sensitivity (100, 220, 600 μ V). Four more tiny jumpers enable the choice of moving-magnet (MM) or MC cartridge. It was easy to get lost when searching for these little black jumpers—my eyes scoured the green circuit board like Gulliver searching for Lilliputians.

“The Quasar has two basic circuits,” Huszti wrote via e-mail. “Both are fully discrete (all transistors, no ICs). The MM section provides RIAA compensation and gain. Via the MM/MC jumpers, the MC section is connected in front of the MM section as a pre-preamplification section. It provides gain and loading adjustment for MC cartridges, as well as a gain section to bring the voltage of the MC cartridge up to the level of an MM cartridge, for input into the MM section.”

On the Quasar's rear panel are two pairs of RCA input jacks—one pair each for MM and MC cartridges—and a pair each of Low Out and High Out RCA jacks. There are also a small ground screw and a DIN receptacle for the cable from the power supply. Most of this is easy to access, even for the clumsy-fingered. In the Quasar's manual is this odd passage: “‘Low Out’ is recommended for older amplifiers of the '70s and '80s. The ‘High Out’ is aimed at more modern amplifier designs.”

Huszti explained: “The manual is referring to the tendency of many modern integrateds and line-stages to use less gain, which can lead to a sense of less dynamics, unless the input voltage reaches a certain threshold. . . . The ‘High Out’ section indeed has more gain and generally sounds more dynamic, but with a certain sacrifice of transparency and immediacy. Since the Quasar has a lot of headroom before being overdriven, I recommend using the highest gain position of the adjustable gain jumpers (100 μ V), using the ‘Low Out’ with MC cartridges that have an output below 0.5mV. Listening bears this out pretty quickly.” It most certainly did, but more about that later.

Incidentally, the Quasar's manual suggests sensitivity and impedance settings for various MC cartridges, including the Dynavector Karat 17D2 (100 μ V, 100 ohms), Goldring Erocica and Excel (220 μ V, 100 ohms), Audio Note Io (100 μ V, 100 ohms), and Lyra Lydian (220 μ V, 470 ohms).

“The input sensitivity and loading jumpers are only in the circuit when using MC,” Bob Clarke explained via e-mail. “For MC loading, it's best to follow the manufacturer's recommendation; however, it is always good to experiment a little. For 0.5mV to about 0.8mV carts, I use the 220 μ V setting, then the 600 μ V for anything over that, until you reach MM output levels.”

Setup

Finding room for the oblong Heeds proved problematic. I didn't have an extra shelf to devote to them in either system, so was forced to position them somewhat haphazardly. I ultimately sandwiched the Quasar between my Shindo Allegro preamplifier and the Heed Elixir, and perched the Q-PSU on a wooden stool.

I typically run my Denon DL-103 MC cartridge, via an Auditorium A23 step-up transformer (SUT), into the MM

MEASUREMENTS

I measured the Heed Audio Quasar phono preamplifier using my Audio Precision SYS2722 system (see www.ap.com, and the January 2008 “As We See It” at www.stereophile.com/content/measurements-maps-precision). As always with phono stages, I experimented with the grounding between the preamp and the Audio Precision system to get the lowest level of noise. I ended up floating the Audio Precision's outputs from ground and connecting the Quasar's grounding post to the analyzer ground.

The Quasar preserved absolute polarity with both moving-coil and moving-magnet settings and inputs, and from both its High and Low outputs. There are internal jumpers to set the gain for the MC input, meaning that the gain and, hence, signal/noise ratio and overload margin can be optimized for a specific MC phono cartridge. The MM input gain is set to a fixed value, but the choice of High and Low outputs

also means that the Quasar's performance can be optimized for a specific cartridge. For MM cartridges, the Low outputs offered 33.4dB of gain, the High outputs 48.45dB, thus bracketing the usual 40dB figure. The MC input, set to 600 μ V sensitivity, offered 40.1dB gain at the Low outputs; set to 220 μ V, the gain was 48dB; and to 100 μ V, it was 54.9dB. As with the MM input, these figures were 15dB greater from the High outputs.

The input impedance for the MM input was appropriately high at 1kHz and 20kHz, at 61 and 48k ohms, but dropped precipitously, to 1000 ohms, at 20Hz. This, presumably, is why Ken Micallef found that using a step-up transformer with the Quasar's MM input didn't work. The Quasar's manual states that the choices for input impedance for the MC input are 100, 220, 470, and 47k ohms, the last when the impedance jumpers are removed. However, printed on the circuit board

are “100 ohms,” “470 ohms,” and “1000 ohms,” and my measurements indicated that at 1kHz, the actual input impedances were close to the circuit-board legends: 115, 510, and 990 ohms. The values at 20kHz were similar, but as with the MM input, the input impedances at low frequencies were significantly lower. With the jumpers set to “1000 ohms,” for example, the

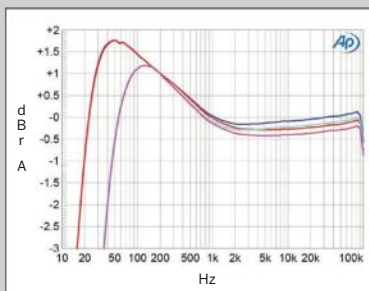


Fig.1 Heed Quasar, Low output, response with RIAA correction into 100k ohms (left channel blue, right red) and 600 ohms (left cyan, right magenta) (1dB/vertical div.).

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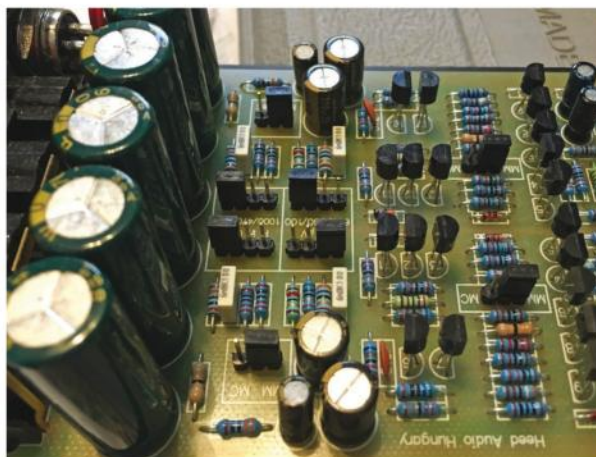
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inputs of the Shindo Allegro. The Heed Quasar wasn't having any of that. No matter the internal arrangement or rearrangement of its jumpers or switching of interconnects from High to Low Outs, the sound was clear and spacious but lacking in bass fundamentals and weight. After e-mailing Bob Clarke and speaking with our own Art Dudley, I concluded that the culprit was impedance mismatch. I removed the Auditorium A23 SUT and plugged my Kuzma Stabi turntable and Stogi tonearm's interconnects straight into the Quasar's MC RCA jacks. Problem solved: musical peace and harmony restored. I did the same with my Music Hall MMF-73 turntable and Ortofon Bronze MM cartridge, plugged into the Quasar's MM RCAs.

I left the Quasar and Q-PSU powered on 24/7, as directed.

Blue Notes

Lately I've had the pleasurable job of selling part of a friend's collection of 7000 Blue Note LPs—the “off-condition” copies, which can still command considerable sums from cash-flush bidders around the globe. Another friend sells our mutual friend's mint-condition vinyl. He got \$4539 for a copy of a deep-grooved pressing of Hank Mobley's eponymous album of 1957 (Blue Note BLP 1568), the LP's dead wax stamped “RVG” (for engineer Rudy Van Gelder) and



neering and lacquer-cutting skills is absolutely, spectacularly, holographically present in such 1500-series titles as *The Magnificent Thad Jones* (BLP 1527) and Curtis Fuller's *The Opener* (BLP 1567), as well as such as 4000-series (1957–1972) LPs as Freddie Hubbard's *Goin' Up* (BLP 4056) and Mobley's *The Turnaround* (BLP 4186). Magnificent dynamics, naturalness, presence, tonal saturation, lucidity—and heart-thrilling music—are what I hear when I spin these discs on my Kuzma or Music Hall turntables.

The Heed Quasar did a terrific job of resolving the music on these Blue Notes, the preamplifier's powerful presentation bringing focus and force to the recordings of Milt Jackson, Grachan Moncur, Kenny Dorham, and Tina Brooks. While the road to satisfaction was fraught with the twists and turns of various interconnects, much plugging and unplugging of

measurements, continued

MC input impedance at 20Hz was 204 ohms rather than the 990 ohms I measured at 1kHz. I also got anomalous results when I removed the jumpers, which should give, according to the manual, an input impedance of 47k ohms. Instead, the impedance was very similar to what I measured with the jumpers set to “1000 ohms.”

The output impedance from the Low outputs was a very low 9 ohms at high and middle frequencies, but increased to 508 ohms at the bottom of the audioband. I got some anomalous results when I examined the output impedance from the High outputs, including an apparently negative output impedance in some circumstances. But measured at 450mV output, the High output impedance was extraordinarily low, at 1.1 ohms at 20kHz and 0.3 ohm at 1kHz, but much higher at 20Hz: 729 ohms. As a result of the increased impedance at low frequencies, the Heed's low frequencies rolled off prematurely into a low, 600 ohm load (fig.1, cyan

and magenta traces) compared with a 100k ohm load (blue, red). Fig.1 reveals close channel matching, but also that the RIAA correction offers up to 1.75dB of boost in the bass before the usual infrasonic rolloff, which reaches -3dB at 16Hz. In this respect, the Quasar behaves similarly to the phono stage of the Heed Elixir integrated amplifier.¹

Channel separation (not shown) was around 70dB R-L and 80dB L-R from 300Hz to 20kHz. The Heed's S/N ratio, measured with the input shorted to ground, depended on whether the MC or MM input was being used, the MC gain setting, and whether it was measured at the Low or High outputs. In the best case, with the MC sensitivity set to 600 μ V and examined at the Low outputs, the unweighted, wideband ratio was an excellent 73.5dB ref. 1kHz at 500 μ V, improving to 87.5dB when A-weighted. Increasing the MC sensitivity reduced the ratio by around 3dB for each setting, while looking at the High outputs reduced the ratio

by around 10dB. The worst case was the MM input measured at the High output: 57.5dB wideband, unweighted, and 70.5dB A-weighted. Nevertheless, this is still good performance, and the spectrum of the Quasar's low-frequency noise floor, taken from the Low output at 1V output (fig.2), reveals that the main sources of noise are spurious at the full-wave-rectified

¹ See www.stereophile.com/content/heed-audio-elixir-integrated-amplifier-measurements.

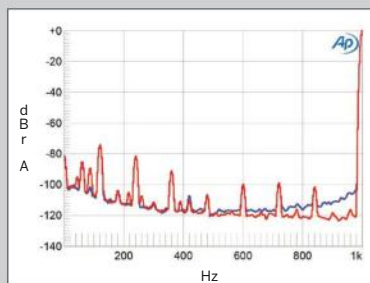


Fig.2 Heed Quasar, Low output, MM input, spectrum of 1kHz sinewave, DC-1kHz, at 1V into 100k ohms (linear frequency scale).

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equipment, and the not-infrequent curse or temper tantrum, the Quasar always kept its class, consistent character.

Listening

The Heed manual advises settings of 100 μ V sensitivity and 100 ohms impedance for the Denon DL-103. After I'd briefly experimented with jumper placement, that advice proved spot-on. And from the first needle-drop of "Whiskey Train," from Procol Harum's magnificent *Home* (LP, A&M SP 4261), I knew the Heed Quasar was on to something good.

Righteousness! This blues-rock standard from 1970 sounded big and raunchy, with ultra-extended low-end notes from Chris Copping's electric bass guitar and BJ Wilson's bass drum. I also noticed the added reverb around Gary Brooker's voice. Meanwhile, Robin Trower's wailing, blues-sauce-spewing guitar never sounded better, all nasty string bends and glistening plectrum attacks. And though the Quasar is 100% solid-state, it sounded neither hard nor, worse, tube-cliché syrupy or soft—as can happen when manufacturers of solid-state gear try to design in added "warmth."

But would the Quasar exhibit similar extension and solid framing of treble and midrange notes when asked to translate my magical Blue Note LPs? And would it convey the soul of the music?

The Quasar surprised me. It repeatedly delivered some of the finest vinyl-produced playback experiences I've heard in my humble home. Whether retrieving the instrumental virtuosity, rich tone, and studio ambience of the Blue Note 1500 discs, the dazzling improvisations on Dave Holland's *Triplicate* (LP, ECM 1373), or the eerie brilliance of Sibelius's *Symphony 4* in the recording by Herbert von Karajan and the Berlin Philharmonic (LP, Deutsche Grammophon 2535-359), the Quasar excelled. It reproduced music with fine transparency, note extension, and tone, and shone at

ASSOCIATED EQUIPMENT

Analog Sources Kuzma Stabi S turntable & Stogi tonearm; Music Hall MMF-7.3 turntable; Denon DL-103 (MC), Goldring Elite (MC), Ortofon 2M Bronze (MM) cartridges.

Digital Sources Apple MacBook computer running Audirvana Plus; Halide DAC HD, PS Audio NuWave, Mytek HiFi Manhattan DACs; Western Digital T2 Mirror Drives (2), LG BD550 BD player (as transport).

Preamplification Auditorium 23 A23 moving-coil step-up transformer, Shindo Laboratory Allegro preamplifier.

Power Amplifier Shindo Laboratory Haut-Brion.

Integrated Amplifiers Heed Audio Elixir, Octave Audio V 80 SE.

Loudspeakers DeVore Fidelity Orangutan O/93, Elac B6, Quad S2.

Headphones Master & Dynamic MH40.

Cables Interconnect: AudioQuest Chicago & Water & Yukon, DiMarzio M-Path, Morrow Audio MA-1, Shindo Speaker: AudioQuest Castle Rock, Auditorium 23, Telurium Q Black. AC: manufacturers' own.

Accessories IsoTek IVO3 Aquarius power conditioner, Mapleshade Clearview Double Helix Mk.II power strip; Music Hall Aztec Blue & Mooo record mats; Spec AD-UP1 Analog Disc Sheet; Salamander five-tier rack; IKEA Aftitlip bamboo chopping boards (under turntable, preamplifier, power amplifier); Mapleshade maple platform (15" by 12" by 2") & mahogany blocks (2" by 2" by 0.5"); 3"-thick studio-treatment foam damping (ceiling, walls).

Listening Room 12' L by 10' W by 12' H, system set up along short wall; suspended wood floor, 6"-thick walls (plaster over 2x4), wood-beamed ceiling.—Ken Micallef

measurements, continued

frequency of 120Hz and its harmonics. (All measurements were taken with the Quasar's Q-PSU power supply placed as far away from the signal enclosure as their umbilical cable allowed.)

These spurious can also be seen in fig.3, which shows the spectrum of the Quasar's Low output with the MM input fed 1kHz at a high enough level to give an output voltage of 1V. The second harmonic is the highest in level, at -80dB (0.01%), and while the third harmonic can be seen at -100dB (0.001%), it disappeared at lower input levels. Overload margins depended on the input, output, and gain setting. In the worst case (MC input, High output, 100 μ V sensitivity), the margin was 10dB at 1kHz ref. 500 μ V; and in the best case (MC, High, 600 μ V), an extraordinarily high 38dB. The margin was lower at low frequencies: for the MM input at the High output it was 17.5dB at 20kHz, 27.5dB at 1kHz, but just 5dB at 20Hz.

When I looked at how the Heed Quasar handled an equal mix of 19 and 20kHz tones, at a level fed to the MM input that resulted in 500mV at the Low output, the difference product at 1kHz lay at a moderately high -50dB (0.3%), though higher-order intermodulation products were respectably low in level (fig.4). I was puzzled, however, by what appeared to be noise-floor modulation in the left channel (blue trace).

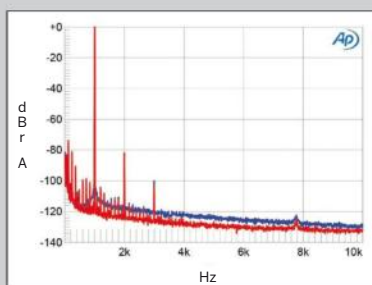


Fig.3 Heed Quasar, Low output, MM input, spectrum of 1kHz sinewave, DC-10kHz, at 1V into 100k ohms (linear frequency scale).

Heed Audio's Quasar offers users considerable flexibility in optimizing its gain, noise, and distortion performance. In general, they should use the lowest-possible gain to get the best sound from their cartridges. However, I was perturbed by the MM input's very low input impedance at low frequencies. I recommend the Quasar for use only with moving-coil cartridges.

—John Atkinson

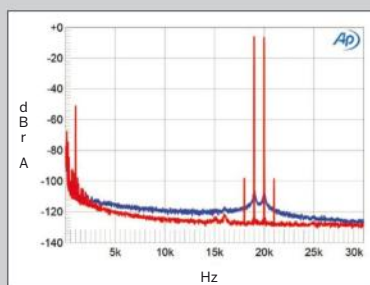


Fig.4 Heed Quasar, MM input, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 500mV peak into 100k ohms (linear frequency scale).

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micro- and macrodynamics.

Those descriptors look mechanical and artificial on the page. The Quasar was anything but, bringing out humanity and depth of feeling and timbral naturalness from every recording—it was a joyful communicator. From Dave Holland's deep-bowed double bass, and the warning notes heard in the opening of Stravinsky's *Firebird Suite*, in the recording with Robert Shaw leading the Atlanta Symphony Orchestra (LP, Telarc DG-10039), to the intimacy of RVG's hard-bop Blue Note sessions, the Quasar *almost* entirely removed itself from the music to let it speak. What unique sonic characteristics it did have were of warmth, a grain-free treble, and a certain delicacy, all of which complemented its whole-cloth sense of openness and coherency. The Quasar knows how to work the room, charming every listener and LP in earshot.

Rudy Van Gelder made his earliest Blue Note recordings at WOR Studios, in New York City, then in his parents' house in Hackensack, New Jersey, and finally in his own studio, in Englewood Cliffs. The Quasar let me easily hear the differences among albums recorded at the different venues. Lee Morgan's *Indeed!* (mono LP, BLP 1538) and Tina Brooks's *True Blue* (mono LP, 4041), both recorded in Hackensack, had much greater immediacy and clarity than Lou Donaldson's *Quartet/Quintet/Sextet* (mono LP, BLP 1537), recorded at WOR.

The Quasar revealed the minutiae of recordings very well, creating a superb sense of in-the-room transparency from small-group jazz recordings in which every improvisation, every minor turn of major improvisers, can be a revelation.

Heed meets Heed

The phono stage of the Heed Elixir¹ is one of that integrated amplifier's glories, its punchy warmth and good tone a consistent delight. The Heed Quasar took it to another level. "Here at the Western World," from Steely Dan's *Greatest Hits* (LP, MCA-2 6008), became lighter and more refreshing, with a flowing musical line exposed in forceful drums and better delineation between standard electric guitar and steel guitar. And the Elixir's at times murkier mid-to low end was replaced by the Quasar's missile-like crystal clarity.

Francis Bebe's *African Electronic Music 1975–1982* (LP, Born Bad 039) really took off, its exuberant meeting

of kalimba, freaky distorted Farfisa organ, rhythm-box playfulness, and layered voices spread deep, wide, and plentiful, with first-rate images and tons of air. The Quasar brought earthiness to this African electronic dance funk, with grander soul and resolution than the Elixir's own phono stage.

For most of my auditioning of the Quasar in both rigs, I used AudioQuest Yukon interconnects (\$324.75/1m pair, Amazon). They're more listenable than AQ's Water (\$524.75/1m pair, Amazon), with better tone than the bottom of AQ's line, the Chicago (\$68.75/1m pair, Amazon). Replacing the Yukons with Morrow Audio's MA-1 interconnects (\$49.95/1m pair) provided less air than the AQs and a recessed soundstage, but excellent snap and rhythmic acuity. Also in-house were a pair of M-Path interconnects from DiMarzio (\$150/1m pair, Todd the Vinyl Junkie), known for their pro-audio gear. The DiMarzios offered substantial images and a generous, unfussy tonality, plenty of jump and clout, and a liquid character that made instruments sound rich. The AudioQuest Yukons and DiMarzio M-Paths were more alike than not, the AQs offering less air and punch and smaller images, but a tad more resolution.

Conclusions

I spent many a night with Heed Audio's Quasar and Q-PSU, engaged in all the revelry and vinyl music-making excitement they created with boundless enthusiasm and deep soul. Like Heed's Elixir, the Quasar is very well built, and its jacks easily withstood the endless tugs and twists this audio reviewer subjected them to. It exhibited pleasing tonality from LP to LP, resolving each disc with its own unique character and a broad soundstage with a grain-free treble, and plentiful mid-range and bass extension.

I'd long heard about this rather plain-looking, spartan phono stage—how it could transform the sounds of lesser systems, and challenge bigger comers with more hi-fi cred and glossier nameplates. The Heed Quasar is a mighty mite of musical authority, a twin-turbo phono stage that offers plenty of flexibility, a practically bombproof enclosure, and ample musical meat and value for the dollar. My brother already wants to buy one. Radically recommended! ■

1 See www.stereophile.com/content/heed-audio-elixir-integrated-amplifier.

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JOHN ATKINSON

NAD Masters Series M50.2

DIGITAL MUSIC PLAYER

Back in May 2014, I reviewed NAD's Masters Series M50 Digital Music Player (\$2499) and M52 Digital Music Vault (\$1999 with 2TB storage).¹ At the 2017 Consumer Electronics Show, NAD announced the M50.2, which is almost identical to the original M50 but now incorporates two 2TB hard disks, arranged as a 2TB RAID array, to ensure data integrity, and adds TosLink and coaxial digital inputs, Bluetooth with aptX for streaming music from a smartphone or tablet, and two single-ended analog inputs—all for \$3999, or \$499 less than the combined cost of the two earlier products. Like the M50, the M50.2 offers WiFi and Ethernet connectivity, and has a CD drive, accessible via a slot on the front panel under the color TFT touchscreen, that can be used to play CDs, or rip them as FLAC, WAV, or high-bit-rate MP3 files.

The M50.2 will play files with bit depths of 16 or 24, and with sample rates up to 192kHz. DSD playback is promised by the end of this year. There are no analog outputs, but the digital outputs include HDMI, AES/EBU, and optical and coaxial S/PDIF. Playback and control of the files stored on the M50.2's hard drive can be either via the touchscreen, which displays the album cover and metadata, or via the BluOS app running on a tablet or PC. (Android and iOS devices are supported, and the app is available for Windows and OS X.) The M50.2 will integrate with third-

party control systems—Control4, Crestron, RTI—to allow it to be integrated with smart homes. It can also be a Roon endpoint, as all BluOS devices are Roon Ready.

NAD called the M50 a “software-defined product,” and the same is true of the M50.2, which is also based on an ARM processor. According to an e-mail from Greg Stidsen, NAD's director of technology and product planning:



NAD's Masters Series M50.2 is an easy-to-use, single-box solution.

Conceptually, the M50.2 is meant to replace a computer and NAS for what's been known as “computer audio.” While computer audio can be made to play high-rez music well enough, it does not give the same attention to sonic

detail as a dedicated device that integrates these functions and focuses solely on music storage and playback. And if you're not a computer geek it can be very difficult and frustrating to setup and maintain a competent computer based system.

From a hardware point of view, BluOS is tightly integrated

¹ See <http://tinyurl.com/ybkfdrwp>.

SPECIFICATIONS

Description Roon Ready digital music server & CD ripper with TFT touchscreen. File formats supported: AAC, AIFF, ALAC, FLAC, M4A, MP3, MQA, Ogg Vorbis, WAV, WMA. Supported cloud services: Deezer, HDtracks, HighResAudio, iHeartRadio, Juke, Napster, Rhapsody, Slacker, Spotify, Tidal, TuneIn Radio, WiMP.

Internal storage: two 2TB hard disks in RAID array. Resolutions & sample rates supported: PCM up to 24-bit/192kHz (a DoP decoder for DSD files is planned). Inputs: Bluetooth aptX, Ethernet, WiFi, two USB Type A, optical & coaxial S/PDIF. Analog inputs: 1 pair. Digital outputs: AES/EBU (XLR), optical & coaxial

S/PDIF, HDMI 1.4 (audio only). Control & display ports: HDMI, RS232, 12V trigger. **Dimensions** 17.125" (435mm) W by 5.25" (133mm) H by 15" (380mm) D. Weight: 17.9 lbs (8.1kg). **Finishes** Silver, Black. **Serial number of unit reviewed** H73M50201220; Bluesound app v.2.12.6, iOS

app v.2.12.2. **Price** \$3999. Approximate number of dealers: 100. **Manufacturer** NAD Electronics International, 633 Granite Court, Pickering, Ontario L1W 3K1, Canada. Tel: (905) 831-6555. Fax: (905) 831-6936. Web: www.nadelectronics.com.



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with the hardware platform, meaning we use our own custom drivers to control all aspects of the signal chain. We do not include a DAC in the belief that most customers at this level have a strong favorite amongst the many fine DACs available. More and more amplifiers are also including high-performance DACs (certainly true at NAD) so we felt an internal DAC would only add cost and make people pay for something they may not use.

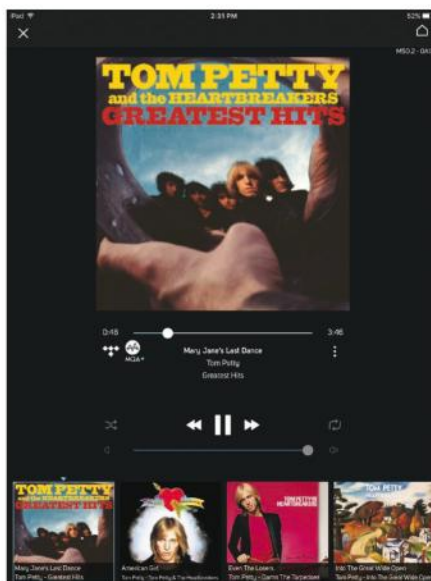
Stidsen offered these thoughts on the M50.2's construction: "Internally we have paid special attention to circuit layout, which is so critical with high-speed digital circuits. Multi-layer printed circuit boards with large ground planes keep the signal very clean . . . [with] high-quality clocks and quiet and stable power supplies."

Setup

I connected the M50.2 to AC power and my network router and switched it on with the rear-panel switch. An icon for the NAD, labeled "m502.0a13," appeared on my laptop's screen, but the button to the left of the M50.2's front panel flashed alternately red and green to let me know that the firmware was being upgraded. Once it had finished downloading the new version, the M50.2 rebooted itself and I could load music into its internal storage. This was as simple as dragging'n'dropping the files from my iTunes and hi-res libraries into the "m502.0a13"'s "shared/Music" folder, and indexing them using the free BluOS music-management app I'd downloaded to my iPad mini.

Almost all the time I had the M50.2 in my system, I used it either as a file player or to stream files from Tidal HiFi, using the NAD's S/PDIF output. (Setting up the M50.2 to access my Tidal account was as simple as entering my username and password in the iPad BluOS app.) The app offers a volume control, but I used the M50.2 set to a fixed output and adjusted playback level with the volume controls on my Ayre Acoustics QX-5 Twenty and PS Audio PerfectWave DirectStream DACs. (The M50.2 also offers choices for equalizing loudness: Track Gain, Album Gain, and Smart Gain.) I used the drive to rip some CDs to WAV or FLAC files—I'm slowly working my way through converting my several thousand CDs to digital files—and experimented with the M50.2's analog inputs.

These inputs have an impedance of close to 20k ohms, and the analog input signals appear to be converted to 24-bit digital with a sample rate of 48kHz. Playing a 1kHz, -20dBFS tone from *Editor's Choice* (CD, Stereophile STPH016-2) on my Ayre C-5xe^{MP} player, which has a maximum single-ended output level of 2.1V, resulted in digital data with a maximum level of -21.35dBFS. The gain of the M50.2's analog inputs will work well with sources that don't peak above 2V RMS. The resultant digital-domain spectrum (not shown) had a clean noise floor, with the second harmonic 86dB lower in level (this spectrum, of course, includes the contribution of the Ayre's



The BluOS app's screen shows when an MQA file is being played.

output stage). Jitter on the NAD's digital output was a respectably low 402 picoseconds (average value over a 50Hz–100kHz bandwidth), which is only a little higher than the Audio Precision's sensitivity limit. The "eye pattern" of the received datastream (not shown) was identical to that of the M50 and was impressively open, with no blurring at the beginning or end of the unit interval.

I found only two operational problems. First, clicking on Info while a track is playing takes you to the Last.fm database, which is not as comprehensive as I would wish. Second, not all the cover art of the albums in my iTunes Music folder had found its way into the NAD's storage. The BluOS app offers a Reload Artwork button in its Settings menu, but this didn't find the

missing covers. I suspect that the button is intended to be used when you rip CDs—the discs I ripped with the NAD all had their artwork correctly attached. (When gathering metadata, the M50.2 downloads a checksum for the disc being ripped. The transport will continue to work with a disc until the calculated checksum from the disc matches what's in the metadata.) However, if you subscribe to Last.fm and that database includes the album, you can manually add its missing artwork.

Music

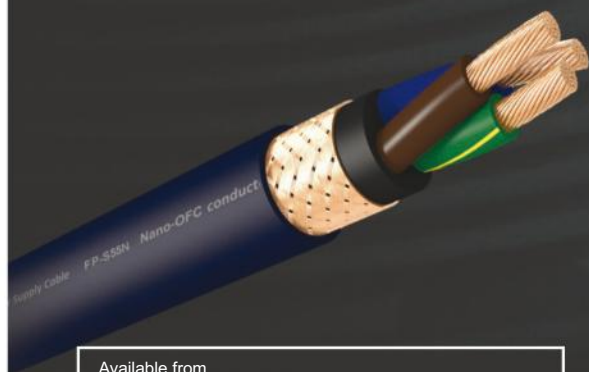
You can choose a file to play by browsing by Artists, Album, Song, Genre, Playlist, or by folder, and with the last you can filter files by Quality: MQA, High Resolution, or CD. Select AutoFill and, in addition to the file being played, all subsequent tracks on the album will be added to the current playlist. I used the M50.2 for several weeks' worth of music enjoyment. Sending data via the S/PDIF connection, using the Esperanto digital datalink from John Marks's new company, worked well with PCM files having sample rates up to 192kHz, with sound quality indistinguishable from my other servers. I'd copied several DSD files to the M50.2's storage, but these didn't show up in the library, though I could find the folders that contained them. I assume that the promised update will allow DSD playback using Roon and a network-connected DAC, though as of October 1, the Roon website notes that while the M50.2 is Roon Ready, it doesn't yet allow playback of MQA files over a network.

Speaking of MQA

The sad death of Tom Petty at the beginning of October had me searching Tidal for Petty's music while I prepared this review, and I found a playlist listed under "Tidal Masters." The "Masters" appellation means that the files are MQA-encoded. Sure enough, when I selected "I Won't Back Down," the metadata indicated that it was an MQA file. I was feeding the NAD's coaxial S/PDIF output to the PS Audio DAC, which won't decode MQA data. However, the M50.2 performed the first "unfolding" of the data, and the PS Audio's screen indicated that it was receiving 24-bit data sampled at 96kHz.

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I don't understand the antagonism to MQA expressed by many audiophiles. My own work² has shown that the reduction in file size is significant, and my listening comparisons with recordings of known provenance suggest that the improvement in sound quality offered by the proprietary "deblurring" may vary from small to significant, but I have never heard a reduction in sound quality with an MQA-encoded file. And if you don't have an MQA-capable DAC, the fact that a source component like the NAD M50.2 will still give you another octave of ultrasonic information seems to me a useful benefit.

Conclusions

The point of fit'n'forget components like NAD's M50.2 is to enjoy the benefit of computer audio and hi-rez music without having to enter into a complicated and possibly frustrating relationship with a PC. I have been alternating between two such servers for the past couple of years: the Antipodes DX Reference, which I reviewed in October 2015³ and control with the iPeng app; and the Aurender N10, which I reviewed in April 2016⁴ and control with Aurender's own Conductor app. Respectively priced at \$6950 and up and \$7999, these two high-performance server/players cost considerably more than the NAD M50.2. While I wouldn't dare say that a price of \$3999 makes the M50.2 a bargain, it's considerably less expensive than the other two products, and offers much the same functionality. Its 2TB storage

² See www.stereophile.com/content/listening-mqa.

³ See www.stereophile.com/content/antipodes-dx-reference-music-server.

⁴ See www.stereophile.com/content/aurender-n10-music-server.

ASSOCIATED EQUIPMENT

Digital Sources Apple 2.7GHz i7 Mac mini running OS 10.10.3, iTunes 12, Pure Music 3.0; iPad mini running Bluesound app; Ayre Acoustics QX-5 Twenty, PS Audio PerfectWave DirectStream D/A processors.

Power Amplifiers MBL Corona C15, Pass Laboratories XA60.8 monoblocks.

Integrated Amplifier NAD M32.

Loudspeakers GoldenEar Technologies Triton Reference, KEF Reference 5.

Headphones Audeze LCDi4 & LCD-X.

Cables Digital: AudioQuest Coffee (USB) & Vodka (Ethernet), Esperanto Audio (S/PDIF), Kimber Kable Orchid (AES/EBU). Interconnect (balanced): AudioQuest Wild. Speaker: AudioQuest K2. AC: Audio Power Industries, Kubala-Sosna Elation!, manufacturers' own.

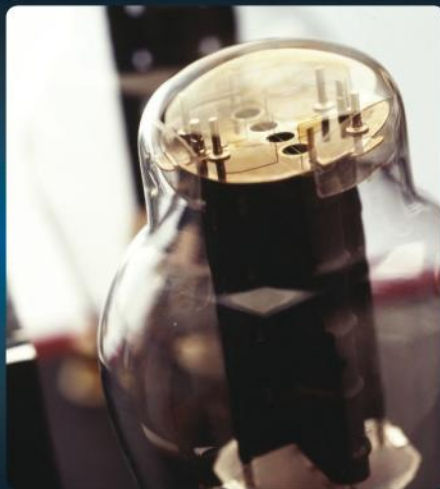
Accessories Target TT-5 equipment racks; Ayre Acoustics Myrtle Blocks; ASC Tube Traps, RPG Abffusor panels; Shunyata Research Dark Field cable elevators; Audio Power Industries 116 Mk.II & PE-1 AC line conditioners (hard drive, computers). AC power comes from two dedicated 20A circuits, each just 6' from breaker box. —John Atkinson

might be a limitation for those with huge libraries, but its USB ports can be used to connect more storage.

I was impressed by NAD's Masters Series M50.2. It's an easy-to-use, single-box solution to the problems faced in setting up a computer-based audio system. ■

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JASON VICTOR SERINUS

dCS Network Bridge

NETWORK PLAYER

John Atkinson asked me to review the dCS Network Bridge (\$4250), which was designed to be paired not just with the dCS Vivaldi DAC (\$35,999) running the current v.2.02 software, but with any DAC. This meant I was forced to endure several months with the state-of-the-art Vivaldi as a replacement for my reference dCS Rossini (\$23,999). Oh, how I suffered.

Michael Fremer, in his January 2014 review of dCS's four-piece Vivaldi system (\$114,996),¹ of which the Vivaldi DAC is part, called it "the best non-digital-sounding digital system I've heard." John Atkinson, in his measurements for that review, credited the system with "the best digital playback I have experienced."

I determined a review strategy. My main focus would be the Network Bridge, with the sound of the Vivaldi DAC's v.2.02 software upgrade a major corollary. First, I'd listen to the Network Bridge as one of four links in a dCS chain of the Vivaldi DAC running its original v.1.2 software, the Scarlatti clock, and the Paganini SACD/CD transport. Once I'd fully grokked the Vivaldi v.1.20 sound, I'd update to Vivaldi v.2.02 and listen again.

Network Bridge

The dCS Network Bridge is a one-box network player that can serve as a bridge between your source of digital music and your DAC. Inside its housing of machined, aerospace-grade aluminum are hardware and software capable of playing high-resolution music files from a NAS, USB drive or stick, or Ethernet-connected drive. It can also stream content from Tidal, Spotify, and other streaming services.

The Network Bridge's front panel is solid, save for a small



Computer playback paired next to the Network Bridge.

blue LED that indicates when the unit is powered up. On the rear panel are two AES/EBU outputs (compatible with dCS DACs) and three S/PDIF outputs (one on an RCA); Ethernet, AirPlay, and USB 2.0 (data) inputs;

two BNC SDIF outputs; and a third BNC word-clock output. Its built-in antenna is designed for app control and eventual WiFi use; the latter remained inactivated during the review period.

The Network Bridge can play PCM files up to 24-bit/384kHz, all major lossless codecs, plus DSD64 and DSD128 in native or DoP formats. While the Bridge's auto-clocking system is compatible with clock settings within the Vivaldi, Rossini, and other DACs, it can also be used with an external clock fitted with BNC outputs. Multistage power regulation isolates the Bridge's digital and clock circuitry from AC irregularities.

As long as a DAC has at least one AES/EBU or S/PDIF input, dCS claims it will benefit from the Network Bridge. This includes DACs limited to 96 or 192kHz, or that can play DSD only when downsampled to 96 or 192kHz PCM. No matter if a DAC with only one AES or S/PDIF input allows sample rates above 192kHz and DSD64—linearity

¹ See www.stereophile.com/content/dcs-vivaldi-digital-playback-system.

SPECIFICATIONS

Description Network player/Roon endpoint. Inputs: Ethernet, Apple AirPlay, USB 2.0 (data), 2 word clock (BNC). Outputs: 2 AES/EBU on (3-pin XLR), for PCM output up to 24-bit/384kHz or DSD128 in DoP when used as dual AES; S/PDIF (coax RCA), for PCM output up to 24/192

or DSD64 in DoP; SDIF-2 (BNC), for PCM output up to 24/96 or SDIF-2 DSD64; word-clock (BNC), for PCM data up to 96kHz. **Dimensions** 14.2" (360mm) W by 2.65" (67mm) H by 9.65" (245mm) D. Weight: 10.2 lbs (4.6kg). **Finishes** Silver, Black

Serial number of unit reviewed 0052911 **Price** \$4250. Approximate number of dealers: 18. **Warranty:** 3 years, parts & labor, to original owner. **Manufacturer** Data Conversion Systems, Ltd., Unit 1, Buckingham Business Park, Anderson Road, Swavesey,

Cambridge CB24 4AE, England, UK. Tel: (44) (0)1954-233950. US distributor: Data Conversion Systems Americas, Inc., PO Box 541443, Waltham, MA 02454-1443. Tel: (617) 314-9296. Web: www.dcsLtd.co.uk.

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considerations have led dCS to limit the ability to pass those higher rates to their traditional Dual-AES connection.

Very much a 2017 product—notably, the Network Bridge is Roon-ready—the product’s FPGA platform is accessed by a remote, iOS-only phone/pad app. The app permits full control of what dCS claims are the Bridge’s bit-perfect wired and wireless streaming capabilities, as well as its input, output, and clock settings. Direct connection to Tidal and Spotify is supported.

The Network Bridge software is easily updated via the Internet using the app’s control section. By the time you read this, software to enable serial-data mode for RS-232 control of other dCS products, including the Vivaldi DAC, should be available. Ditto a USB audio output that will allow connection to USB DACs.

While the Network Bridge is equipped with WiFi, WiFi connectivity is limited to 24/96 because dCS feels that wireless transmission compromises performance, and those compromises increase with the sampling rate. dCS recommends hardwiring the Network Bridge via Ethernet.

Given its multiple functions, the Network Bridge is really a local and streaming music file renderer that can locate, process (*ie*, convert FLAC and other compressed formats to uncompressed WAV), and present to any DAC music files from a variety of sources, local or Web-based. The Bridge also enables the Vivaldi (which has only a USB input) and older, discontinued dCS DACs to play files and stream music in all resolutions and formats the DAC allows.

The Vivaldi DAC has only a single USB and no Ethernet input was an intentional design choice. As dCS Americas’ General Manager, John Quick, explained by phone:

Because the Vivaldi system is our reference statement system, we don’t want excessive processing or overactive power supplies to generate noise inside the box. There are advantages to having the network board, with its dedicated power supply and dedicated FPGA processor, running our code in a separate chassis that is pretty inert. This is why the Vivaldi system’s upsampling, disc playback, and advanced clocking take place in separate boxes.

We decided to put a USB input on the Vivaldi DAC for someone who wasn’t going to buy the whole system, because that was the least compromised input we could offer that would allow access to file playback. Regardless, prior to the release of the Network Bridge, whose dual-AES connection addresses these issues, we would tell customers that if you have a Vivaldi Upsampler, that’s where you want your USB and network plugged in.

The Bridge is a great option for someone who wants to bring network connectivity to a Vivaldi DAC but doesn’t want to spend \$22,000 on a Vivaldi Upsampler. Everything the Rossini can do, the Vivaldi DAC can do with the help of the Bridge.



Although MQA processing for dCS products was still in the testing phase during the review period, the first MQA unfolding is expected for the Network Bridge by the time you read this. Ditto for MQA unfolding and rendering for the Rossini DAC and Player. Unless a major ecological catastrophe hits the UK, the Vivaldi DAC’s v.2.02 software should be upgraded for MQA rendering by the end of 2017, and the Vivaldi Upsampler will handle MQA’s first

unfolding. Expect a Follow-Up assessing dCS’s implementation of MQA.

The Network Bridge app resembles the Rossini DAC app, with settings that accommodate earlier dCS DACs and DACs from other companies. It also has portals for playlists, UPnP, USB, Spotify, and Tidal.

For much of my listening, I plugged into the Network Bridge one of three USB 3.0 sticks loaded with hi-res files, or one of two external hard drives, and controlled playback with the Bridge app. Occasionally I connected a Roon-equipped Intel NUC computer to the Bridge via Ethernet, and used the Roon app for playback. Into the NUC were loaded the contents of the three USB sticks and one of the external HDs. This setup let me compare the features and sound of multiple sources and playback platforms.

Vivaldi v.2.02

dCS claims that the Vivaldi system’s v.2.02 software upgrade brings multiple audible improvements to the DAC’s sound. For one, it enables DSD128 file playback. It also adds a new DSD filter, designated F5, for which, in a press release, dCS claims “better impulse response than [dCS’s] previous DSD filters, with virtually no ringing. High frequency noise has also been better suppressed outside the audio band to be more universally amplifier-friendly, and to present the amplifier with a cleaner signal.”

In addition to new gain settings and new clocking architecture for the DAC, a new system for *mapping* the Ring DAC—*ie*, for determining precisely how the many discrete elements within the DAC core are switched on and off—is claimed to generate lower distortion. According to dCS, it “does an even better job avoiding hardware mismatches that manifest as errors correlated with the music signal, bringing superior linearity, even at low signal levels.” You can choose among three Mappers, two of which are new. Hint: New Mapper 3 sounds a mite warmer, softer, more analog-like; new Mapper 1 offers sharper lines and more color contrast.

Putting it all together

I’m so glad that John Quick and his colleague Brad O’Toole delivered in person the Network Bridge, the Vivaldi DAC running software v.1.20, and the v.2.02 upgrade disc—setup required repositioning equipment and running three BNC cables from the Scarlatti clock to the Network Bridge, Vivaldi DAC, and Paganini transport. There were dual AES and analog output cables to hook up, new settings to choose from, and an app to download and master. As I had only one pair of AES cables for the DAC, I switched them between

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the Bridge and Paganini, as needed.

On the bottom shelf of my four-tiered rack sat most of the power products listed in "Associated Equipment." Both the Nordost QX4 and Isotek EVO3 Sigmas power conditioners were active, because I've found them to be complementary in reducing noise and thus revealing more low-level detail. Ditto for the Synergistic Research Tranquility Bases under the Grand Prix amp stands. To further minimize system noise, I switched on my Roon-enabled NUC only when I used it. Ethernet cables led from NUC to router and from router to Network Bridge.

On the shelves above were the Network Bridge stacked atop the Paganini, the Scarlatti clock sitting on a 1.5"-thick Grand Prix Formula platform, and, on the top shelf, the Vivaldi DAC sitting on another Formula platform. On stands flanking this rack sat a pair of Pass Laboratories XA200.8 monoblocks.

To those tempted to cry foul at my stacking of Bridge atop Paganini transport, or at the absence of any analog source: If this 5' 4.5" Serinus had a single rack tall enough to hold everything, he'd need a stool to reach the top shelf. Nor are two side-by-side multi-shelf racks acceptable—squeezing them and two amp stands between my speakers would make it nearly impossible for me to get to the cables. We do what we must do.

Network Bridge with Vivaldi v.1.20

Minutes after the Network Bridge and Vivaldi DAC v.1.2 were connected via dual-AES, I inserted a USB 3.0 stick in the Bridge. Using the Bridge app, I played a recording of works by J.S. Bach transcribed for the trio of mandolinist Chris Thile, cellist Yo-Yo Ma, and double bassist Edgar Meyer (24/96 WAV, Nonesuch 558933/HDtracks).² Although the equipment was not fully warmed up and the cables hadn't settled in, instrumental textures were far more palpable than before.

Thile's fingering was more cleanly articulated than through the Rossini. I could easily differentiate between the leading edges of plucked or bowed strings and the resonant bodies of their instruments. The cello's timbre was so rich and beautiful that I recalled the sound of my friend Elaine Kreston's cello as she sat beside me during a rehearsal. Bass pitches were perfectly articulated—the cleanest I'd heard from these files—and images were palpably

larger. Because the instruments felt more real, the music's impact deepened.

After everything settled in, I used the Bridge app to play the first movement of Lou Harrison's Concerto for Violin with Percussion Orchestra, with soloist Tim Fain and Angel Gil-Ordóñez conducting the Post-Classical Ensemble (24/48 WAV, Naxos 8.559825/HDtracks).³ The Bridge-Vivaldi combo painted the solo violin and percussion with far more believable body and substance than I'd heard before, at home or at audio shows. Textures of drums, gongs, and chimes were far more realistic and transparent, with copious air around percussion. I was astounded by the percussion's life-like visceral impact.

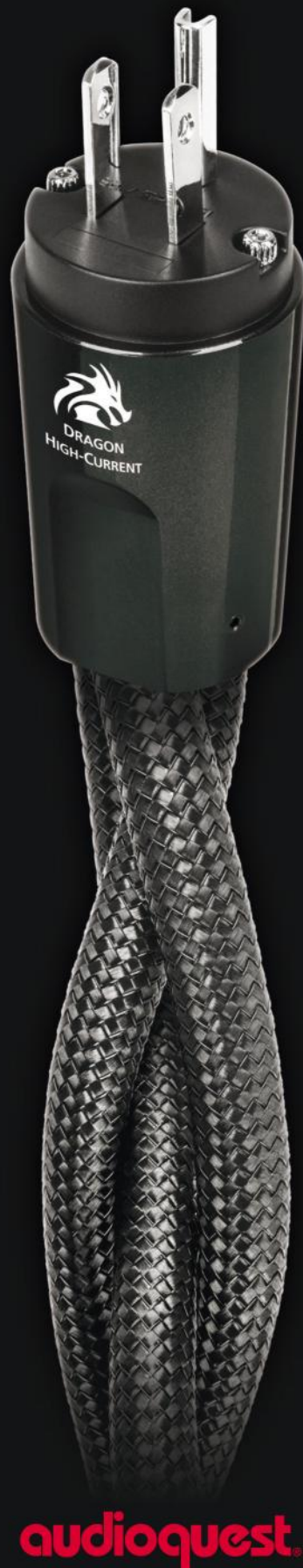
My impressions remained consistent, regardless of source material. "Electrified II," from Yello's *Toy* (24/48 WAV, Polydor 4782160/HDtracks), sounded larger and more all-enveloping. In soprano Elisabeth Schwarzkopf's recording of Richard Strauss's lied "Muttertändelei" with George Szell conducting (24/96 WAV, Warner/HDTracks 509990873182), I could hear the subtlest changes in the quality of her voice as she traversed the scales, as well as tiny splices in the original analog tape. Beyond the added detail, I found myself lost in the beauty of her voice. Moving on to DSD64—the Vivaldi v.1.2 wasn't equipped to handle DSD128—I noted the huge orchestral expanse of Iván Fischer and the Budapest Festival Orchestra's recording of Mahler's Symphony 5 (DSD64, Channel Classics 34213/NativeDSD).

It was only when I switched AES/EBU cables from the Network Bridge to the Paganini transport and began playing discs that I realized: as detailed and lifelike as the sound was, files through the Vivaldi v.1.2 had a bit of dryness that I didn't hear from files played through the Rossini DAC. That I'd never heard this dryness at audio shows confirmed that it's only in my own, ultrafamiliar system, carefully assembled and tuned in my purpose-designed music room, that I can clearly hear such differences.

On a good old-fashioned CD of the early 21st century, the sound of the piano on Murray Perahia's disc of works by Handel and Scarlatti (CD, Sony Classical 62785) was delicious:

² See my review of this recording: www.stereophile.com/content/hi-rez-bach-trios-ma-thile-and-meyer.

³ See my review of this recording: www.stereophile.com/content/music-lou-harrison-centennial.



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Network Bridge with Vivaldi v.2.02

Can great get greater? I asked myself that as I inserted the Vivaldi v.2.02 upgrade disc into the Paganini transport and followed the easy directions.

An hour later, I had my answer. The colors of Antonio Lysy's cello on his *At the Broad: Music from Argentina* (CD, Yarlung YAR27517) were even more vividly saturated than through the Vivaldi v.1.2. I felt as if I'd somehow been moved closer to the instrument, and could hear its full sound before its highs and richness were truncated by distance. I was so impressed by the degree of color saturation that, to fully bask in the sound, I turned the lights out.

Returning to file playback through the Network Bridge, I inserted the USB stick that contained a file of Terry Riley's *In C*, performed by the Ragazze Quartet and Slagwerk den Haag (DSD128, Channel Classics 37816/Native DSD). Selecting the Vivaldi v.2.02's new DSD filter, F5, yielded the best sound from DSD I've ever heard. "The three-dimensionality is sensational," I noted. "The dryness of v.1.2 has been replaced by an iridescent clarity to timbres and textures. The transparency is astounding; every clang and bang sounds real."

By the end of *In C*, my friend Béla, sitting next to me, was ecstatic. "One minute I felt I was inside the music; the next minute, I felt the music was inside me!" he exclaimed. "I could feel it vibrating in all my different organs. My entire body is throbbing."

Béla was describing his response to hearing an ultra-hi-rez recording of game-changing minimalist music whose repetitive patterns came to Riley in the early 1960s as he rode a bus, stoned, to a piano gig at the hungry i, a San Francisco nightclub. No chemical enhancement figured into our listening experience, nor was any necessary; the high comes with any well-executed performance of Riley's masterpiece. That Béla was able to relive Riley's high without knowing the story behind *In C* speaks volumes of the communicative power of the Network Bridge/Vivaldi v.2.02 combo.

For vocal music, I chose baritone

Matthias Goerne and pianist Markus Hinterhäuser's recording of "Meine Rose," from Schumann's song cycle *Myrthen* (24/96WAV, Harmonia Mundi HMM 902243/HDtracks). In addition to more detail in the voice and a fuller, richer, more lifelike piano, Goerne's emotional intent was more palpable than through the excellent Rossini. Goerne's voice seemed a portal to the spirit.

Comparison: Software and Sources

After many more tracks had confirmed that the Vivaldi DAC's v.2.02 upgrade and the Network Bridge delivered the most colorful, believable, involving sound I'd ever heard from my system, it was time to investigate playback options. First, I compared the sound of files from USB sticks played through the Bridge using its app to the sound of the same files loaded into my NUC running Roon and controlled by the Roon app. The NUC fed the Network Bridge via a double run of Ethernet cables: NUC to router to Bridge.

Up first was *Hanover Square North*, from a recent recording of Charles Ives's *Second Orchestral Set*, with Ludovic Morlot conducting the Seattle Symphony Orchestra (24/96 WAV, Seattle Symphony Media SSM1015/HDtracks). Highs were less sharp and more softly delineated with Roon, colors a mite muted, and transparency a bit diminished. Using Roon's Search function, however, was a snap, and accessing cover art and other information inaccessible with the Bridge app were bonuses.

Next I compared two different playback methods for the first movement of Franz Schmidt's *Symphony 2*, in the recording by Semyon Bychkov and the Vienna Philharmonic (24/48 WAV, Sony Classical 88985355522/Primephonic). The first was with an external HD connected, via a Nordost Valhalla 2 USB link, first to the Bridge (Bridge app) and then to the NUC (Roon app). Both sounded beautiful, but the Bridge software again delivered clearer sound, with sharper highs, more saturated colors, and maximal liquidity and transparency. Roon's sound was smoother, with more apparent emphasis of the midrange and bass. This conclusion held even when I changed the Ethernet cables used with the NUC from Wireworld Platinum Starlight to AudioQuest Diamond.

Locating the file using Network Bridge software required time-con-

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suming scrolling through the HD's contents to discover if it was listed under the composer (Schmidt) or the conductor (Bychkov). Had I not previously retitled the parent folder to make identification easy, I'd have been lost. But with Roon, I just typed "Schmidt" into Search, and two choices appeared: my own 24/192 files and Tidal's 16/44.1 stream. Swami Serinus predicts: The more files you've got, the more you'll use Roon.

I then compared sources, USB stick *vs* external HD, for the Network Bridge and Vivaldi v.2.02 by playing soprano Carolyn Sampson's performance of "Sich üben im Lieben," from J.S. Bach's *Wedding Cantata*, BWV 202, with Petra Müllejans conducting the Freiburg Baroque Orchestra (24/96 WAV, Harmonia Mundi 902252/HDtracks). Although a USB stick obviates the need of a USB cable, and would seem the superior source *if* you can remember what's on the stick—a big "if" that frequently found Swami Serinus floundering—Nordost's Valhalla 2 USB link is so excellent that the sources were barely distinguishable.

As to which playback software sounded "better," it remained a case of the Bridge app's ultratransparent liquidity *vs* the Roon app's softer-edged smoothness. Might this have had something to do with the sound of the NUC *vs* a Mac mini or other computer dedicated solely to file playback? I don't know.

Lest you think I ignored DSD, I compared two native DSD64 tracks, from both SACDs and files. Playing the *Trauermarsch* from the Fischer/Budapest recording of Mahler's Symphony 5 (SACD/CD/DSD64, Channel Classics 34213), and Antonio Bertali's Ciaccona for Violin, Keyboard and Chitarone, from violinist Rachel Podger's *Perla Barocca: Early Italian Masterpieces* (SACD/CD/DSD64, Channel Classics 36014), I felt that the SACD brought out contrasting lines in ways the files did not. SACD also delivered greater depth, and perhaps sounded more neutral. While the sources definitely sounded different, calling one "better" than the other will be a matter of personal preference.

Given that this test involved a discontinued transport, it may not seem relevant to audiophiles who don't use a Vivaldi, Paganini, or other SACD/CD transport. If dCS ever releases a Rossini SACD/CD transport, this comparison will be worth repeating.

Network Bridge with Mytek HiFi Manhattan II DAC

In Michael Lavorgna's review of the Network Bridge for our sister publication AudioStream.com, he paired it with his totaldac d1-six D/A processor rather than the far more expensive Vivaldi DAC. Michael concluded that "the Bridge-endowed system and the music it played sounded more refined. More real. . . . [M]usic is presented as if emanating from its source without obstruction. . . . Nuance is reproduced music's life blood and dCS gets it. And the Bridge gets this as fully as any other similar-functioning-device I've heard in my system. . . . [It] brought out the best my totaldac has to offer."⁴

To repeat Michael's experiment with a non-dCS DAC, I turned to Mytek HiFi's Manhattan II. Mytek's Brooklyn (\$2000) and Manhattan II (\$6000) DACs each sport one AES input and two S/PDIF synchronous inputs. These inputs pass along signals of resolutions only up to 24/192, up to DSD64 via DoP, and MQA. By contrast, each DAC's USB 2 Class 2 input permits playback of up to 32/384 PCM, DSD256, and MQA.

After connecting the AES input of the Manhattan II to one of the Network Bridge's AES outputs, into the Bridge went a USB 3.0 stick containing Michael Tilson Thomas and the San Francisco Symphony's download-only release of Berg's Three Pieces for Orchestra (24/192 WAV, SFS Media/HDtracks). This music is ultra-demanding in its full-range instrumentation and dynamics. While not the cheeriest music, it felt fitting for the quasi-apocalyptic destruction Hurricane Irma was then visiting on the Caribbean and Florida.

After evaluating the sound through the Network Bridge, I copied the Berg files to my MacBook Pro's SSD and connected the computer to the Manhattan II using the Nordost Valhalla 2 USB link. Using Audirvana Plus app—it was already installed and set up on that computer, which Roon and the latest Amarra playback software were not—the sound was more muffled, less colorful. The loss of detail was anything but subtle. Despite impressive bass, computer playback paled next to the Network Bridge.

By the time you read this, Mytek will have issued an optional Roon-

⁴ See www.audiostream.com/content/dcs-network-bridge.

Ready Network Card (\$995) for the Manhattan II. Installed, the card enables an Ethernet connection to a home network, NUC, or other home drive, with remote control via tablet or smartphone. The card also offers streaming from Tidal, Spotify, Apple Music, Internet radio, and other services, and a USB port for direct playback of files from a USB stick or external drive.

In other words, the Manhattan II's new Network Card will give it the same functions provided by the Network Bridge, as well as playback of higher-resolution files than the Network Bridge can pass through a single AES cable. What the card doesn't offer are the noise-isolation and other features that make the dCS Network Bridge unique. Evaluating Mytek's Roon-Ready Network Card, and comparing its sound to the Network Bridge feeding music to the Manhattan II, seems worth a Follow-Up.

Conclusions

I've paired so many different components, and explored so many different ways to use the dCS Network Bridge, that I'm probably ready to launch an audiophile edition of match.com. But so painstaking a methodology was necessary to conclusively establish whether the Network Bridge could optimize the sounds of files and streams played through the dCS Vivaldi and other DACs, and present music in the best possible light.

The answer is incontrovertible. The \$4250 dCS Network Bridge and app comprise an invaluable—I'd say indispensable—asset for owners of a Vivaldi and/or older dCS DAC. And even with DACs from companies other than dCS, the Network Bridge delivered sound that was demonstrably

ASSOCIATED EQUIPMENT

Digital Sources dCS Paganini SACD/CD transport & Rosini DAC & Scarlatti clock; Oppo Digital UDP-205 universal BD player; Intel NUC7i7BNH computer with 8GB RAM, 128GB SSD, running Roon; Apple MacBook Pro computer with Intel i7, SSD, 8GB RAM; Apple iPad Pro; external hard drives, USB sticks.

Power Amplifiers Pass Laboratories XA200.8 monoblocks.

Loudspeakers Wilson Audio Specialties Alexia.

Cables Digital: AudioQuest Diamond (FireWire, Ethernet), Nordost Odin 1 & Odin 2 & Valhalla 2 (USB), Wireworld Platinum Starlight (Ethernet). Interconnect, Speaker, AC: Nordost Odin 2.

Accessories Grand Prix Monaco rack & amp stands, 1.5"-thick Formula platforms; Nordost QB8, QX4, QK1, QV2 AC power accessories; Isotek EVO3 Sigmas power conditioner; AudioQuest NRG Edison outlets; Stein Music Signature Harmonizers, Blue Suns/Diamonds, Speaker Matches, Super Naturals, crystal Quantum Organizer; Synergistic Research Tranquility Base UEFs, Transporter, PowerCell; Bybee Room Neutralizers; Absolare Stabilians; Resolution Acoustics room treatments; Stillpoints Aperature panels. Listening room: 20' L by 16' W by 9' H.

—Jason Victor Serinus

superior to conventional computer-audio playback via USB. As with dCS's major upgrade of the Vivaldi DAC's software to v.2.02: Class A all the way. ■

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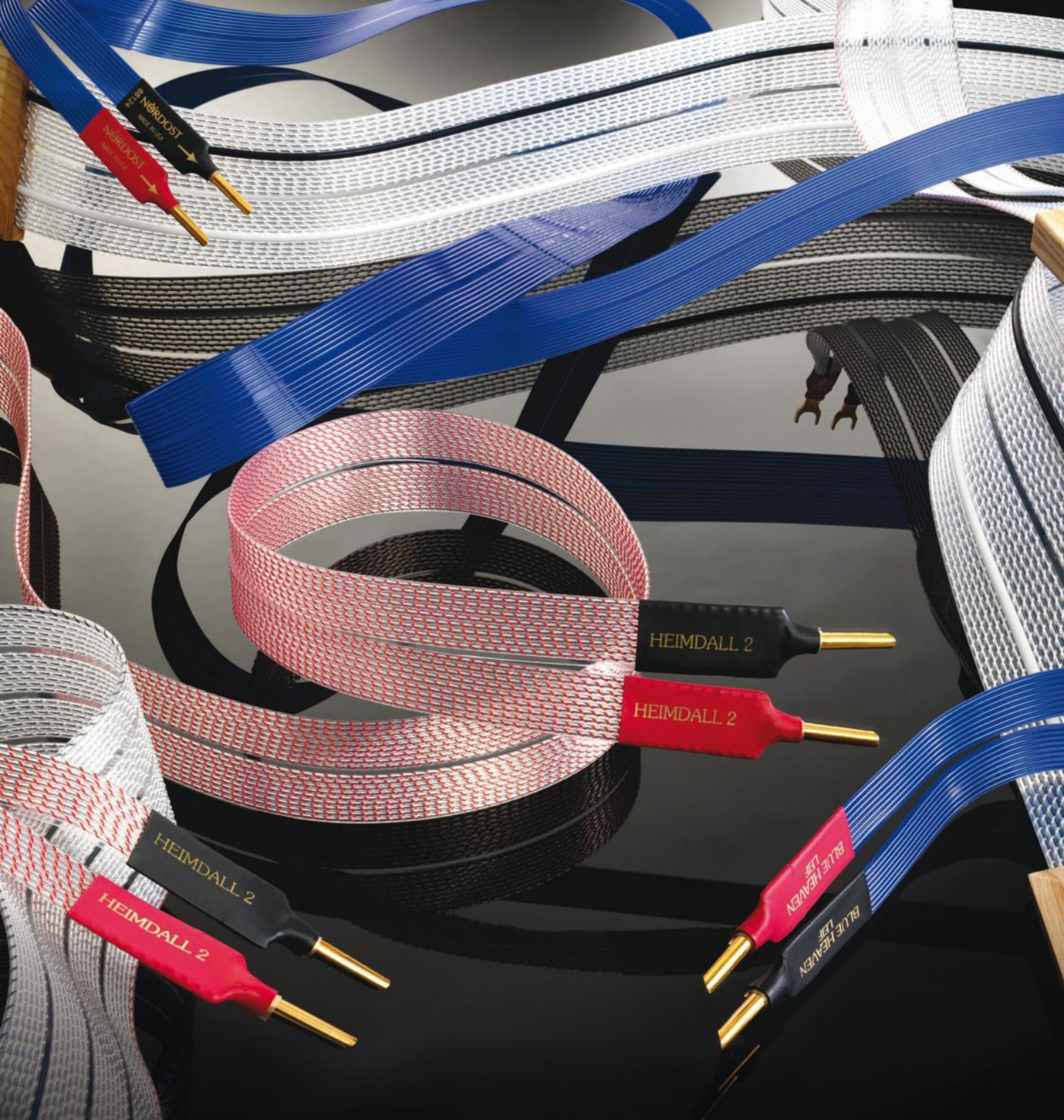


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LARRY GREENHILL

SVS SB16-Ultra

POWERED SUBWOOFER

This review began when I ran into Gary Yacoubian, president of SVS, in a crowded hallway at Las Vegas's Venetian Hotel, during the 2016 Consumer Electronics Show. He smiled and introduced himself. "Larry, I enjoyed your review of our SB13-Ultra.¹ If you liked that subwoofer, we have something coming soon that should really interest you. I can't say anything more now."

He'd gotten my attention. But it wasn't until the next year's CES that I learned about SVS's newest and largest subwoofer, the SB16-Ultra, which deploys a 16" driver and a radically different magnet structure, voice-coil design, and control interface. On paper, its greater power and bass extension seemed a good match for the demands of my large listening room. I requested a review sample.

What it is

Yacoubian's infomercial on YouTube² about the SB16-Ultra (\$1999.99) lists the three design features that enabled SVS to build a subwoofer with so large a cone and still meet the design goals of extended, low-distortion bass output and fast transient response: an 8" edge-wound voice-coil in a new motor, a 1500W RMS (>5kW peak) Sledge amplifier with fully discrete MOSFET output (each output device is rated at 200V and 64A), and control and bass management via a smartphone app.

Yacoubian claims that the SB16-Ultra's 8" voice-coil is the largest used to date in a consumer subwoofer. Most large subs have voice-coils 2" to 4" in diameter that sit inside the



permanent magnets; the SB16's 8" coil sits *outside* the magnets. SVS found so large a coil necessary in order to: avoid the cone flexing and the resultant boomy bass produced in and by subwoofers that have cones 15" to 18" in diameter but voice-coils of only 2" to 4"; maintain linear control over so large a cone; better dissipate heat, which lessens

1 See my review of the SVS SB13-Ultra in the January 2015 issue: www.stereophile.com/content/sv-sound-sb13-ultra-powered-subwoofer.

2 See www.youtube.com/watch?v=YqqqsXRtCs8.

SPECIFICATIONS

Description Front-firing, sealed, powered subwoofer. Drive-unit: 16" cone with 8" edge-wound voice-coil and four toroidal ferrite magnets. Inputs: balanced (XLR) and unbalanced (RCA) for two channels (right-channel input designated for LFE input), 3-12V trigger. Outputs: balanced (XLR) for each channel to additional subwoofer. Rear-panel connections: Power switch, IEC connector for detachable power cord.

Low-pass filter: 30-200Hz (continuously variable); 6, 12, 18, or 24dB/octave slopes. Parametric equalizer: 3 bands. Boost: -12dB to -6dB (0.1dB steps). Q factor: 0.2-10.0 (0.1 steps). Room-gain compensation: frequency, 25, 31, 40Hz; slope, 6dB or 12dB/octave. Amplifier: 1500W RMS, 5160W peak. Input voltage sensitivity: N/A. Input impedance: 22k ohms, balanced (XLR), unbalanced (RCA). Frequency response:

16-460Hz, ± 3 dB. Accessories: power cord, IR remote control, steel-mesh grille, screw-in rubber feet, quick-start guide, owner's manual. **Dimensions** 20" (510mm) H by 19.5" (495mm) W by 22.9" (580mm) D (with grille). Weight: 122 lbs (55.3kg) net, 145.9 lbs (66.2kg) shipping. **Finishes** Black Oak, Piano Gloss Black. **Serial number of unit reviewed** SB16U10161037.

Price \$1999.99. Approximate number of dealers: 200 retail, 10 on-line, 150 custom installers, factory direct. Warranty: 5 years, unconditional, fully transferrable; 45-day in-home trial period, no questions asked; lifetime customer & technical support. **Manufacturer** SVS Inc., 260 Victoria Road, Youngstown, OH 44515. Tel: (877) 626-5623. Fax: (703) 845-8183. Web: www.svsound.com.

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thermal compression and so increases a sub's power handling; provide better centering of the voice-coil, with less tilting during large excursions; and to use the permanent magnets most efficiently. The SB16-Ultra's voice-coil is wound with copper-clad aluminum wire (CCAW); CCAW has a number of advantages: it's lighter than pure copper, for lower moving mass; it's stronger than pure aluminum; has higher electrical conductivity; and is more easily soldered, for more durable and reliable connections.

The SB16-Ultra's voice-coil and four large, toroidal magnets are housed in the motor structure that drives the 16" cone, which has a "premium glass fiber laminated dustcap and reinforced composite cone sub-structure [to] ensure a light, rigid, and neutral radiating surface." The cone is held by a deep basket of die-cast aluminum; the motor alone weighs 56.2 lbs, the entire drive-unit 63.9 lbs.

The SB16's Sledge STA-1500D class-D amplifier is specified to output 1500W RMS, or 5160W peak dynamic. Featuring 64A, 200V MOSFET output devices and a switch-mode power supply, the Sledge delivers significantly more current than the 1000W class-D amplifier used in SVS's SB13-Ultra. The Autostart and Green standby modes can be used to switch the amp on quickly when a signal appears at the input terminals. The equalization and all app settings, including the parametric equalizer, are managed with a 50MHz Analog Devices DSP chip with 56-bit filtering.

SVS's smartphone app, available free from iTunes and



The SVS SB16-Ultra's class-D amplifier.

includes a three-band parametric equalizer that controls the strength and width of the filter (the filter's "Q") over a range of 20–200Hz. Settings can be stored in three presets.

The SB16-Ultra's rear panel is uncluttered—most of the controls are included in the user-friendly app. On the rear panel are only the unbalanced (RCA) and balanced (XLR) inputs and outputs, a trigger input, a Power switch, and an IEC inlet for the detachable power cord. The tilted front-panel LCD display, four directional controls, and tiny IR remote can also be used to set up and control the sub. Because the display uses a larger font than other subs I've reviewed, I could more easily read it from my listening seat.

Setup and use

When the SB16-Ultra arrived, I was impressed by its solidity, mass, and size. At 20" high by 19.5" wide by 22.9" deep and 122 lbs, it's 2.6" taller, 2.1" wider, 5.5" deeper, and 30 lbs heavier than the SB13-Ultra, and costs \$400 more. SVS's packaging is smart: The SB16 can be slid out of its carton on

MEASUREMENTS

I took these measurements while setting up the SVS SB16-Ultra, to optimize its match with my Quad speakers by adjusting the sub's position. Although I used the Fast Fourier Transform (FFT) module of Studio Six Digital's AudioTools, my measurements should not be compared with the in-room responses taken by John Atkinson that accompany all loudspeaker reviews published in *Stereophile*. Mine were taken in a room very different from his, and JA uses a better microphone, and bases his averaged results on more data points.

I took my measurements with Studio Six Digital's iTestMic,¹ a professional-grade test and measurement microphone for the iPhone 4 and iPad. The mike's connector required an Apple Lightning adapter to plug into my iPhone 6. That done, the mike was auto-calibrated by Studio Six's AudioTools app, v.10.5.6, which stores the

microphone's output, then analyzes and plots the results. I drove the SB16-Ultra with a digital file of uncorrelated pink noise supplied by Kevin Voecks, of Revel Speakers.

I took eight measurements at slightly different points around the ear-level position at the back of my listening room chair, and averaged them. I set AudioTools to an 8kHz, 16-bit reading, 1/6-octave, with a 1-second graph decay. The FFT resolution was set to 0.5Hz. I took readings for the low-frequency range of AudioTools (5Hz–2kHz). The SPL readout was C-weighted.

I measured the Quad ESL-989s run full-range, with no external crossover filter (fig.2). Note that the in-room frequency response peaks at 80Hz, begins to fall off

¹ Studio Six Digital's AudioTools, v.10.6.6, is available for download at the Apple App Store for \$19.99. The company's iTestMic2 costs \$199.99 and can be ordered at <http://studiosixdigital.com/audio-hardware/itestmic2>.



Fig.1 SVS's SB16-Ultra iPhone control app.

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its packing skids, rather than having to lift it out from the top. After unboxing the sub, I slipped my own Super Sliders under it to protect my hardwood floors, then realized I couldn't move this sub without them.

My listening room is large—about 25' long by 13' wide, with a semi-cathedral ceiling 12' at its highest—and opens onto a hallway and into the kitchen; the total volume exceeds 5000 cubic feet. On their own, my Quad ESL-989 speakers sound best when they're 8' from my listening seat, 57" from the front wall, and the centers of their front panels are 8' apart and toed in toward me.

Optimally positioning a subwoofer in my room is critical for attaining smooth integration of its output with the Quads' output. I first installed the SB16-Ultra next to the right-channel ESL-989, lining up the subwoofer's driver with the speaker's front panel. I played a brief musical selection and found the sound disjointed—I could easily hear differences in character between sub and satellite speaker. Moving the SB16-Ultra into the room's right front corner, where subwoofers usually go, raised the bass impact and greatly improved the subwoofer's blend with the Quads. This put the sub's cone 10' 8" from my listening chair and 2.5' behind the right Quad's front panel.

SVS's four-page quick-start guide made the rest of the setup process easy. I plugged the SB16's power cord into my Torus Power RM 20 power conditioner. As in many of today's freestanding subwoofers, no high-pass filter is built into the SB16-Ultra to limit the deep-bass signals sent to the main speakers, so I used my Mark Levinson No.526 pre-amplifier's 80Hz high-pass filter to drive the Quads. When I used my Bryston BP-26 preamp, I also used the high-pass outputs of a JL Audio CR-1 outboard electronic crossover for the Quads. I used balanced interconnects for all connec-

tions, and never used SB16's heavy metal grille.

I then downloaded SVS's free app from iTunes to my iPhone 6. Making sure that Bluetooth functions were enabled on the iPhone, I tapped the app. It opened, immediately found the SB16, and paired with it. From my listening seat, I set the sub's low-pass filter to 80Hz, 24dB/octave, and the volume control to -19dB. I then matched the outputs of the sub and the Quad ESL-989s at the crossover frequency, 80Hz. Then, playing a digital track of uncorrelated pink noise, I adjusted the preamplifier's volume until the Quads delivered 75dB at my listening chair, per the SPL meter of Studio Six Digital's AudioTools app. Then I turned off my Mark Levinson No.536 monoblocks, turned on the SB16-Ultra, played the pink-noise track again, and adjusted the sub's volume until it, too, delivered 75dB at my listening seat. Then, with Quads and subs both playing, I confirmed that the SPLs of the pink noise above and below the crossover frequency were equal.

Sound

My first impression of the sound of the SB16-Ultra was tremendous bass solidity and weight, with no muddying of the clarity and transparency of the highs. But there was more improvement to be gained.

As I listened, I found that the soundstage was shallower, and voices had more bass emphasis, than with the Quads run full-range by themselves. In the *Kyrie* of Ariel Ramirez's *Misa Criolla*, conducted by José Luis Occio (CD, Philips 420 955-2), José Carreras's soft, lyric tenor was now too full and rich, and the separation of his voice from the chorus disappeared. The conga drum that begins "Hotel California," from the Eagles' *Hell Freezes Over* (CD, Geffen GEFD-24725), was blurred, bloated, and less solid. The final pedal

measurements, continued

at 55Hz, and is down 20dB by 31Hz. There are room-related peaks at 40 and 200Hz. I then added the JL Audio CR-1 external electronic crossover, with its high-pass filter set to 63Hz, 12dB/octave and its low-pass filter set to 43Hz, 24dB/octave. The SB16-Ultra's internal parametric equalizer was used to linearize the response at 43 and 160Hz. The FFT analysis plotted the Quad ESL-989s' room response with

the high-pass filter, measured with the sub turned off (fig.3, green line); the SB16-Ultra alone with the low-pass filter (orange); and the Quads and SVS combined (light blue). The Quads plus SVS sub showed a room frequency response of ± 3 dB, 20Hz-1kHz. A dip in frequency response at 38Hz was somewhat smoothed by pulling the subwoofer out from the corner a few inches into the room, just behind the

right ESL-989.

The use of an extended FFT measurement down to 5Hz revealed a sound (blue line in both figs. 2 and 3) outside my awareness. It was 12dB below the Quad's room response at 31Hz, and peaked at 14Hz. I suspect that this was produced by the radon-mitigation exhaust system in the basement of our house, under the listening room.

—Larry Greenhill

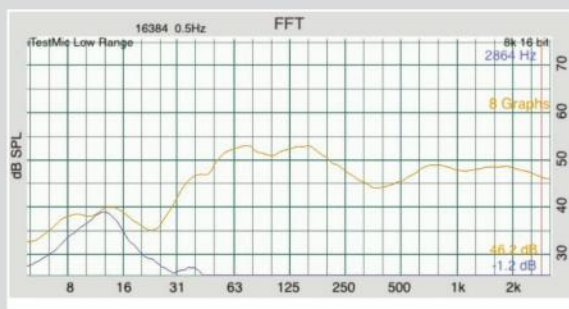


Fig.2 Quad ESL-989, room response around ear level at listening chair at 96", averaged across 24" horizontal window (orange trace).

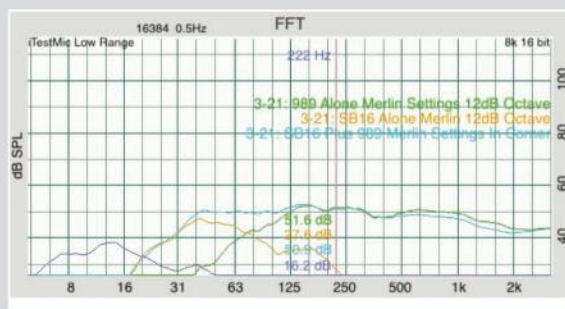


Fig.3 Spatially averaged room responses at 96" of: Quad ESL-989 alone (green), SVS SB16-Ultra alone (orange), and both together (light blue), all with the electronic crossover's high- and low-pass filters on.

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note in organist James Busby's performance of Herbert Howells's *Master Tallis's Testament*, from the compilation *Pipes Rhode Island* (CD, Riago 101), failed to pressurize my room.

SVS's Merlin—a portion of the company's website that offers loudspeaker-specific recommendations on SVS subwoofers and settings—recommends low-pass filter settings of 60Hz (high-pass) and 40Hz, 12dB/octave (low-pass). Because the CR-1 couldn't use different slopes for high- and low-pass filters, I set its high-pass filter at 60Hz, 24dB/octave for the Quad ESL-989s, and the SB16-Ultra's internal low-pass filter to 40Hz, 12dB/octave. I then used the SVS app's parametric equalizer to reduce peak room modes at 43 and 160Hz, and played the same recordings as before. The integration of the sub's and Quads' outputs now seemed seamless, and the soundstage was markedly deeper.

I checked the lowest-frequency bands of the half-step-spaced chromatic scale on *Editor's Choice* (CD, Stereophile STPH016-2). These sounded sharply defined, as did the 40, 31, and 25Hz $\frac{1}{3}$ -octave warble tones on that CD. The 20Hz band was not audible as such, though the track pressurized the room.

Other recordings confirmed this setup. Keith Jarrett's light, lyrical "True Blues," from his *The Carnegie Hall Concert* (CD, ECM 1989/90), revealed no discontinuities between subs and main speakers when he stamped his feet on the floor while playing high in the right hand. Using the JL Audio CR-1 crossover's bypass switch, it was easy to switch between the Quads run full-range alone and the combination of Quads and SVS. Either way, the soundstage depth remained unchanged, the highs were fully transparent, and there was no hardening of the sound.

I discovered the advantages of adjusting the subwoofer volume to optimize the sound of each recording. Reducing the SB16-Ultra's output removed a slight droning quality in the final organ-pedal note of *Master Tallis's Testament* without lessening the bass extension or the note's ability to pressurize my room. As I increased the sub's output while playing John Rutter's "Lord, Make Me an Instrument of Thy Peace," with the Turtle Creek Chorale and Dallas Women's Chorus conducted by Timothy Seelig (CD, Reference RR-57CD), the pipe organ's deep pedal notes became more distinct, and the differences between the ranks of choristers were enhanced. Playing Don Dorsey's "Ascent," from Erich Kunzel and the Cincinnati Pops' *Time Warp* collection (CD, Telarc CD-80106), the SB16's imaging let me better distinguish the positions of the synth beats that move from side to side. The dynamic ranged from soft murmurs to a thunderous rumble as the synths blend into the sustained 31.7Hz organ-pedal note that begins the next track, the introduction of Richard Strauss's *Also sprach Zarathustra*. Similarly, the 32' pipes in *Gnomus*, from Jean Guillou's recording of his own transcription for pipe organ of Mussorgsky's *Pictures at an Exhibition* (CD, Dorian DOR-90117), pressurized my room while delivering full, thunderous chords. When I played a digital file (AIFF, 24-bit/88.2kHz) of the *Toccata* of Widor's Organ Symphony 6, performed by Jonas Nordwall and recorded by John Atkinson, an unusual sense of the recorded space occurred as the sub reproduced the deepest pedal notes with mass and solidity. It was clear that a single SB16-Ultra could produce more than enough bass extension and slam in my large listening room.

The Quads and SVS sub rendered clean, solid, full bass reproduction of the sounds of many different instruments—kick drum, bass drum, timpani, and synthesizer. For a review

ASSOCIATED EQUIPMENT

Analog Sources Linn Sondek LP12 turntable & Lingo power supply & Ittok tonearm; Spectral cartridge; Day-Sequerra 25th Anniversary FM Reference tuner.

Digital Sources Bryston BCD-1 CD player & BDA-3 DAC & BDP-2 media player with IAD soundboard; Oppo Digital BPD-103 universal BD player; Lenovo P50 computer running Windows 10 Pro (64-bit), Bryston USB driver, JRiver Media Center 22.

Preamplifiers Bryston BP-26, Mark Levinson ML-7 & No.526.

Power Amplifiers Mark Levinson ML-2 & No.536 (both monoblocks) & No.334.

Loudspeakers Quad ESL-989, Revel Ultima Salon2; Revel Ultima Rhythm2 subwoofer.

Cables Digital: Wireworld Starlight (coax). Interconnect: Mark Levinson Silver, Red Rose Silver One, Totem Acoustic Sinew (single-ended); Bryston, Pure Silver (balanced). Speaker: Coincident Speaker Technology CST 1, Pure Silver R50 double ribbon (biwire), QED X-Tube 400, Ultralink Excelsior 6N OFHC. AC: manufacturers' own.

Accessories JL Audio CR-1 electronic crossover; Torus Power TOT AVR & RM 20 power conditioners; Apple iPad & iPhone 6 running Studio Six AudioTools & iTestMic.

Listening Room 26' L by 13' W by 12' H (388 ft², 4056 ft³) with semi-cathedral ceiling, sparsely furnished with sound-absorbing furniture. Left wall has large bay window covered by Hunter Douglas Duette Honeycomb fabric shades. Opens at rear through 8' by 4' doorway into 25' by 15' kitchen. —Larry Greenhill

I wrote for the October 1989 issue, I listened to Velodyne's ULD-18 subwoofer³ with a recording of John Williams's *Liberty Fanfare*, from Lowell Graham and the National Symphonic Winds' *Winds of War and Peace* (CD, Wilson Audio-ophile WCD-8823). The downfiring Velodyne remained silent for the first 55 seconds of this track, then burst into life with the bass drum's first notes. The bass-drum whack had no unnecessary overtones, no overhang, and disturbed no midrange or treble sounds. The SB16-Ultra delivered the same dense, solid punch with no added sustain, but revealed more of the bass drum's timbre.

Comparisons

I compared the SB16-Ultra (\$1999.99) with three other subwoofers: SVS's own SB13-Ultra (\$1599.99), Revel's Ultima Rhythm2 (\$10,000, discontinued), and JL Audio's Fathom f212v2 (\$7000). I used the same Quad ESL-989 speakers, and the JL Audio CR-1 crossover when appropriate.

I began with SVS's SB13-Ultra, which I reviewed in January 2015, and used the CR-1 crossover, as I had with the SB16-Ultra. Both SVS subs excelled at pitch definition, speed of bass, and the ability to suddenly halt the bass output when needed. The SB16's smartphone app made setting it up easier, and the sub delivered greater solidity, mass, and power, and did a better job of pressurizing the room with sustained pipe-organ pedal notes.

I reviewed the Revel Ultima Rhythm2 in February 2015,⁴

3 See www.stereophile.com/subwoofers/velodyne_uld-18_amp_uld-15_subwoofers/index.html.

4 See www.stereophile.com/content/revel-ultima-rhythm2-powered-subwoofer.

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and I didn't need to use the CR-1 with it because the Revel has its own high-pass filter. At five times the SB16-Ultra's price, the Rhythm2 has a number of features the SVS lacks: a 2"-larger woofer cone, an internal system for blending the responses of the subs and satellites, and a parametric equalizer with seven more bands. However, the Rhythm2 wasn't controllable with an iPhone app via Bluetooth. As with the SB16, setup and calibration can be carried out from the listening seat, but the Revel must be connected to a computer via a USB link, and you can't make changes on the fly as easily as with the SB16.

What most impressed me about the Rhythm2's sound was its bass power, ability to pressurize the room, the quality and speed of bass, and pitch definition, each of which was somewhat superior to the SB16-Ultra's. Yet both subs were well able to fill my large room with deep bass and slam, and pressurize it during long-held bass notes. The Revel Rhythm2's internal crossover did a better job of smoothing the integration of the satellites' and sub's outputs, perhaps due to its ability to match the sub and the satellite speakers to a pre-determined room-response curve. But, again, the Revel costs five times the SVS's price.

Turning to JL Audio's Fathom f212v2 (\$7000), which I reviewed in the November 2016 issue,⁵ I found similarities in its heavy cabinet and front-panel controls. Its two 12" drivers offer more driver area than the SB16-Ultra's single 16" cone. However, it costs three-and-a-half times as much and weighs 100 lbs more. For its higher price, the Fathom f212v2 offers more: auto-optimization to smooth room modes, a calibration microphone, white gloves, and a built-in test-tone generator. The SB16 came close to matching

the f212v2's deep-bass extension, solidity of bass, and ability to pressurize my room with sustained pipe-organ chords. Two Fathom f212v2s (\$14,000) and JLA's CR-1 electronic crossover (\$3000) let my Quads deliver a much wider, more three-dimensional soundstage and deeper bass in my large room than could a single SB16-Ultra—but at more than eight times the cost. And, as with all of the other comparison subwoofers, the JL Audio's level couldn't be adjusted on the fly from my listening seat.

Conclusions

Once I'd identified its optimal placement and crossover settings and experienced on-the-fly subwoofer control, I became convinced that the SVS SB16-Ultra is one of the finest, fastest, best-controlled, most powerful subwoofers I have reviewed in my large listening room. Like the SB13-Ultra, it delivered pitch-perfect, detailed, fast bass, but with greater deep-bass extension, and enough power to function within my large listening room. It doesn't offer auto-equalization, doesn't come with a free calibration microphone or white gloves, it has no internal high-pass filter, and it's heavy for its size, requiring Super Sliders under it for easy movement. But it's the first subwoofer to come with its own Bluetooth smartphone control app. And its on-the-fly control of output level from the listening seat has opened for me a new door that goes way past the awkwardness of having to set up a sub by darting back and forth between its front and/or rear panels and my chair. A Class A component if ever there was one. ■

5 See www.stereophile.com/content/jl-audio-fathom-f212v2-powered-subwoofer-cr-1-crossover.



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JOHN ATKINSON

Audeze LCDi4

IN-EAR HEADPHONES

Headphone listening has always been an important part of my audiophile life. In recent years I've been using at home Audeze's large, open-back, circumaural LCD-X headphones, which I bought after reviewing them for the March 2014 issue;¹ and a pair of small Ultimate Ears 18 Pro in-ear monitors,² which provide much better isolation on my subway commute to *Stereophile's* offices in Manhattan. I was intrigued by Audeze's iSine in-ear models, which were introduced in November 2016 and are unique in using planar-magnetic drive-units mounted outside the ear.³ I thought about reviewing a pair of the affordable iSines, but before I could get around to it, I heard that Audeze was to launch a cost-no-object version, the LCDi4, priced at a substantial \$2495/pair. Aspiration got the better of frugality, and I asked for a pair to review.

Technology

The LCDi4s superficially resemble the iSines in having a fair-sized, roughly hexagonal, shallow housing, in this case made of magnesium, enclosing a flat, magnetically driven diaphragm. This is coupled to the user's ear canal with a tapered tube, over which is fitted a rubber tip to provide the necessary seal. The LCDi4s are supplied with a variety of different-sized eartips, along with vestigial clips that fit over and behind the pinnae to secure the fit. Unlike the iSines, which have a DAC chip in the cable and are intended to be connected to an iPhone's Lightning connector, the LCDi4s come with a braided 1.2m cable made of silver-plated OCC copper with Kevlar threads and fitted with a conventional 3.5mm stereo plug. Both the earpieces and the cable connectors are marked



With their lack of edge or brightness, the Audeze LCDi4s excelled with electric guitar.

L and R, so there is no confusion connecting them.

The 30mm drive-unit is derived from that used in Audeze's LCD-4 circumaural headphone, and uses a plastic film just 0.5µm thick. A special-

ized vacuum-deposition process slowly builds a malleable metal layer on the film to act as the voice-coil. This Nano-scale Uniforce diaphragm is energized by Audeze's Fluxor array of neodymium magnets. The LCDi4s are assembled

1 See www.stereophile.com/content/audeze-lcd-x-headphones.

2 See www.stereophile.com/content/ultimate-ears-18-pro-ear-headphones.

3 See www.stereophile.com/content/audeze-sensory-experience.

SPECIFICATIONS

Description In-ear, universal-fit headphones with semi-open, 30mm-diameter, planar-magnetic transducers. Frequency range: 5Hz-50kHz. Impedance: 35 ohms, ±10%. Sensitivity: 105dB/1mW. THD: <0.2%, full spectrum

at 100dB. Maximum power handling: 3W. Maximum SPL: >120dB. Supplied accessories: 1.2m OCC silver-plated braided cable fitted with 3.5mm stereo plug and 2-pin earpiece connectors, single-ended 3.5mm-to-1/4" TRS adapter, soft rubber

eartips in various sizes, ear clips in various sizes, travel case.

Dimensions Cable: 47" (1.2m) L. Weight: 12gm per side.

Serial number of unit reviewed i4000169.

Price \$2495. Approximate

number of dealers: 12, and sold direct. Warranty: 3 years, LCD planar drivers; 1 year, cables.

Manufacturer Audeze LLC, 3412 S. Susan Street, Santa Ana, CA 92704. Tel: (714) 581-8010. Web: www.audeze.com.

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in Audeze's factory in Orange County, California, and in the first part of a video shot by our editorial coordinator and videographer Jana Dagdagan and posted to our website,⁴ you can watch how the headphones are made, followed by the testing, burn-in, and packaging. (The narration is by Sankar Thiagasamudram, Audeze's founder and CEO.) In the second part of the video you can watch me unbox the LCDi4s in the *Stereophile* office and give them a first listen.

The LCDi4s come packed in a classy leather and plastic box, with a leather travel case, the cable, a 3.5mm-to-1/4" adapter, a USB stick with the user guides for Audeze's LCD and iSine models (but, peculiarly, not the LCDi4), a certificate of ownership, and a variety of rubber ear tips and clips. Because my ear canals are larger in diameter than average, I needed to use the largest rubber tips to get a good seal.

Listening

I started my auditioning of the LCDi4s in the magazine's office with the Pass Laboratories HPA-1 amplifier (our "Headphone Product of 2017"; see elsewhere in this issue), and with my 160GB iPod set to Shuffle. With Robert Silverman's performance of Liszt's Piano Sonata in b (16-bit/44.1kHz AIFF ripped from CD, Stereophile STPH008-2), the combination of low-frequency clarity and bass extension was unexpected for in-ear headphones. The Liszt was followed by "Flamenco Sketches," from Miles Davis's *Kind of Blue* (16/44.1 ALAC ripped from CD, Columbia Mastersound CK 52801), which begins with that familiar falling-fifth motif on Paul Chambers's double bass; the differences in character between John Coltrane's tenor sax and Cannonball Adderley's alto were delineated with superb clarity. Similarly, such details as the sudden "splash" of the spring-reverb unit in the middle of "Dream Brother," from Jeff Buckley's posthumous *Mystery White Boy: Live '95-'96* (16/44.1 ALAC ripped from CD, Columbia 4982652), sounded palpably correct. (Back in the 1970s, I built a reverb unit using a Hammond organ spring unit I found in a dumpster outside a studio, and am well familiar with the "splash" you got when you accidentally knocked it.)

The iPod's Shuffle mode followed Buckley with pianist Angela Hewitt performing the Prelude in e-flat from J.S. Bach's *Well-Tempered Clavier, Book 1* (16/44.1 ALAC from CD, Hyperion CDA66714/4). Hewitt's appropriately delicate playing was reproduced by the Audeze 'phones with space between the notes. The same thing was true with "The Horses," from Rickie Lee Jones's *Flying Cowboys* (16/44.1 ALAC file, Geffen), a recording of deliciously wide dynamic range produced by the late Walter Becker, of Steely Dan.

It was time to finish listening for pleasure and leave the office. Listening to the Audeze LCDi4s on the subway with my PonoPlayer proved fruitless: though they played acceptably loud with the iPhone, the headphones offer almost no isolation from external sounds. But when I got home, I plugged the LCDi4s into the 3.5mm output jack of Ayre Acoustics' QX-5 Twenty D/A processor, fed it S/PDIF data from NAD's M50.2 server (also reviewed in this issue), and settled down to some critical listening.

The 1/3-octave warble tones on *Editor's Choice* (ALAC files ripped from CD, Stereophile STPH016-2) were audible at full level down to 32Hz, and the 25 and 20Hz tones were just audible if I raised the volume. With the half-step toneburst track on *Editor's Choice* the Audezes spoke cleanly and evenly in the bass, though there was a slight reduction in energy in the 2–4kHz octave. Driving the LCDi4s with Faber Acoustical's SignalSuite app on my iPhone, I heard no distortion in the low bass. This is a difficult test to pass for conventional in-ear headphones that use armatures, though the Ultimate Ears and JH models use multiple armatures at low frequencies to improve linearity. At the other end of the audioband, the Audeze 'phones produced audible output up to my current HF cutoff of 14kHz.

Enough test tones—time for some music. Well, not *music*. I'd recently been archiving old cassette tapes to digital, and had come across the BBC's 1981 binaural production of Oliver Goldsmith's play *She Stoops to Conquer*, featuring a young Judi Dench as Miss Hardcastle. The beauty of a good binaural recording is that it places all the acoustic objects outside the head, rather than stringing them on a

line between your ears. With the LCDi4s, voices and the instruments playing the incidental music were positioned well to the left and right of me, but voices at the center of the stage remained inside my head instead of being projected forward. This was primarily due to the fact that the transfer function of my outer ears doesn't match that of the dummy head that was used to make the recording. But when Tony Lumpkin (Wayne Sleep) makes his first entry by slamming open a door at far stage right/audience left and running to center stage, I looked around to see what the disturbance in my room was, such was the sense of binaural realism with the Ayre-driven Audezes.

Okay, *now* it was time for music. With the David Haseltine Trio's treatment of Bach's "Jesu, Joy of

MEASUREMENTS

I didn't measure the Audezes' frequency response, as I don't have the necessary simulated head and torso, and estimating the optimal response of headphones is far from simple.¹ However, I used my

Audio Precision System One to measure the Audeze LCDi4s' impedance and electrical phase. The solid trace in fig.1 shows the impedance magnitude with the headphones inserted in my ears. The impedance is a constant 26.7 ohms across the audioband, and the phase angle is 0° up to 10kHz, suggesting that the planar-magnetic drive-unit behaves as a pure resistor up to 10kHz, with the slightly positive angle above 10kHz due to its residual inductance.

—John Atkinson

1 See Sean Olive, Todd Welti, and Elisabeth McMullan, "Listener Preferences for Different Headphone Target Response Curves," presented at the May 2013 AES Convention; downloadable from www.aes.org/e-lib/browse.cfm?elib=16768. See also my colleague Tyll Hertsens's recent thoughts on this subject at www.innerfidelity.com/content/compensation-curve-innerfidelity-measurements-dialog-part-1.

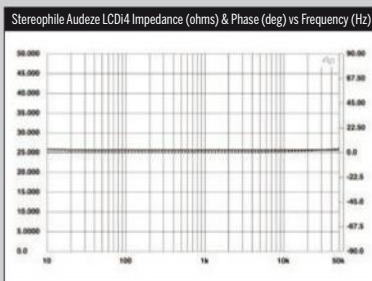


Fig.1 Audeze LCDi4, electrical impedance (solid) and phase (dashed) when inserted in JA's ears (5 ohms/vertical div.).

4 See www.stereophile.com/content/audeze-lcdi4-start-finish.



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Man's Desiring," from *Dr. Chesky's Ultimate Headphone Demonstration Disc* (24/44.1k ALAC, Chesky/HDtracks), this binaural recording through the Audeze LCDi4s relocated me from my listening room to the recording venue, with the piano to the left of me, the drums to the right, and the double bass slightly in front of my nose. But as I'd pre-ordered Stevie Winwood's *Greatest Hits Live* (2 CDs, Wincrest/Thirty Tigers WM002; see David Sokol's review elsewhere in this issue) and it arrived the day I unpacked the Audezes, I paused Dr. Chesky and, not waiting to rip the CD to the NAD's storage, loaded it into my Ayre C-5xe^{MP} player and fed AES/EBU data to the DAC. Ahh . . . while I would have much preferred there to have been a bass player in the band rather than Winwood using his Hammond for the bass lines, the sound of this album is generally excellent ("While You Take a Chance" being an unfortunate exception). Through the LCDi4s, Winwood's voice sounded as naturally soulful as I remember it from first hearing him sing in the 1960s, the organ's bass pedals had a satisfying combination of weight and extension, and the cymbals had plenty of top-octave air.

With their lack of edge or brightness, the Audeze LCDi4s excelled with electric guitar. José Neto's electric guitar on the Winwood album sounded clean when necessary and overdriven when musically appropriate, as in his solo in "The Low Spark of High Heeled Boys." And if I'm mentioning recordings of electric guitar, I must play something by that master of the instrument, Bill Frisell. Listening to "That Was Then," from *Live in Tokyo, Japan: July 21, 2000* (16/44.1 FLAC, Bill Frisell Downloads), again I was struck by how the LCDi4s' lack of mid-treble aggression allowed me to appreciate both Frisell's artistry and his artful use of effects. Perhaps some might feel that the Audeze 'phones were taking away some of the instrument's attack, but I didn't feel musically shortchanged.

Comparisons

It's difficult to match levels precisely by ear with in-ear headphones, but for comparisons with my Audeze LCD-Xes (\$1699) and Ultimate Ears 18 Pro IEMs (\$1350, plus the cost of having an audiologist taking impressions of the owner's inner ears), I played the pink-noise track from *Editor's Choice* and, using the single-ended ¼" output (where the levels sounded closest) on the Ayre QX-5 Twenty D/A headphone amplifier, noted the Ayre's volume-control settings. This was easier to write than to do, due to the three headphones' different frequency balances, but the LCDi4s seemed to be about 4dB less sensitive than the LCD-Xes, and 10dB less sensitive than the Ultimate Ears.

The 18 Pros sounded considerably more forward in the midrange than the LCDi4s. In addition, there appeared to be less top-octave extension and a reduced sense of weight, despite the fact that the Ultimate Ears' molds completely block my ear canals, thus maximizing the low-frequency performance. With the Silverman Liszt, there was a somewhat diminished sense of the acoustic of the Albuquerque church where I'd made the recording, though the 18 Pros' tonal balance made the piano sound more forceful. With



ASSOCIATED EQUIPMENT

Digital Sources NAD M50.2 music server; Ayre Acoustics QX-5 Twenty D/A processor/headphone amplifier; 160GB iPod Classic, PonoPlayer, Astell&Kern A&Ultima SP1000 personal players; iPhone 6s; Ayre Acoustics C-5xe^{MP} disc player.

Headphone Amplifier Pass Laboratories HPA-1.

Headphones Audeze LCD-X, Ultimate Ears 18 Pro.

Cables Digital: AudioQuest Coffee (USB), Canare (AES/EBU), Esperanto Audio (S/PDIF). Headphone: Cardas Clear, Surf Cable, manufacturers' own. AC: Audio Power Industries (components), AudioQuest NRG-2 (Niagara 1000).

Accessories AudioQuest Niagara 1000 Low-Z Power/Noise-Dissipation System, EZ-Lok stand. — John Atkinson

the Frisell, the guitar moved forward in the mix, Kenny Wollesen's drums and Tony Scherr's double bass both took a couple of steps back, and the cymbals had less HF extension.

Changing to the LCD-Xes gave a balance in "That Was Then" that was much closer to that with the LCDi4s, but with a touch less top-octave air and overall delicacy. This was somewhat offset by an increased sense of low-frequency weight, especially when I switched to a balanced connection. With the Silverman Liszt recording, there was again a slightly diminished sense of the church's acoustic.

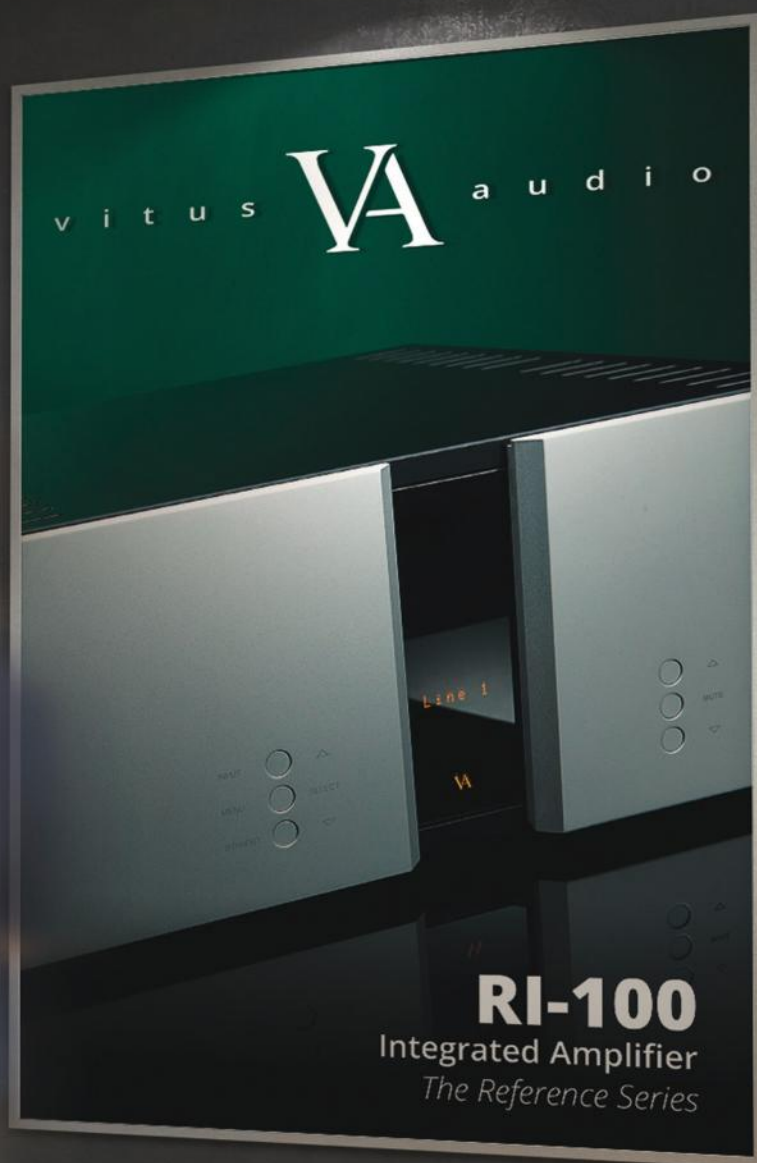
I'd used the LCD-Xes for monitoring when recording the Portland State Chamber Choir in 2014 for the CD *Into Unknown Worlds* (CD Baby: <https://store.cdbaby.com/cd/portlandstatechamberchoir2>). Listening to the 24/88.2k master file of "Hear My Prayer," a brief setting of Psalm 102 composed by Purcell in 1682 that sounds surprisingly modern, the LCD-Xes reproduced this recording exactly as I remembered hearing it at the session. Changing to the LCDi4s, some of the bass bloom was lost, but I got a clearer picture of the complex layering of the vocal parts, and the warmly supportive acoustic of Portland's St. Stephen's Church was a little more apparent than it had been through the LCD-Xes.

Summing Up

I was very impressed by Audeze's LCD-4 open-back, circumaural headphones when I reviewed them in July 2015,⁵ but was a bit taken aback by their price: \$3995. At \$2495, Audeze's LCDi4s are also expensive, but excel in their naturally balanced sound, reproduction of recorded detail, top-octave air, and surprisingly extended low-frequency response for earphones that rely on rubber tips to seal the user's ear canals. The LCDi4s' treble balance might be too polite for some tastes, but I prefer aggression that is encoded in the recording rather than added by the playback gear. The LCDi4s played sufficiently loud with my iPhone 6S, but that's a bit of a moot point considering their lack of acoustic isolation.

I had one quibble: I would have liked a longer cable. Other than that, I have nothing negative to add. I'll miss the LCDi4s when I return them to Audeze; but until I do, I'll continue using them to rediscover forgotten gems in my music library. ■

⁵ See www.stereophile.com/content/audeze-lcd-4-headphones.



VITUS AUDIO RI-100 AWARDS



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FOLLOW-UP

BY ART DUDLEY

THIS ISSUE: A second listen to Peachtree's North American-made nova300 integrated amplifier.

PEACHTREE AUDIO NOVA300 DAC-INTEGRATED AMPLIFIER

Come back, baby. You'll find a million poems deep in your destitute soul.

—Richard Hugo, “Second Chances”

The poet Richard Hugo (1923–1982) was known by his students for suggesting that every poem has two subjects: the thing that triggered the writing of the poem in the first place—the writer's Grecian Urn, if you will—and, beyond that, whatever eventually becomes the finished poem's *actual* subject. Hugo observed that the latter often isn't known to the writer when he or she begins work, but reveals itself over time.

I think the same can be said of a good review (by *good* I mean an interesting and useful review, not necessarily a positive one): A critic can set out to evaluate something as small as a piece of wire, only to end up discovering—and ultimately communicating—a larger truth.

When I set out to review Peachtree Audio's 300Wpc, class-D nova300 for the June 2017 *Stereophile*,¹ I thought I was just reviewing the latest iteration of an affordable DAC-integrated amplifier from the company that popularized if not invented the genre. Only after I'd written the piece was it apparent that I'd also critiqued my review regimen itself. Although I'd enjoyed the nova300's musical strengths, in particular praising its onboard phono preamp, I considered its sound inferior to that of an earlier Peachtree, the iDecco integrated amp, which I'd reviewed for the December 2010 issue.² My evaluation wasn't entirely positive, and Peachtree and readers alike were concerned that my testing conditions were unfair, inasmuch as my very high-sensitivity Altec Flamencos are so unlike the loudspeakers owned by normal people.

Until now, my view has been this: As long as I describe—for the benefit of readers and equipment suppliers alike, in these pages and on *Stereophile.com*—the associated products I use to review new gear (and I do), and as long as equipment suppliers send me review samples in full knowledge of the system in which they will be used (and they do, at least presumably), then I'm off the hook, free and clear, untroubled and unconcerned. But on reflection, I think my critics³ have a point: I may indeed be off the hook when it comes to writing reviews of low-power amplifiers, low-compliance moving-coil cartridges, and suchlike, but in this case, my published observations were of limited use to people who own the sorts of systems most likely to be used with the device under test.

Partly because John Atkinson's measurements revealed “a high level of switching noise,” he and I wondered if our sample of the nova300 might not have been exemplary. In our correspondence with Peachtree, we suggested that they

check out that sample on its return to their facility, but if they did, *Stereophile* wasn't informed of the results. In any event, we remained in touch with Peachtree, who assured us that a second sample would follow. It arrived in August, described by Peachtree as having been run in and made ready for use.

Meanwhile, earlier last summer, I was sent *Stereophile*'s review pair of Wharfedale Diamond 225 loudspeakers⁴ (\$449/pair), which I reviewed in a Follow-Up in the October 2017 issue. With its modern soft-dome tweeter and Kevlar mid/woofer; its modern, reflex-loaded, not terribly wide enclosure; and its modern (read: average) sensitivity (Wharfedale specifies 87dB, though JA measured 85dB), the unambiguously affordable Diamond 225 is everything the Altec Flamenco is not: a perfectly likely mate for the nova300 or any other contemporary, budget-priced integrated amp. It seemed a fine pairing, so pairing is what I

set out to do—though I also thought it would be a good idea to try the new nova300 with my Altecs, to determine whether this sample sounded different from the old one.

What pipes and timbrels?

I began by evaluating the sound of the new nova300 precisely as I'd done the old: through my usual system, Altec Flamencos included.

This time I started out with LPs, specifically with one of my favorite Ella Fitzgerald collections, *Ella Swings Lightly* (Verve MG VS-6019). Overall, the sound was musically engaging: dramatic, forceful, detailed, colorful. That said, the sound of Fitzgerald's voice, especially in note attacks, was just a bit dry, with sibilants that were very slightly exaggerated and drawn out—especially in the opening track, “Little White Lies.” But that shortcoming wasn't as severe as with the first nova300 sample, and those negatives were overwhelmed by such positives as the sounds of Mel Lewis's drums in “Teardrops from My Eyes,” which were richly toned and impactful.

I heard more or less the same pros and cons with a fine, recent reissue of Procol Harum's *A Salty Dog* (LP, A&M/Mobile Fidelity Sound Lab MFSL 1-474), an album recorded in 1969, mostly at Abbey Road Studios. Despite sounding decidedly compressed—but no more so through the Peachtree than through any other amp of my experience—Barrie Wilson's drumming came across with good, colorful tone, and his tabla playing in “Boredom” had decent touch and snap. Melodic flow and the ability to involve me were superb through the Peachtree: Listening to “Too Much Between



1 See www.stereophile.com/content/peachtree-audio-nova300-integrated-amplifier.

2 See www.stereophile.com/content/peachtree-idecco-da-integrated-amplifier.

3 See footnote 1, in particular the Comments section.

4 See www.stereophile.com/content/wharfedale-diamond-225-loudspeaker.

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Us,” I was left marveling at the song’s very typical Gary Brooker chord progression, in which the transition from the end of the chorus to the beginning of the next verse made complete sense, even if it was impossible for me to determine how he got there. Again, however, vocal sibilants intruded: The *s* in *sow*, in the second verse of “The Milk of Human Kindness,” made me wince a little, and the marimba’s note attacks in “Boredom” were somewhat too crisp.

Then I switched over to the Wharfedales and relistened to the Harums. The sound was much better: smoother and less edgy. That *s* sound in “The Milk of Human Kindness” still ran at me to the end of its chain, but this time it didn’t get far enough to bite. That said, the sound was also more opaque overall through the Wharfedales than through the Flamencos: The worst traits of the Peachtree-Altec combo were now subdued—but so, to a lesser extent, were its best.

The Wharfedales still in place, I switched over to my Sony SCD-777 SACD/CD player and, in a nod to my original nova300 review, returned to

the SACD of the Band’s *The Last Waltz* (SACD/CD, Warner Bros./Rhino/Mobile Fidelity Sound Lab Ultradisc UDSACD 2-2139) and the song “It Makes No Difference.” And indeed—the Wharfedales *made* a difference, if a modest one. Through the Wharfedales, this recording’s treble range was more enjoyable than when I’d first reviewed the nova300, but a slight excess of energy in vocal sibilants (“the *sun* don’t *shine*”) endured.

I connected my iMac to the new nova300 and switched to the Peachtree’s internal DAC, then fired up Roon and tried listening to “Passion Dance,” from McCoy Tyner’s *The Real McCoy* (AIFF file of unrecorded provenance, Blue Note 84264), first through the Flamencos. Upper overtones of Joe Henderson’s tenor sax were edgy, and the sounds of drummer Elvin Jones’s cymbals were all swish and no body—a characteristic that also plagued the end of “Four by Five,” from the same album. That said, the trebles didn’t seem quite as grainy as they did with the previous Peachtree sample.

Better still, when I moved over to the far less sensitive Wharfedales, all was, if not quite perfect, a whole lot

better. After listening to a few more files through this combo, I forged two opinions: At least through its phono stage, the new nova300 sounded slightly less edgy than the old one, though I’d still characterize its sonic fingerprint as dry and crisp overall; and, in the sense that some amp designers feel that the first watt is the most important, with the Peachtree that seemed not to be the case: This amp performed its best only after its legs have been stretched and its reserves tested.

Had these second-round listening tests been definitive—in a manner and to an extent that such things almost never are—I’d now be suggesting that, in my first round, the fault was in both my review sample and in myself. Re-viewing a 300Wpc class-D amp—even a good one—with my horn-loaded Altecs was a mistake from which I have now learned. That said, even though my first sample of the nova300 seems to have underperformed, this Peachtree model combines, in all settings, excellent musicality and an overachieving phono stage with an inherently dry sound—not a deal breaker, but something the prospective buyer should take into account. ■

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Jonathan Valin, *The Absolute Sound*, 12/2015.



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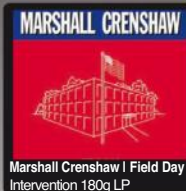
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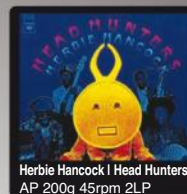
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RECORD REVIEWS

As musical movements go, rock and jazz seem to be running out of new ideas, most of the stylistic pathways in both genres having been explored to their logical conclusions. In rock in particular, every stream of inspiration has been followed past its headwaters, every droplet of inspiration wrung from established forms.

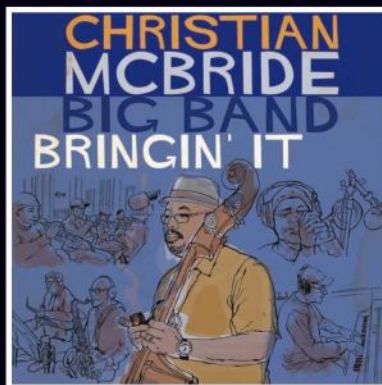
Jazz, however, seems to be finding new energy in reinvigorating old forms, and none more prominent or promising than the big band. Groups such as John Hollenbeck's Large Ensemble and Darcy James Argue's Secret Society, each comprising 18 players, have brought exciting new dimensions to a musical form that, with few notable exceptions (eg, Woody Herman, Gil Evans, Charles Mingus), was left for dead with the emergence of bebop after World War II.

Seven years ago, Christian McBride—perhaps the most ridiculously productive artist in all of music today, let alone just jazz—released a big-band album, *The Good Feeling*, that won a Grammy Award. It's a happy occurrence that bassist McBride occasionally finds the time to turn his considerable energies toward big-band music. Brimming with confidence and packing a considerable ego, the dapper McBride's dance card is incredibly full. He leads a straight-ahead jazz quintet, Inside Straight; a more out, free-jazz-leaning quartet, New Jawn; a fusion ensemble, A Christian McBride Situation; and, finally, the Christian McBride Trio. He also finds time to be a radio host on SiriusXM and NPR, compose original music, teach jazz classes, serve as artistic director of the Newport Jazz Festival, and revel in being one of the highest-profile cigar aficionados alive today.

His new big-band release, *Bringin' It*, does exactly what its title implies: following in the path of hard-charging historical outfits like Basie and Ellington, his Big Band is a new-century take on swing music.

Bringin' It opens with McBride's "Gettin' To It," a big, funky number

EDITOR'S PICK RECORDING OF THE MONTH



CHRISTIAN MCBRIDE BIG BAND *Bringin' It*

Mack Avenue Mac 1115 (CD).
2017. Gretchen Valade, exec prod.;
Christian McBride, prod.; Todd
Whitelock, assoc. prod., eng.;
Timothy Marchifava, asst. eng.
ADD? TT: 68:59

PERFORMANCE ★★★★★
SONICS ★★★★★

featuring trumpeter Freddie Hendrix in a fast solo that stays in the instrument's showy high register, and is followed by a less ostentatious yet no less meaningful solo from tenor player Ron Miles. As in most of the record, everything here is underlaid by the leader's commanding sense of rhythm. His own bass solo is economical, and funky path in the extreme.

The two other fine McBride compositions here are "Youthful Bliss" and another funky blues, "Used 'Ta Could," in which a party atmosphere, complete with tambourines and handclaps, alternates with solos by lead alto saxophonist Steve Coleman and lead trombonist Michael Dease. McBride has previously recorded all three tunes with one or another of his smaller ensembles.

While the originals have attitude, it's

in the covers that this band and McBride's arrangements shine brightest. The elegant slow take of Johnny Mercer and Jimmy Van Heusen's standard "I Thought About You," for whose arrangement McBride credits the influence of the great Maria Schneider, is a highlight—as is a sweeping, sepia-toned arrangement of Bob Hiliard and David Mann's "In the Wee Small Hours of the Morning," in which McBride uses a bow and Dan Pratt turns in a tasteful, understated tenor sax solo.

If there's one iffy element, it's McBride's wife, singer Melissa Walker, whose take on country singer Jerry Jeff Walker's "Mr. Bojangles" is odd for a jazz album, and not entirely successful. Her fairly pedestrian performance doesn't stretch the music or her voice in any meaningful ways.

Recording a big band can be as tricky as the music's complex arrangements. This album was recorded at Avatar Studios, the best room in New York City, and the sound is as big and brash as the music: beautifully defined, with admirable depth and clarity.

The one side of McBride's many-faceted talent that *Bringin' It* showcases more than any other is his skills as an arranger for big band—not an easy feat in any age. Perhaps being the rhythmic foundation of any group he plays in has given him insight into how sections should ebb and flow, who leads and who follows, and what he wants the overall sound picture to say and resemble. For the final number, "Optimism," he gives up the arranger's chair to its composer, Steve Davis, who plays trombone in McBride's Big Band and is McBride's connection to one of his chief influences.

"I saw that last Jazz Messengers band that Steve was in," McBride says in the press materials for this release. "Blakey was a huge influence on me, and because of that, Steve and I share the same compositional and arranging DNA."

He's that rare jazz bassist who's a genuine leader. The success of *Bringin' It* begs the question: What *can't* Christian McBride do?—Robert Baird

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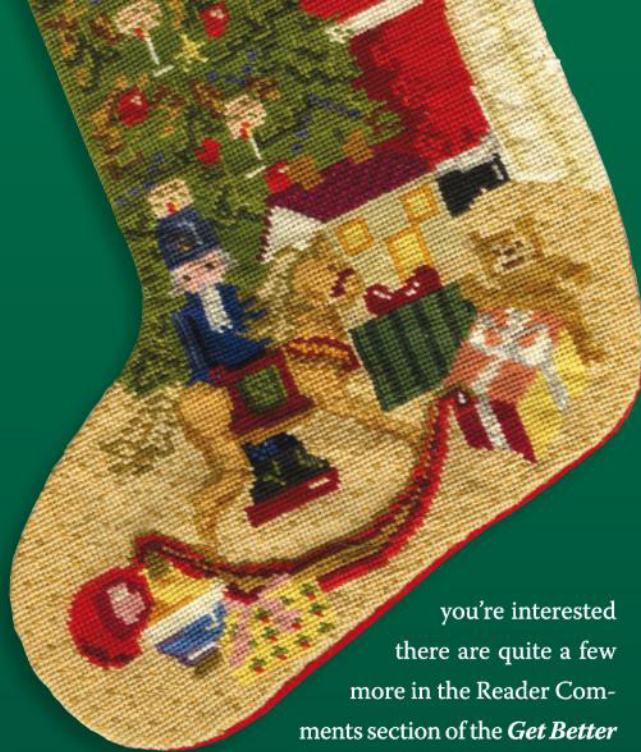
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Of course, I've received hundreds of similar letters, including a large quantity from readers outside of the U.S. Obviously, they wouldn't have written if they weren't exceptionally pleased. And, if



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JONAS KAUFMANN
L'Opéra

Arias by Berlioz (*The Trojans*, *The Damnation of Faust*), Bizet (*Carmen*, *The Pearl Fishers*), Gounod (*Romeo and Juliette*), Halévy (*The Jewess*), Lalo (*The King of Ys*), Massenet (*The Cid*, *Manon*, *Werther*), Meyerbeer (*The African*), Offenbach (*The Tales of Hoffmann*), Thomas (*Mignon*)
 Jonas Kaufmann, tenor; Sonya Yoncheva, soprano; Ludovic Tézier, baritone; Bavarian State Orchestra, Bertrand De Billy

Sony Classical 8898539072 (CD). 2017. Christopher Adler, prod.; Philip Krause, eng. DDD. TT: 74:00

PERFORMANCE ★★★★★
SONICS ★★★★★

Having just reviewed a mediocre recording of Mahler's *Das Lied von der Erde* with Kaufmann singing the tenor and mezzo-soprano/baritone songs, both stressfully and neither interestingly, I approached this CD of French arias with a tiny chip on my shoulder. It was knocked off with the first aria, Roméo's "Ah, lève-toi soleil," which is sung quite properly, as a young guy in the first throes of love—with ardor, a wonderful use of the text, and exquisite dynamics—and a high pianissimo B-flat reached with stunning legato from the two preceding notes.

In the past, Kaufmann's pianissimi have occasionally come slightly too close to crooning, but that seems to have been battled and won; they're now integrated into the rest of the voice. His singing of Mylio's aria from *The King of Ys*, invariably a platform for a tenor in falsetto, is now ravishing and all of a piece. And the tessitura of the midpoint of Hoffmann's "O Dieu de quelle ivresse," which lingers for a very long time above the staff and which very few tenors (Nicolai Gedda, Alfredo Kraus) conquer, is graceful, sung with big, grand tone.

And so it continues on this recital—not a dud in the batch, and each well delineated from the next. The duets from *Manon* and *The Pearl Fishers*, with the glorious Sonya Yoncheva and the sturdy Ludovic Tézier, respectively, are an opera lover's dream. Diction, accompaniments, and sound are ideal.

—Robert Levine


MOZART
Piano Concertos Nos. 25 & 26
 ("Coronation")

Francesco Piemontesi, piano; Scottish Chamber Orchestra, Andrew Manze
 Linn CDK544 (CD). 2017. Philip Hobbs, prod.; Robert Cammidge, eng. DDD. TT: 61:00

PERFORMANCE ★★★★★
SONICS ★★★★★

These performances have everything going for them, and they deliver. The Scottish Chamber Orchestra are great Mozarteans, and conductor Andrew Manze's versatility brings him smoothly from Baroque to Classical. And he and the 34-year-old Swiss pianist Francesco Piemontesi share a sensibility that is Classical but free, and always alert to Mozart's rich melodies.

It's often said that the tunes in Mozart's piano concertos are arias without words, and nowhere is this more obvious than in the "Coronation," K.537 (No.26); Piemontesi plays them with grace and charm, and embellishes them as would a wise but not-showy singer. This is an invigorating and joyful work from start to finish, and here it's flawlessly played. In his autograph score, Mozart omitted much of the left hand; it is filled in by Piemontesi.

Because it's clear that our pianist neither treads lightly nor bangs, the martial Concerto No. 25, K.503, is safe—parts of the first and last movements practically invite aggression, but Piemontesi remains lively and youthful without ever attempting to bully or showcase or beat the brass at its game. His delicate playing—eg, the songful interlude about 10 minutes into the first movement—is dreamy but unaffected. (And listen for the "Marseillaise" in the cadenza.) The wind-heavy slow movement is loveliness itself, and the final movement's opening melody makes one want to dance.

Could Piemontesi be the perfect Mozartean? Well, he studied with Alfred Brendel, and that can't hurt. And with Manze in his court, this is a winner, in stunning sound. —Robert Levine


JOHN POTTER
Secret History: Josquin/Victoria

John Potter, tenor; Anna Maria Friman, soprano; Ariel Abramovich, Jacob Heringman, Lee Santana, vihuelas; Hillel Perl, viola da gamba
 ECM New Series 2119 (CD). 2017. Manfred Eicher, prod.; Peter Laenger, eng. DDD. TT: 69:04

PERFORMANCE ★★★★★
SONICS ★★★★★

Credentials don't get much better: Scholar, conductor, and tenor John Potter (*of* Hilliard Ensemble) and Anna Maria Friman (Trio Mediaeval) are the vocal soloists in music by Tomás Luis de Victoria, Josquin Desprez, and others. The music was composed for four or more voices; here, some vocal lines are omitted, their places taken by three vihuelas (a nascent guitar tuned like a lute). In between mass movements (Victoria's *Surge Propera* mass is performed complete) are vihuela solos, mostly improvised; a series of relatively well-known motets by Josquin follow. The secret in *Secret History* is that Renaissance polyphonic pieces were just waiting to be reworked or adapted as chamber music.

One wonders why it has taken six years from recording to commercial release. Perhaps this is too sparse for most tastes, and Potter's voice, always a clean, pitch-perfect instrument, sounds somewhat monochrome and worn. While the whole does evoke an evening of intimate music-making, I'm not certain that will suffice. Listening to this glorious polyphony with one or two of the human voices just sketched in, leaves one wanting dynamic range and texture. Josquin's "Benedicta es" comes closest to satisfying, but that may be because after so much thin sound, two voices, two vihuelas, and a viola da gamba sound like a jam session. On one level, this CD lends a type of clarity one rarely experiences in such complex music; on another, it's a low-calorie experiment, a bit precious. The instrumentalists are superb, the sound so perfect it's probably better than live. —Robert Levine

ROCK/POP

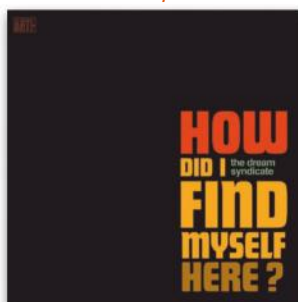


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THE DREAM SYNDICATE
How Did I Find Myself Here?

Anti-/Epitaph 87530-1 (LP). 2017. Dream Syndicate, Chris Cacavas, prods.; Adrian Olsen, Bruce Olsen, engs. ADA? TT: 45:48

PERFORMANCE ★★★★★

SONICS ★★★★★

Psychedelic warriors the Dream Syndicate returned in 2012 after two decades off, their original 1981–89 tenure still celebrated. Nostalgia for '80s and '90s Amerindie rock was running high, and the band didn't disappoint in concert, sometimes doing complete performances of such classic albums as their first, *The Days of Wine and Roses* (1982).

Now completing the circle is *How Did I Find Myself Here?*, for which guitarist-singer Steve Wynn, original drummer Dennis Duck, latter-day bassist Mark Walton, and M3 guitarist Jason Victor clearly set out to do more than simply revisit old glories—they extend and elaborate on an already estimable legacy. Along with coproducer and keyboardist Chris Cacavas (Green On Red), the group serves up a tough-as-nails set of 100% guitar rock.

Everyone sounds utterly energized, from the jet-stream convulsions of the feedback-laden “The Circle,” to the psychedelic, “Heroes”-esque “Glide,” to the manic, choppy riffage of “Out of My Head.” They also lob a few Easter eggs to longtime fans, notably the throbbing bass intro of dissonant garage raver “80 West,” which recalls the first album’s “That’s What You Always Say.” They bring back original bassist Kendra Smith to sing “Kendra’s Dream.” And the 11-minute title track, a spooky, bluesy, ultimately swaggering slice of swamp psych, conjures DS epics of yore.

That track is sonically emblematic of the album as a whole, one moment boasting a broad, high-ceilinged soundstage, the next a tight, claustrophobic vibe. Pressed on 180gm vinyl (black in the US, turquoise in Europe), the album sizzles with a raw immediacy.

—Fred Mills



HAPPY ABANDON
Facepaint

Schoollkids SMR042 (LP). 2017. Happy Abandon, prods.; Jason Merritt, prod., eng.; Jamie Candiloro, Brett Scott, engs. ADA? TT: 55:07

PERFORMANCE ★★★★★

SONICS ★★★★★

Rock’s so-called rich tapestry has often included threads of lyrical introspection and high-energy extroversion woven tightly together, the poster child being U2. It’s a catharsis thing. I’m not necessarily talking about standard-issue theatrical bands, many of whom confuse grand pronouncements with intellectual profundity. I mean groups that bring an emotional literateness and polish to some seriously rockin’ music, and breed a keen intimacy with their listeners.

Chapel Hill trio Happy Abandon falls squarely in that tradition on *Facepaint*, offering grand, sweeping melodies, soaring voices, and manic explosions of energy. Two songs are instructive: “Ivory Bound” unfurls via delicate, pirouetting acoustic guitar and piano, followed by the crescendo of a string section that abruptly segues into “Beneath Our Feet,” a hectic rush of searing guitars and convulsive drums, as singer Peter Vance, in a deliciously androgynous voice, croons, then sneers, then pleads with a Broadway showman’s outside confidence.

It’s exhilarating—indeed, cathartic—and not the only such moment. “Stop Taking Care of Me,” for example, is anthemic, almost cabaret-like, yet the dark, harrowing words depict a lover’s growing addiction. This is a rock recording in which each instrument and voice is precisely positioned. The LP—pressed on eye-popping, multicolored vinyl that looks like splattered wax—has an additional crispness that emerges when the volume is turned up. Not that there’s anything deficient about the CD, but the difference is significant.

Facepaint is all the more remarkable for being a debut album. The future looks promising indeed. —Fred Mills

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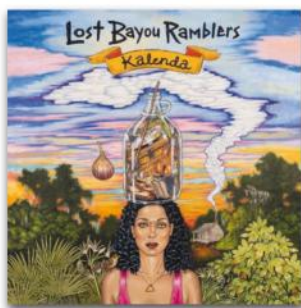
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LOST BAYOU RAMBLERS *Kalenda*

Lost Bayou (CD). 2017. Korey Richey, Eric Heigle, prods., engs.; Emily Eck, eng. DDD? TT: 39:04

PERFORMANCE ★★★★★

SONICS ★★★★★

As have most aspects of Louisiana culture, Cajun music has shown amazing resilience. The music is handed down from person to person, often through a family structure, but a new generation of young players has kept faithfully in touch with their roots while adding to the mix contemporary musical influences. No band has done this more dramatically than the Lost Bayou Ramblers, whose latest album is its crowning achievement. Formed in 1999 by the Michot brothers—Louis on vocals and fiddle, André on accordion and lap steel guitar—the group has gradually added electric elements and modernized its approach, while continuing to sing in Cajun French.

Kalenda is a breakthrough, using not just rock accompaniments but also electronic beats and drones for effects that blend remarkably well with the hypnotic, textured sounds of Cajun music. Though there are English titles, all songs are sung in French, and Louis's high, reedy voice fits the tradition perfectly, with at times a whistling, hurricane sound that falls somewhere between an anguished wail and a cry of joy.

The album opens on a traditional note, with André playing the first verse of "Sabine Turnaround" on solo accordion before guitarist Jonny Campos, bassist Korey Richie, and drummer Eric Heigle come crashing in. The band drops down to the simple rhythm for Louis's vocal, then kicks into full-band mode again. "Côte Clair Waltz" is another traditional approach, but after that things get spacy, culminating in a recasting of the "Kalenda" legend for the album's penultimate track. André's beautiful "Aloha Golden Meadow," for lap steel, is a bit of lagniappe. —John Swenson



STANTON MOORE *With You in Mind: The Songs of Allen Toussaint*

Cool Green CGR75302 (CD). 2017. Stanton Moore, David Torkanowsky, prods.; Matt Grondin, Nick Guttman, engs. DDD? TT: 52:57

PERFORMANCE ★★★★★

SONICS ★★★★★

The presence of Allen Toussaint arches so far over New Orleans music that it's surprising there haven't been more tributes to him since his death in 2015. I suspect it's because Toussaint's influence is baked into New Orleans music—he's constantly paid tribute when New Orleans music is made. Drummer Stanton Moore, known for his exceptional work with the New Orleans jam band Galactic, might seem an unlikely host for Toussaint's work, but that just goes to show how deep that influence goes. Moore was scheduled to record in 2015 with pianist David Torkanowsky and bassist James Singleton, both of Astral Project, when they heard of Toussaint's passing. They immediately decided to record an album of his songs, augmented by some of the best musicians working in New Orleans.

The result may surprise followers of the jam-band aesthetic, but its mix of rock, jazz, R&B, and—because it's Toussaint—pop is perfectly in tune with the wide range of New Orleans music. Trumpeter Nicholas Payton sits in on Toussaint's pop instrumental masterpiece "Java," which was the cornerstone of Al Hirt's career. Donald Harrison Jr. adds alto sax and Trombone Shorty plays trombone.

Cyril Neville sings in "Girls" and three other tracks that are the album's highlights: an astonishing rearrangement of "Life," with Payton and Eric Bloom on trumpets and longtime Moore associate Skerik on tenor and baritone sax; a similarly inventive recasting of "Night People"; and a celebratory "Everything I Do Gone Be Funky," the latter two featuring Maceo Parker on alto saxophone. —John Swenson



THE NATIONAL
Sleep Well Beast

4AD 0020LPE (2 LPs). 2017. Aaron Dessner, prod., eng.; Jonathan Low, David Chalmin, Sean O'Brien, Jan St. Werner, Andi Toma, engs. ADA? TT: 56:47

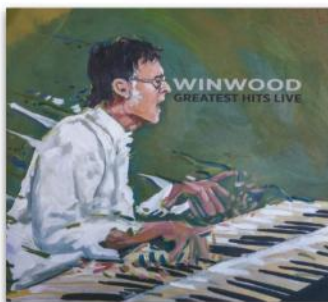
PERFORMANCE ★★★★★

SONICS ★★★★★

Never quite understood the National's "dad rock" tag. Granted, the Cincy outfit was voted Band Least Likely to Have a Mosh Pit at Its Concerts; there's always been a certain calculated restraint at the core of its aesthetic, with smartly groomed lead singer Matt Berninger typically performing in tailored suits and sipping red wine during shows. But since shedding its urbanized Americana in favor of more atmospheric indie rock with *Boxer* (2007), the National has also been embraced by the hipster elites. The group recently decamped to upstate New York, to build a studio and open up the experimental floodgates.

Sleep Well Beast is a gorgeous record, with electronics subtly deployed alongside traditional instrumentation. Even quieter, piano-powered songs (the stately "Carin at the Liquor Store") have a lush, gently orchestral vibe, and others feature an actual chamber orchestra (the seductively waltzing "Dark Side of the Gym"). Heavier songs have also become a key part of the sonic arsenal, such as the U2-like anthem "Day I Die" and the propulsive "Turtleneck," with the latter's blazing, psychedelic guitars. Turning up the volume brings out in the mix a wealth of sonic nuances, an effect even more pronounced on the two-LP edition, and tacitly acknowledged by the band's allotting each side an average of 14 minutes of music.

Throughout, Berninger, he of the impossibly deep baritone, still indulges his trademark existential angst, analyzing flaws and motivations like a man in therapy, though the fact that he wrote the lyrics with his wife, Carin Besser, suggests someone uninterested in artistic solipsism or stasis. —Fred Mills



STEVE WINWOOD
Greatest Hits Live

Wincraft/Thirty Tigers WM002 (2 CDs). 2017. Steve Winwood, prod.; James Towler, John Dent, engs. AAD? TT: 2:30:38

PERFORMANCE ★★★★★

SONICS ★★★★★

The first 10 minutes here are so drab, so uninspired, that it seemed a long shot that this career-spanning collection of concert recordings would redeem itself. The disc itself had to be checked to determine whether the first two tracks, "I'm a Man" and Buddy Miles's "Them Changes," were in fact Winwood, not some generic bar band. Then, with "Fly," the mood morphs from smooth blues to smooth jazz, redeemed only by SW's soulful singing. It's only after this that the legacy mercifully comes to life.

Over the course of 23 songs, *Greatest Hits Live* touches all bases of Winwood's brilliant career—from the Spencer Davis Group, Traffic, and Blind Faith to his superstar solo years—with tracks chosen by the man himself from his extensive archive. Recorded with his crack band in various venues, the sound is seductively pristine, in fact so bright that, until the crowd makes itself heard, much of it—eg, the medley of "Low Spark of High Heeled Boys" and "Empty Pages"—has a distinct live-in-studio feel.

The newer material, such as the mandolin-driven "Back in the High Life Again" and the near-euphoric "Higher Love," generally boasts the most spark, but otherwise there's too much jamming; only two tracks clock in at under five minutes. "Rainmaker" is a snoozer, and in "Pearly Queen," SW sounds as if he's reading from a lyric sheet, while Richard Bailey's drumming is distractingly busy. There are some wonderful juxtapositions, such as "John Barleycorn" and "While You See a Chance." But ultimately, file this one under "lounge music for hipster baby boomers."

—David Sokol

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JAZZ



CLASSIC SAVOY BE-BOP SESSIONS 1945-49

Dexter Gordon's All-Stars, Jay Jay Johnson's Beboppers, Allen Eager Quartet, Stan Getz Quartet, Sonny Stitt/Kenny Dorham/The Be Bop Boys, Kai Winding's New Jazz Group (Kai's Kats), others Mosaic MD10-264 (10 CDs). 2016. Teddy Reig, orig. prod.; Steven Lasker, Paul Reid III, Jack Towers, Rudy Van Gelder, orig. transfers; Michael Cuscuna, reissue prod.; Jonathan Horwich, Steve Marlowe, restoration, mastering. A-D. TT: 10:23:55.

PERFORMANCE ★★★★★

SONICS ★★★★★

When it comes to reissues of classic American jazz, no one else even comes close to the care and time Mosaic Records has put into their comprehensive sets of LPs and CDs over the past 35 years. In terms of presentation (the famed black boxes), liner notes, session info, and best possible sound, Mosaic sets the standard for jazz reissues.

The continuing improvements in sound-restoration technologies have made Mosaic sets ever more listenable, and now the label has used those technologies to reveal new life in one of the most essential recorded catalogs of the early bebop era. *Classic Savoy Be-Bop Sessions 1945-49* collects all the recordings made for Savoy Records by producer Teddy Reig, who was active with Herman Lubinsky's label from 1945 to 1951. Reig signed and recorded such artists as Dexter Gordon, J.J. Johnson, Fats Navarro, and Sonny Stitt, many of whom had never been in a recording studio before. Wisely, Mosaic has omitted from this set Reig's greatest claim to fame: the Savoy recordings of Charlie Parker. Those have been remastered and reissued many times before, and are currently available in a number of different playback configurations, from streaming to reissue LPs.

Reig (1918-1984) was a native New Yorker whose folks owned a Brooklyn candy shop. After his Savoy years, he went on to record the Count Basie Band for the Roulette and Verve labels. His special talent was his ear for horn players, who are such an essential ingredient of bebop's mix of instrumental voices. His legacy, 216 tracks



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- John Atkinson / Stereophile

from 34 different sessions spread across 10 CDs, is impressive. Bebop, then a still-emerging art form, can be literally heard transforming and growing more complex. Swing players who'd started out playing dance music audibly settle into small groups, improvising together, flashing their virtuosity, jockeying for solos, exploring the boundaries of this new music.

Over the years, the Savoy recordings have been cut up and repackaged many times, most successfully in the two-fer LP sets of the late 1970s. In 2015, the original LPs were reissued on less-than-impressive-sounding vinyl. According to Mosaic cofounder Michael Cuscuna, "The Savoy recordings were recently purchased from Denon/Savoy by Concord Records. Our set is derived from the time when Arista bought Savoy and Bob Porter transferred all the 16" lacquers at Rudy Van Gelder's. Since all of Savoy's lacquers are unattainable in deep storage, all of the material on the Mosaic set was expertly transferred by Steve [Marlowe] and Jonathan [Horwich] from the '70s LPs, which were analog transfers."

Bebop from this era can sound samey and indistinguishable, and the mass of alternate takes included here only exacerbates this problem. That said, there's much great music here. Well-known stars like Dexter Gordon acquit themselves well, Dex nailing three takes of one of his signature blowing tunes, "Dexter Digs In," and bathing a slower, more intricate composition, Tadd Dameron's "Dextivity," in his big, warm-toned playing.

The great trumpeter Fats Navarro fronts a group called His Thin Men, featuring baritone-sax player Leo Parker and pianist Tadd Dameron. They come together in spectacular fashion for a 1947 take of Navarro's "Goin' to Minton's": After Navarro opens the tune with an unaccompanied trumpet solo, both horn players carve incisive solos.

The two takes by Kai Winding's New Jazz Group of "Grab Your Axe Max," a Winding original, recorded at WOR Studios in NYC in December 1945, find trumpeter Shorty Rogers brisk and buoyant, and a young Stan Getz, his trademark hollowed, longing tenor sax tone and unerring phrasing already fully formed.

The surprises come from lesser-known players—like tenor-sax player Brew Moore, whose light touch on the simple changes of his own "Brew

Blue" should be part of any serious bebop fan's education. The same goes for a 1948 session with Leo Parker's All-Stars, in which Parker's nimble baritone playing niftily negotiates his own up-tempo number "Dinky." And the scat vocals by the otherwise unknown Marcel Daniels in two tracks by Howard McGhee, "Flip Lip" and "The Last Word," are rare examples of early bebop vocals.

While some dedicated bebop fans may grumble that this is overly familiar material that they don't need to hear yet again, the sound improvements alone are reason to own this set. For the last word on these very audible, much appreciated improvements, I asked Marlowe and Horwich to explain the near-miracles they performed:

Historic, elderly recordings exist on less-than-ideal mediums. And even old tapes are often plagued with dropouts, stretches, deteriorating oxide, speed fluctuations, and noises. Original LP transfers, while fraught with noise, may have certain plus-points, as preparation and engineering were performed with considerable care and precision. Moreover, their source tapes were quite a bit fresher at the time. Mosaic

Records spared no expense to ensure the new *Savoy Be-Bop* release uniquely benefited from latest technologies and procedural processes. First, the all-important analog-to-digital conversion was performed using high-end audiophile-grade equipment, both for playback and capture. Critical aspects, such as speed accuracy, low noise floor, highest-quality cabling, and clean power were also addressed. The subsequent mastering process then took the music gently through key steps and stages to remove distortions and noises, while bringing forth more and more music content, including low-level information and microdynamics often "left for buried" during typical restorations.

Our proprietary processes do not apply noise reduction to the overall music content. Rather, each offensive noise is located by waveform and surgically removed. Thus, the lion's share of the music is entirely unprocessed. The Savoy tracks benefited from Bit Density Processing to improve tonal qualities across the entire frequency range, while also targeting specific instrument and vocal ranges so as to present them as fully and completely as possible. —Robert Baird

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MANUFACTURERS' COMMENTS

THIS ISSUE: VPI, Swissonor, Grado, and Heed respond to our reviews of their products.

VPI Prime Scout

Editor:

We love and appreciate the time Art Dudley put into the review of the VPI Prime Scout (October 2017). We completely agree with his assessment of its sonic virtues and the quality of the American-made machining and fit and finish. Our concern is with measurements.

The absolute speed of the Prime Scout is adjustable in four steps, using the four grooves on the motor pulley. The two center grooves on the motor pulley are very close to the correct speed, while the lowest groove is 0.1% fast and the highest groove is 0.1% slow. The slip mat has a strobe disc built in so you can set the speed exactly. We can only assume that since the speed was measured faster than our quality control allows (every workstation measures and puts all tables through full QC), the belt must have been on the lowest groove, which is there only for customers to play with for their own experimentation, as per the manual. That will give an absolute speed reading that is as fast as what Art measured. He was correct with his measurement, but the setup was wrong.

Regarding the wow and flutter, we can only assume that the pulley was hit in shipping or damaged in transit, because each motor/pulley is tested with a dial indicator that must read less than ± 0.0005 ", otherwise it does not pass and does not get shipped. This is well within and actually below industry norms.

We felt it is important to comment on this because we take a lot of pride in our improved testing and QC with each and every VPI turntable. We wholeheartedly agree with Art on his sonic results, but only wish he could have experienced the Prime Scout at its absolute best. By the way, Art's review encouraged us to try the MusiKraft mod to the Denon DL-103 cartridge, and we are happy to say it is a wonderful addition to any turntable. It sounds great on the Prime Scout, and just as good if not better on a 12" 3D-printed Avenger tonearm. Thanks, Art; good call!

Mat Weisfeld, President
VPI Industries

Grado Labs Epoch

Editor:

The Grado family and I want to thank

We applaud Mr. Micallef and *Stereophile's* return of the critical conversation to an awareness of what music is about.

Michael Fremer for taking the time to listen to and write his review of our new flagship phono cartridge, the Epoch. It is a thorough and enlightening piece. We especially agree with his statement of "Its overall musical balance is as knowing, sophisticated, and musically involving as that of any cartridge I've heard." The Grado family has supported the analog world since 1953, and as we enter our 65th year, with the third generation of Grados taking the helm, we look forward to keep producing the best possible products we can.

John, Jonathan, Matthew Grado
Grado Labs

Swissonor TA10

Editor:

There are several problems with Art Dudley's review of the TA10.

FIRST PROBLEM: Mounting on a Thorens TD 124 turntable. The original plinth was designed for 8" tonearms, later for 9" tonearms. **SOLUTION:** There's no problem with Swissonor's #29.0 plinth, which is designed for tonearms up to 10" or longer than 11".

SECOND PROBLEM: Bearing function. As with every item, this TA10 was tested on a TD 124, and several parameters, such as bearing preload, were fine-adjusted by ear, using an Ortofon SPU Classic cartridge. The complete job, from A to Z, is done by our technician, who has studied under others and plays the harpsichord (he has one at home). He has much younger/finer ears than mine. He listens on a high-grade system he has owned for many years, so he can hear absolutely any smallest deviation from the ideal.

How is it possible that the bearings of the first sample we sent were not working? I had that issue once with the first-series TA10, after transporting a turntable in my car between two dealers without removing the counterweight. The bearing had moved off-center. I repaired that in five (hot) minutes. Was the tonearm Art reviewed shipped with the counterweight on? We think so.

SOLUTION: Leave off the counterweight

for shipping, as we do. This is absolutely necessary, not only for Swissonor tonearms but for any design.

THIRD PROBLEM: Azimuth. As I explained to Art, the azimuth of the supplied headshell, which seems not to suit Art's ideas even if it's the best one we've found worldwide (Japan-made, cast magnesium, double locker pins), can be adjusted through a full 360°. The double locker then makes securing that adjusted position very precise. Any azimuth is possible with the supplied headshell. Our technician checks azimuth with the supplied headshell type, an Ortofon Quintet cartridge, and a mirror.

With the single locker of the SPU's (and most headshells in the market), you can move the cartridge clockwise and counterclockwise easily, through more than $\pm 1^\circ$. Therefore, you will change azimuth with each change of cartridge. Our customers often change cartridges from mono to stereo and back.

In every case, the TA10's azimuth adjustment is much more precise than that. Generally, as I explain in the user guide, when you screw down the mounting plate on the TD 124, you have to adjust parallelism or you will get the wrong azimuth, due to uneven compression of the grommets. **SOLUTION:** Until now, using the above methods, all dealers/customers have gotten perfect azimuth without trouble.

FINAL PROBLEM: Philosophy. When I think about our customers, they have one thing in common: They all spend time (and money) on collecting and listening to discs. At the beginning, they spend a little time on adjusting their gear, too. But their hobby is music, and hi-fi is only the way, but not the aim. When our dealers repair, refurbish, upgrade, and/or deliver a TD 124, it will sound so good that no one will think about how to make it even better, because they will simply feel no need for it. A well-known German magazine specializing in analog hi-fi tested the smallest Swissonor system and summed it up: If you're tired of running all your life

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after the “maybe even better” and look for peace of mind now, you may find what you need for the rest of your life.

I hope that each TA10 will find a lifetime place in the home of a music lover. (This should not be difficult, with the TA10's series 2 limited to only 50 units.) If Art is not at ease with this, better he should not write about our stuff. *Urs Frei*
Swissonor

Heed Audio Quasar

Editor:

We would like to thank Ken Micallef and *Stereophile* for the very thorough and thoughtful review of the Heed Audio Quasar phono stage. Heed Audio has always tried to produce honest, musical, trouble-free products that perform well above their price, and that, most important, communicate the heart and soul of the musical performances they reproduce. Once again, we would like to express our appreciation for Mr. Micallef's unwavering sense of what music is, what it does for us as human beings, and his ability to translate that sense into language.

Over the years, the term “musicality” seems to have evolved within the language of high-end audio to mean something different from what it is.

Many now understand it to be something that describes some kind of tonal quality, like a specification, that is perhaps overly “warm” or “forgiving,” and generally in opposition to the recent notion of “resolution,” which has somehow become an errant Grail in the pursuit of “audio perfection.” Once an audio system achieves a sense of resolution whereby it can be used, like a scalpel, to dissect the sonic image of a musical body, it has lost its way.

Thankfully, Mr. Micallef's many years of experience as a music journalist allow him not only to stay on an eminently musical path while accomplishing the difficult task of “critical evaluation,” they have given him a unique perspective and ability to communicate his experience and understanding of how music and audio can and should converge. His descriptions of the “sound” of a component are always in terms of musical performance: “really took off, its exuberant meeting of kalimba, freaky distorted Farfisa organ, rhythm-box playfulness, and layered voices spread deep, wide, and plentiful, with first-rate images and tons of air. The Quasar brought earthiness to this African soul and resolution than the Elixir's own

phono stage.”

We applaud Mr. Micallef and *Stereophile*'s return of the critical conversation to an awareness of what music is about: communication, from one human being to another. Heed Audio and Profundo have always believed that this is what a music system should be about as well. Without it, it is just a bunch of shiny, expensive gear. “Those descriptors look mechanical and artificial on the page. The Quasar was anything but, bringing out humanity and depth of feeling and timbral naturalness from every recording—it was a joyful communicator.”

Once again, with great thanks, we acknowledge the mode and skill of Mr. Micallef's own joyful communication of what we feel is a very accurate evaluation of the Quasar, and of the mission of all Heed Audio products. Many have criticized the audio industry of late for being out of touch, both with music lovers and with music. We strongly encourage *Stereophile* on this current path toward what this industry (and the world today) needs to rediscover, as Mr. Micallef wrote: joy, exuberance, naturalness, humanity, depth of feeling, communication.”

Zsolt Huszti, Heed Audio
Bob Clarke, Profundo



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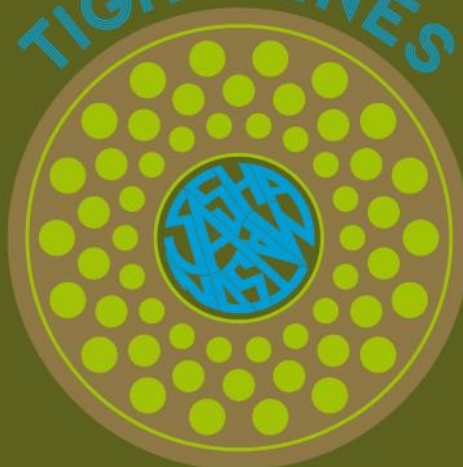
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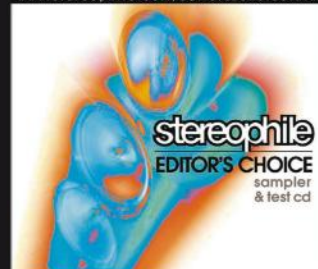
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Collecting and the Cloud

I'll inch out on a limb here and say that most audiophiles are also collectors of recordings. How people collect recordings is an endless fascination of mine—I ask friends, acquaintances, interview subjects, and even students in a music class that I teach. The sum of their answers makes me something of an expert on the ways in which people consume music.

There are, I grant you, a certain number of audiophiles, gearheads—whatever you want to call them—who really do collect only gear. Swapping out new speakers every year or so is an expensive hobby, but if you have the means, then to each his own. *Stereophile's* late contributing editor Wes Phillips called them geekazoids. For the geekazoid, music is only a means of testing the gear. He's interested only in brushed-metal boxes and little red and blue lights. He keeps a couple of Deutsche Grammophon Beethoven symphony cycles or John Coltrane Atlantic albums on hand, but only to impress friends.

Last weekend, I and three friends, all rabid devotees of the LP, crawled into a car and made the trip across Brooklyn to Prospect Park and the annual Brooklyn Flea Record Fair. It's held in a giant circus tent in the lot next to Smorgasburg, the foodie wallow that takes place every Sunday from April through October—Beet Sliders, Spaghetti Burgers, and Chicken Chorizo Paratha Tacos run amok. This year's Brooklyn Flea drew over 60 vendors selling every form of playback technology: 78s, 45s, LPs, CDs, even cassette tapes (whose current comeback mystifies me). Boxes of \$1 LPs sat in direct sunlight. We were there at 11am, when it opened, and by noon an overflow crowd was busily elbowing each other and jockeying for position at tables covered with boxes of LPs.

Let there be no more debate: The return-of-the-LP craze has legs. Twentysomething men and women are again devoted to the big black discs. It's even trickled down to the advertising business. While writing this column, I saw a TV commercial for Citibank's Double Cashback Card that featured identical-twin brothers standing in front of a wall of vinyl and holding up two identical LPs. It was followed 30



seconds later by an ad for Xeljanz, a drug used to treat rheumatoid arthritis, in which a woman got out her old LPs, turned them over in her suddenly pain free hands, and played them on the kind of blue-and-white suitcase record-player-with-handle that I played my first Beatles 45s on. Rest easy, the unseemly, untimely death of vinyl has been fully avenged.

But what about the generation or two of music lovers who invested in CDs because record labels went to the mat in the early 1990s to kill the LP? Everyone bought a CD player, those damned jewel boxes started piling up, and, as we all knew deep down they wouldn't, the price of CDs never came down as promised—until now, when no one cares, and fewer and fewer are buying. There was a stretch of 20 years when CDs were the *only* way to possess music. Even more vexing is the fact that many digital recordings will only ever be available on CD and MP3—and I find that the compromised sound of MP3s fatally mars my enjoyment of the music. I'd almost rather hear a cassette.

The best solution to this problem is financial wherewithal. For those who want to possess a collection rather than stream, the super-deluxe Cadillac choice is a library made up entirely of new LPs, vintage LPs, and high-resolution downloads. Several friends have



gone in this direction, and the results are undeniably sweet. To complete the library load and copy to a hard drive all the CDs you can't bear to part with, and voilà! You're good for at least the next quarter century.

For those of lesser means and/or smaller living spaces, who have to make rent while also eating regular meals, the choices are more complicated. Do you have the financial resources to replace a CD collection with hi-rez downloads? Do you have enough time left in your life to buy new gear and all your essential recordings all over again? Do you have space for LPs? I suspect that many audiophiles will dig in and, at a certain age, decide, "*This is my library. I will not move 'forward' and replace it yet again.*"

Admittedly, streaming solves a lot of these problems: High-quality lossless files are universally available. The problem of space occupied by a music collection disappears. The selection of music is almost endless. It's inexpensive. It can use less gear. And if you have an adventurous urge, playlists make the discovery of new music easier.

I guess the issue then becomes one of how much *tangibility* you need or desire. Can you live with the bulk of your music being untouchable, in the cloud? Do you need LP jackets, and the tribal ritual of slipping a disc out of its jacket and easing a needle down? Or pressing play and paging through a CD booklet? These are questions I ask myself every day. The future is now. ■

Music Editor Robert Baird (RBaird@enthusiastnetwork.com) finds all this talk of having too many records patently absurd.

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