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AS WE SEE IT

BY JASON VICTOR SERINUS

THIS ISSUE: The annual Consumer Electronics Show has been a fixture on the audio scene for decades. Will that continue?

What If They Gave a CES and Nobody Came?

Last January, in Las Vegas, a record 170,000 people attended the 2016 Consumer Electronics Show. Most of them neither saw nor heard a trace of high-end audio gear. Not only was all mention of what CES calls “high performance audio” absent from the show’s official *Attendee Guide*, but the hallways of the Venetian Tower, which in past CESes were filled with high-end manufacturers, dealers, and distributors, were anything but crowded.¹

Given the steady decline, in recent years, in CES attendance by high-end audio distributors and dealers, many observers were not surprised by the decreased traffic in rooms, or by seeing fewer familiar faces, or by the relatively short waits for elevators. But even after learning that one well-known high-end company, Parasound, had chosen not to exhibit, and that another, PS Audio, had opted for closed meetings rather than an open demo room, I was unprepared for the shock of discovering numerous well-known high-end companies MIA. Even more astounding: The rooms those companies might have occupied were now filled by a host of technology companies with no relationship to high-end audio.

Equally shocking were the huge increases in the prices of almost everything. My Uber driver, who collected from me a disgusting 5.2x “surgecharge,” told me that hotel rooms that had cost \$100 the week before were going for \$500 during CES. Virtually every industry person with whom I spoke in Las Vegas complained of how the greed was out of control. To quote Carolyn Counnas of Zesto Audio—who, with her husband, George, also chose not to exhibit this year—“I hate being criminally ripped off.”

“Exhibiting in CES might have at one time been a reasonable economic proposition for many, but it is no longer,” Parasound President Richard Schram wrote in a post-show e-mail. “The money we would spend on CES can be spent far more effectively in other ways . . . In my opinion high-end audio doesn’t belong in CES because we can’t ever receive the attention, signage, etc. that are appropriate. Most of our companies are small and the least capable of affording inflated hotel prices, and our customers [are] ill-inclined to deal with long taxi lines and crowded restaurants.”

Instead of spending over \$25,000 to mount a major exhibit, Schram flew to Las Vegas unaccompanied, and met with clients in the Venetian’s Grand Lux Cafe. “Preparations for exhibiting at CES formerly diverted my entire staff’s attention, and our business was always weaker before and during the show,” he reported. “But this year, we did more business in the first week of January than in the first three weeks of any previous January. In my meetings, I received only praise for my decision not to exhibit, and envy from colleagues and

friends who will not exhibit in CES 2017.”

Of the close to 20 industry veterans with whom I discussed the future of CES in my four days at the show, only two said that CES remains their most important US venue for meetings between manufacturers, dealers, and distributors. Instead, many noted that the three major US consumer shows—AXPONA, the Rocky Mountain Audio Fest, and T.H.E. Show Newport Beach/Irvine—have supplanted CES as gatherings where they can conduct business in relatively friendly environments.

Virtually everyone also mentioned High End, held each May in Munich and promoted as a consumer destination throughout that city and beyond (see p.15). Those people told me that, from a business standpoint, it’s the most productive show of all. In fact, by the last day of CES 2016, it had become clear that many wandering the hallways, like ghosts from the recent past, had set their sights on High End and the US consumer shows as viable alternatives to CES.

Joe Reynolds of Nordost, one of many who noted that a lot of his company’s US dealers had skipped CES this year, called a spade a spade while pointing the way forward: “We are not served by the CTA [the Consumer Technology Association, formerly known as the Consumer Electronics Association and the owner of CES] and never have been,” he said. “We should have a North American High End Society that puts on a show comparable to what the industry-run Munich High End organization does in Munich.”

Reynolds’s idea has already had a trial run in North America. After the Chester Group cancelled the 2016 installment of Montreal’s once-vital *Salon Son et Image*—which they had bought, in 2013, from Michel Plante and Sarah Tremblay—SSI’s former owners stepped into the gap.² The couple quickly formed a new, industry-run, not-for-profit organization, Montreal Salon Audio, and resurrected the show under the new name. Their show, which offered free admission, was so successful that MSA immediately booked Montreal’s Hotel Bonaventure for a return engagement during the last weekend of March 2017. According to Plante and Tremblay, what’s most significant is that MSA is “a show for the industry, owned by the industry, and organized by the industry.”

If people in the US high-end audio industry were to form an education-oriented, not-for-profit organization to mount one or more annual, industry-sponsored shows, they could do so at considerably lower cost to exhibitors than is presently possible at the Consumer Electronics Show. The money saved could be used to reach out to new constituencies and create a consumer-friendly destination event that, in time, could become eagerly anticipated and well attended. Out of the ashes of the high-performance audio segment of CES might arise a new show that serves consumers and industry alike.

Jason Victor Serinus (*STLetters@sorc.com*) is a professional whistler and the voice of Woodstock in the Emmy-nominated *Peanuts* cartoon *She’s a Good Skate*, Charlie Brown. ■

1 See www.stereophile.com/category/ces-2016.

2 See www.stereophile.com/content/salon-son-et-image-put-hold.

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SEE OUR EXCLUSIVE EQUIPMENT REPORT ARCHIVE AT WWW.STEREOPHILE.COM

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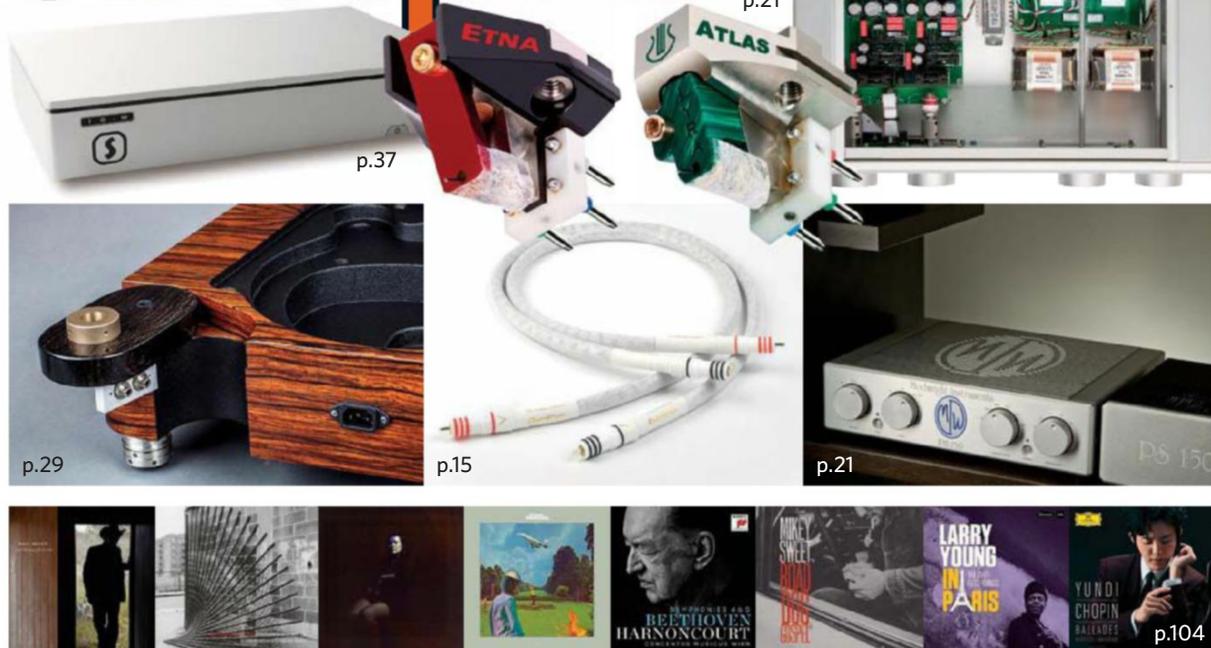
Technical supremacy in a Savile Row suit.

Actually, they don't seem expensive at all.



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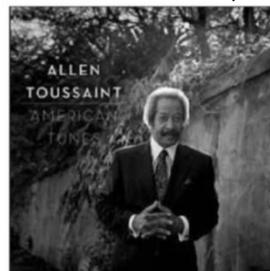
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- John Atkinson, *Stereophile*



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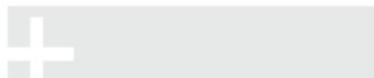
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"... the mere fact that it is not unreasonable to compare the sound of the \$4999 (pair) Triton One with the sounds of speakers costing tens of thousands of dollars more per pair says a lot about their level of performance ..." – Robert Deutsch, *Stereophile*

"A Giant-Killer Speaker ... Borderline Class A"
– *Stereophile Magazine*

Winning Stereophile's Loudspeaker-of-the-Year, is perhaps, the highest honor that a loudspeaker can achieve. Plus, this is doubly significant for such an affordable loudspeaker as the One, when you realize that the co-winner sells for \$25,000 a pair, winners often sell for \$50,000, \$100,000, or \$200,000 a pair, and you have to go back to 2007 to find another winner under \$20,000 a pair (at \$18,000, not much under). And, of course, Borderline Class A is a similar, very special achievement, when you realize the average Class A speaker, this year, sold for \$54,000 a pair.

"An absolute marvel ... shames some speakers costing ten times as much."
– Caleb Denison, *Digital Trends*

The Triton One is an evolutionary speaker that builds upon all the advanced technologies that have made the Tritons mega-hits around the world. This new top-of-the-line flagship was engineered to deliver even better dynamics and bass than the extraordinary Triton Two, along with further refinement of all aspects of sonic performance. How well have we succeeded? In the words of HD Living's Dennis Burger, the Triton One delivers, *"... the sort of upper-echelon performance that normally only comes from speakers whose price tags rival a good luxury automobile"*.

Triton One "creates visceral, tangible waves of pure audio bliss"
– Dennis Burger, *HD Living*

Great sound is what it is all about and the Triton Ones are, as HiFi+'s Chris Martens raved, *"jaw droppingly good ... one of the greatest high-end audio bargains of all time with a dazzling array of sonic characteristics that are likely to please (if not stun) the finicky and jaded of audiophiles"*. The Ones were specifically engineered to excel with all types of music as well as movies. Best of all, they offer previously unheard of value, as Brent Butterworth wrote in *Sound & Vision*, *"I heard a few people saying the Triton One sounded like some \$20,000-and-up high-end towers, but I disagree: I think they sounded better than most of them"*. Darryl Wilkinson summed them up best, *"A Masterpiece ... GoldenEar has fully ushered in the Golden Age of the Loudspeaker"*. Hear them for yourself and discover what all the excitement is about.



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LETTERS **FEEDBACK TO THE EDITOR**

The fallacy of accuracy

Editor:

Steve Guttenberg's "As We See It" in May (p.3) was the best and most believable article I've ever read in *Stereophile*. Two thumbs up!

—Dave Freeman
dfree68@comcast.net

Accuracy is neutrality

Editor:

Stereophile long ago wandered off the trail blazed by the late J. Gordon Holt. With "The Fallacy of Accuracy" in the May issue (p.3), it has finally fallen into a ditch.

Steve Guttenberg and those who reject the concept of high-fidelity sound reproduction—the promotion of which was one of *Stereophile's* reasons for being—have finally taken over.

"The Fallacy of Accuracy" obtusely overlooks the fact that neutrality is accuracy. A neutral component neither adds to, subtracts from, nor alters the signal it's handling. How else (at least on a technical level) would you define "accuracy"?

The proper goal of recording and reproduction is to reproduce the original acoustic event as closely as possible. The idea that one should select audio equipment on the basis of whether it "sounds good" (another belief Gordon fought) is as wrong today as it was 60 years ago.

—William Sommerwerck
grizzledgeezer@comcast.net

The fallacy of Guttenberg

Editor:

So, let me get this right: If all speakers were designed to be accurate, "the most accurate [speakers] would all eventually sound exactly the same."

I never thought this statement would make it to the pages of *Stereophile*: a magazine whose writers live to describe the wonderful differences of well-designed amplifiers, amplifiers that have similar, flat frequency-response measurements. Yet some are smoother, sweeter, grip the bass better, etc. Solid-state and tubed amps might have almost identical frequency responses; do they sound "exactly the same"? So, then, how can Mr. Guttenberg be accurate?

Guttenberg misses a crucial and important point: the *room*. The room (or studio, or, as Andrew Jones was quoted in Guttenberg's editorial, the playback

equipment) will have a large effect on a speaker's performance. Some studios are overdamped and sound like crap. Some sound amazing. Some playback equipment is colored by design, some is transparent to the source. Some speakers might sound magical in one room and like a bad trick in another.

Speaker designers who strive for flat frequency response on and off axis want customers to have predictable performance in their room. I think that's what Jones meant in his response. If you get a speaker with a design tilt toward brightness—"detail," "airy," in *Stereophile* writers' lingo—and put that speaker in a room that is lively, good luck listening longer than 30 minutes.

—Pio Ferro
pioferro@icloud.com

Steve is right

Editor:

Steve Guttenberg is right. Dancing with your wife at your favorite blues club as the band plays "Sweet Little Angel" isn't accurate. Paul McCartney singing "Maybe I'm Amazed" to the memory of Linda in a 40,000-seat stadium isn't accurate. The second balcony in a 400–500-seat venue while Jeff Beck plays "Nessun Dorma" isn't accurate. But it *is* music, and it *is* a nearly tactile emotional experience.

I thank the sound engineers involved in each of those moments. Their ears and efforts brought the experience of the music to me. I also thank those same ears in the designers of the speakers we listen to. But please, no oscilloscopes—the distraction of a projected sinewave, while the music is being played would ruin it. All you would be left with, then, would be an "absolute sound."

—Bert Paul
Waldenpond@comcast.net

The guy can write

Editor:

As a longtime subscriber from back in the days of the magazine's small digest format, when reading *Stereophile* made it seem as if you were part of a select group of cognoscenti, I was recently relieved when Sam Tellig finally retired and the kid, Stephen Mejias, with his tales of girlfriends and cats, left to pursue other interests. *At last*, I thought—*now, if only Atkinson can get a grip on Dudley and keep him away from garage sales and junkyards so*

TAKE HEED! Unless marked otherwise, all letters to the magazine and its writers are assumed to be for possible publication. In the spirit of vigorous debate implied by the First Amendment, and unless we are requested not to, we publish correspondents' e-mail addresses.

we don't have to hear about his resurrecting another long-dead and entirely unmissed piece of audio history, maybe we can get back to some good old audiophile stuff. You know, just the facts: How does this piece image? Does it reproduce frequencies only my dogs can hear, and how well are they dispersed? Will the bass rattle my windows and flutter my pants legs? *That's* the kind of stuff audiophiles want to know.

Then along comes this Herb Reichert fellow with no audiophile cred. His favorite amp is an integrated, for Christ's sake, and features arc-welding tubes and sells for somewhere in the mid-four-grand area. Okay, my longtime Prometheus-Quad combo cost only half as much, but I'm not making a living writing for audiophiles. We want to hear about systems, like Fremer's, that cost as much as my house and my Mercedes.

But, being open-minded, I decided to give Reichert the benefit of the doubt, and read a few of his columns. Damn—it as an old English major who reveres the written word, I have to admit that, for someone so misguided, the guy can write. Unfortunately, he's one of those poor romantic souls who believe that music can take us to another place. He needs help. He's so focused on the experience that he misses all the audiophile stuff. When I finish reading one of his columns, instead of lusting after the equipment, I want to purchase the music that got him so passionate, even when I hate the genre.

You have to rein Herb in. Otherwise, you'll have another Tellig on your hands, and *nobody* wants that. I'd like to say that if something isn't done about Reichert, I'll be canceling my subscription. But that's never seemed to work for anyone, so I guess I'll just have to put up with another issue—and another after that!

—Bill Aberman
waberman@msn.com

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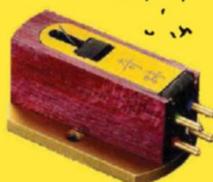
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INDUSTRY UPDATE

AUDIO NEWS & VIEWS

UK: YOUR LOCAL VINYL SHOP

Paul Messenger

The demand for vinyl not only continues, it continues to accelerate: UK year-on-year sales increased by about 60% in 2015, to a total of 2.1 million units. Those statistics are backed up by US figures for the same period, which show a 30% increase in sales, to 12 million units, in 2015.

But a recent editorial in *The Economist* magazine¹ highlighted a problem: The rapidly growing hunger for vinyl has caught the world's few remaining pressing plants completely off guard. Not surprisingly, some of these plants are taking the line of least resistance, giving priority to larger record labels whose rosters include albums from such high-selling artists as Justin Bieber and Adele. These superstar LPs are thus being pressed at the expense of the smaller, independent labels and artists who were largely responsible for the vinyl revival in the first place.

It's important to keep things in perspective: Vinyl still represents only about 2% of music sales. Then again, listeners interested in high-end audio gear are themselves only a tiny minority of the gear-buying population as a whole. Then yet again, since 2007 the vinyl market has grown tenfold.

Other relevant observations include the facts that a substantial proportion of LPs are bought by people who don't have a turntable to play them on, and that, last Christmas, cheap record players with USB output constituted Amazon's biggest-selling audio-component category. And while cheap Chinese-made players seem to be selling well, so are rather more serious but still-inexpensive record players from the likes of Rega Research and Pro-Ject.

The vinyl revival is in a state of some confusion—it means different things to different people. Indeed, those responsible for creating the vinyl—that is, those who contract with plants to press LPs—seem as confused as their customers, judging by the wide variety of approaches to deciding what to release on LP. There are plenty of back-catalog releases, of course, some-

times with elaborate packaging and often aimed at older buyers who may have long ago ditched their original LP collections. For example, I recently bought a three-LP edition of Bob Dylan's *The Cutting Edge 1965–1966: The Bootleg Series Vol.12*. (Highly recommended: It comprises outtakes and alternate takes from *Bringing It All Back Home*, *Highway 61 Revisited*, and *Blonde on Blonde*, the three albums that, in my opinion, represent the highpoint of his songwriting.) Bundled with it were the equivalent two CDs, which I quickly ripped to my server for those times when I'm too lazy to put a record on the turntable.

While no one has come up with a satisfactory explanation for why those who don't own a record player are nonetheless buying vinyl, plenty of new releases are presumably aimed at younger clients, and many of these come packaged with download codes. I suspect that the LPs and their sleeves, jackets, slipcases, and other extras are stashed away unplayed as collector's items, to be sold later for considerably more—it's the download copies that the buyer listens to.

That there are many ways to skin a cat seems to particularly describe the vinyl revival, and in my opinion it's a fundamentally good thing. I've long preferred the sound of vinyl, and already have a large collection of LPs—but *any* development that helps keep the format alive is welcome.

GERMANY: MUNICH

Jason Victor Serinus

Thirty-five years ago, in 1981, an association of West German high-end companies formed the High End Society, in order to mount the country's first, and now oldest, high-end show (www.highendsociety.de). Technically speaking, it is a limited company, High End Society Service GmbH, rather than High End Society e.V., that organizes and runs High End. This was done purely for legal reasons, to protect the society in case of a lawsuit. The first event was held in Düsseldorf; within a few years, it had moved to a

¹ See www.economist.com/blogs/prospero/2016/04/tables-turning.

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 September 2016 issue is July 20, 2016.

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.

ARIZONA

■ Wednesday, June 29, 7–9pm: The **Arizona Audio Video Club** holds a **PS Audio** night, during which we will sample the soon-to-be-released BHK Signature preamp, coupled with the well-reviewed BHK Signature stereo amplifier. The highly regarded line of Bascom H. King (BHK) amplifiers demonstrate Paul McGowan's commitment to providing market-leading electronics at prices many people can afford. Come join us at Trinity Lutheran Church, 9424 N. Seventh Street, Phoenix 85021. For additional info, please visit the Arizona Audio Video Club website: www.azavclub.org.

■ Wednesday, July 27, 7–9pm: The **Arizona Audio Video Club** will hold its monthly meeting at Trinity Lutheran Church, 9424 N. Seventh Street, Phoenix 85021. This will be our annual Members' Music Night, for which club members bring the tunes they wish to share. The event will highlight the joys of analog with a nice turntable and associated electronics. Just ignore the occasional click, tick, or pop—*analog still rocks*. Visitors are encouraged to attend. For additional info, please visit the Arizona Audio Video Club website: www.azavclub.org.

CALIFORNIA

■ Saturday, June 25, 2–5pm:

CONTINUED ON PAGE 19

hotel in Frankfurt, where it remained for 21 years. Finally, in 2004, with the goal of securing a larger, more conducive environment, High End shifted to Munich's MOC Event Center, where it continues to this day—the 2016 show took place May 5–8, and you can find our coverage at www.stereophile.com—and it is fair to say that for the high-end audio industry, High End has replaced the Las Vegas CES as the primary show for introducing new products.

“Participation exploded after our move to Munich,” veteran managing director Branko Glisovic told *Stereophile* via Skype. “I have to be honest: We reached capacity maybe five or six years ago. We have no more space available. The number of exhibitors can increase only if there are more co-exhibitors sharing a room. The areas of the MOC that we do not occupy are rented the entire year to show and sportswear companies who pay MOC a monthly rental fee. Of course, I have urged those companies to go on vacation for a week and said I will pay for it, but there is no chance.

“We always have a waiting list, especially for the larger conference

rooms in the upper Atriums,” said Glisovic. “Forty to 45 companies want these rooms, and it’s difficult for me to explain that, despite their nice look, the sound quality in those 144 rooms is not that good. But there are certainly more larger conference rooms than at any other show.”

Over a decade ago, Munich High End developed 10–15 “demo cabins” with improved sound in MOC’s downstairs exhibition halls. Glisovic insists that while they are “not that large, they are as large as a normal living room.” Nonetheless, exhibitors still clamor for rooms in the upper Atrium, though the combination of rear glass walls, angled ceilings, and ceiling dividers has been known to eat bass alive and play havoc with everything that survives.

In 2016, with 515 exhibitors and 1000 brand names, High End offered products from perhaps 95% of the world’s high-end companies. It’s a dazzling array of offerings that no US show can equal. “We are a show run by the industry for the industry,” Glisovic emphasized. “This is why it’s the largest European show. It also costs a minimum 30% less to exhibit here than

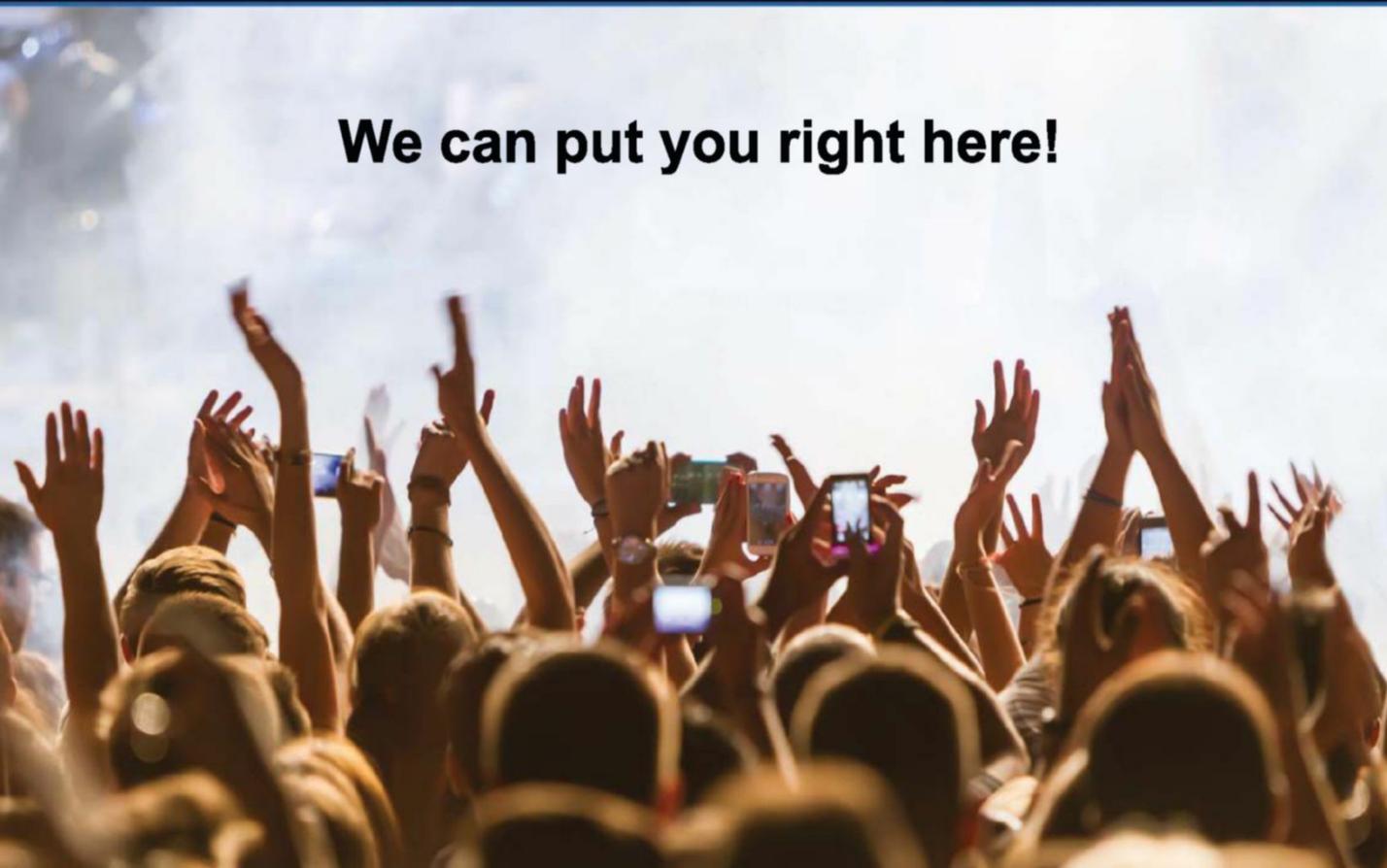
in any other audio show in Europe, because there is no need to make money on it, and I do not need to have, every year, a new Porsche. Our member companies may be competitors, but we learned quite quickly that it makes sense to exhibit and make decisions together when we meet annually.”

High End’s research revealed that members of the public attending the show primarily come from a radius of about 70 miles (100km) from Munich. Committed audiophiles, of course, know about Munich High End throughout Europe and beyond. But the general public beyond a 70-mile radius is best reached via the organization’s High End on Tour—a series of smaller satellite shows, held at least twice a year. Eight years ago, the High End Society also took over High End Swiss, the only industry-organized show in Switzerland.

“We spend a lot of advertising money reaching out to young people, women, and people sensitive to music,” said Glisovic. “Ninety-five percent of our advertising budget goes to non-audio magazines that get us in touch with the whole family. This is a show where you can relax, eat, and enjoy live

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music. It is a show for the complete family, to which more and more women and families are coming.”

MOC's diverse eating and drinking venues, including a surprisingly healthy cafeteria and beer garden, put to shame the food trucks and impossible restaurant lines at US shows. There is also a fair amount of entertainment, some of it happening at odd hours. I find the music played in exhibit rooms to be often far more interesting than at US shows, and the open nature of the downstairs Atriums, easy access to the outdoors, and the sheer enthusiasm of the diverse crowds make for a surprisingly festive environment.

Branko Glisovic, now 65, has decided to throw in the towel. Beginning in 2017, Munich High End will be run by only the second managing director of its long history. But the show's basic orientation as a cost-effective, industry-run endeavor will continue to serve as a model for what companies in other countries can collectively accomplish with the right person at the helm.

UK: WILTSHIRE

Paul Messenger

UK cable makers have recently been



The Chord Company's ChordMusic cables use a new dielectric material, called Taylon.

particularly successful, and none more so than the Chord Company, which is celebrating its 31 years in the business by introducing a brand-new and rather costly range: the ChordMusic models (www.chord.co.uk).²

The main reason behind the new cables—their hefty price tags are roughly twice those of Chord's previous top

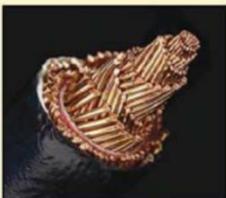
line, the Super ARAYS—is the use of a new insulation material that Chord calls Taylon. This plastic has apparently never before been used in audio cables, and is being supplied exclusively to the Chord Company. Although Taylon's dielectric constant is slightly less than

² The Chord Company's cables are distributed in the US by The Sound Organisation, www.soundorg.com.

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The hard reality is that audio cables can only do damage: they can blur or smear information, distort phase relationships, destroy detail and add colouration. Bad cables can – and all too often do – ruin the best of systems.

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that of polytetrafluoroethylene (PTFE), apparently the material's main advantage is that its signal phase relationships remain very stable at normal room temperatures (which, allegedly, is not the case with PTFE). Although Chord deliberately says nothing about what Teylon actually is, it's supplied by a US company that uses it in defense applications such as radar systems, in which great speed and accuracy are of paramount importance.

In other respects, the ChordMusic cables build on lessons learned in Chord's design and development of its Super ARAY models, which have PTFE insulation and micropolished connecting plugs. However, the ChordMusics use no fewer than three layers of noise reduction along each cable's length: one to damp out any mechanical vibrations; a second to hold the damping layer firmly in place; and a third, metallic braid, perhaps to provide some electrical shielding. The whole cable is then wrapped in a braid similar to that used for the Super ARAYs, but in a choice



Paul Messenger (left), with veteran reviewer Martin Colloms (center) and Sally Kennedy of the Chord Company (right), at the London launch of the ChordMusic cables.

of colors.

The ChordMusic line includes analog and digital interconnects, which can be ordered with any combination of phono, DIN, RCA, XLR, and BNC termination; the speaker cables come with 4mm banana plugs or spades. Power cords, as well as Ethernet and USB links, are in preparation.

The Chord Company—which has

no connection with the English electronics manufacturer, Chord Electronics—recently held a press conference at KJ WestOne, a high-end dealer in the heart of London's West End. The presentation included a demonstration comparing the ChordMusic cables with the equivalent Super ARAY models, in the context of a decidedly high-end system that included a dCS Vivaldi CD player/streamer, Naim Statement amplification, and Wilson Audio Specialties Alexia speakers. As we listened to tracks from several CDs, the Super ARAYs were,

one by one, swapped out for their ChordMusic counterparts. I heard impressive improvements indeed. Although I worried that the sound of the ChordMusics seemed to include some extra brightness that was not fully explained, the overall differences were not small, and somewhat reminded me of the results of Naim Audio's recent Discrete Regulation (DR) upgrades for component models, which I discussed in the February 2016 issue (p.17). I look forward to trying some of the ChordMusic cables in my own system. ■

CONTINUED FROM PAGE 15

The **Los Angeles & Orange County Audio Society** will hold its monthly meeting at **Sunny's Audio and Video**, in Covina (1370 E. Cypress Street, #D). Sunny's will feature a completely new showroom with new product lines by **Arcam, GoldenEar, T+A, and Technics**. Featured products will also include **Aerial, Audio Research, Dan D'Agostino, HRS, Meridian, Wilson Audio**, and more. Several complete systems below \$15,000 will be highlighted. You'll want to check out the transformed high-end store as well. As a bonus, on Friday, June 24, Sunny's will host clinics conducted by several manufacturer representatives and focusing on setting up digital-streaming and analog systems. A raffle is planned, and on Saturday lunch will be served. Guests, visitors, and new members are invited, and there's free parking nearby. For more information about Sunny's, visit www.sunnyaudiovideo.com. For more information about the society, visit www.laocas.com or call Bob Levi at (714) 281-5850.

■ Sunday, July 24, 2-5pm: The **Los Angeles & Orange County Audio Society**

will hold its monthly meeting at **The Source Audio/Video Design Group** (3035 Kashiwa Street, Torrance). Our hosts, Steven and Jason Lord, will again demonstrate top-of-the-line equipment in spaces custom-designed to maximize your musical (and visual) enjoyment. Listen to **Boulder, Dan D'Agostino, Denon, Linn, Marantz, MBL, McIntosh, Pearl Evolution, Simaudio Moon, Sonus Faber, Totem Acoustics, Wadia**, and other fine examples of high-end equipment that will allow those attending to make comparisons and/or just enjoy the music. Special industry guests will include: **Dan D'Agostino**, who will talk about and show his new Progression line of amps and preamps; and Ray Kimber of **Kimber Kable**, who will talk about his new headphone cables as well as the properties and advantages of braided-wire technology. All six of The Source's theater rooms now feature **Dolby Atmos** for a true surround-sound experience. **Eastwind Import** will be on hand to offer for sale personally selected LPs and CDs. A raffle is planned and an extraordinary lunch will be served. Guests, visitors, and new members are invited, and

there's free parking nearby. For more information, visit www.laocas.com or call Bob Levi at (714) 281-5850.

■ Sunday, August 21, 2-5 pm: The **Los Angeles & Orange County Audio Society** will hold its monthly meeting at **The Audio Salon**, in Santa Monica (2525 Michigan Avenue, Gallery F1). Maier Shadi will demonstrate top-of-the-line equipment in a space custom-designed to maximize your musical (and visual) enjoyment. Peter McGrath of **Wilson Audio Specialties** will discuss the full range of Wilson speakers, from the Sabrina to the all-new Alexx. **Nagra's** recently introduced Classic line of electronic components will be demonstrated. Vinyl playback will include the **SAT** tonearm and the **TechDAS** Air Force One and Air Force Three turntables. The system will be wired with **Transparent Audio** cables. **Eastwind Import** will be on hand to offer for sale personally selected LPs and CDs. A raffle is planned and an extraordinary lunch will be served. Guests, visitors, and new members are invited, and parking is free. For more information, visit www.laocas.com or call Bob Levi at (714) 281-5850.



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ANALOG CORNER

BY MICHAEL FREMER

THIS ISSUE: ModWright Instruments' PH 150 tubed phono stage and two new low-output Lyra cartridges.

Analog Corner No.253!!!!!!!!!!!!!!!

First, let's talk about problems with grounding and hum. I regularly get e-mails from frustrated readers asking if I have a solution to a problem that seems impossible to solve: turntable-related ground hum. When the e-mail doesn't include what its writer has done so far to eliminate hum, my job is easy. I just go through the usual checklist:

- 1) If your tonearm's output leads include a separate ground wire, is it connected to the phono preamplifier's ground lug? (This is more critical with moving-magnet cartridges.)
- 2) Does your turntable have a ground lug? (Read the instruction manual.) If so, have you run a wire from the lug to your phono preamp?
- 3) Do your tonearm's cartridge clips fit snugly onto your cartridge's pins?
- 4) Do the RCA plugs of the phono cable linking your tonearm and phono preamp fit snugly in their jacks?

If the answers to all of those are *yes*, I tell the reader to try removing the ground wires, one at a time. If the turntable has no ground lug, I suggest running a wire from anything metal on the turntable's chassis to the phono preamp's ground lug. Then I suggest trying a wire from the phono preamp's ground lug (if it's an outboard model) to the line-level preamp's ground lug—or, if there is no lug, to a screw on the preamp's chassis.

The difficulty is that there are different kinds of problems that result in ground hum, and the hum is often very hard to trace and get rid of—which makes it doubly difficult to diagnose from afar.

Just the other day, for no apparent reason, a hum appeared in my system.

I have found that, to prevent hum in my phono front-end, the cables linking my Ypsilon MC-16 step-up transformer to my Ypsilon VPS-100 phono

There are different kinds of problems that result in ground hum, and the hum is often very hard to trace and get rid of.

preamp must be well shielded and dressed *just so*. I've been using and liking Teresonic's Clarison Gold interconnects, which are made of 99.999%-pure, silver-plated gold. They're terminated with crimps, not solder, and have an extremely sophisticated shielding system terminated at one end with spades that connect to the ground lug of the component at the source end (in this case, the transformer). But I've found that, to avoid hum, even these must be positioned carefully.

Earlier that day, I'd replaced the power cord of the vacuum hold-down compressor of my Continuum Audio Labs Caliburn turntable, simply because the blades of its molded plug had gotten bent over time. This cord, which was from a well-known brand, had been doing its job *for 10 years*; I replaced it with a higher-quality cable from the same company—one that has a far better plug. (Originally, my thinking was: *Why bother using a better, newer cable there?*)

Later that day, when I turned everything on, hum in my system was at an all-time high. I ran through my usual checklist, to no avail. The hum was now so bad that, for the first time ever, it intensified when I touched the tonearm's finger lift. Only when all of my usual fixes had failed to correct the problem did I think of the power-cord swap I'd made earlier in the day, to what had *appeared* to be a higher-quality cable. From my stash of cables, wires, and cords—enough to build a suspension bridge—I retrieved an equally old Siltech cord and used that.

Not only did the newly apparent ground hum disappear, so did an old one I've spent 10 years dealing with. What was it about the original cord that made it somewhat susceptible to inducing a ground hum? What was it about the first replacement cord that made the hum unbearably loud? And what is it about this old Siltech cord that completely eliminated the hum?

I don't know. You could say I should have tried replacing the compressor's cord years ago, but I didn't see how it could create such a systemic problem. What I failed to consider is that the compressor is electronically linked to

Impeccably designed and built: the ModWright PH 150 and its companion power supply.



the Caliburn's motor-controller system, and that's the potential ground path that apparently produced the problem.

Too bad I didn't start out with that first replacement cord—*ie*, the “better” one that produced the really loud hum. Then I would have been forced to do the experiment sooner. My point is, if you've got a phono hum—*any* hum—don't rule out *anything*.

**MODWRIGHT INSTRUMENTS
PH 150 PHONO STAGE**

ModWright Instruments' PH 150 moving-coil/moving-magnet phono stage measures 17" wide by 5" high by 12" deep and weighs 19 lbs. Knobs on its front panel let you easily make adjustments that with some phono pre-amps require accessing the rear panel or going inside. Starting at the left, the Select knob offers settings for MC, MM, and Mute. The Gain knob offers levels of 0dB, -6dB, and -12dB. With MC selected, those settings would correspond with 72, 66, and 60dB of gain, respectively; with MM, the numbers would be 57, 51, and 45dB, the last being more typical of most MM stages.

At the center of the front panel is ModWright's logo, backlit in blue. Di-

rectly to its right is the MM input's Capacitance knob, with choices of 0, 100, 200, 330, 470, and 680pF. Selecting MM sets the PH 150's resistive loading at 47k ohms. With the rightmost knob, labeled Resistance, resistive loadings of 10, 50, 100, 200, 500, and 1000 ohms can be chosen on the fly for MC cartridges—enough to meet the needs of all but the most obsessive loaders.

There are also two small pushbuttons: Power (between the Select and Gain knobs) and Mono (between Capacitance and Resistance). Show of hands: How many of you love this level of configuration convenience? That's what I thought!

On the rear panel are both MM and MC inputs—you can simultaneously run two turntables, or two tonearms on the same table, so long as one arm holds an MM cartridge and the other an MC—or you could add an outboard step-up transformer and run two MCs.

The PH 150's large, outboard power supply is based on a solid-state rectifier and a choke-based current regulator. It measures 10.5" wide by 5" high by 8.5" deep, weighs 15 lbs, and is connected to the PH 150 via a 4' umbilical. Both cases are solidly constructed of milled,

anodized aluminum.

WHAT'S INSIDE: Inside the PH 150 itself are three gain stages, the first of which is an MC step-up based on a Lundahl transformer and using two low-noise, high-current 6C45 triode tubes. According to Dan Wright, ModWright's founder, president, and owner, the rest of the circuit uses “a combination of tube-FET hybrid and inductively coupled and loaded gain and buffer stages.” These stages use a pair of 6922 dual triodes (6DJ8 or 7308 tubes are also acceptable). Wright points out that the tube filaments are regulated by current rather than voltage, which is said to produce a warmer sound.

The output is coupled not with a capacitor but with a gapped transformer, also from Lundahl. Interestingly, changing the secondary winding of the output transformer changes the gain. Mil-spec selectors on the business side of the various front-panel knobs do all the switching.

Setup requires that you open the case and insert the four tubes in their sockets, which gives you a chance to admire the neat circuit layout and component placement. This clean machine costs \$7900.

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Far left: inside the PH 150's outboard supply. **Near left:** Lundahl trannies and ModWright's own capacitors have pride of place in the PH 150.

SWEET, SPACIOUS, VIVID SOUND: Why begin with a familiar record when you can approach a new component with fresh ears? With the nicely broken-in Lyra Etna SL installed in the Swedish Analog Technologies tone-arm, I began with a reissue of the late Cape Verdean singer Cesária Évora's *Café Atlantico* (2 LPs, Lusafrika/Sony BMG/Pure Pleasure PPAN 54012), first released on vinyl in 1999. It sold 300,000-plus copies in France alone.

Lushly orchestrated, with a string section floating behind the guitars and Évora's luxurious voice, bathed in reverb, "Flôr di nha Esperança" (The Dream of My Hope) sounds mournful and romantic—as, with these opening lines translated from the Portuguese, it should: "If I had known / that young people could die / I would never have loved / anyone in this world." The full-bodied production of this track and of the entire album were a perfect match

for the PH 150. Évora's voice—round, buttery, yet somewhat ethereal in spite of those qualities—was center stage, bathed in a generous reverberant field that didn't quite swallow it whole, but, with its long sustain and cushiony decay, came close. Nonetheless, the aural image of Évora's voice had a well-focused presence and a glorious, satiny shine. The bass line—full, but not quite soft or ripe—was well enough controlled to produce not only what, around here, we call satisfying rhythm'n'pace, but also instrument-defining textures. High-frequency extension was airy,



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open, and 100% free of edge and grit—as you’d expect from a tubed phono preamp. There was nothing not to love about the sound of this sensual record as reproduced by the PH 150.

Next up was a comparison of: an original Ted Jensen (Sterling Sound)-mastered version of the Police’s *Ghost in the Machine*, cut from analog tape (LP, A&M SP-3730); the Nautilus half-speed mastering of the same album, cut from tape by Bruce Leek and Richard Donaldson at the IAM Cutting Center (LP, A&M/Nautilus NR-40); and the new half-speed mastering of it by Miles Showell at Abbey Road, cut from a high-resolution digital source, and sample-rate-converted to half speed (LP, A&M/Polydor ARHSLP 005). (I’ll soon review on Analogplanet.com the Abbey Road half-speed mastered series of albums.)

I hadn’t played *any* version of this album for a long, long time. I was amazed at how great a recording it is, and by how much my system has improved since the last play. With all three pressings, the PH 150’s bottom-end weight and definition were tight, muscular, and very well extended. The top end was pristine, super-clean, and very well defined. Stuart Copeland’s drum kit, from the wallop of the kick to the crystalline clarity of the cymbal crashes, left nothing to be desired.

As you’ll read below, the fact that it was the Lyra Etna SL cartridge being amplified by the PH 150 didn’t hurt—but I tried other cartridges as well; they, too, were very well served by

the PH 150, which produced “black” backgrounds even with cartridges with outputs as low as 0.25mV.

Acoustic music was even better served by the PH 150’s smooth, effortless attack, generous sustain, and elongated decays into “black.” The ModWright produced an expansive soundstage with well-focused images of generous size. String sheen, at which tubes seem to excel, mesmerized me, whether from solo or massed strings. Yet the PH 150 didn’t soften or gloss over string “grip” when called on to reproduce edgier, sometimes harsh playing. To confirm that, I pulled out the Kronos Quartet’s performance of Steve Riffkin’s arrangement of Jimi Hendrix’s “Purple Haze” (LP, None-such 79111-1).

This is not to say that the PH 150 will suit everyone’s tastes or needs. Some like the tighter grip, greater bass weight, faster transients, and overall punch of a pure solid-state phono stage. If the PH 150 fell short anywhere compared to the best SS designs, it was in dynamics. There’s a bit more “slam” to be had, and greater low-frequency focus and punch, but to get those you have to give up other things.

I’m thinking of Luminous Audio Technology’s Arion (*ca* \$6500), which I reviewed on Analogplanet.com.¹ The Arion was designed by Mike Bettinger, who recently went to work for VPI. It and some other pure-SS (and step-up transformer-less) designs provide a very different listening experience—particularly in terms of macrodynam-

ics, and greater grip on and weight in the bottom octaves—that some prefer. Others would never leave the sanctuary of tubes and transformers, especially because of overall musical flow.

What’s great about this moment in analog playback is that enthusiasts on both sides have upped their games and seem to be meeting somewhere in the middle: the best tubed phono preamps don’t sound noisy and soft, and the best solid-state designs don’t sound hard and crunchy, even as each remains a fundamentally different-sounding approach to the same task.

When you pay \$7900 for a phono preamp, you’re entitled to excellent build quality inside and out, and superior sound that includes low noise, high gain for the lowest-output cartridges, and a consistently transparent sonic picture that lets you forget everything you’re listening to—other than the music itself. ModWright Instruments’ PH 150 meets or surpasses all of these requirements, while adding features of convenience and configurability (including a Mono button) offered by only a few other phono preamps. Impeccably designed and built, the ModWright PH 150 combines the qualities of sound preferred by tube lovers with the convenience and configuration features loved by all vinyl fans. It’s also attractive and looks great on the shelf. If you’re in the market for a tubed phono preamplifier, the PH 150 is definitely worth checking out.

¹ See <http://tinyurl.com/zjz242u>.

TWO LOW-OUTPUT CARTRIDGES FROM LYRA: ATLAS SL AND ETNA SL

My 0.5mV-output Lyra Atlas moving-coil cartridge (\$11,995) has put in four years of heavy-duty use. But not long ago I began to hear some problems with sibilants from records that previously hadn’t given me trouble in that department, and Lyra’s Jonathan Carr and Stig Borge suggested I bring my Atlas to the 2016 Consumer Electronics Show, held last January in Las Vegas, where they would exchange it for a new one.

I was doubly grateful because, while Lyra’s top models are expensive, demand is high and regularly outstrips supply. This is because every Lyra cartridge is handmade by the same man, Yoshinori Mishima, and there’s usually a fairly long wait between order and delivery.

But in Las Vegas, along with the replacement Atlas, Carr and Borge handed me two new Lyras to review: the Etna SL (\$9995) and the Atlas SL (\$12,995), both of which also usually require a long wait. Yes, I’m a very lucky audiophile—I don’t take it for granted.

In past years, with their most well-received models—including the Helikon and Kleos—Lyra has followed their standard cartridges with low-output versions of same. The lower outputs are produced by winding the coil with fewer turns of wire. This results in lower mass—and, theoretically, lower mass results in better tracking and tracing and faster response times, all of which should produce, among other things, greater detail resolution and speed.

An aside: those who don’t “get”

vinyl playback consider all of this mechanical talk crazy and stupid. They think we’re fetishizing a technology that’s not worth salvaging, but that’s only because they’re 100% clueless. Hardly a day goes by that I don’t get an e-mail like this one, which arrived yesterday from a reader in Sweden:

A week ago I never heard of you, but now I’ve read dozens of articles and watched many many of your videos. I don’t think I’ve learned so much in such a short time since University.

I listened to vinyl up to around when the CDs came, then the music interest faded (except for my own playing). The CDs never did it for me and I still don’t own very many.

That said, I never had any great vinyl gear and my records went into storage

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for twenty years. About a year ago I was offered a Thorens 166 [turntable]. I picked the mothballs from my record collection and I was hooked. Well, I'm sure you've heard the story before, but I really like telling it. :-)

We are *not* crazy, and it's not crazy to spend \$13,000 on a phono cartridge if you have a big record collection, a system that can do justice to such a sophisticated transducer, and an equally ample bank account (though I know some less-than-well-off vinyl fanatics who do what they have to own such extravagances).

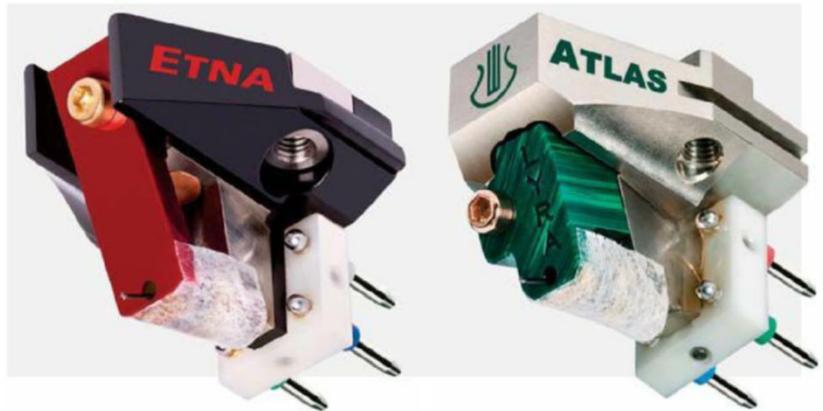
Back to the Lyra SL cartridges: Fewer coil turns also means lower internal impedance and lower output. The standard Atlas outputs 0.56mV, and has an internal impedance of 4.2 ohms and an inductance of 10.5 μ H. Its recommended resistive loading is between 104 and 887 ohms. The SL essentially halves the standard version's output, to 0.25mV, and reduces the internal impedance to a superlow 1.52 ohms and the inductance to 1.9 μ H.

With an output of 0.56mV at 5cm/s, the standard Etna's specs are identical to the standard Atlas's. And there's no difference at all between the rest of the specs of the Etna SL and Atlas SL. (If you're interested, read my reviews of the standard versions of the Atlas² and Etna.³)

The SL cartridges are electrically close to short circuits. They're ideal for use with phono preamps based on current amplification, such as the B.M.C. MCCI, which I reviewed for *Stereophile* a few years ago,⁴ and the MR Labs Vera 20, which I reviewed on AnalogPlanet.com.⁵

While I also listened to the Lyras through the ModWright Instruments PH 150 phono preamp (see review above), I mostly used a phono preamp and step-up transformer more familiar to me: Ypsilon's VPS-100 and MC-16. With both SLs, I found that halving the output of the original didn't produce *proportional* differences in sound, though both performed at the expected higher levels of resolution of inner detail and, especially, microdynamics, without losing any of the higher-output versions' dynamic slam and overall explosiveness.

Low-level dynamics—the small shifts that make music breathe and come to life—were better from the SL versions, which sounded even less mechanical than the originals. Still, I'm not talking



The SL cartridges are ideal for use with phono preamps based on current amplification.

profound differences, and even this level of accomplishment assumes that your phono preamp has enough gain and low enough noise to accommodate the halved output. If not, dynamics will suffer.

The higher-output versions of both cartridges retrieved so much detail, produced such explosive dynamics, and achieved such high levels of tonal neutrality that it was difficult to pick out precisely where the “better” resides—especially with the Atlas, where I felt the improvements, while notable, were not of game-changing scale.

But for whatever reason or reasons—perhaps due to the fact that the original Etna I had for review was one of the very first production units, if not *the* first—the differences between the sounds of the Etna and Etna SL were far greater than between the two Atlases. Of the original Etna, I wrote in March 2014: “The Etna’s macrodynamics were somewhat reduced compared with the Atlas’s, its soundstage was somewhat more compact, and its lower octaves weren’t as ear-poppingly iron-fisted—but it was close! In fact, in most ways, the Etna was a slightly scaled-down Atlas. But in a few crucial ways, the Etna’s sound quality seemed to surpass that of the Atlas, particularly in the midrange, where its transparency, harmonic expression, and ability to make sense of dense thickets of instruments seemed superior.”

The Atlas SL still beats the Etna SL in bottom-octave wallop, macrodynamics, overall grip, speed, and plain

old ear-popping *slam*, but the Etna SL’s stage was no smaller. In fact, compared to the Atlas SL, the Etna SL was more airy, expansive, and velvety rich, without giving up anything in detail or transparency—both of which usually take a hit to attain a velvety sound.

While I wrote in my review of the original Etna that it “seemed” in some ways superior to the Atlas, there was no doubt about the superiority of the Etna SL to the Atlas SL in the midrange. The Etna SL produced a profound midrange magic the Atlas SL did not.

These are two of the world’s great cartridges. Right now, I’m thinking the Etna SL is, overall, the greater, and that it’s Jonathan Carr’s best work yet. ■

Michael Fremer (fremer@analogplanet.com) is the editor of AnalogPlanet.com, a Stereophile website devoted to all things analogical.

2 See *Stereophile*, May 2012: www.stereophile.com/content/lyra-atlas-mc-phono-cartridge.

3 See *Stereophile*, March 2014: www.stereophile.com/content/lyra-etna-mc-phono-cartridge.

4 See *Stereophile*, June 2013: www.stereophile.com/content/bmc-phono-mcci-phono-preamplifier.

5 See <http://tinyurl.com/k5nga2a>.

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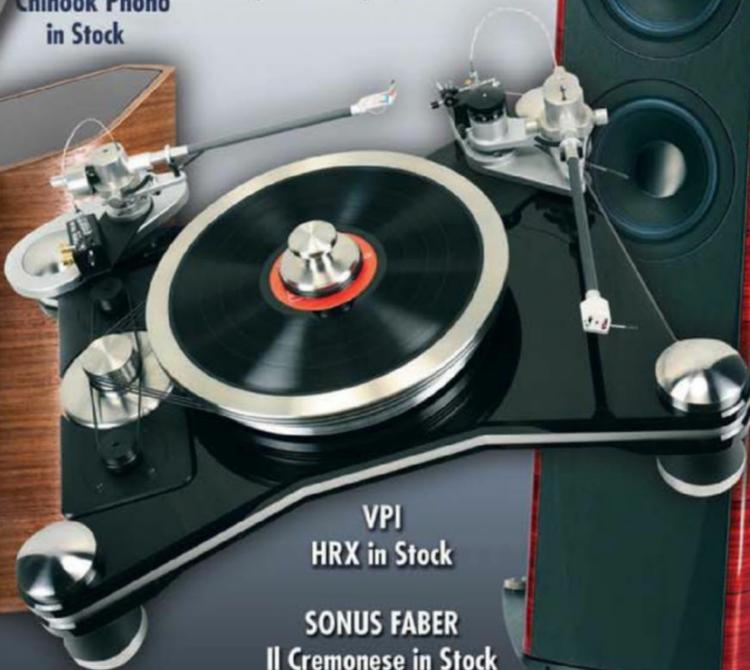
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LISTENING BY ART DUDLEY

THIS ISSUE: Constructing a plinth for the venerable Garrard 301 turntable: a craftsman at work.

Woodsong cutting through the fog

One

Everything makes a difference. Everything. File that away.

Two

There are two kinds of good sound: good *sound* sound and good *music* sound. While I could describe the distinction in few words or many, it's easier to point to two recordings of Elgar's oratorio *The Dream of Gerontius*: by Sir Adrian Boult and the New Philharmonia Orchestra, with tenor Nicolai Gedda singing the title role (2 LPs, EMI SLS 987); and by Malcolm Sargent and the Liverpool Philharmonic Orchestra, with Heddle Nash in the lead (2 LPs, EMI RLS 709).

I imagine the Boult version, recorded in stereo in 1976, fits most listeners' definitions of good *sound* sound. Although made somewhat after the golden era of British recording, it nonetheless typifies EMI's best work: open and clean, yet with realistic warmth and texture and color, and commendably free of distorted peaks. Boult's *Gerontius* is also spatially convincing, having both believable scale and a good sense of instrumental and vocal placement on the recording stage—and the depth and power captured in the sounds of timpani and, especially, orchestral bass drum must be heard to be believed. Indeed, no matter how many times I play this record, the thunderous climax to which the orchestral introduction builds is emotionally stirring.

There's little sonic thunder in Sargent's mono recording of *Gerontius*, made in 1945: the intro's orchestral bass drum can't be heard at all, the timpani barely. And yet, from the first notes played in unison by the clarinets, bassoons, and violas, there is a momentum, a temporal inevitability, in every line. The first harp arpeggio is breathtaking in its deliberateness, and the singing—especially by Nash, although the chorus is especially convincing—is lit from within by a level of emotional conviction I've



not heard in any other recording of *Gerontius*. It is impossible *not* to play the whole thing straight through, all four sides, and it ends too soon. This is good *music* sound.

I'm sure every *Stereophile* reader's collection contains both kinds of records. I'm equally sure that all of us trot out examples of the first

kind when people visit and ask to hear some music—and I suppose we sell our friends short in thinking they won't be equally or even more impressed by records of the second kind. It's a trust thing, I guess.

If I had to make the choice, I'd rather have the sort of playback system that shows the second kind of record to best advantage; experience tells me that, after a while, systems that show off only the first kind tend to bore me. But there's no reason we can't have both. File that away, too.

Three

I still believe that the most important part of a good record-playing system is a good record player, and that the critical critter is the turntable itself—what old-timers called the motor unit. If the turntable doesn't drive the record with sufficient noiselessness, physical stability, consistently accurate

A good plinth can enhance nearly every aspect of a turntable's performance.



Cocobolo curves: Woodsong Audio's Garrard 301 plinth, armboards akimbo.

speed of rotation, and sheer *grunt*, then there's no use obsessing over the rest of the system—you're screwed from the start.

But the turntable can't function without a structure—a plinth—to which it and its tonearm are fastened. (Obviously, this doesn't apply to such skeletal designs as various models from Rega Research, in which the supporting structure is part of the turntable itself.) A good plinth can enhance nearly every aspect of the turntable's performance, not only by holding the parts perfectly level and still, but also by damping or even drawing away the excess energies produced by the motor and the platter bearing. A poor plinth will store and then re-release those energies with such efficiency that they impinge upon the music—and a truly horrid plinth will amplify those energies. In the horrid category, the worst plinths are simple boxes in which a hollow chamber with a single aperture combine to function as a Helmholtz resonator—something you definitely *don't* want beneath a sensitive transducer.

In recent years, renewed interest in such vintage idler-drive turntables as the Thorens TD 124, Garrard 301

and 401, and various Lenco models has spurred hobbyists and commercial manufacturers alike to new heights of creativity¹ in plinth design. Pinterest, Tumblr, and Facebook are filled with photos of different design approaches: MDF, HDF, plywood, hardwood, softwood, slate, aluminum, and various high-density polymer/mineral composites all enjoy popularity as materials for plinths and tonearm boards alike—for the latter, brass, bronze, and polymer also have their supporters—and size, mass, and internal complexity can range from moderate to high to extravagant, with prices to match.

In "Listening" columns past, I've written about plinths made of slate (from Oswalds Mill Audio²) and polymer/mineral composites (the PTP Solid 12 turntable³), and I've probably written way too much about my own efforts at designing and building plinths made of stacked plywood and hide glue, for use with my Thorens, Garrard, and Rek-O-Kut turntables. Now I've had the opportunity to live with yet another design—the plinth made for the Garrard 301 by Woodsong Audio, of Sandpoint, Idaho, whose aftermarket eddy-brake disc for

the same turntable I reviewed in my March 2016 column.⁴

Viewed from above, and especially when its two articulated armboards are both pointing straight back, Woodsong's unapologetically curvy Garrard plinth (\$1900–\$3800, depending on construction, appointments, and finish) looks a bit like the Bearsville Records logo. (The Woodsong is also available with a single armboard, for those who think *one*.) The plinth itself measures 20" at its widest point, 15.75" deep, and, without its adjustable feet—made by British company Track Audio—just over 4" tall.

The Woodsong plinth is made of Baltic-birch plywood, with a bottom layer of manmade slate and, at its center, a layer of Panzerholz—literally, *armor wood* (sometimes called tank wood), an unusually hard, dense ply-

1 I won't say science is unwelcome in these waters, but I'm unconvinced in the extreme that any two technicians, any more than any two listeners, will find honest agreement on what does or does not constitute good performance in a plinth.

2 See www.stereophile.com/artdudleylistening/listening_93/index.html.

3 See www.stereophile.com/content/listening-126.

4 See www.stereophile.com/content/listening-159-page-2.



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wood made in Germany by Delignit AG. Internally—*ie*, the area that's cut away to make room for the motor unit itself—the plinth presents an intricately terraced structure, to accommodate the 301's motor, platter bearing, and various moving parts. To this chamber is applied a heavily textured black acrylic finish that, if nothing else, gives the Woodsong a distinctly professional look—and, I assume, a bit of damping. Even more impressive is the evident quality and sheer beauty of the Woodsong's veneer. My review loaner was clad in cocobolo, finished in a hand-applied oil that Woodsong's founder, Chris Harban, buffs to a lacquer-like gloss; other veneers are available, ranging from the merely pretty to the stunning.

The same oil finish is applied to the Woodsong's armboards, which are machined from hardwood. (Indian rosewood is standard, although the ones on my review sample were made of ebony.) A single, hefty bolt serves as a lockable pivot for each armboard; the range of adjustment is approximately 150 degrees—enough to accommodate tonearms ranging in length from under 9" to over 12". On my loaner,



On the armboard: the output jacks and bronze collet for AD's EMT tonearm.

one armboard was drilled for and fitted with a bronze mounting collet for my EMT 997 tonearm—I'd supplied the collet ahead of time, along with the output-jack housing for the EMT's flying signal leads—while the other was drilled for the collet of my Thomas Schick tonearm.

With the vast majority of Garrard

301 plinths, in both domestic and broadcast settings, the turntable drops into an opening just large enough to clear its mechanicals, leaving the Garrard's cast-alloy chassis aboveboard; indeed, that's how the original mounting template had it, said template having been slipped into a pouch within the hardcover owner's manual supplied with every new 301. By contrast,

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Woodsong provides a rabbeted (*ie*, recessed) fit that conceals the bottom lip of the chassis and draws the eye to the turntable's own subtly shaped design—an aesthetically nice touch that may, for all I know, pay a sonic dividend as well. The 301's four mounting bolts are accommodated by hidden threaded inserts.

Meticulous woodworkers who know how to measure carefully and cut precisely—a fraternity for which I'll probably never qualify—can produce a plinth in which a turntable's parts clear the plinth's structure by *just enough* to prevent interference or overheating, and not a millimeter more: too large a cavity means too much air to resonate. Chris Harban is one of these woodworkers; he calculates the distance between the inside of his plinth and the bottom edge of the 301's platter bearing well enough that he supplies, with each plinth, a precise amount of Bostik Blu-Tack putty to place between the two, as a damper. I don't know if other plinth makers have ever attempted such a thing, but it seems a worthwhile idea. And if it isn't . . . well, it's reversible.

Finally, in order to keep the Garrard's power cord from fouling against the plinth—possibly transmitting vibrations or, at worst, restricting the movement of the 301's spring-suspended motor—Woodsong supplies a relatively light-gauge, three-conductor wiring harness to go from the turntable's AC terminal block to an IEC socket on the rear edge of the plinth. The installation procedure: Attach harness to turntable; insert turntable in plinth while carefully feeding wires toward an opening on the plinth's rear edge; fish wires through opening and fasten wire lugs to socket contacts; fasten socket in place. On my sample, the wires proved just short enough to render the penultimate step tricky but not impossible; that said, Harban suggests that all future production plinths will get slightly longer harnesses.

Four

So I changed plinths: I removed my EMT 997 tonearm from its custom-made armboard—also an articulating type, this one machined from bronze—and transferred it to one of the Woodsong armboards. Then I unbolted my Garrard 301 from my homemade plinth and transferred it to the Woodsong, noting, in the process, the latter's more precise fit. (I blame

Other veneers are available, ranging from the merely pretty to the stunning.

my tools.) The aforementioned wiring-harness challenge, not to mention the need to unsolder and resolder the EMT's flying signal leads, conspired to push the changeover time past the one-hour mark; that said, the adjustable armboards made it easy to dial in the precise spindle-to-pivot distance, thus freeing me from getting bogged down with another half-hour's worth of cartridge alignment.

Soon I was listening to the same records I'd played earlier that day, before the swap, and wondering at the reasons for all the differences I now heard. The sound had been cleaned up and clarified—not to an extraordinary degree, but enough that there could be no doubting the Woodsong's positive influence—and the frequency range extended further toward the lowest bass and highest treble. Somewhat more noticeably, the entire soundfield was now more distant than before. Musically, there was more punch—dynamic peaks had more force and impact—but there was a little less melodic flow, a little less *ease*. The *sound* sound was more impressive, and the *musical* sound was at least as good, overall: I was still excited, still enchanted, but now for different reasons.

A few specifics: It was easier to hear the piano in the recording by Malcolm Sargent (yes, him again) and the London Symphony Orchestra of Prokofiev's Symphony 5 (LP, Everest/Classic SDBR 3034). In the first movement, the contrabassoon sounded meatier, heavier; and in the second, virtually every instrument, from flutes to timpani, made known its presence—and the sense of human effort behind its sound—to a greater degree. At the other end of the musical spectrum, Phil Ochs's solo voice-and-guitar recording of his remarkable and disturbing "When in Rome," from *Tape from California* (LP, A&M SP4148), was even more effective with the new plinth in place. Subtle changes in tempo and intensity in Ochs's bare-bones guitar playing took on greater significance, and his vibrato-rich singing style was portrayed with fine force and feeling.

What could account for these distinctions? Better one should ask

what *couldn't*—a question that points to the many variables between one turntable installation and another. A record player is piece of hardware that combines the characteristics of a seismograph with those of an electron microscope—the latter especially in terms of the scale of the stored information being played—and that, like it or not, behaves in a manner similar to a musical instrument. In moving my motor unit from plinth to plinth, I changed the record-playing system's size, mass, density, materials distribution, cooling capabilities, and physical relationship with its surroundings. It's also safe to assume that, despite my best efforts, there were minute differences in tonearm height and pickup overhang between the two installations. And as long as we're flirting with despair, let's acknowledge that there were surely differences in ambient temperature, humidity, air pressure, RF interference, AC voltage, blood sugar, and mood.

Four point five

Consider what happened just a few days ago, at a time when some or another reviewing chore forced me to move the Garrard from its rightful place on my Box Furniture equipment rack—the same structure that supports my phono transformer, preamplifier, and power amplifiers—to a separate, smaller Box rack nearby. Without expecting a great deal, I played a record on that Woodsong Garrard, and within seconds was mildly surprised to hear that the relocation had made it sound *better*: the opposite of what I expected. I stopped what I was doing, moved the Garrard back to the main rack, and confirmed my first impression: With the Woodsong plinth, my 301 sounded better when it sat on a different support from the rest of the system.

I wondered if this had to do with the Woodsong's Track Audio feet—which, after all, appear to be designed with isolation rather than coupling in mind. And I wondered if swapping out the Track feet for something simpler and more conventional would make the plinth more amenable to my primary Box Furniture rack.

As with the recent excavations cosponsored by the Richard III Society of Leicester, UK,⁵ my hunch paid off: Leaving the Woodsong Garrard on my primary rack while replacing its

⁵ Those with interests in phonography and British History will be intrigued to know that Richard III's current tomb rests on a plinth of Kilkenny marble.

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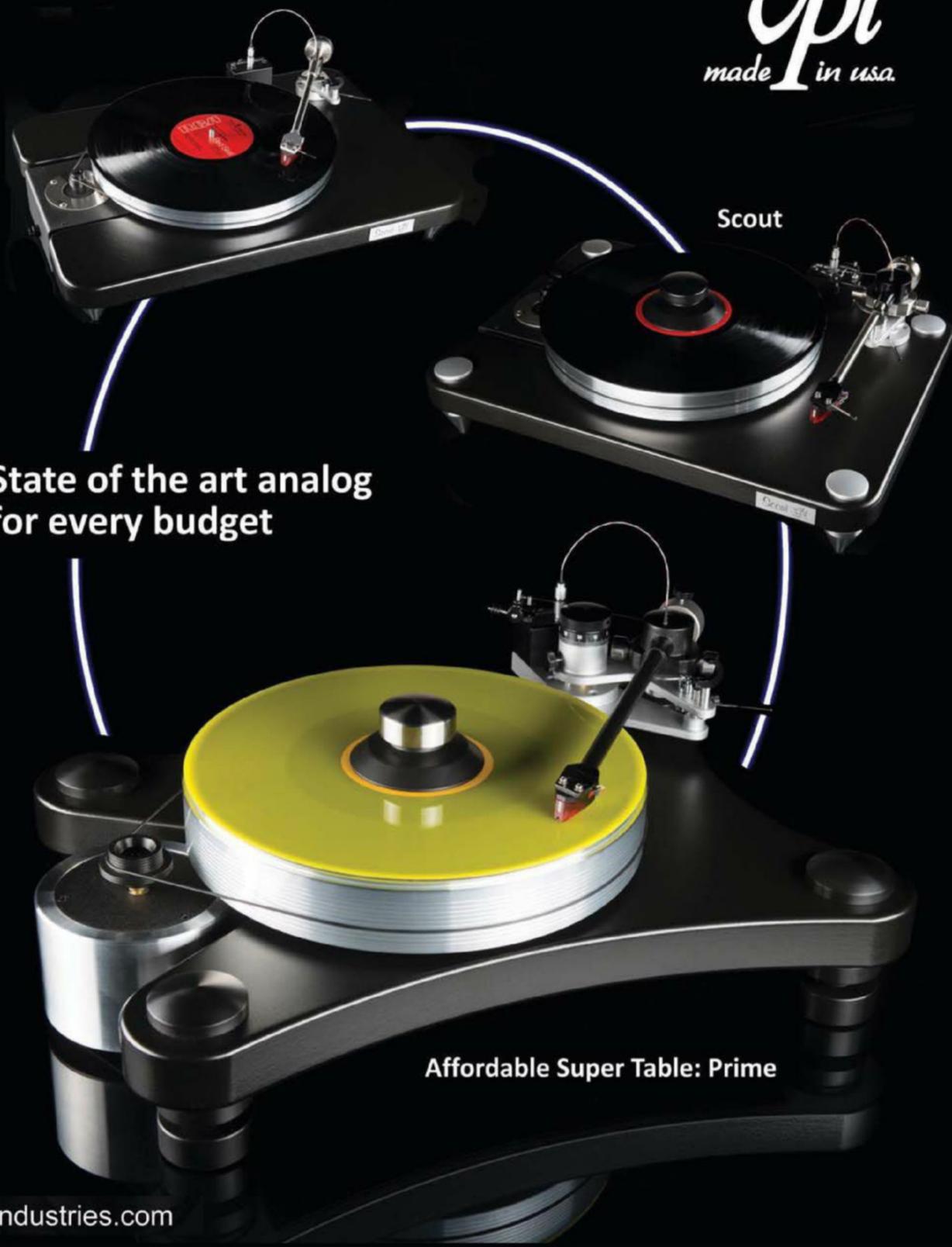
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isolation feet with three simple Ayre Acoustics Myrtle Blocks wrought the hoped-for change, along with three curious additional ones: the player's sense of musical flow was now every bit as good as I'd ever heard from my 301, yet at the same time the sound was slightly smaller, even more spatially distant, and quieter. One of those changes responded well to adjustments of my preamp's volume control.

After that, and for just a little while, it was an all-*Stereophile* evening, and not just because I work here. I had read, in a recent piece by Herb Reichert, his paean to the French-German pianist Samson François (1924–1970), whose playing I'd never heard. Herb's description of François's approach to Chopin sounded so far up my alley that I didn't want to waste time and money on CDs or downloads: only LPs would do, preferably mono. I turned to the British vintage-LP specialist Sophia Singer, whom I profiled in my April 2016 column,⁶ and she sold me a mono copy of his 1962 recording of Chopin's 24 Preludes (LP, UK Columbia 33CX 1877). I'm listening to it now. François's Chopin is astonishing in its combination of beauty—at times it's al-

most flowery—and raw physicality. Via the Woodsong Garrard, this record is amazing. Before too long, I'll revert to my own plinth—its seams need caulking, the whole thing needs finishing—and hear how the François Chopin, and everything else, compares.

Five

But before I set aside the matter of plinths for another couple of years (weeks?), let me return to one quality of Woodsong plinths that deserves emphasis: Prices for the company's Garrard plinths start at \$1900. For that matter, prices for Woodsong's plinth for the Linn LP12 start at \$1000.

I have now made from scratch a total of four turntable plinths: one each for the Garrard 301, Thorens TD 124, and Rek-O-Kut Rondine, and one utter failure. (I can't even remember what turntable the last one was aimed at, but its destiny was the fireplace.) I know what kind of work goes into even the most basic examples (eg, mine) of these things, and I know how much it costs to buy decent-quality plywood and, especially, really good veneers—and how much time it takes to even find such materials. There is

no false modesty in my saying that my work exhibits roughly (haw) $\frac{1}{10}$ the quality of Chris Harban's—and if my best friend asked me to make him a plinth, I'd balk at doing it for as little as \$1000. He'd have to be sick, or unemployed, or something.

I'm thoroughly impressed by the Woodsong plinth—even now, I think I have yet to grasp its full measure—and I'm astonished at how little it costs, considering what has gone into it and all of the quality music sound it brings. As consumer products go, this is one of the easiest recommendations I've ever made. ■

Art Dudley (STletters@sorc.com) thrills to the music on his Sir Malcolm Sargent recordings in the bucolic heaven of upstate New York.

⁶ See www.stereophile.com/content/listening-160.

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**- Art Dudley, Stereophile, January 2014,
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MUSIC IN BY KALMAN RUBINSON THE ROUND

THIS ISSUE: A review of SOTM's
sMS-1000SQ Windows Edition with
AudiophileOptimizer and Room.

Serving Multichannel Music

The SOTM sMS-1000SQ Windows Edition with AudiophileOptimizer and Room: Not only does that very long name require finger-twisting shifts between upper and lower case, it really doesn't tell you what the sMS-1000SQ WE is.

Korean manufacturer SOTM, Inc. describes it on their website as a "music server based on Windows Server OS besides the original Linux [Vortexbox] OS based sMS-1000SQ." I'd describe it as a Windows-based PC that's designed and optimized to manage a database of music files and stream the music to local or networked DACs, and that supports multiple options for file management, playback, and target devices. (Hmmm: that's not much better, is it?)

With its stylish, compact chassis (14" wide by 2.7" high by 9.4" deep, weighing 8.8 lbs), the sMS-1000SQ WE looks more like an audio component than a computer. But this server is actually a PC with an Intel Atom CPU N2800 (1.86GHz) processor, 4GB RAM, and 32GB of SSD storage, running Windows Server 2012 R2 Essentials (64-bit). It comes in three different versions: with an analog output, with an S/PDIF digital output, or with a USB digital output, the port of which is based on SOTM's tX-USBexp output card;¹ SOTM sent me the USB version (\$3500), to which they had added their Ultra Low Noise Jitter Clock for USB outputs (\$500). In addition, SOTM sent me their sPS-1000 DC power supply (\$1000);² I used two of its three independent outputs for the sMS-1000SQ and the tX-USBexp, the latter of which normally works off the server's internal power supply. To complete the suite, SOTM sent an iSO-CAT6 LAN isolation transformer (\$350),³ which I inserted in the Ethernet link to my home network.

Clearly, with its limited 32GB storage for OS, programs, and data, the sMS-1000SQ WE is intended to be used with music files stored on attached or remote drives. (I found that it worked easily with both.) Similarly, because the sMS-1000SQ WE runs under Windows Server, it has limited display capabilities: it's designed to be controlled, via network, by a tablet, a smartphone, or another computer. Indeed, after installation and setup, there's no need for any physical interaction with the SOTM server. This is underscored by the fact that SOTM installs on the sMS-1000SQ

WE a software package called AudiophileOptimizer, by the Swiss company Highend-AudioPC, which works with Windows Server to optimize audio quality. AudiophileOptimizer further limits user interaction with the SOTM server by disabling all functions not required for—and that might interfere with or compromise—the management and playback of music. As we'll see, this is an important feature of the sMS-1000SQ WE.

Finally, the sMS-1000SQ WE comes loaded with apps, including Foobar2000, JRiver Media Center, Qobuz, Room, and Tidal. The default is Room, which as yet doesn't do



**This server is actually
a PC with an Intel
Atom CPU N2800
(1.86GHz) processor.**

multichannel—but Foobar2000 and JRiver do, and that, my friends, is why we are here.

Physical setup was trivial. DC power from the sPS-1000 supply was via provided cables, network connection was via the iSO-CAT6 to my local Ethernet switch, and USB output was from the tX-USBexp output to my exaSound e28 DAC, via an AudioQuest Carbon USB link. Just to get going, I plugged a 1TB USB drive full of files into one of the other USB connectors on the sMS-1000SQ WE. After power-up, the SOTM server and power supply were dead silent but accessible, via a remote-desktop app, from my iPad or my main PC. Room being already installed, I downloaded the RoomRemote app and pointed it to my USB drive; it quickly added the files on the USB drive to the SOTM server's library, ready for play.

However, the exaSound DAC, like so many high-performance devices, requires the installation of its proprietary ASIO driver, and that installation is more complicated for the sMS-1000SQ WE: in its zeal to disable all functions not

1 See www.sotm-audio.com/sotmwp/english/portfolio-item/tx-usbexp/.

2 See www.sotm-audio.com/sotmwp/english/portfolio-item/sps-1000/.

3 See www.sotm-audio.com/sotmwp/english/portfolio-item/iso-cat6/.

strictly necessary for music playback, AudiophileOptimizer (AO) disables the ability to install new applications. I had to use a remote-desktop app to disable AO, reboot the sMS-1000SQ WE, install the ASIO driver, and reboot to re-enable AO. This was a bit of a pain, as I needed to download and print the instructions for it (*sMS-1000SQ Windows Edition Quick Guide*); these instructions are not included in the manual, which is printed in painfully tiny type. AO provides additional documentation, but it is almost encyclopedic in scope. Despite my kvetching, the entire installation, physical and logical, took me about two hours, and then I was listening to stereo, including DSD, with Roon. Very nice sound in every way, but around here . . . mere stereo? So what?

The promise of the sMS-1000SQ WE is that it makes almost anything possible because it's a network-connected Windows PC, as comfortable with installed programs such as Foobar2000 and JRiver—which support multichannel—as with Roon. That characteristic also means that it can be used to send as well as render music via DLNA. Using JRiver, I pointed

the SotM to the attached USB drive and my NAS, the latter containing some 6TB worth of files. It took JRiver an hour or so to process all the files, but then it was old home week, running the sMS-1000SQ WE from JRremote or via remote desktop. All my files, PCM and DSD, stereo and multichannel, even DXD and ISO, were available because JRiver can play them. It ain't the hardware that limits servers and renderers to stereo, it's the software . . . or is it?

I began with Willie Nelson's *Night and Day* (DVD-A, Surrounded-By-SBE-1001-9, out of print) because it's assertively immersive, and I love it. Sure enough, this 24-bit/96kHz, 5.1-channel FLAC file sounded great, each instrument in its place, depicted with clarity, presence, and weight, and yours truly sitting at the center of it all. From there I climbed the resolution scale, first to 24/192 and then to 24/352.8: Beethoven's Piano Concertos 1 and 2, with pianist Hannes Minnaar, and Jan Willem de Vriend conducting the Netherlands Symphony Orchestra (SACD/CD, Challenge Classics CC72712D), was presented with a delightful balance between

piano and orchestra in a warm acoustic. Playback of all high-resolution PCM multichannel files by the sMS-1000SQ WE was unperturbed, uninterrupted, and excellent.

I switched to DSF files and was just as impressed. The delightful *Bailes, Tonadas & Cachuas*—music from the 18th-century *Codex Trujillo del Perú*, with Adrián Rodríguez Van der Spoel directing *Música Temprana* (Cobra 0036)—is infectious and spiced with piquant percussion, which the sMS-1000SQ WE and the exaSound reproduced with aplomb. Pushing the SotM even further, I tried a few 5.0-channel DSD256 files obtained from some friendly recording engineers under promise of confidentiality, and boy, were they lovely! Clearly, the sMS-1000SQ WE, partnered with a capable DAC, could play almost anything and realize the complete potential of the recording.

As I listened to these tracks I often browsed my files, looking for what to sample next. When I did this in JRiver, it was usually no problem. However, browsing with Windows Explorer produced an occasional stutter in playback that was correlated with my file scrolling. This suggested that the

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for moving coil



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- Switchable high-pass filter to eliminate rumble
- Internal jumpers to match cartridge impedance
- Plug and play easy to set up and use



"My Hafler PH60 phono preamp kicks ass! I've never heard my turntable sound that good. Actually, I didn't think it was possible."

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Atom processor was running near the limit of its processing ability. The Windows Resource Monitor revealed that the CPU was running at about 20% with nothing playing. When playing hi-def multichannel files, PCM or DSD, it jumped to over 50%, and responded to file-scrolling by peaking at close to 100%. I know I wasn't supposed to be fiddling around while the music was playing, but this demanded investigation.

First, I turned off AudiophileOptimizer. As expected, the CPU load increased and the stability of playback worsened, so I turned it back on. I then tried several other maneuvers to see what else might be a problem. The 5.0 DSD256 tracks played beautifully as DSD direct to the exaSound, but the sMS-1000SQ WE ran out of steam when asked to convert them, on the fly, to PCM. That happened with *all* multichannel DSD files, nor would the SotM play ISO files: they just buffered . . . buffered . . . buffered. Interminably.⁴ I didn't even *think* about installing Dirac Live EQ, which uses more resources and requires PCM conversion.

Bottom line: The Atom CPU is the sMS-1000SQ WE's limiting factor,

though AudiophileOptimizer helped in getting a lot out of it. That said, the SotM sMS-1000SQ Windows Edition sounded just wonderful playing all music files, from 16/44.1 up to 24/352.8 PCM and DSD256, in their native formats—which basically fulfills its mandate. It does stereo as well as any of the dedicated servers, and it also does multichannel. But it needs more processing horsepower.

What's Up with Multichannel Servers?

Playing and enjoying multichannel music is easy in theory, but there are some frustrating impediments. Most mainstream servers and audio components ignore multichannel. For example, a glance at Native DSD Music's NativeDSD Database (www.nativedsd.com/database) reveals that, of over 400 DSD-capable components, only 20 or so are multichannel devices, and of those, half are disc players; only three are DACs. (Add a handful more with the Mytek stereo DACs, which can be stacked for multichannel use.⁵) I can only presume that a wider survey, of non-DSD products, would return an even smaller proportion of multichannel-capable devices, espe-

cially if one included mobile listening via headphones. In the audio market, multichannel is small potatoes.

At the 2015 Consumer Electronics Show, I asked a manufacturer (I won't name him; he's no guiltier than most others) whether the USB audio input on his new multichannel product would support the playback of multichannel files. He didn't know. One of

4 I found similar but more severe limitations with the DigiBit Aria music server (see my March 2015 column, www.stereophile.com/content/music-round-71), which used the earlier Atom N2600 processor.

5 See my July 2013 column: www.stereophile.com/content/music-round-61.

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his tech guys said that it wouldn't, but that he'd patched his own sample so that it would.

"Why isn't it in the product?"

"It wasn't in the design spec."

I'm sure that the exclusion from the design spec of multichannel via USB was based on market analysis that showed little evidence of consumer interest. On the other hand, this product would have been the first of its kind with such a feature—even today, it would still be the only such device made. Such thinking only perpetuates the difficulty of exposing users to mul-



RECORDINGS IN THE ROUND



It's been five years since I've had the time and space for this feature. I can't hope to catch up with all that's happened since, but in reviewing surround gear for "Music in the Round" I've used and mentioned the most notable surround recordings as references, and reviewed the recordings themselves in "Records to Die For." When the last installment of "Recordings in the Round" was published, we were still dealing mostly with SACDs and the very first Blu-ray Audio discs. I now prefer to download files, but most surround downloads are also available as physical discs.

PROKOFIEV *Symphonies 3 & 4*

Challenge Classics CC72584 (SACD/CD, 24/352.8
FLAC download from www.spiritofturtle.com). 2015. Bert van der Wolf, eng. DDD. TT: 58:00

PROKOFIEV *Symphonies 6 & 7*

Challenge Classics CC72714 (SACD/CD, DSD64
download from www.nativesdsd.com). 2016. Bert van der Wolf, eng. DDD. TT: 72:22

Both: James Gaffigan, Netherlands Radio
Philharmonic Orchestra

These first two releases in a projected cycle of all of Prokofiev's symphonies are both blockbusters. First, James

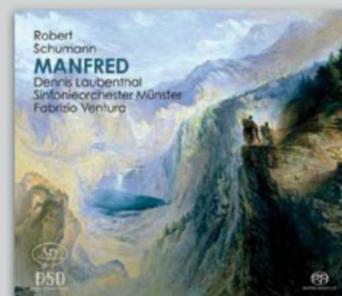


Gaffigan's view of these works is passionate, and he's more overt about that passion than is Valery Gergiev in his traversal. This is Prokofiev with weight *and* wit. In particular, symphonies 3 and 6 stand with my favorite performances, by Abbado and Weller, respectively (both on Decca LPs). Second, the Netherlands RPO carries it all off with power and precision. Third, the engineering by Bert van der Wolf is spectacular, with a spacious soundstage and formidable bass. He recommended the 24/352.8 FLAC over the DSD download; I found the difference subtle, but slightly preferred the DSD with the exaSound e28 DAC.

SCHUMANN *Manfred*

Vocal soloists; Münster Concert Chorus, Münster
Philharmonic Chorus, Münster Symphony
Orchestra; Fabrizio Ventura
Ars Produktion AR538192 (SACD/CD). 2016.
Annette Schumacher, prod.; Manfred Schumacher,
Martin Rust, eng. DDD. TT: 65:32

Described by Schumann as "a dramatic poem with music in three parts," based on the poem by Lord Byron, *Manfred* is an odd, extravagant production recorded in a series of live performances in 2015. The



familiar overture is nicely paced and well performed, but many better are available. The rest consists of 14 melodramatic arias, choruses, and incidental music interleaved with six sections of spoken passages in German. It appealed to me because I long ago imprinted on two mono Columbia Masterworks LPs of a dramatic recording in histrionic English, with the Royal Philharmonic led by Sir Thomas Beecham. Here, the soloists, and the Münster orchestra and choruses, are more than competent as conductor Fabrizio Ventura offers us this unfamiliar and lovely music. This recording makes great use of multichannel: the orchestra and soloists are up front, a phantasmagoria of spirits and ghosts swirling around the listener. Despite my continued enjoyment of the whole thing, I suggest sampling it online before purchase.

BIBER *The Rosary Sonatas*

Rachel Podger, violin; Jonathan Manson, cello, viola
da gamba; David Miller, theorbo, archlute; Marcin
Swiatiewicz, harpsichord, organ
Channel Classics CCS SA37315 (2 SACD/CDs).
2015. Jonathan Attwood, prod.; Jared Sacks, eng.
DDD. TT: 2:14:26

I am addicted to these sonatas, and



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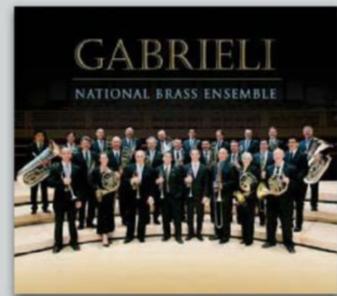
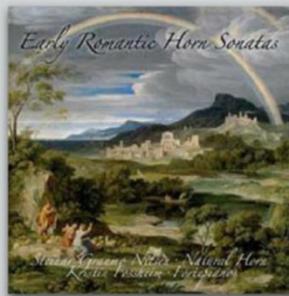
tichannel music streaming and continues to ensure low market interest. Ditto all those servers and renderers listed in the NativeDSD Database.

Think about it. Excluding DACs—which, obviously, must have the requisite number of hardware channels—servers and renderers are data processors that access local or networked data files and, via software, translate the contents of those files into an audio format acceptable to the DAC(s). Simple mathematics tells us that six channels present a CPU with three times the work of the two

channels of stereo—but all sorts of general-purpose computers are up to the job, given enough CPU and RAM. At audio shows, one can't ignore the ubiquity of the laptops sitting atop component racks. The servers and renderers in the NativeDSD Database are among some of the most sophisticated and powerful audio-processing components; the inclusion of multichannel capability should require only changes in the software.

Of course, one can argue whether or not such a general-purpose computer is optimal; indeed, making something

that works and sounds better than an ordinary device is the high-end audio industry's *raison d'être*. But in a generic laptop or custom processor, it's the software that determines what it does and how well it does it. To the programmer, the number of channels is just one of myriad variables. It should be no surprise that there are probably more music-player programs that can play more than two channels than there are hardware-based streamers/renderers that can. My four-year-old, base-model Mac mini handles it all with aplomb. Why won't they? ■



buy every recording I can find. There are many good ones, several in multichannel, including three new ones in the past year alone. I've settled on this one for its balance. There is already so much joy and intensity in the music that adding more is as compromising as is conveying less. Rachel Podger plays beautifully, and the supporting ensemble is superb: they proceed through this musical and emotional journey with passion and resolute focus. Jared Sacks's recording is utterly transparent.

I also recommend two other outstanding DSD recordings of these sonatas: Riccardo Minasi (ArtsMusic 47735-8) and Ariadne Daskalakis (BIS 2096). Buy at least one of them!

STEINAR GRANMO NILSEN *Early Romantic Horn Sonatas*

Danzli: Sonata in E-flat, Op.28. Ries: Grand Sonata in F, Op.34. Von Krufft: Sonata in E.
Steinar Granmo Nilsen, natural horn; Kristin Fossheim, fortepiano
2L 113-SBD (SACD/CD & BD-A, DSD 64 download from <https://shop.klicktrack.com/2l/>). 2015.
Morten Lindberg, prod.; Morten Lindberg, Beatrice Johannesen, eng. DDD. TT: 68:00

You must hear this. Most of us are used to hearing valved French horns in an orchestra or band, and occasionally a natural (valveless) horn,

particularly in some recordings of Mozart's concertos. What most have not heard is a natural horn up close, as here. The Ries sonata begins with two pianoforte chords that set up an expectation of scale; the entry of the horn blows it away. It's large, it's sharply defined, and you can almost feel Nilsen's blast of air. More than that, the music is delightful, with charm, melody, and drama. If you like Beethoven or Mendelssohn—or, better yet, Beethoven *and* Mendelssohn—you'll enjoy these three works as the sound of Nilsen's magnificent horn *in your room* never loses its grip on your audiophile ears.

NATIONAL BRASS ENSEMBLE *Gabrieli*

Gabrieli: Selections from Sacrae Symphoniae (arr. Tim Higgins), other works. Williams: Music for Brass.
National Brass Ensemble
Oberlin Music OC15-04 (SACD/CD, DSD64 download from www.nativedsd.com). 2015. Michael Bishop, eng. DDD. TT: 68:29

This brass spectacular is the latest in a distinguished line. The patriarch was the 1968 stereo classic *The Antiphonal Music of Gabrieli*, performed by members of the Philadelphia Orchestra, the Cleveland Orchestra, and the Chicago Symphony, and organist E.

Power Biggs, and is now available as a stereo SACD (Sony Classical SS 89173). The music pretty much demands multichannel recording, and there have been several outstanding SACD offerings, including Paul McCreesh and the Gabrieli Consort & Players' *Music for San Rocco* (SACD/CD, Archiv 477 086-2) and the Berlin Brass's *Berliner Dom: Music for Brass & Organ* (SACD/CD, Pentatone PTC 5186 509). Inspired by the 1968 recording, this spectacular new release includes many of the same works, as well as a newly composed piece by John Williams that fits in well. The National Brass Ensemble is entirely new, its 26 players drawn from a wide array of professional orchestras (see www.balquhiddermusic.com/gabrielihiggins-project/). Recorded direct to DSD at Skywalker Sound Stage by Five/Four Productions, with Michael Bishop (of Telarc fame) at the controls, the playing is exuberant and precise, as is the crystalline delineation of the instruments' sounds. The clarity and directness are in refreshing contrast to the more reverberant venues of the Archiv and Pentatone recordings, but this is a matter of taste. Each is quite wonderful in its own way.

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—Roy Gregory, The Audio Beat

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a conference call gave me a pretty good idea of who this mythical third person is.

The immediate genesis for making a record together, however, came from a 2014 tour they did together, subtitled *Songs & Stories*.

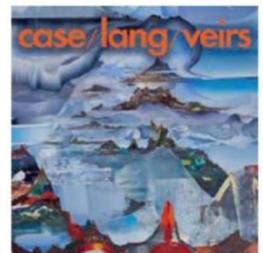
“We’ve known each other for a long time,” Earle began. “I’ve always been a fan, so we did the tour. The surprise was ‘Wake Up Little Susie,’ one of the first things we learned. We opened the show with that—we still do—and it became instantly obvious that there’s something that kinda happens when we sing together. It’s like a whole other artist to write for. As a songwriter, I find that exciting.”

Colvin agreed. “That’s a good way to put it.”

Like the three contributors to the *case/lang/veirs* project (see p.46), Colvin and Earle wrote nearly all of their record together, mostly in Nashville, with follow-up sessions in Austin, at Colvin’s house. The album was recorded in the Nashville home studio of all-world string player and guitar maven Buddy Miller. Listening to an advance CD, the flavors of the song-

HARMONIOUS FUSIONS

NEW COLLABORATIONS OF EARLE & COLVIN AND CASE/LANG/VEIRS.



by ROBERT BAIRD

Songwriting collaborations are always an interesting test. Most never advance past a brainstorming session, or perhaps one unsuccessful stab at sitting down and trying to combine visions, methods, and worldviews. It’s the successful melding of artstries that makes two new sets of collaborators worth a listen.

First out is *Colvin & Earle*—which, according to its two participants, seems to have been created by a whole other person. Talking to both Shawn Colvin and Steve Earle at the same time via



writing seem to be a fairly even blend; neither dominates.

"It really was kind of evenly split, you know," Colvin said.

Earle jumped in. "It really is. Co-writing is usually like not something I ever do with anybody twice, because I usually kind of end up leaving people in the dust and writing way more than they do, and feeling weird about it. I write pretty fast most of the time. It's my job."

"He is fast," Colvin admitted. "I don't co-write with anybody very easily, but he's kind of a force of nature, and I wasn't scared, for some reason. I mean, maybe a little, 'cause I just *am* with songwriting. He's not. But it flowed."

"I'm scared of *not* writing songs, not of writing songs," Earle said. [laughter].

"We did a lot over the Internet," Colvin said.

"Other than those two sessions," Earle continued. "A lot of it got written with her on one bus and me on another bus and over telephones. It's about us singing together. This originally started as whitewashing the fence, the guitar pull thing, where you go out and each of you plays some songs, and you play some songs together, and you work half as hard and have somebody to hang out with."

The originals, whose titles—eg, "You're Right (I'm Wrong)" and "You're Still Gone"—and lyrics seem to look at love relationships from a similar point of view, are a mix of twangy Americana à la Earle ("Come What May") and the softer, more lyrically driven folk music Colvin often records ("The Way That We Do"). "Tell Moses"—a gospel-y protest song that mentions Selma, Alabama, and Ferguson, Missouri—sounds a bit more like Earle, particularly in its closing flourish:

*Say Joshua's blown his trumpet and the walls are comin' down
Tell sister, brother too
Tell 'em where they're gonna meet us and what we're gonna do
Tell Stephen, tell Shawn there's a message in the music
Everybody sing along*

Strangely enough, it's in the three covers that the differences between the two show most. Colvin chose John D. Loudermilk's "Tobacco Road," a tune that's been covered by Jimi Hendrix, Eric Burdon & War, Status Quo, Lou Rawls, and everyone in between, though it's best known in the 1964 version recorded by the British group the

Nashville Teens, with a young Jimmy Page on guitar. Earle and Colvin's version may well be the catchiest tune and the best arrangement on the record.

"I was on a *Sixties on Six* kick on Sirius XM," says Colvin, "and I heard that song, and I just love it. I'd forgotten about it. It's a great duet. And different from something I would normally do. I knew it was right for Steve and I—I probably couldn't pull it off by myself. That's the great thing about the collaboration here, is I get to be a little bit tougher."

Reader, how could I resist:

"And Steve gets to be a little more sensitive?"

Earle emits an audible sigh.

"I don't know about that—he's already pretty sensitive," Colvin said seizing the initiative with a slight chuckle. "Generally, I don't try to pull things off that rock more unless I'm in a band, which I'm not most of the time, and with Steve I am. I'm a big fan of Steve's, and know that he can get a little rough—and I like to play loud."

"She's a great guitar player, so that's the thing," Earle said.

"Thank you. And I feel like that too—"

"We think of this as a band," Earle cut in. "We're going to tour just the two of us, but we're not ruling out touring with a band in the future. But it works with the two of us. If television comes up, we may use a rhythm section. I'm playing better in this situation, and I'm doing things I don't normally do. I had to learn the Jimmy Page lick in 'Tobacco Road' on bouzouki. I get around that instrument a little bit better than guitar when it comes to lead lines. I don't know why. It's a cool sound. I think that ['Tobacco Road'] was Jimmy Page's second session. It's an iconic, intimidating guitar lick."

For his part, Earle chose Ian and Silvia's "You Are on My Mind" and "Ruby Tuesday," which seems a half-beat slow in the *Colvin & Earle* version. Of the plethora of Jagger-Richards tunes, why this obvious choice?

"Ahhh, God. It's fantasy camp, to a certain extent," Earle said. "I get to be Keith and Mick. I sing the melody on the verses and Keith's part on the choruses—it's kinda cool. I've always loved that song. I love the riff-rock era of the Rolling Stones. They were a really great live band, but man, *my* Stones records were the ones where they were competing with the Beatles and they fucking knew it, and they were writing

really, really good songs."

A big part of *Colvin & Earle* is the presence, on guitar and harmonium and as a set of ears, of Buddy Miller—who, given the history of all present, seemed a natural choice (to produce the album). The other electric guitarist on the record is one of rock and Americana's least-sung heroes, Richard Bennett.

"It was something we had in common. Shawn and Buddy go way, way back. They were in the band together in the '70s," Earle said. "I met Buddy right about the time I got out of jail and came back. His first record came out, and I noticed that immediately, and then I met him. He was in Emmylou Harris's band shortly after that. He was in my band for one tour. I'd never worked with him as a producer, and I always wanted to work with him as a producer."

"I threw in the idea of Richard Bennett. He was on [Earle's 1987 album] *Exit 0* and *Guitar Town* [1986]. And he's on *I Feel Alright* [1996]. It's hard to catch him in town—he's Mark Knopfler's other guitar player."

Saying she loves to be an accompanist, rhythm guitar player, and harmony singer, Colvin likes the final mix of voices on *Colvin & Earle*. "I wouldn't describe our voices as similar, but we're able to blend with each other kind of by osmosis. And I think, being fans of one another, I knew what Steve sounded like and I loved it, and I think that made a difference. And he's a real intuitive singer, great harmonizer."

"I don't know how to describe it," Earle said. "A lot of people hear about this collaboration and they go, 'Well, that's odd.' And I don't know why it works. I know there's something that happens when there are two voices, whether they are instruments or human voices. It's why the brother-and-sister thing works—that's because of the similarities in the voices, I think. But I think when voices are really different, there can be something too."

case/lang/veirs

Two artists collaborating on writing and recording an album of music is one thing. But three? It's an odd number—someone's always the odd one out right? For another, trying to combine the talents and lives of three singer-songwriters, each at a different stage of her career, is a hard thing to balance—and yet k.d. lang thought it might work.



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"I've kinda wanted to do a female Traveling Wilburys for a while, and I didn't know who the other girls would be. Then I met Laura [Veirs] when I moved to Portland, and met Neko [Case] soon after. One night, it just came to me that that might be an interesting combination of artists that have similarities but are very different at the same time—the spectrum of what we could bring to the table. Also, Laura comes with [producer] Tucker Martine [Veirs's husband], and that's an awesome, awesome attribute. And so, on a whim, one night I wrote an e-mail, and within about half an hour I heard from both of them, saying, 'Yeah, let's do it.' I was excited. That was a good indication that there was some energy there."

"My initial reaction," Laura Veirs said of lang's out-of-the-blue e-mail, "was I said, 'Let me check my schedule. I'm free!'"

That first e-mail was sent three-and-a-half years ago. Not surprisingly, considering the complexities of trying to sync the schedules of three touring artists, it's taken that long to make this project coalesce.

"We originally toyed with the idea of a cover record," lang explained (she still prefers the lower-case) from her home in Portland. "But then we felt like we were cheating ourselves to not explore something individual and combine songwriting talents. We knew that it would be difficult; we knew that it would be logistically difficult, and emotionally difficult in terms of pride and ego. It hasn't really been done that often: three individually successful writers write together. We did do a lot of talking, a lot of debating, a lot of rallying and stumping, 'cause we're from Stumptown. It was trying at times, to say the least, but really, the music kept us focused."

The result, simply titled *case/lang/veirs*, is a mélange of voices and styles that will stand as a minor work in each artist's catalog but is nonetheless an intriguing exploration. Veirs seems to have done much of the writing. Case, whose schedule was too full to include an interview, seems to have the smallest presence on the album, if only because both lang and Veirs live in Portland.

"Laura is very prolific, so she did



the bulk of the writing, and then we got Neko out to Portland three times, for one or two weeks at a time, and finished writing songs. There are Laura songs that she wrote exclusively. But for the most part, we wrote everything together."

Veirs agreed that making this album project was a process—to say the least. "There were times when it wasn't working. It was a bit arduous at times, but I think we all respect each other enough to be like, well, okay, let's just move through it. Whether someone is feeling offended because their songs or their ideas didn't get in . . . it was a bit of a culture clash.

"They inspired me. Sometimes I would bring in songs, and I think that's when things started to go better, because we didn't just start from a blank page. They'd be like, 'Let's scrap this, but let's keep this melody, that's cool. And let's add a bridge.' Neko was brilliant at that kind of thing."

Recorded in just five days, *case/lang/veirs* is 14 short tracks of folk pop, built on acoustic guitars and keyboards with occasional drums. While each of the three sings lead on several tunes, the most intriguing parts of the record are when they sing together—which happens in nearly every track. In songs like "Atomic Number," "Greens of June," and "Behind the Armory," the three voices move in and out of the melody in simple but strongly effective arrangements. With her big voice, lang is the most recognizable presence, making such songs as "Blue Fires" and "Honey and Smoke" her own in ways her fans will instantly recognize. If there's a hit, it's Veirs's "Best Kept Secret" and the hook of this line from its chorus: "You're the best-kept secret in Silver Lake." As this went to print, *case/lang/veirs* were rehearsing for a summer tour—rehearsals that were certain to tighten up the arrangements and add new wrinkles to the vocal

interplay.

"I have a soft voice, in a way," Veirs said. "k.d.'s got a huge voice, and Neko can do both. So they meld really interestingly, because they are so different. We all have very distinct voices. On '1000 Miles [Away]' I just stood back and said, 'Oh my God, k.d. lang just sang one of my songs!'"

That's awesome. She's a master of singing and interpreting, and that was just so cool to witness."

"Choosing who sang what song happened very easily," lang said. We didn't discuss it much. We just sort of went with it. One thing we did consciously decide was that we didn't want to make a really pretty three-part-harmony record all the way through. What we wanted to do was make a band record, I guess kinda like an Eagles thing, where the individual would sing the song backed up by the other two—not three girls all the way through, forcing the harmonies in."

Veirs credits her husband, producer and engineer Tucker Martine—he's worked on records by R.E.M., the Decemberists, Bill Frisell, My Morning Jacket, and Neko Case—with organizing the record. She readily agreed that Martine is actually the ghostly fourth member of what is actually a quartet. "I feel very proud of the record, and grateful they invited Tucker, my husband, to do it. We brought him in early, and he helped with, 'Okay, which songs are we gonna pick? And how are we gonna treat these?' He curated the band."

Echoing lang's concerns, Veirs continued: "We were all concerned about it being too sugary sweet, with three-part harmonies. We just didn't want it to be adult contemporary at all.

While the whole process wasn't without its obstacles, lang still feels her initial hunch was correct.

"I enjoy the fact that, in songwriting, you learn so much from other people's processes and even approaches, and watching their relationship to lyrics or to melody, and applying it to yourself. Because of logistics, we're doing our interviews separately, and just to go back and read other people's opinions and experiences—that's enlightening. And also, the tour will be, really, where so much comes to the table. I'm really excited about it." ■

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HERB REICHERT

Zu Audio Soul Supreme

LOUDSPEAKER

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"Why not?" I asked. "They're exciting and super-enjoyable."

"Zu speakers are not mainstream," he explained. "People either love them or hate them. They're for music lovers, not audiophiles."

"That's not true!" I whined like a disappointed child. "They play Nina Simone and Aretha Franklin with spooky soul and natural tone! They play big classical orchestras—especially with trumpets and timpani—with radical ease and full-tilt momentum! And . . . and . . . they project large soundstages! Isn't that what audiophiles like?"

"Herb, I'm telling you, this is not your normal two-drivers-in-a-ported-MDF-box loudspeaker. The Soul Supremes are definitely *not* mainstream."

"Are they pro-audio?"

He sighed. "No, Herb. They're a unique product designed to perform exactly as Sean Casey"—Zu Audio's owner, founder, and chief engineer—"believes a speaker should perform. He makes no effort to accommodate fickle audiophile fashion. His speakers are designed for people who get what Zu Audio is all about. *That's* why they're so special."

"Okay. Okay." Pouting slightly, I stomped my little Iron Ranger boot. "But I don't care! I *get* these speakers, and . . . and they get *me*."

As Lifestyle Dude shook his head and looked down at his phone, I mumbled, "And they're made in Utah, just like those other big audiophile speakers!"

Description

You tell me: Is a 10.3" *full-range* driver with a doped fabric surround, nanotech-treated paper cone—its core is infused with what Zu refers to as "nanometer-engineered structural materials"—ceramic magnet, whizzer cone, and sculpted aluminum phase plug, all designed and built by Zu Audio, *not* mainstream? According to Sean Casey, "Whizzer cones are a pretty cool design feature on most full-range drivers.

They are essentially part of the [coil-] former assembly and dramatically improve the power transfer of treble waves, converting the electromechanical motion that is typically damped out by the main cone into acoustic power, and in desirable ways. The machined pole [-piece] in the middle also helps us to get the spray we desire from treble energy: it works with the whizzer profile to act as a horn."

Casey has developed his own Zu-Griewe loading technology for dynamic loudspeakers, inspired by and based on work he did in the mid-1990s on motorcycle mufflers with the late Ron "Ogre" Griewe, when they were both working for ATK Motorcycles. Casey explained, "Zu-Griewe is an acoustic technology originally developed for high-performance internal-combustion-engine exhaust systems, for improving power output through pulse and pressure management. It increases bandwidth while reducing noise and sound-pressure levels over conventional methods. . . . You can model most of it by merging several loudspeaker loading designs—tuned pipes, horn transforms, and Helmholtz resonators."

Each Soul Supreme is a tall, narrow, truncated pyramid, 37.7" high by 12" square at its base, and weighing 70.4 lbs. No damping material is applied to the interior walls of its cabinet. Instead, a slender pyramid of solid foam rises elegantly from the cabinet bottom. Casey: "The foam pyramid is a component of the whole and does not function independent of the rest of the Zu-Griewe model. However, we can simplify the internal pyramid's contribution and say that it provides internal loudspeaker standing-wave control more effectively, and with greater bandwidth tuning, than fiber- and foam-lined walls, as has been the tradition. You just damp particle velocity where velocity is highest and thermal/mechanical conversion is most effective—not near the walls, where velocity is lowest."

The Soul Supreme's tweeter operates from 12 to 20kHz. It's a 113dB/W/m, horn-loaded, Radian compression driver with a 3" aluminum-alloy diaphragm and a 2" throat. It sports a 49oz magnet with a flux density of 16,400 gauss, and it's made in California. Okay, I admit, that *may* not be

SPECIFICATIONS

Description Two-way loudspeaker with "Zu-Griewe" acoustic woofer loading. Drive-units: Radian 850 compression-driver tweeter with 3" diaphragm and 2" throat (12–20kHz); Zu103ND/G1-16 10.3" woofer

(full-range, unfiltered). Frequency response: 35Hz–20kHz, ±3dB. Sensitivity: 97dB/2.83V/m. Nominal impedance: 16 ohms. Dimensions 37.7" (965mm) H by 12" (308mm) W by 12" (308mm) D. Weight: 70.4 lbs

(32kg).

Finishes Ghost Black Maple, Sangria Maple, Blond Maple, American Walnut, Gloss (most colors).

Serial numbers of units reviewed 0220 Mk.1 (Rev.-A). **Price** \$4500/pair. Approximate

number of dealers: Sold direct. Warranty: 5 years. **Manufacturer** Zu Audio, 3350 S 1500 W, Ogden, UT 84401. Tel: (800) 516-8925, (801) 627-1040. Web: www.zuaudio.com.



oppo



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very mainstream. The only crossover parts are a voltage divider and a capacitor on the tweeter. But . . .

“How about the Soul Supreme’s sensitivity of 97dB/W/m?”

“No, Herb. That is *definitely* not mainstream.”

Setup

I began by putting the Zu Audio Soul Supremes in the exact positions that John DeVore had placed his DeVore Fidelity Orangutan O/93s. I figured that because both speakers have high-sensitivity, 10" paper-cone woofers, they'd probably put about the same amount of bass energy into my small-ish room. I was right—the Zus sounded good right away. (Zu Audio gives every pair at least 600 hours of break-in before shipping.) Over time, I moved them farther apart, farther out from the front wall, and toed them in less. It took me more than a week to understand how clean the Soul Supremes' bass really was, and how sharply they could focus an aural image. The more I fine-tuned the toe-in, the bigger—especially wider—the soundstage. Tonal character was always good. Bass was lean, fairly deep, and highly detailed. I moved my couch closer than usual and sat in what most would call the nearfield. Set up



The only crossover parts are a voltage divider and a capacitor on the tweeter.

properly, the Soul Supremes reminded me of electrostatic speakers, but with greater dynamic responsiveness.

Most of my listening, and most of the observations described below, were accomplished using the Soul Supremes with Zu's own Mission Mk.II speaker cables (\$369/8' pair), terminated with Neutrik SpeakON connectors at the speaker end. (Don't all speakers feature both Neutriks and five-way binding posts?)

Listening: First Watt J2

I've been a fan of Sunn O)))'s layered, hyperslow, percussive drone and drift since I bought *Altar* (2006), their collaboration with Japanese doom band Boris (LP, Southern Lord 62). Sunn O)))'s music is always a full-on mind shifter and DNA-changer. Forget rhythm and melody—imagine a tautly measured, very loud, almost creeping sonic unfolding. Imagine massive, physical clouds of bass and synth energy. Like my beloved Melvins, Sunn O))) subverts the mindless, ego-driven drum-and-guitar displays of mainstream metal

MEASUREMENTS

I used DRA Labs' MLSSA system and a calibrated DPA 4006 microphone to measure the Zu Audio Soul Supreme's frequency response in the farfield; for the nearfield frequency responses, I used an Earthworks QTC-40, which has a 1/4" capsule and thus doesn't present a significant obstacle to the sound.

My estimate of the Zu Soul Supreme's voltage sensitivity was 91.5dB/2.83V/m, which is lower than the specified 97dB/W/m but still much higher than average. This speaker will play loudly with low-powered amplifiers. In addition, its plot

of impedance magnitude and electrical phase (fig.1, plotted with a wider vertical scale than usual) reveals the Soul Supreme to be a very easy load for the partnering amplifier. Though the phase angle is occasionally high, the minimum magnitude is a still-high 8.4 ohms at 260Hz and the average impedance is around 16 ohms. This partly explains the measured sensitivity being lower than specified; at 2.83V, the speaker will demand from the amplifier 0.5W rather than 1W.

Several wrinkles in the impedance traces suggest the presence of resonances of various kinds. The largest

discontinuity lies just below 200Hz, but when I tested the enclosure's panels with a plastic-tape accelerometer, I found nothing amiss in that region. However, there was a fairly strong resonance at 340Hz on all of the panels, and strongest on the back (fig.2), where it was joined by an even-higher-level mode at 590Hz. Herb Reichert didn't mention any midrange coloration that could be ascribed to these panel resonances, nor did I hear anything amiss when I listened to the Soul Supremes. It's possible, therefore, that the fact that these modes are of high Q (Quality factor), coupled with the speaker's high sensitivity, allows them to step out the music's way most of the time.

Though Zu takes pains to explain that the Soul Supreme's downward-firing, finger-shaped ports do not behave as they would in a typical reflex-loaded speaker, the impedance-magnitude trace does have the double-humped shape in the bass that indicates some sort of reflex design. The saddle in the trace centered on 45Hz implies that this is the ports' tuning frequency.

Stereophile Zu Soul Supreme Impedance (ohms) & Phase (deg) vs Frequency (Hz)

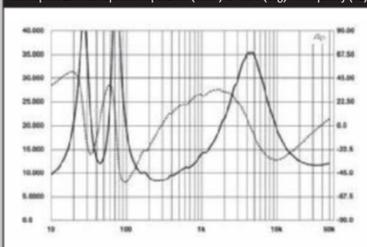


Fig.1 Zu Audio Soul Supreme, electrical impedance (solid) and phase (dashed) (5 ohms/vertical div.).

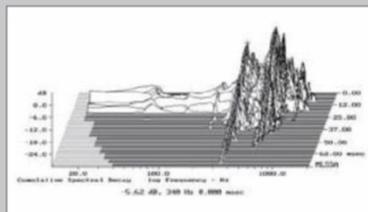


Fig.2 Zu Audio Soul Supreme, cumulative spectral-decay plot calculated from output of accelerometer fastened to center of rear panel (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz).



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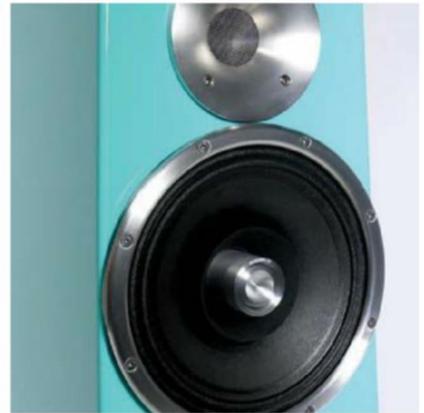
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bands by substituting a focused engagement with the contemplative listener. A Sunn O))) song is about inner worlds, meditation, and mood swings, precipitated by roomfuls of morphing energy. Like most of the other music I like, it is a form of church. Add songs written and sung by Scott Walker, as on Walker and Sunn O)))’s *Soused* (LP, 4AD 73428), and “The most intimate personal choices . . . central to your dignity will be sung” (from “Lullaby”).

Listening to Walker sing “Lullaby” through the Soul Supremes and the Nelson Pass-designed First Watt J2, a 25Wpc JFET amplifier (\$4000, review in process), was mostly scary, but I survived. The Soul Supremes played Sunn O))) extremely loud (100dB+), quite smoothly, and with a fatigue-free joy that was definitely not mainstream. They let the Moog, guitars, and Walker’s haunting voice walk me safely through a fearsome black abyss. Droning bass had a feeling of righteous splendor. It was clean and forceful, but a touch leaner than I expected. The Soul Supremes handled every synth expression with ease and exceptional clarity. “Lullaby” felt as if I, Walker, and maybe David Lynch were all trapped in some endless steel tank with no light. When I picked up the tonearm at the end of the track, it felt as if the music



Left: Neutrik SpeakON connectors and binding posts. **Right:** the Zu103ND/G1-16 driver.



The Zu woofer’s voice reminded me just a little of my ancient and beloved Altec 604s.

were still reverberating and we were all still in that dark tank, Walker and Lynch standing right behind me. The Zu Soul Supremes were made for this powerfully lamentative music, and the First Watt J2 was born to drive them.

The musical textures of Miles Davis’s *In a Silent Way* (LP, Columbia CS 9875) were succinctly described: Davis’s trumpet was realistically toned and nearly full scaled. The

measurements, continued

However, the primary drive-unit’s response, measured in the nearfield (fig.3, blue trace), has the expected minimum-motion notch a little higher in frequency, at 52Hz.

The output of the ports—again measured in the nearfield, but with the speaker raised a little higher off the floor than the recommended 1/4" so that I could poke the tip of the Earthworks microphone under the cabinet—peaks between 40 and 70Hz (fig.3, red trace). However, a significant peak in its upper-frequency response at 182Hz coincides with the largest wrinkle in the impedance traces. Because this resonance is out of phase with the woofer’s output, the complex sum of the woofer and port responses (fig.3, black trace below 300Hz) has a notch centered at 182Hz. However, as the ports face the floor, it’s probable that their upper-frequency output at the listening position will not be strong enough for this notch to fully develop. Again, when I listened to the Zus, I was unaware of any problem in the transition region between the upper bass and lower midrange. This graph reveals no sign of the usual nearfield “bump” in the upper bass, which

suggests that the Soul Supreme’s low-frequency alignment is tuned to favor control and definition rather than boom.

Higher in frequency in fig.3, the Zu’s response on the tweeter axis, which is 36" above the floor, is superbly flat between 300Hz and 1.8kHz; *ie*, throughout the entire midrange. Though the response looks very uneven above 2kHz, it reminded me of something Martin Colloms said to me in the late 1970s, when I used to take part in the blind listening tests he then organized

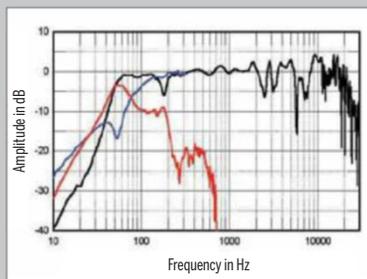


Fig.3 Zu Audio Soul Supreme, anechoic response on tweeter axis at 50", averaged across 30° horizontal window and corrected for microphone response, with nearfield responses of woofer (blue), port (red), and their complex sum (black), respectively plotted below 300Hz, 700Hz, and 300Hz.

for *Hi-Fi Choice*: that when narrowband peaks and dips in a speaker’s treble are equal in amplitude and width, they tend to balance each other. The perceived balance is thus more neutral than the measured response would suggest. I note that though HR mentioned that he listened for “strangeness, sibilance, or discontinuity in the upper harmonics of the ranges of male and female voices,” he heard nothing amiss, though he did comment on a rise between 2 and 5kHz.

The perceived balance will also be affected by the fact that the peaks and dips in the Zu’s on-axis response tend to be compensated for in the off-axis behavior. This can be seen in fig.4,

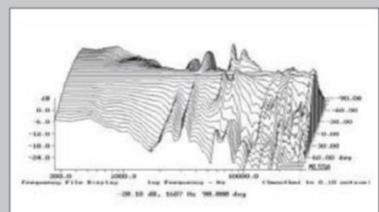


Fig.4 Zu Audio Soul Supreme, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

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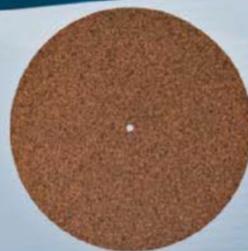
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title track just rolled by and through my consciousness in a way that made me stop and think, *Wow—like a shark slinking through an open sea.* The Soul Supremes, perhaps more than any loudspeaker in my recent memory, let Davis and his hyper-talented crew play together with an expressive wholeness that I can describe only as “channeling the Big Force.” Whether you’re an “accuracy” freak or an old-school music lover, I dare you to find a combo of amp and speaker that will play your recordings more truthfully or enjoyably at anywhere near this price.

Listening: Line Magnetic LM-518IA

The single-ended 845 triode tubes in my reference integrated amplifier, the Line Magnetic LM-518IA (22Wpc into 8 ohms, \$4400), grasped the Zu Soul Supremes with a little less authority but a little more gentle finesse than did the JFETs in the single-ended First Watt J2. Weight and body were diminished, but through the LM-518’s 16-ohm taps, microtextures became more vivid and noticeable, music more breathy and sparkingly vibrant.

I was cheerfully surprised by how similar the First Watt J2 and Line Magnetic LM-518IA sounded driving the Soul



The waveguide for the Soul Supreme’s Radian compression tweeter.

with a just-right grip that caused me to savor the music’s tone and tempo. It liked twists and turns. It let the Zu show me the whole of the recording matrix and the extremities of the soundstage. The First Watt delivered well-toned flesh and pumping blood. In contrast, the Line Magnetic displayed a lighter, more feminine touch that emphasized

I prefer to feel the music and dream along with it.

Supremes. Both delivered an easy-flowing, articulate musicality that let me relax and slip into the music. Both did rhythm and momentum as well as the best amplifiers I know. Both demonstrated extraordinary tonal character. Both danced wildly and jammed into the mosh pits. Both did candlelit seduction. The biggest difference I could *feel* was not in how each amp *sounded* or played *music*, but in how each had its own special way of controlling the speakers and establishing the music’s flow and viscosity.

The First Watt grasped every note with a just-right grip that caused me to savor the music’s tone and tempo. It liked twists and turns. It let the Zu show me the whole of the recording matrix and the extremities of the soundstage. The First Watt delivered well-toned flesh and pumping blood. In contrast, the Line Magnetic displayed a lighter, more feminine touch that emphasized

measurements, continued

which plots the difference between the off- and on-axis responses at 5° intervals, from 90° on one side of the speaker to 90° on the other. For example, the cursor is positioned at 1.7kHz, the center frequency of one of the on-axis peaks, and it shows that that peak is balanced by a notch to the speaker’s sides. It looks as if the primary driver’s “whizzer” cone does improve the Soul Supreme’s dispersion in the treble, as Zu claims. Though the tweeter’s output above 10kHz looks very ragged in fig.3, fig.4 shows that its dispersion smoothly decreases to the speaker’s sides. The speaker’s vertical dispersion (fig.5) is difficult to interpret, but I believe it reveals that

the optimal balance will be on or just below the tweeter axis.

In the time domain, though the Soul Supreme’s step response (fig.6) has a superb, time-coincident, right-triangle shape, it is in the correct polarity. I checked this with an old-fashioned test: briefly connecting a D-cell battery across the speaker terminals and watching which way the cone moved. It did indeed move toward me when hit with the 1.5V DC voltage.

Finally, the Zu Soul Supreme’s cumulative spectral-decay or waterfall plot (fig.7) looks awful, with a significant resonant mode at 2.8kHz—that accounts for Herb’s presence-region rise—and hashy-looking delayed

energy in the top audio octave. Yet, other than noticing a somewhat clanky quality with recordings of acoustic piano, I didn’t find the Zu to sound as bad as this graph implies. In fact, I enjoyed the afternoon I spent listening to the speakers in Herb’s system. As with Zu Audio’s Essence speaker, reviewed by Art Dudley in October 2009,¹ Sean Casey appears to have carefully balanced the Soul Supreme’s performance to sound more neutral than its measured behavior would suggest, allowing the listener to appreciate its high sensitivity and evenly balanced midrange. —John Atkinson

¹ See <http://tinyurl.com/4t6eczy>.

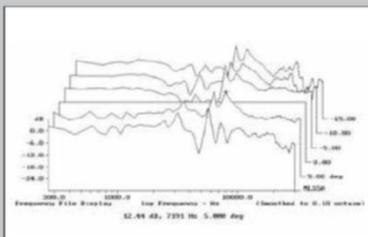


Fig.5 Zu Audio Soul Supreme, vertical response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 15–5° above axis, reference response, differences in response 5–10° below axis.

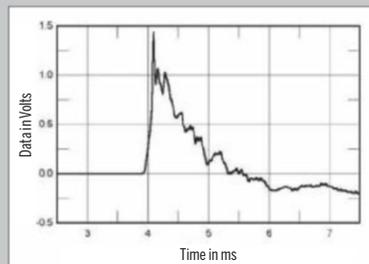


Fig.6 Zu Audio Soul Supreme, step response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

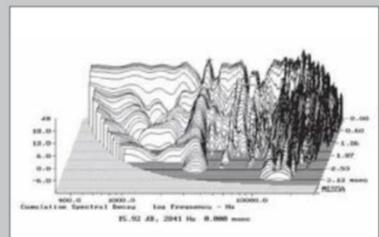


Fig.7 Zu Audio Soul Supreme, cumulative spectral-decay plot on tweeter axis at 50° (0.15ms risetime).



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vibrating textures, cathedral spaces, and flickering colors.

Sean Casey says that all Zu speaker models are designed with an ear to the human voice. Therefore, because the Zu's 10.3" nominally full-range driver hands over to the tweeter at 12kHz, the most important things I listened for were strangeness, sibilance, or discontinuity in the harmonics of the ranges of male and female voices (1–5kHz). I played a greater-than-usual number of recordings of sopranos, high-pitched sirens, and countertenors—such as my perennial favorite, Alfred George Deller, CBE.

When I'm not listening to Scott Walker or Miles Davis, I'm dreaming back to those times before our colonies rejected British rule. I'm especially fond of the music of Henry Purcell (1659–1695). I wish, dear reader, that you could have been here with me, sitting on my couch, as my beloved Deller Consort played and sang extracts from Purcell's *King Arthur*, sung to a text by John Dryden (LP, Harmonia Mundi HMC E200). Oh solemn joy and mild voices! Act I,ii opens with pomp and pageantry that gradually develops into restrained foreboding; even the choruses and solos that follow are less than joyful. My joy was in the listening. The Soul Supremes and LM-518IA played this semi-opera in a most enlightening way. The textures and spaces were revealed with a clarity and tangible realism that made for an enjoyable intimacy with the performers. Images were well drawn, in a way that enhanced my understanding of Deller's and Purcell's intentions. These American speakers responded supremely

to the British Dryden-Purcell-Deller consortium. Joy and odes!

Using the new Hana EL moving-coil cartridge (\$400, review in progress), I played more Deller and Purcell. This time, in a scene from Purcell's last semi-opera, *The Indian Queen*, released in 1969 on the collection *Musique de Scène: Airs d'Opéras, Odes et Chants Sacrés* (LP, Harmonia Mundi France HMD 218), Deller sings the aria "Wake, Quivera, wake!," accompanied by the most vivid viola da gamba imaginable. This stunning French recording—supreme analog at its goose-bump best—presents a clearly defined space that overflows with layered clouds of penetrating harmonics. The Zus and Line Magnetic were very happy I played it—they made every note a tasty, delight-filled morsel. Deller's voice was transcendent. The viola da gamba, played by Desmond Dupré, sounded so colorful, so ecstatically textured that I had to stop listening and read all about the history and manufacture of these bowed, fretted, stringed instruments and their lovely C-holes.

Continuing my search for problems in the lower treble, I decided to pull out all the stops with J.S. Bach's Prelude & Fugue in D, BWV 532, as performed by Hans Heintze on the Arp Schnitger organ of the Ludgerikirche in Norden, Germany (LP, Nonesuch H-71321). Through the Soul Supremes, this recording projected into my room fierce fugal power: Bass notes shook the floor and vibrated my desk. Treble notes soared to the top of the Zus' soundstage. High frequencies were pure and glowing. The mids were highly resolved, but

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Digital Sources Integra DPPS-7.2 DVD-A player, Schiit Audio Bifrost Multibit DAC.

Preamplification Dynavector SUP-200 step-up transformer; Dynavector P75 Mk.3, Parasound Halo JC 3+ phono stages; PrimaLuna ProLogue Premium, Simaudio Moon Neo 350P preamplifiers.

Power Amplifiers First Watt J2, PrimaLuna ProLogue Premium, Simaudio

Moon Neo 330A.

Integrated Amplifiers Linear Tube Audio microZOTL 2.0, Line Magnetic LM-518 IA, Schiit Audio Ragnarok, Simaudio Moon Neo 340i.

Loudspeakers DeVore Fidelity Orangutan O/93.

Cables Speaker: Auditorium 23, Zu Audio Mission Mk.II. Interconnect: Auditorium 23, AudioQuest Cinnamon, Kimber Kable Silver Streak. Accessories Dr. Feickert Analogue cartridge alignment protractor & Adjust+ app; PS Audio PerfectWave PowerBase.—Herb Reichert

between 2 and 5kHz I consistently noticed what sounded like the rise of a “presence region” that lent a bit of extra light, extra detail, and occasional brightness to short organ pipes—and, on other recordings, massed strings and female choirs.

Comparison: DeVore Fidelity Orangutan O/93

I hate comparisons, but *Stereophile* readers seem to love them. I hate comparisons because I loathe left-brain listening. I prefer to *feel* the music and dream along with it. Comparison means I have to think—maybe even *quantify* my experiences—and you all know I can’t think and make love at the same time. (Can you?)

Actually, I’m not completely right-brain; I do measure the final value of all audio equipment by the quantity of musical connectedness it can provide.

DeVore Fidelity’s Orangutan O/93s (\$8400/pair) always deliver copious amounts of savory musical connectedness. So did Zu Audio’s Soul Supremes. Both are very direct, exciting-sounding loudspeakers. Both are unusually expressive and very non-hi-fi. Both capture musical heartbeats well. Both love high-quality, low-power, class-A amplifiers.

But how, other than in price, do they differ? I suspect the answers lie in their crossover philosophies, their woofer loading, and, especially, the sound character and implementation of their paper cones.

To my ears, every speaker driver sounds like the materials of which its cone or dome is made. Other elements of the driver and the materials they’re made of—iron, neodymium, beryllium, alnico, Kevlar, rubber, ceramic, plastic, etc.—also come into play. Each colors the music with its resonant nature—or at least I imagine they do.

As I listened to “Lullaby” through the Line Magnetic LM-518 integrated and DeVore Orangutans, singer Scott Walker sounded less present, fear-some, and tactile than through the Soul Supremes. His voice also sounded much finer grained and relaxed. The DeVores are noticeably smoother through the midrange than the Zus. The Soul Supremes made music sound louder and more direct, with amazingly lifelike macrodynamics. The distance between soft and loud seemed greater through the Zus than through the DeVores. Compared to the Soul Supremes, the Orangutan O/93s capture more micro-

detail and dynamic nuance, but seem to compress larger dynamic contrasts. Music seemed to flow faster and more forcefully through the Zus—they had an inescapable “wild woman” boogie factor that swept me up and took me for a Cadillac ride to the Promised Land. The DeVores are a different kind of abductor: They seduce me with their saucy smile, barefoot dancing, and sequined Gypsy clothes. Both induce submission to their charms.

To my ears, the biggest difference between these two excellent—but non-mainstream!—speakers was in the voices of their very different magnet and (paper) cone structures. The Zu woofer’s voice reminded me just a little of my ancient and beloved Altec 604s: lightning fast, mostly neutral, wide open, and breathy, while the DeVore O/93s deliver a less open but more refined, colorful, and modern sound. What I mean is: the 10" DeVore woofer delivers less dynamic slam, but more nuance and tonal shading.

Sean Casey and John DeVore are both extremely talented designers. I suspect that each made difficult decisions in order to preserve what he believed to be important. Consider me a fan of both aesthetics.

Conclusions

An audio component must always do its jobs: play music in an enjoyable, enticing, elucidating fashion; be reliable (nothing beats a stereo rig that has two working channels every day); and let its owners feel good about themselves. I don’t mean simple pride of ownership. I mean *audiophile identity*, as in: “These speakers represent how I believe music should be experienced in my home,” and “These speakers represent what I value in audio engineering and interior design,” and, most important, “These speakers get me and I get these speakers!” These were precisely the thoughts I had while reviewing the Zu Audio Soul Supremes.

Audio consumers need to be self-aware and self-empowered. Don’t just buy into some pre-existing (*ie*, mainstream) audio aesthetic or belief system. Your ears, heart, and mind are far more sensitive and sophisticated measuring tools than any ‘scope, calibrated mike, or analyzer—trust them. In my rustic hermitage, and to my ears and heart, Zu Audio’s Soul Supremes delivered copious amounts of savory musical connectedness. Highly recommended. ■

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Unison Research Unico Primo

INTEGRATED AMPLIFIER

In 1999, I visited a friend, professor of Italian history Bill Adams, at his castle lair in the mountain village of Panzano, in Chianti, Italy. The 10th-century Castello di Panzano towers over the lush Tuscan hills, offering stupendous views. Each morning we'd walk down the mountain to the town below, where squat old men drank espresso and watched soccer at the all-in-one café/general store/post office. We toured the Roman ruins at Volterra and San Gimignano, gorged ourselves on pasta, and admired the fashionable young women.

In Italy, my pulse seemed to slow. I fell into the rhythm of Panzano. I drank too much and too often of the arid red wine, devoured the crusty bread, enjoyed the stout richness of the *pici all'aglione*. While everything moved more slowly, I also felt somehow more alive.

Do all things Italian offer a similar sensual feast? I've certainly loved the surreal films of Federico Fellini and the bittersweet scores of Nino Rota, and the work of those other Italian legends of film and music, Sergio Leone and Ennio Morricone. As a first-generation Maltese-American, I feel a kinship with the emotional Italians, who, as my father and



The volume knob has, undoubtedly, the creamiest action I have ever laid fingers on.

his two brothers did, wring every last bit of blood from the art of living. Am I silly to think that an Italian-built, 80Wpc, hybrid tube/solid-state integrated amplifier running in what its manufacturer calls “Dynamic class-A” should deliver equally emotional dynamics, deep instrumental tones, and sensual aural textures?

Since 1987, Unison Research's phono stages, pre- and power amplifiers, integrated amplifiers, and loudspeakers have been designed by the company's founder, Giovanni Maria Sacchetti. UR's early, tubed products bore such cute names as Glowly, Ruler, and Nimbly, and led to its first major success, the Simply Two: a 12Wpc, single-ended triode (SET) amplifier that in its first four years of production sold 10,000 units, primarily to Japan and other Far Eastern markets. UR then created dozens of amplifier models based on the KT88, EL34, and 845 tubes (the last of which they take credit for popularizing).

Some contemporary UR amps, with their gleaming copper finishes and dramatic sloping surfaces, look as if they've been launched from the Starship *Enterprise*. UR believes in

SPECIFICATIONS

Description Two-channel, hybrid integrated amplifier with MOSFET output stage. Tube complement: one ECC83 (12AX7). Inputs: 5 unbalanced (RCA), optional MM/MC phono stage. Outputs: Tape, Subwoofer. Power output: 80Wpc into 8 ohms (19dBV). Frequency response: -0.2dB at 10Hz, -0.5dB at 100kHz. Total

harmonic distortion: 0.15% at 10W, 1kHz. Channel separation: 83.7dB, 1kHz. Signal/noise: 90dB. Phono input impedances: MM, 47k ohms/220pF; MC, 100 ohms/440pF. Negative feedback: 10dB. Damping factor: >50. Power consumption: 380W max.

Dimensions 17" (435mm) W by 3.7" (95mm) H by 16.8"

(430mm) D. Weight: 30.8 lbs (14kg).

Finishes Silver, Black.

Serial number of unit reviewed 500868.

Price \$2400; MM/MC phono board, \$150; optional black faceplate, \$150. Approximate number of dealers: 20.

Manufacturer Unison Research, A.R.I.A. Advanced

Research in Audio, via Barone 4, 31030 Dossone di Casier (Treviso), Italy. Tel: (39) 0422-633547. Fax: (39) 0422-633550.

Web: www.unisonresearch.com. US distributor: Colleen Cardas Imports, PO Box 912, Brewerton, NY 13029. Tel: (970) 275-9086.

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“distinctive styling,” states its website, “characterized by the use of fine materials such as hand-crafted wood for the trim pieces, stainless steel and turned aluminum for the control knobs.” The Unico Primo’s low-rider profile is offset by its hefty aluminum front plate, which displays two oversize knobs that are silken to the touch. More recently, UR’s focus has been squarely on hybrid integrated amplifiers with tube input stages and solid-state output stages, such as the best-selling, entry-level Unico Primo. This slim, sleek performer could be called the NAD 3020 of Italy, so popular has it become.

Unison Research currently makes a total of 14 (!) models of integrated amplifier, from the Unico Primo (\$2400, or \$2550 with phono board) and the Unico 150 (\$6500) to the S9 (\$11,000), the Performance Anniversary (\$15,500), and the Absolute 845 (\$50,000). That’s a lot of tubes, a lot of Italian goodness, and a wide range of prices from which to choose.

Delivery and Setup, and . . . Delivery and Setup

The Unico Primo arrived at my Greenwich Village crib in a reasonably sized box. As I hoisted it to my shoulder to begin the seven-flight climb to my pad in the sky, I could hear and feel the amplifier jostling around in its box. *Uh-oh.*

Once inside my apartment, I unboxed the Primo and removed it from its snug, drawstring cotton condom, along with its power cord and instruction manual. After attaching the ground wire and AC cord, and the interconnect to my Auditorium A23 step-up transformer, I inserted the speaker

cables’ banana plugs into the Primo’s binding posts and flipped the switch.

On firing up the Primo, you should see two green, quickly blinking LEDs; after 30 seconds, these LEDs should glow steady green, indicating that the 12AX7/ECC83 tube is ready to boogie. The latter didn’t happen: the LEDs blinked and blinked and blinked. I lowered the tonearm to the first LP I could find, Woody Herman’s fantastic *Giant Steps* (LP, Fantasy OJC-344). I put my ear to the left speaker and heard . . . nothing. The right channel emitted a teeny-teeny signal, as if the Primo were playing a joke on me. But this was no joke: The Primo was *finito*, and the accompanying remote control was also DOA.

Marc Phillips, of Unison’s US distributor, Colleen Cardas Imports, sent another Primo, *pronto*. On its arrival, the replacement, too, bobbed like a pogo stick inside its box. When I unpacked it, I saw, through the Primo’s ventilation grille, a palm-sized circuit board squashed between two blood-red capacitors. It looked like a small man, who, having fallen off a mountaintop, was now helplessly trapped between two peaks. I removed the top plate, fished out the board, saw that it was the phono board, and gently slid it into the logical receptacle. A couple of wires, too, had been displaced; I cautiously joined mama to papa and prayed that all was well. *It worked.*

Although Unison Research has obviously spent *multi soldi* on the Primo’s design and cosmetics, safely packaging its products seems less of a concern. The foam-rubber dividers designed to hold the amp rigidly in place were as squishy

MEASUREMENTS

I performed a full set of measurements on the Unison Research Unico Primo using my Audio Precision SYS2722 system (see the January 2008 “As We See It,” www.stereophile.com/content/measurements-maps-precision). As always before performing any measurements on an amplifier, I preconditioned it by running it with both channels driven at one-third power into 8 ohms for 60 minutes. Thermally, this is the worst-case situation for an amplifier with a class-B or class-A/B output stage, as one-third power is when the maximum heat dissipation occurs in the output transistors.

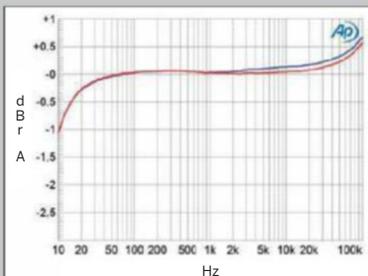


Fig.1 Unison Unico Primo, phono input, response with RIAA correction (left channel blue, right red) (1dB/vertical div.).

As the Unico Primo’s maximum power is specified in the manual as 80Wpc into 8 ohms, I set it driving 27Wpc into 8 ohms. However, the amplifier turned itself off after just 15 minutes at this power level. The two green LEDs on its front panel were slowly flashing, which, according to the manual, meant that the amplifier’s protection circuitry had detected thermal overload. The internal heatsink’s temperature was 113.2°F (45.1°C), which didn’t seem that hot. But I turned the Primo off and let it cool down for 30 minutes, after which I could turn it on again. This preconditioning test puts a significant strain on

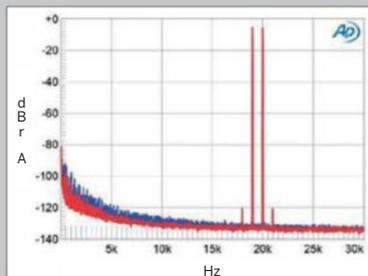


Fig.2 Unison Unico Primo, phono input, HF intermodulation spectrum, DC–30kHz, 19+20kHz at 2V peak into 100k ohms (linear frequency scale).

inexpensive amplifiers, which tend to have undersized heatsinks; it appears that the Unico Primo is not the best candidate for use at parties.

I looked first at the phono input, which Ken Micallef had used with the default moving-magnet setting. Measured at the Tape Out jacks, this preserved absolute polarity (ie, was non-inverting) and offered a gain of 40.5dB. The input impedance measured 46k ohms at low and middle frequencies, dropping slightly to 39.6k ohms at the top of the audioband, and both the gain and impedance are appropriate for MM cartridges. Fig.1 shows the RIAA error: The two channels match closely, and while there is a slight rise in the top two octaves and a slight rolloff below 30Hz, both are low in absolute terms. The unweighted, wideband signal/noise ratio, measured with the input shorted to ground and ref. 1kHz at 5mV input voltage, was excellent, at 69dB, increasing when A-weighted to 79.3dB left and 80.5dB right. The phono input’s channel separation was also excellent, at >80dB above 2kHz.

The MM stage’s overload margin was superb, at 26dB at all audio fre-

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AK RM01 (Bluetooth remote control)

Support for the AK T1, AK500N, AK380, AK320, AK300, AK240, AK120 II and AK100 II

as jellyfish, and of the wrong size. This left the amp free to bang around inside its box like a drunken sailor, from Italy to the US. The second remote control was also DOA, but at least it left a good-looking corpse. The first remote looked as if a shark had mistaken it for Charlie Tuna—nasty gouge marks mutilated both ends.

Description

Based in Treviso, Unison Research uses Italian-made materials and designs its own transformers, each locally made and designated for a specific amplifier model. “There is no ‘off the rack’ transformer that they use,” said Marc Phillips. “In some of the tube amplifiers, they actually make the output transformers slightly larger than required—this makes the pentode output valves behave like triodes, creating that unique sound.”

UR’s principal technician, Alessio Fusaro, explains the Primo’s “Dynamic class-A” circuit design: “In the circuit,” Alessio said, “after the rotary switch input selector, the signal goes to an Alps potentiometer, to a polypropylene capacitor, and then to the ECC83 tube, which provides [active] preamplification and gain. There are no other capacitors in the signal path. The output-stage polarization is regulated by



The Primo played this mellow music with sweet, rhythmic attentiveness.

a microchip, which keeps both final MOS-FETs always on (with a limited current). We call it ‘dynamic class-A’ because the MOS-FET output is never switched off completely. Obviously, it is not a pure class-A, but it’s not standard class-A/B [either].”

When I’d popped the top plate of my second sample of the Unico Primo to put things to rights, I’d seen a large toroidal transformer with accompanying heat-sink. Next to this, a large circuit board held a single 12AX7/ECC83 tube and capacitors of various sizes and colors, including four large, red, Italian-made Itecond aluminum caps and an array of smaller Nichicons. The Primo’s internal wiring is copper, stranded or stranded-and-tinned.

On the Primo’s ½"-thick brushed-aluminum faceplate are, at the left, a dome-like Selector knob and, next to it, a larger Volume knob that has, undoubtedly, the creamiest ac-

measurements, continued

quencies, this equivalent to an output voltage of 9.5V at the Tape Out jacks. Harmonic distortion was correspondingly low at typical MM signal levels, with the third harmonic of a 1kHz tone the highest in level at a very low -97dB (0.0015%). Intermodulation distortion was similarly low in level (fig.2).

Turning to the line inputs, the Unico Primo’s maximum gain into 8 ohms measured 40dB, which is typical for an integrated amplifier; these inputs also preserved absolute polarity. The

input impedance was a usefully high 47k ohms at low and middle frequencies, dropping inconsequentially to 42k ohms at 20kHz. At 0.3 ohm, the Primo’s output impedance was on the high side for a solid-state design, presumably due to the low level of loop negative feedback. As a result, the modification of the amplifier’s frequency response with our standard simulated loudspeaker¹ reached ± 0.25 dB (fig.3, gray trace). This graph reveals that the Unison amplifier had a wide small-signal bandwidth even into 2 ohms (green trace), but the 10kHz

squarewave (fig.4) shows no overshoot or ringing. Fig.1 was taken with the volume control set to its maximum; turning down this control also reduced the amplifier’s bandwidth, but the response was still flat to 20kHz at the lower settings, and the excellent channel balance seen in fig.1 was preserved.

Channel separation for a 1kHz line-level signal was a little disappointing, at 65dB R-L and 70dB L-R, and decreased with increasing frequency, reaching a poor 40dB at 20kHz. I also

¹ See www.stereophile.com/content/real-life-measurements-page-2.

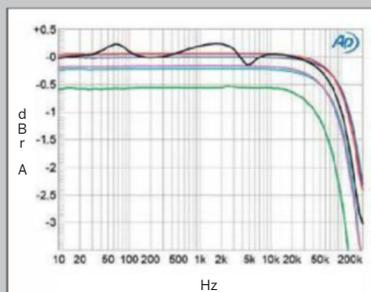


Fig.3 Unison Unico Primo, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (0.5dB/vertical div.).

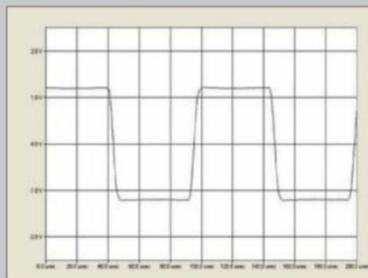


Fig.4 Unison Unico Primo, small-signal, 10kHz squarewave into 8 ohms.

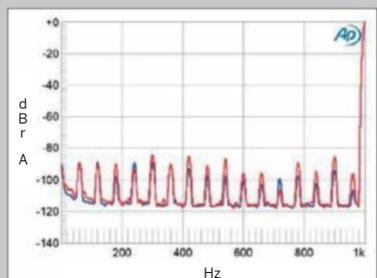


Fig.5 Unison Unico Primo, spectrum of 1kHz sinewave, DC-1kHz, at 1W into 8 ohms (linear frequency scale).

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tion I have ever laid fingers on. The dead remote was fine by me—turning the silken volume dial between my fingers was what I imagine driving a Lamborghini must feel like: but-tah! To the right of this is a round, $\frac{3}{4}$ " receiver window for the remote signal, followed by a 2" wood oval adorned with the Unison Research logo. The power switch is found on the right side panel. In all, the Primo's smooth casework and lovely knobs looked and felt mighty fine to this displaced Southern boy.

Around back are the Primo's power receptacle, four pairs of Taiwanese-made speaker binding posts, a hefty ground screw, and seven pairs of gold-plated RCA jacks: Sub Out, Tape Out, Tape, Tuner, CD, Aux, and Phono. The Primo measures 17" wide by 3.7" high by 16.8" deep and weighs 30.8 lbs.

Listening

All sorted at last, I began listening to the Primo in my fun-house rig: Kuzma Stabi turntable with Kuzma Stogi tone-arm, and DeVore Fidelity Orangutan O/93 speakers. The Primo's phono board is set at the factory to moving-magnet mode. (To switch it to moving-coil, you shift two jumpers.) I plugged the interconnects from the A23 step-up transformer into the Primo. Sweet music emerged.

As most vinyl fanatics know, half the fun of collecting LPs is replacing with beautiful 12" black plastic discs what you previously owned only on shiny 5" silver donuts. Such was my joy when I found a mint copy of Robbie Robertson's eponymous 1987 solo album, sumptuously produced by Daniel Lanois (LP, Geffen GHS 24160). Robertson is considered the bad guy in the epic history of rustic rock'n'roll messengers the Band, but that doesn't detract from the

magic of his first solo outing. Between righteous rockers and atmospheric rollers lies one of my favorite compositions by Robertson (and Martin Page), "Somewhere Down the Crazy River."

Feverish and trance-inducing, "Somewhere Down the Crazy River" pulsates like blood pooling in your brain, the locomotion provided by the great jazz drummer Manu Katché. His drums dominate the mix, a 16th-note hi-hat pattern spinning off reggae-like tom drops. Thanks to the Unico Primo, the drums boomed beautifully, with long decay trails. The UR presented Robertson's tale of Delta voodoo and debauchery with first-row presence and palpability, leaving nothing to the imagination. The sound was vivid, quick, and punchy. Off the mark, the Primo seemed to cast a bigger soundstage than my Shindo separates. But while the Primo's deep bottom end was big, perfectly wet, it was neither well defined nor textured. The low notes of the toms and bass drums resounded like a hurricane, but the electric bass was undeniably soft. Still, "Somewhere Down the Crazy River" is really about atmosphere, and that the Primo nailed—and good.

The Brooklyn Blowhards recently released a self-titled album (LP, Little (i) Music) that matches the exhilarating free jazz of Albert Ayler with the woeful yet playful melodies of 19th-century sea chanteys. The combination works better than you might expect—Blowhards Jeff Lederer (saxophone), Kirk Knuffke (cornet), and Matt Wilson (drums) turn it all into a seriously grooving Brooklyn brew with a New Orleans chaser. The LP is lo-fi, no question, but the thunder generated by a trap-set drummer *and* a percussionist (Alison Miller) manhandling a concert bass drum with a mallet is positively stomach-cleansing. As the band lets fly

measurements, continued

noted significant inter-input cross-talk, at -30dB at 1kHz for adjacent, unloaded inputs. The unweighted, wideband S/N ratio, measured with the line inputs shorted to ground but the volume control set to its maximum, was also disappointing, at 68.4dB ref. 2.83V into 8 ohms, though when A-weighted this did improve to 82.8dB left and 79.3dB right. Fig.5 reveals that the noise floor is dominated by spurious at the AC mains frequency of 60Hz and its harmonics.

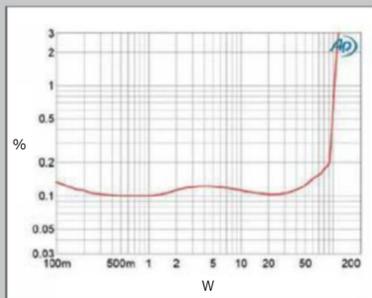


Fig.6 Unison Unico Primo, THD+N (%) vs 1kHz continuous output power into 8 ohms.

Fig.6 reveals that the Unico Primo exceeded its specified maximum output power of 80Wpc into 8 ohms (19dBW), clipping (defined as 1% THD+noise) at 105Wpc (20.2dBW). However, into 4 ohms (fig.7), the output voltage dropped, the amplifier clipping at 135Wpc (18.3dBW), which suggests that its power transformer is undersized. While performing this test, I noted that at levels above 20W or so the transformer audibly buzzed, which suggests the same thing. These two

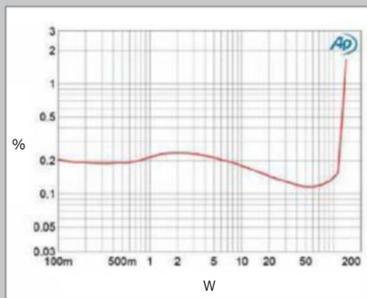


Fig.7 Unison Unico Primo, THD+N (%) vs 1kHz continuous output power into 4 ohms.

graphs indicate that the THD+N level remains relatively constant over a wide range of powers, from 100mW to 10W, but that the amplifier becomes more linear as the output current increases.

I plotted how the THD+N percentage changed with frequency at a level, 8.95V (equivalent to 10W into 8 ohms, 20W into 4 ohms, and 40W into 2 ohms), where I could be sure that I was examining actual distortion rather than noise. The results are plotted in

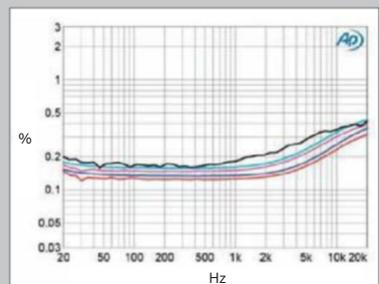


Fig.8 Unison Unico Primo, THD+N (%) vs frequency at 8.95V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (left gray).



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in “Santy Anno,” the Primo delivered their music with great speed, vivid colors, and spirited interplay.

The Primo charged hard 24/7, with enough dynamic gusto to compel music mightily, from orchestral crescendos to free-jazz ballyhoo. The DeVore O/93s took a serious liking to the Primo, the trio creating low-end gravitas that seemed to come up from the floor, not down from the speakers. And when Blowhards Wilson and Miller played unison bass-drum assaults, the Primo directed the subsonic commotion with ample force and weight, if not equal resolution. While the Primo resolved upper frequencies with commendable clarity, it could also make saxophone squeals and cornet splats sound dry, if not exactly hard. In fact, this touch of dryness when delivering spicy transients was a consistent trait. Cymbals, upper-register piano notes, brass bells—all shared through the Primo a similar dryness of texture that also aided the leading-edge definition of aural images.

When I played pianist Tete Montoliu’s excellent *Tête à Tête* (LP, Steeplechase SCS-1054), his notes sounded truncated via the Primo, as did Niels-Henning Ørsted Pedersen’s double bass. But the notes flew with such liveliness and exuberance that it was easier to dig the sounds than to frown at such minor offenses.

A Big Bang Theory

I like to play my music *loud*. I’ve gone through several changes of heart about this through the years, but, all else being equal, and especially if my system is warmed up and simpatico, there’s a certain sweet spot in the volume range where everything comes alive, and I can feel the music as I believe the artist intended. My loudness fetish works particularly well with my Shindo Laboratory separates, which give more goodness, the more juice I feed them. The music becomes more colorful, more revealing, more sweet of note and expanded in demeanor.

ASSOCIATED EQUIPMENT

Analog Sources Kuzma Stabi S turntable & Stogi tonearm; Music Hall MMF-7.3 turntable/tonearm; Denon DL-103 cartridge.

Digital Sources Apple MacBook computer, Halide DAC HD, Western Digital T2 Mirror Drive.

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

Power Amplifier Shindo Laboratory Haut-Brion.

Loudspeakers DeVore Fidelity Orangutan O/93, Elac B6, Snell Type J/II.

Cables Interconnect: Shindo Laboratory. Speaker: Auditorium 23, AudioQuest Castle Rock & GO-4.

Accessories Music Hall Aztec Blue & Mooo record mats; Spec AD-UP1 Analog Disc Sheet; Clearview Double Helix Mk.II power strip; Salamander five-tier rack; IKEA Aptitlig bamboo chopping boards.—Ken Micallef

While riding its volume sweet spot, the Unico Primo consistently portrayed music with vibrant, vigorous textures—its excellent resolution and weighty if soft bass reproduction struck a good overall balance. But when pushed, the Primo lost its cool and got nasty in the upper frequencies. This glare, or treble aggression, became obvious only when I pushed the amplifier past its comfort zone.

Tonally, the Unico Primo’s sound was on the warmish side of neutral. It didn’t present music in an overcolorful, oversaturated fashion, nor was it neutral in the fastidious, buttoned-down sense of that word. I’ve heard components that were decidedly neutral that made me cry out for some flesh and blood and bones and spit. The Primo struck an unusual balance between superior resolution in the treble

measurements, continued

fig.8: The rise in THD in the top two octaves is lower than usual, suggesting that the circuit has a wide open-loop bandwidth. The distortion also remains relatively constant over the range of impedances.

The distortion signature at 1kHz and low powers appears primarily to be third-harmonic in nature (fig.9), but at

higher powers, the second harmonic and higher-order odd harmonics make appearances (fig.10). The graph of intermodulation distortion (fig.11) looks a little alarming, but other than the products at 18 and 21kHz, the spuriae are all at or below 70dB (0.03%).

Some of its measured behavior suggests that some corners have been

cut to keep the Unison Research Unico Primo’s price relatively affordable. But despite its disappointing levels of noise and distortion, the Unico Primo appears to maintain a relatively constant level of performance over a wide range of frequencies and power levels, which is always subjectively found to be a good thing.—John Atkinson

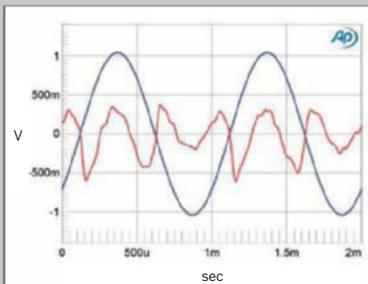


Fig.9 Unison Unico Primo, 1kHz waveform at 1W into 8 ohms, 0.1% THD+N (blue); distortion and noise waveform with fundamental notched out (red, not to scale).

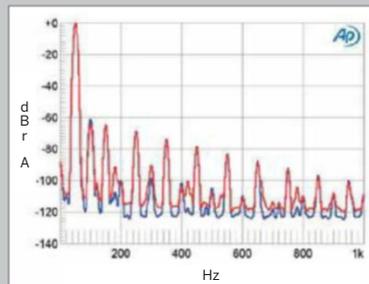


Fig.10 Unison Unico Primo, spectrum of 50Hz sine wave, DC-1kHz, at 20W into 8 ohms (linear frequency scale).

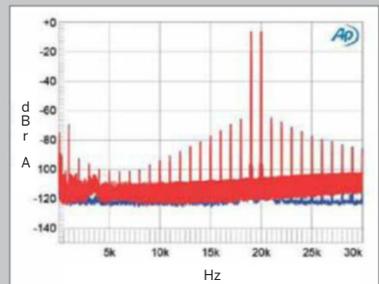


Fig.11 Unison Unico Primo, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 40W peak into 4 ohms (linear frequency scale).

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to midrange and weighty low-end fundamentals that were less than accurate but were cozily soft and oversize, like my Maltese grandmother's big belly. The Primo's strongest traits were its charged dynamics and spirited demeanor. The Primo flowed, and its somewhat dry, occasionally even cool character helped create very specific images with graphic leading edges.

As I listened to Frank Sinatra's *In the Wee Small Hours* (LP, Capitol W-581), the Primo's definition of the leading edges of the Kid from Hoboken's voice was excellent, its chestiness, smoothness, and gracefulness tinted with a subtle aridity. Foggy lower notes were offset by a touch of upper-frequency burr. The result was a fully fleshed-out Frank that sent shivers.

Primo Meets Varèse

The more I listened to the Unico Primo, the more I came to enjoy its natural effervescence and feisty get-up-and-go. The Primo was a party animal, always ready to rock the house. Though I refused to indulge it with any Jimi, Janis, or Jaco, I did slide some Boulez its way, and it resolved every note of *Boulez Conducts Varèse*, performed by the New York Philharmonic (LP, Columbia Masterworks M34552). Wouldn't you know it? The album cover portrays hand-powered crash cymbals in the act of crashing together! That's what this LP delivered in spades via the Primo: big, bold dynamics that leapt from the speakers. The Primo took great joy in knocking me around my listening space, casting a large and explicitly populated soundstage.

I don't know if the Primo's 80Wpc was responsible for its large soundfield—even larger than that from my Shindo separates—but there it was, plain as the egg on my face. What the Primo failed to do was create the tonal splendor, the musical emotion and flesh-and-blood "viscosity" (to quote Herb Reichert), so ably delivered by my Shindo gear. The Primo was like an energetic teenager: a very talented teen with good instincts, but ultimately lacking the wisdom, insight, purity, musical color, and innate life experience with which the late Ken Shindo so brilliantly imbued every one of his amplifiers.

While we're talking purity and wisdom, I compliment Ethan Hawke for his portrayal of trumpeter Chet Baker in *Born to Be Blue*. Hawke captures Baker the complete man, not

merely the junkie artist. But while the film focuses on Baker's youthful talent, Baker made some of his greatest records in his early 50s (he died at 58, in 1988). *Someday My Prince Will Come* (LP, Steeplechase SCS-1180), a 1979 album with guitarist Doug Rainey and bassist Niels-Henning Ørsted Pedersen (again!), is a beautiful collection of standards that feature Baker's warm, pure trumpet tone, giant sound, and lyrical elocution. The Primo played this mellow music with sweet, rhythmic attentiveness, capturing the flowing largesse, tonal depth, and execution of Baker on trumpet as well as I've ever heard it.

Music Hall and Elac

Mating the Primo with these sensibly priced separates provided a sound similar to that of my big rig, only in miniature. Those same Primo qualities—vigor, dynamics, resolution, *jump!*—were present with Music Hall's MMF-73 turntable (\$1595, review in process) and Elac's B6 stand-mounted speakers (\$279/pair). The Primo is, as the first-generation Italians who frequented the local VFW in Greenwich Village used to say, *primo!*

Conclusions

Like Ferrari, Leonardo da Vinci, and Monica Bellucci, Unison Research's 100Wpc Unico Primo integrated amplifier is an Italian over-achiever. It has the sheer speed of the superpowered automobile, the interpretive personality of the artist, and the sweet color and zesty personality of the model and actress. The Primo wowed me with its ability to ally impact with resolution, and visceral dynamics with graceful detail and musicality. That it failed to resolve the deepest low-end notes with equal gumption in no way detracted from its overall appeal. Rather, the Primo delighted with its cohesive strengths, and so achieved a kind of holistic presence.

At \$2550 with MM/MC phono board, the Primo resides in a neighborhood similar to that of Bel Canto Design's C7R receiver (includes tuner, DAC, and headphone input; \$2595), which used to be listed in Class A of *Stereophile's* "Recommended Components," and of Harman/Kardon's HK 990 integrated (includes DAC and headphone input; \$2599), listed in Class B. What the Primo lacks in extras it makes up in spirit and passion. It's alive! ■

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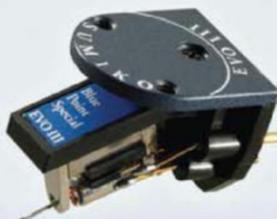
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JOHN ATKINSON

Pass Labs HPA-1

HEADPHONE AMPLIFIER

When Pass Labs is mentioned, it's natural to think of its founder, iconic engineer Nelson Pass. But Nelson heads a team of engineers at the California company: Their XP-30 preamplifier, which I enthusiastically reviewed in April 2013,¹ was designed by Wayne Colburn; and the subject of this review, the HPA-1 headphone amplifier, is the first Pass Labs product designed by Jam Somasundram, former director of engineering for Cary Audio. Somasundram joined Pass Labs in July 2013; he spent a year working on the HPA-1, which was shown at the 2015 Consumer Electronics Show, in Las Vegas,² but not formally launched until the 2016 CES, at a hefty \$3500.

Technology

The HPA-1 has two pairs of single-ended inputs, one pair of single-ended outputs to allow it to be used as a preamp, and, at the center of its front panel, a single, locking Neutrik ¼" headphone jack. To the jack's right is the volume control, to its left three pushbuttons and their associated LEDs. These buttons select the chosen input and, using high-quality relays, switch between the rear-panel preamp-output jacks and the front-panel headphone jack.

The HPA-1 looks more like a small integrated amplifier than a headphone amp. At 11" by 4.5" by 12.9", it's larger than the Naim Nait 2, which Art Dudley wrote about in the May issue; and at 14 lbs, it's not much lighter than the Creek Evolution 100A integrated, which Herb Reichert reviewed in July 2015. In part, the weight comes from the beveled, ½"-thick faceplate, the case panels of aircraft-grade



The HPA-1 headphone amplifier is the first Pass Labs product designed by Jam Somasundram.

aluminum, and the solid-aluminum volume knob—but inside are a hefty, mu-metal-shielded toroidal transformer and multiple heatsinks. The power supply comprises a bridge rectifier, generous CRC passive filtering followed by discrete DC

regulators, and then more passive RC filters. Overall, the HPA-1 boasts more than 40,000µF of supply capacitance.

The supply and audio circuitry are carried on a single multilayer circuit board that, other than a rectangular cutout at the right rear for the transformer, occupies the full width and depth of the HPA-1's interior. On the left, following the two pairs of Cardas input jacks (RCA), are, first, the left-channel audio circuits, then the right-channel circuits. According to Pass Labs, this circuitry is a simple two-stage CFA (current-feedback amplifier) topology using two pairs of

1 See www.stereophile.com/content/pass-laboratories-xp-30-line-preamplifier.

2 See <http://tinyurl.com/m4w62mc>.

SPECIFICATIONS

Description Solid-state headphone amplifier/line preamplifier. Analog inputs: 2 unbalanced (RCA). Analog outputs: 1 pair unbalanced (RCA), 1 locking ¼" headphone jack. Maximum output power: 3500mW

into 20 ohms, 200mW into 300 ohms. Frequency range: 10Hz-100kHz. Voltage gain: 8dB. Input impedance: 50k ohms. Output impedance: <2 ohms, headphones. Signal/noise and channel separation: not specified. THD+N:

<0.005% at 1V output. Power consumption: 6W. **Dimensions** 11" (280mm) W by 4.5" (115mm) H by 12.9" (330mm) D. Weight: 14 lbs (6.35kg). **Serial number of unit reviewed** 31083.

Price \$3500. Approximate number of dealers: 20. **Manufacturer** Pass Laboratories Inc., 13395 New Airport Road, Suite G, Auburn, CA 95602. Tel: (530) 878-5350. Web: passlabs.com.



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cascaded, ultra-low-noise Toshiba JFETs for the input stage, and a direct-coupled output stage comprising a complementary pair of Fairchild power MOSFETs biased into class-A, each mounted on its own heatsink. Between the left- and right-channel circuits is a single Burr-Brown OPA2804 dual op-amp chip, presumably to provide DC-servo action. The volume control is a top-line Alps potentiometer, and the board is replete with metal-film resistors and other premium parts.

Pass Labs says that the HPA-1 “easily drives headphones presenting loads from 15 to 600 ohms, particularly excelling with planar headphone designs.” Overall, the amplifier appears superbly well made and finished.

Listening

Pass Labs recommends that the HPA-1 be left powered on at all times, and says that it sounds its best after having been powered up for an hour. I used several pairs of headphones with the HPA-1: my long-term references, Audeze’s LCD-Xes, which I reviewed in March 2014;³ the Master & Dynamic MH40s, which Art Dudley wrote about in February;⁴ AudioQuest’s NightHawks; and Audeze’s LCD-4s, which I review elsewhere in this issue.

Authority—the word appears repeatedly in my listening notes, especially with good recordings of piano: The instrument’s left-hand register was weighty but without boom. My love affair with Brahms’s chamber music continues unabated; recently, I bought the complete set of his Piano Trios, performed by Christian Tetzlaff on violin, Tanja Tetzlaff on cello, and Lars Vogt on piano (DSD128 files, Ondine/HDtracks). The soundstage on this recording engineered by René LaFlamme has a tangible delicacy that the HPA-1 preserved, even if, through

The output MOSFETs and regulators are each mounted on a hefty heatsink.



headphones, that soundstage exists only inside the listener’s head. The instruments in the mysterious *Andante grazioso* of Trio 3 in c, Op.101, were stably positioned in a subtly present acoustic, each with a superbly natural tonal quality. Again, *authority* was the appropriate word to describe

3 See www.stereophile.com/content/audeze-lcd-x-headphones.

4 See www.stereophile.com/content/listening-158.

MEASUREMENTS

I measured the Pass Labs HPA-1’s electrical performance with my Audio Precision SYS2722 system (see the January 2008 “As We See It,” <http://tinyurl.com/4ffpve4>). I performed a full set of measurements from both the HPA-1’s preamplifier and headphone outputs. The graphs all refer to the headphone output; I

comment when the preamplifier output behaved differently.

Both sets of outputs preserved absolute polarity (ie, were non-inverting), and the maximum gain was the same from both, at 8.35dB, this very similar to the specified 8dB. The maximum output level at 1kHz was close to 10V. The input impedance measured a use-

fully high 46k ohms at 20Hz and 1kHz, dropping inconsequentially to 40k ohms at 20kHz. The output impedance from the headphone jack was a very low 1.35 ohms at all audio frequencies; it was higher from the preamplifier jacks but still low in absolute terms, ranging from 55 ohms in the low bass to 48 ohms at the top of the audioband.

The frequency responses of the HPA-1’s two channels matched very closely but varied with the volume-control setting. The blue and red traces in fig.1 were taken from the headphone output with the volume control set to its maximum—the response is flat to the 200kHz limit of the graph. The green and gray traces were taken with the volume control set to 12:00—the output is now down by 3dB at 190kHz, but the audioband response is still perfectly flat. The response from the preamplifier outputs was also flat within the audioband, but down by 1dB at 200kHz with the volume control

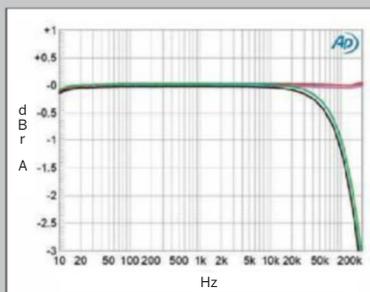


Fig.1 Pass Labs HPA-1, headphone output, frequency response with volume control set to its maximum (left channel blue, right red) and at 12:00 (left green, right gray) at 100k ohms (0.5dB/vertical div.).

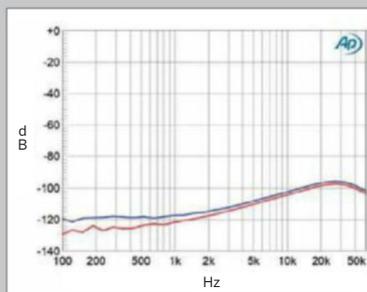


Fig.2 Pass Labs HPA-1, headphone output, channel separation ref. 7V into 100k ohms (R-L blue, L-R red) (20dB/vertical div.).

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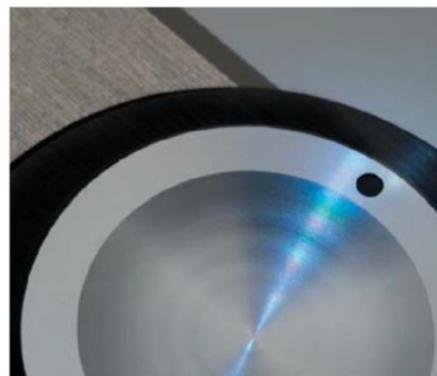
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the character of Vogt's piano as reproduced by the HPA-1.

I have belatedly been ripping my Joni Mitchell HDCDs to 20-bit AIFF files with the dBpower-amp app running on a Windows 7 PC. (The Mac version can't unravel the HDCD encoding.) In "Coyote," from *Hejira* (Asylum 1087-2), with the HPA-1 driving the Master & Dynamic MH40s, Jaco Pastorius's fretless Fender bass underpinned the music to great effect. The combination of low-frequency clarity and, yes, authority proved addictive.

As I write these words, it is five years to the day that I played at Otto's Shrunken Head, in the East Village. The late Bob Reina had put together the gig to celebrate my first 25 years as *Stereophile's* editor. Bob was playing Fender Rhodes piano, Liam Sillery trumpet, Mark Jones drums, Chris Jones double bass, and I was on fretless bass guitar. A band with two bass players constantly skirts disaster, especially when the music is improvised. The key is for both bass players to listen to each other and play in a complementary rather than a competitive fashion. Ideally, when one bassist is in the pocket low down, the other is playing up the neck, and vice versa—except that, much of the time that May night in 2011,

Left: RCA output jacks allow the HPA-1 to be used as a preamp. **Right:** that solid aluminum volume knob.

Chris and I managed to occupy the same pitch space!

For example, I began the second set with a groove in B-flat minor⁵ based on the riff featured in the verses of Traffic's "The Low Spark of High-Heeled Boys." When Chris came in, rather than soloing, he added bass harmonies to the second half of the riff. I'd recorded the gig at 24-bit/96kHz with a Zoom H4n portable recorder, using its coincident cardioid mikes. I had then added some first-order boost in the bass to compensate for the cardioids' inherently shelved-down low frequencies, which did insufficient justice to Mark's well-tuned kick drum. However, I forgot that, by doing so, I would add extra mud to those passages in which Chris and I were competing rather than collaborating. But through either set of Audeze 'phones driven by the HPA-1, Chris's double bass and my fretless electric bass were clearly differentiated in both space and tonality. Even through the AudioQuests, which can be a little bass heavy, there was no confusing the sounds of our instruments.

5 If that key causes a frown to furrow the brows of sharp-key-loving guitarists, note that we were playing jazz. With a trumpet player.

measurements, continued

set to its maximum, and down by 3dB at 190kHz with it set to 12:00. The response from neither output was affected by the load impedance.

Channel separation (fig.2) was superb, at close to 120dB in both directions at and below 1kHz, and still

95dB at the top of the audioband. The unweighted, wideband signal/noise ratio, measured at the headphone output jack with the inputs shorted to ground but with the volume control set to its maximum, was excellent, at 86.5dB ref. 1V. This improved to 98.5dB

when the measurement bandwidth was restricted to the audioband, and to 102dB when A-weighted. The unweighted, wideband ratio was slightly greater from the preamplifier outputs, but otherwise similar to the ratios measured at the headphone jack.

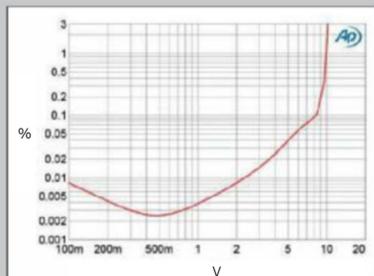


Fig.3 Pass Labs HPA-1, headphone output, THD+N (%) vs 1kHz output voltage into 30 ohms.

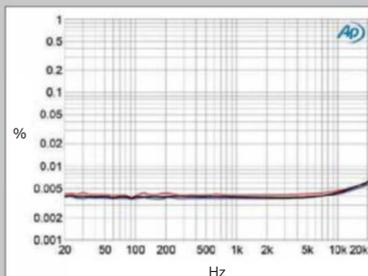


Fig.4 Pass Labs HPA-1, headphone output, THD+N (%) vs frequency at 1V into: 200 ohms (left blue, right red), 30 ohms (left gray).

Fig.3 plots how the percentage of THD+noise changes with output level into a low (30 ohm) load. The measurement is dominated by noise below 500mV, and although the actual distortion begins to emerge from the noise floor above that level, it remains below 0.01% up to 2V. The linear rise in THD+N with level above 2V suggests that only a moderate amount of loop negative feedback is used, and that actual waveform clipping occurs much higher in level. Into the low 30 ohm impedance, the HPA-1 clips (defined as

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Against the Ayre Codex

Jon Iverson enthusiastically reviewed the Ayre Acoustics Codex (\$1795) in our June issue, commenting that it “presented a simple, well-recorded, unaccompanied voice with ease, humanity, and that essential breath of life.” In contrast to the Pass Labs HPA-1, the Codex combines USB and Tos-Link digital inputs with a high-quality D/A converter, and can drive balanced or unbalanced headphones. As the Codex has a set of single-ended preamplifier outputs, for comparisons with the Pass Labs amplifier I fed these outputs to the HPA-1 so that the same D/A converter was used for both amps. And as I’d be swapping headphones between amps, I used the Ayre’s unbalanced headphone output. With the low-sensitivity Audeze LCD-4s, this meant that, to achieve a satisfactory playback level, the Ayre’s volume control needed to be set to “97,” very close to its maximum of “100.” But every time I plugged the balanced headphones into the Ayre after listening to the Pass Labs, the Codex helpfully reset its volume to “66,” which slowed my otherwise instantaneous comparisons.

My primary impression of the sound of the DSD Brahms Trio recording through the hot-running Ayre⁶ was that the images of the instruments were slightly farther toward the front of my head than through the HPA-1. The Pass Labs had a little more high-frequency air, and kept Jaco’s plucked harmonics in “Coyote” slightly more separated from the strummed guitars at far left and right. Jaco’s distinctive bass lines had a little more upper-bass emphasis through the Codex, a little more midbass body through the HPA-1. Overall, the Pass Labs edged ahead on points.

But the Codex is optimized for balanced headphones; it could be argued that, with the Audeze ‘phones running unbalanced, it was fighting with one hand—er, signal phase—tied behind its back. With the LCD-4s connected to the Ayre with balanced Cardas Clear cables,⁷ the Ayre’s overall sound remained a little more forward than the Pass Labs’, but the Codex’s low frequencies acquired greater apparent extension with the Joni Mitchell track, and greater weight

ASSOCIATED EQUIPMENT

Digital Sources Antipodes DX Reference, Aurender N10 music servers; Apple 2.7GHz i7 Mac mini computer running OS10.9.4, iTunes 12, Pure Music 3.0, Audirvana Plus 1.5.10; PS Audio PerfectWave DirectStream, Logitech Transporter D/A processors.

Headphone Amplifier Ayre Acoustics Codex.

Headphones Audeze LCD-X & LCD-4, AudioQuest Night-Hawk, Master & Dynamic MH40.

Cables USB: AudioQuest Coffee. Interconnect (unbalanced): AudioQuest Fire. Headphone: Cardas Clear (balanced), manufacturers’ own (unbalanced). AC: manufacturers’ own.—John Atkinson

in the piano’s left-hand register in the Brahms recording. The two amplifiers were now much more closely matched, though I ultimately preferred the sound of the Ayre’s DAC feeding the HPA-1 via unbalanced interconnects and the Pass Labs driving single-ended headphones.

Summing Up

As balanced headphone operation is the audio fashion du jour, it might be felt that Pass Labs’s sticking with single-ended operation could work against the HPA-1. But regardless of circuit topology and the active devices, it’s the sound quality that matters, and on that count the HPA-1 scores big-time. Yes, it’s an expensive headphone amplifier; but I venture to suggest that, in bass clarity and *authority*; and in midrange transparency, the Pass Labs HPA-1 is without peer. ■

6 After a couple of hours of operation, the temperature of the Ayre’s enclosure stabilized at 108°F (42.3°C).

7 Unfortunately, this disabled the Codex’s single-ended outputs, making instantaneous A/B comparisons with the Pass Labs even more cumbersome and causing me to reflect, once again, that those who declare that A/B comparisons are “easy” have very little practical experience of such tests.

measurements, continued

when the THD+N reaches 1%) at 10V. The HPA-1 will have no problem driving even low-impedance headphones to unsociably high volumes. I measured how the THD+N percentage changed with frequency (fig.4) at a level, 1V, at

which fig.3 had indicated that I would be looking at actual distortion. Even so, the level of distortion was very low, at around 0.004%, and the expected rise in THD at the top of the audioband was minimal.

The main distortion component was the second harmonic (fig.5), which is subjectively innocuous even when much higher in level than the -83dB (0.007%) at which it lies in this graph. Though some third harmonic is also present, this lies close to -120dB (0.0001%), and will therefore be irrelevant to sound quality. Similarly, though AC supply components can be seen at 120, 180, 240Hz, etc., unmasked by the very low level of random noise, these are all way too low to be anywhere close to audibility. Intermodulation distortion (fig.6) is also extremely low, with the 1kHz difference component resulting from an equal mix of 19 and 20kHz tones lying at -89dB (0.003%).

Pass Labs’ HPA-1 offers superb measured performance that reflects equally superb audio engineering.—John Atkinson

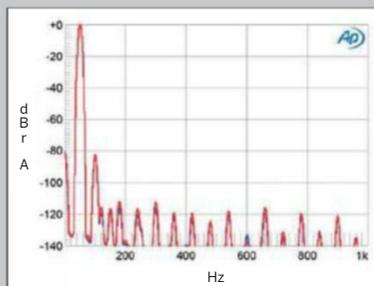


Fig.5 Pass Labs HPA-1, headphone output, spectrum of 50Hz sinewave, DC-1kHz, at 2V into 300 ohms (left channel blue, right red; linear frequency scale).

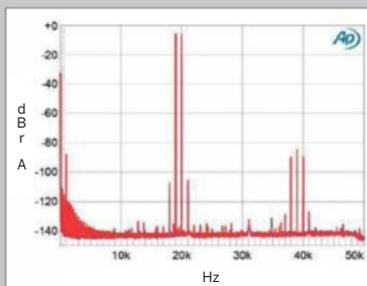


Fig.6 Pass Labs HPA-1, headphone output, HF intermodulation spectrum, DC-50kHz, 19+20kHz at 2V into 300 ohms (left channel blue, right red; linear frequency scale).

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BRIAN DAMKROGER

Nordost Valhalla 2 Reference

INTERCONNECT, SPEAKER CABLE, PHONO CABLE, POWER CORD

It would be an understatement to say that in 2001, when Nordost introduced their original Valhalla cables, they were a revelation for me. Their focus and resolution of detail were like nothing I'd ever heard, and revealed in recorded performances a startling energy and realism. Throw in their seemingly absolute transparency, and similarly unique levels of spatial and temporal precision, and the Valhallas established a new standard of sound quality in audio cables. Although their tonal balance was cool, as I reported in my first review of them in the November 2001 issue,¹ they were the only game in town in terms of reproducing the feel of a live performance. I immediately adopted them as a reference cable, and they remain a reference for me today.

Over time, other cable manufacturers upped their games and made the leap into the Valhalla cables' universe. None has matched the Valhallas' incredible transparency, focus, and detail, but they've equaled or surpassed them in other ways, such as reproducing music's seamless flow, or creating more solid aural images or more coherent portrayals of individuals playing in a single, continuous space. The coolness of the Valhallas' tonal balance became more obvious to me, and I became more aware that what had seemed like precision was actually a slight overemphasis of the edges of images. I began thinking of the best audio cables as each having a place on a continuum: at one end were the Valhallas, with their resolution and precision; at the other end were cables with superb coherence, tonal richness, and flow.

Improving on Perfection?

As good as they can be, even the very best audio cables fall short of absolute transparency in one way or another. Each comes tantalizingly close, but needs just a tweak here and



there to step out from the pack. My wish list for the Valhallas comprised three items: a slightly warmer tonal balance; a little less edge/a little more body; and more coherence across space and time. Great minds think alike, or maybe I just got lucky, but Nordost has evidently seen it the same way. As they acknowledged when they introduced the Valhalla 2 Reference models, the development program for the new line was aimed squarely at addressing these issues.

¹ See www.stereophile.com/cables/1101nordost/index.html.

SPECIFICATIONS

VALHALLA 2 REFERENCE ANALOG INTERCONNECT: Connectors: Holo:Plug RCA or XLR.

Serial numbers of units reviewed V0021 (RCA); V1251, V1262 (XLR).

Price \$7599.99/1m pair; add \$1100/additional 0.5m.

VALHALLA 2 REFERENCE

SPEAKER CABLE: Connectors:

Holo:Plug spade or banana.

Serial number of unit reviewed V0148.

Price \$14,849.99/3m pair; \$1500/additional 0.5m.

VALHALLA 2 REFERENCE

PHONE CABLE:

Connectors: Holo:Plug RCA, XLR, straight or 90° DIN.

Serial number of unit

reviewed V0021.

Price \$4799.99/1.25m, \$600/additional 0.5m.

VALHALLA 2 REFERENCE

POWER CORD: Connectors: US, EU, UK, Aus, 15A IEC, 20A IEC.

Serial numbers of units reviewed V0887, V0888.

Price \$5999.99/2m, \$1000/

additional 1m.

COMMON TO ALL:

Approximate number of dealers 100.

Manufacturer Nordost Corporation, 93 Bartzak Drive, Holliston, MA 01746.

Tel: (508) 893-0100.

Fax: (508) 893-0115.

Web: www.nordost.com.

Suffice it to say that the Valhalla 2 References jumped to the top of my Must Hear list.

Design and Technology

The pursuit of these characteristics—tonal warmth, a better balance between an image or note's body and edges, a more natural feel to the coherence of individual elements within the surrounding space, coupled with seamless, natural musical flow—has been a major driver for all of Nordost's design evolutions. Following their first-generation cables, across their Flatline, Blue Heaven, Red Dawn, and SPM lines, these characteristics improved over time (*and* as you moved up through the lines).

What I think of as the second generation of Nordost cables included the Quatro-fil interconnects and the first Valhalla line of interconnects and speaker cables. Nordost's ongoing R&D had begun to show that mechanical resonances had a much greater effect on cables' performance than had previously been thought. These results led Nordost to abandon their flat layouts of parallel conductors in favor of a round cross-section cable within which individual conductors were wound around a hollow core. The latter provided many more opportunities to vary design elements to better control mechanical resonances.

This second generation also used Nordost's Mono-Filament system, in which a small-diameter Teflon FEP filament was wound around the conductor prior to their co-extrusion into a Teflon FEP tube: the filament maintained a constant gap between conductor and tube. In addition to physically damping and tuning the conductor, the contact between the conductor and its surrounding material was reduced to only 20% of the former's surface area. Thus the Mono-Filament system more closely approximated an air-dielectric design, increasing the cable's speed of signal transmission.

The third generation of Nordost cables, which began with the cost-no-object Odin series and includes the Valhalla 2 References, incorporated two major design changes. One was Nordost's Dual Mono-Filament system, in which not one but two Teflon FEP filaments separate the Teflon tube from the conductor. Dual Mono-Filament further reduces the conductors' contact with the dielectric tube, to just 15% of its surface area.

The second change was Nordost's switch from using OEM connectors that best fit their designs—*eg*, the WBT RCA plugs on the original Valhalla interconnects—to designing and manufacturing their own connectors in-house. Their R&D program had highlighted the importance of minimizing the formation of eddy currents in cables, and that the place to start was the connectors. The results were Nordost's Holo:Plug RCA, XLR, and spade connectors, all used in the Valhalla 2 References.

The materials used in Nordost's cables have also evolved, though far less than the structural changes. The silver plating

on the conductors has thickened, from 60 to 85µm. Teflon has been used throughout for the filaments and the tubes that surround the individual conductors, the only change being the switch, in the Valhalla 2 References and other recent designs, to a high-purity Class 1.1 extruded FEP.

Use and Listening: First Things First

The first step in my review process was to hear how the Valhalla 2 References' sound quality compared with that of the original Valhallas, and to assess if, or how well, Nordost had met their design goals. This turned out to be very easy to do. First, there was no comparison between the two generations. The Valhalla 2s' performance was different enough from and so dramatically better than the original Valhallas' that, if not for the name printed on the cables, I would never have thought they were the same product line from the same company.

It was also obvious that, in terms of meeting their goals, Nordost had hit a home run. My first impressions of the Valhalla 2 References, which remained unchanged throughout my listening, were of how smoothly the music flowed from note to note; of a very natural warmth and tonal richness of the sounds of instruments; and of how solid, dimensional, and tangible images and soundstages seemed. That's where my analysis would begin.

Listening Approach: prix fixe or à la carte?

Listeners typically view cables in one of two ways. The first is to think of all of the cables in an audio system as a single component; in the other view, each individual cable is considered a separate component. (Holders of this second view will want to know the audible effects—manifesting, one presumes, from the cable designer's vision—that will be imparted to their systems by, say, a single run of Valhalla 2 Reference interconnect.) Nordost sent me only two Valhalla 2 Reference power cords; otherwise, I had everything I needed to wire my entire reference system with Valhalla 2s. This made it possible for me to examine them from both perspectives.

One Big Bite

What I heard from the all-Valhalla 2 Reference system is easy to describe. It is also impossible to describe. The simple part is that, with the Valhalla 2s, my system sounded better than I can recall it ever sounding. Recordings of all types of music seemed raised to a higher level. Musicians were both more precise and more expressive, and the soundscapes created by orchestras were dazzling in their intricacy and color. Combos were tighter, guitar and sax solos were cleaner, drums had more realistic impact—the list goes on. With the Valhalla 2s, I had a more direct connection to the music, and my listening room was a much more compelling place to spend an evening.

Better, but . . . better in what ways? I have no simple or satisfying answer. It's hyperbole to say that the Valhalla 2 References were perfect, or that they had *no* sound of their own, but that's how they seemed to me. No amount of switching cables in and out allowed me to home in on a sonic thumbprint I could attribute to the Nordosts. All that my efforts accomplished was to identify the things that *other* cables were

The net effect was to dramatically change the feel of the piano, in ways that made the instrument seem more alive.



contributing to the system's sound.

One Nibble at a Time: Valhalla 2 Reference analog interconnect

I listened extensively to both unbalanced (RCA) and balanced (XLR) Valhalla 2 Reference analog interconnects, but decided to focus most of my listening on a pair of 1m-long interconnects with unbalanced terminations. In part, I did so to establish consistency, to make all of the cable-swapping I'd be doing as easy as possible. A second reason for the choice was my hope that it would make my observations relevant and easily understood to the greatest number of readers: 1m RCA interconnects are the most commonly used in AudioLand.

CHARACTERISTICS AND IMPACT: What I found over the course of my listening will be great news for people who'd like to add to their systems just a single run of Valhalla 2 Reference interconnect (\$7599.99/1m pair; add \$1100/additional 0.5m). Of all the Valhalla 2s, it was the 1m interconnect with RCAs that had the greatest effect on the sound of my system.

It was no surprise that the Valhalla 2s improved the system's transparency and resolution of detail. Those attributes have long been strong points of Nordost cables, as have the speed and precision with which they reproduce dynamic and tonal transients. Having the Valhalla 2 References in the system made it possible for me to "see," for the first time, into the soundstage and identify more than just the fronts of the various aural images—or, more correctly, to see into the assemblage and to perceive each individual piece.

What was surprising was that the Valhalla 2s weren't doing this by accentuating spatial and temporal edges, as the originals did. The V2s more clearly identified elements within the recording by providing more information on what exists between the boundaries separating one track, one microphone feed, from the other. For example, in "The Midnight Special," from Creedence Clearwater Revival's *Willy and the Poor Boys* (LP, Fantasy/Analog Productions APP 8397-45), the Valhalla 2 interconnects made it embarrassingly easy to distinguish between vocals: John Fogerty's voice in the verses was crystal clear, but had a tangible, almost liquid-like presence; in contrast, the harmonized voices in the choruses weren't nearly as clear or distinct, instead consisting of a slightly foggy texture that created a more diffuse picture of the voices and surrounding space.

The additional precision and detail I heard with the Valhalla 2 Reference didn't come as results of unnaturally sharp interfaces and transients, or at the expense of the tonal richness and harmonic complexity of the voices and instruments—just the opposite. Voices and instruments were all richer and warmer when the Valhalla 2 interconnects were in the system, and the sonic interactions that developed behind the notes' initial transients were more clearly defined.

Bottom line: Of all the Valhalla 2 Reference cables and all the different runs, it was the 1m interconnect with unbalanced RCA termination that had the biggest impact on my system's sound. Inserting only this interconnect didn't improve the sound as much as when my system was wired entirely with Valhalla 2s, but it did take it further than the single cable's simplicity and cost would suggest.

Valhalla 2 Reference speaker cable

Although Nordost's speaker cables continue to be flat arrays of parallel conductors, for the most part the other aspects of their construction are similar to those of Nor-



It was the 1m interconnect that had the biggest impact on my system's sound.

dost's other cables. In the case of the Valhalla 2 Reference speaker cable (\$14,849.99/3m pair; \$1500/additional 0.5m),

these include a solid-core conductor of 99.999999% (8N) pure oxygen-free copper (OFC) plated in silver, the Dual Mono-Filament system, and the co-extruded Teflon sleeve. The number and size of the conductors have also changed: the Valhalla 2 Reference speaker cable has four sections, each comprising seven 22AWG conductors. The four groups in some of Nordost's other models can be used in a biwire configuration, but that's not the case with the Valhalla 2.

CHARACTERISTICS AND IMPACT: Most people instinctively assume that the choice of speaker cables will have a greater effect on a system's sound than that of any other cables, and in some ways that's been my experience. But what I've also found is that speaker cables usually have the largest effect, by far, on more *obvious* aspects of a system's sound, such as the overall tonal balance.

What I heard with the Valhalla 2 Reference speaker cables was completely consistent with that expectation: using the Valhalla 2s gave my system a tonal balance that was slightly on the warm side of absolute neutrality. But however slight that added warmth may have been, examples of its musical consequences make up a significant proportion of my listening notes. I love and listen to a lot of Ray Brown's recordings, and the Valhalla 2 References' extra bit of warmth gave his double bass a slight glow, or a bit more of the woody body sound he's so good at bringing out on his own. It was absolutely gorgeous, but after a lot of hand-wringing and soul-searching, I couldn't avoid concluding that it was just a bit *too* gorgeous.

In terms of their impact on a system's sound, the Valhalla 2 Reference speaker cables were second only to the Valhalla 2 Reference interconnects. But really, the ways these two cables affected my system's sound were too different for me to rank their relative performances. I've done so here because my approach doesn't permit ties, and I ranked them in the order I have, mostly because the subtle, less obvious aspects of a component's performance are more important to me than its tonal balance.

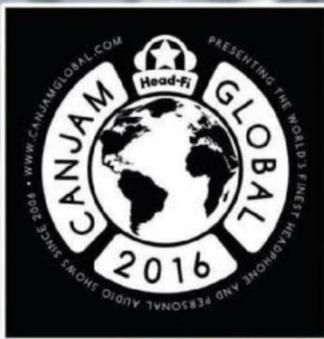
Valhalla 2 Reference Tonearm (phono) cable

Next in line with respect to its impact on my system's performance was the Valhalla 2 Reference Tonearm phono cable (\$4799.99/1.25m, \$600/additional 0.5m). The Valhalla 2 is a purpose-built model, though it does incorporate elements of the technologies used elsewhere in the line: the Dual Mono-Filament system, the materials and structure used in the conductors, and individual conductors woven around a hollow central core. Other design elements are unique to the Valhalla 2 Tonearm cable. One obvious example is the use of only four conductors, rather than 8 or 10



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or 28. Another is the addition of a ground wire.

CHARACTERISTICS AND IMPACT: My experience with phono cables has been that they have a huge effect on a system's sound, if in subtler ways that take longer to understand but that far more profoundly affect my connection to the music. Oscar Peterson's piano on his *Reunion Blues* (LP, MPS MB-20908) offers good examples of both large and small changes. One of the largest changes was how installing the Valhalla 2 brought all of the distance and size information into focus, tied it all together, and locked it into place on the stage. Prior to hearing the Valhalla 2 Tonearm cable, I'd largely written off *Reunion Blues* as poorly recorded—which wasn't the case at all.

A less obvious aspect of the change with the V2 in place was how each piano note evolved from an initial impact and simple string sound into the complex choral nature created as the piano's soundboard and body begin contributing to the sound. After going back and forth with the original Valhalla and several others, it became clear that the V2 bettered the best aspects of each. It was more transparent than the original Valhalla, and even more detail was revealed. At the same time, all of that detail was woven into a coherent whole. The notes, even the components of each note, flowed more naturally. The net effect of these subtle changes was to dramatically change the feel of the piano, in ways that made the instrument seem more alive.

Nordost Valhalla 2 Reference power cord

The cable package Nordost sent included two 2m-long Valhalla 2 Reference power cords (\$5999.99/2m, \$1000/additional 1m). Most of my listening was to LPs, where the V2 cords fed my pair of Sutherland Engineering Phono Block monoblock phono preamps. With CDs, I used the Valhalla 2 Reference cords to power my Simaudio Moon Evolution 750D player and 850P preamp. Although I power my reference system through an Audience AdeptResponse aR12-TS power conditioner,² I did all of my listening and made comparisons with the Nordost AC cords plugged straight into the wall.

CHARACTERISTICS AND IMPACT: The Valhalla 2 Reference power cords were a surprise—their contribution to sound of the all-V2 system was far greater than I'd expected. Using anything other than the Valhalla 2s to feed the Sutherlands caused differences that weren't subtle shadings; I'm certain those were there, but they were swamped by obvious, even gross audible differences. In an instant, my earlier thoughts about differences between power cords being minimal were rendered obsolete.

Without the Valhalla 2 cords feeding my Sutherlands, the perfection I spoke of earlier began to come apart. The effect produced one of those puzzling "Did I hook something up wrong?" moments. Pachelbel's Canon in D was once again the disjointed mish-mash it had been before I first installed the Valhalla 2 loom. Violins again sounded aggressive and edgy, even in their lower ranges. The individual elements of the recording, so distinct and clear with the Valhalla 2s in the system, now bled together into something wide and deep, but incoherent and inconsistent. Any sense of musical tempo or flow vanished; at best, when a simple passage would emerge, the adjective I found inescapable was *strident*.

Dexter Gordon's tenor sax in his *A Swingin' Affair* (LP, Blue Note/Classic ST-84133) had a rich, reedy bite with the Valhalla 2 References, blooming naturally into a tenor's characteristic mix of harmonics. With one of my other AC

ASSOCIATED EQUIPMENT

Analog Sources Spiral Groove SG-2 turntable & Centroid tonearm, VPI HR-X turntable & tonearm, Grado Master Reference & Statement Reference cartridges.

Digital Sources Primare CD32 CD player, Simaudio Moon Evolution 750D CD transport-DAC.

Preamplification Sutherland Engineering Duo & Phono Block phono preamplifiers; Placette Audio Active, Sutherland Engineering Line Block line stages; Simaudio Moon Evolution 850P preamplifier.

Power Amplifiers Simaudio Moon Evolution 880M, VTL Ichiban monoblocks.

Loudspeakers Wilson Audio Specialties Sophia 2.

Cables Phono: Nordost Valhalla. Interconnect: Nordost Valhalla, Audience Au24e. Speaker: Nordost Valhalla, Audience Au24e.

Accessories Audience aR12-TS & aR2-TS power conditioners; Echo Busters room treatments; Finite Element Reference equipment rack; VPI HW-16.5 record cleaner; MusicTools CD shelves. —Brian Damkroger

cords, the blare was brassy rather than a reedy buzz, and the note behind the transient never evolved into anything beyond a threadbare outline of Gordon and his sax. The same was true of Sonny Clark's piano and Billy Higgins's drums, which were rich, complete instruments with the Valhalla 2s in front of the Sutherlands.

I can't say how adding one, two, three, or more Valhalla 2 cords might have affected my system, were the balance of it not wired with Valhalla 2s. Nor can I say how my standard setup, in which my electronics' power cords are plugged into the excellent Audience aR12-TS power conditioner, would fit into the picture. What I can say is that if you're replacing your system's cables with Valhalla 2 References, *don't* neglect the power cords.

Wrapping Up

After spending vast amounts of time listening to the Valhalla 2 References, and even vaster amounts of time trying to analyze their characteristics, I ended up where I'd begun. The Valhalla 2 Reference cables are the best I've ever heard, and made my system sound the best it ever has.

Were I to regard all of the cables in my system as a single component, upgrading it to Valhalla 2 Reference would cost me about \$85,000. That upgrade absolutely, positively, and very significantly improved my system's performance. That said, I believe that other upgrades—replacing my speakers with ones further up Wilson's line perhaps—represent greater value. On the other hand, in a system made up of components costing in the hundreds of thousands of dollars, switching to Valhalla 2 could easily represent the highest value among potential upgrades.

It's a horse of a different color for the enthusiast to whom an individual run is a single component. Make no mistake about it, prices like \$5000 for a phono cable or \$8000 for an interconnect are well into the nosebleed seats. Yet a 1m interconnect will tell you a lot about the vision that resulted in the Valhalla 2 Reference line, and will buy a disproportionately large piece of that sound quality: good value, in my book. ■

² See www.stereophile.com/content/adeptresponse-ar12-ts-january-2012



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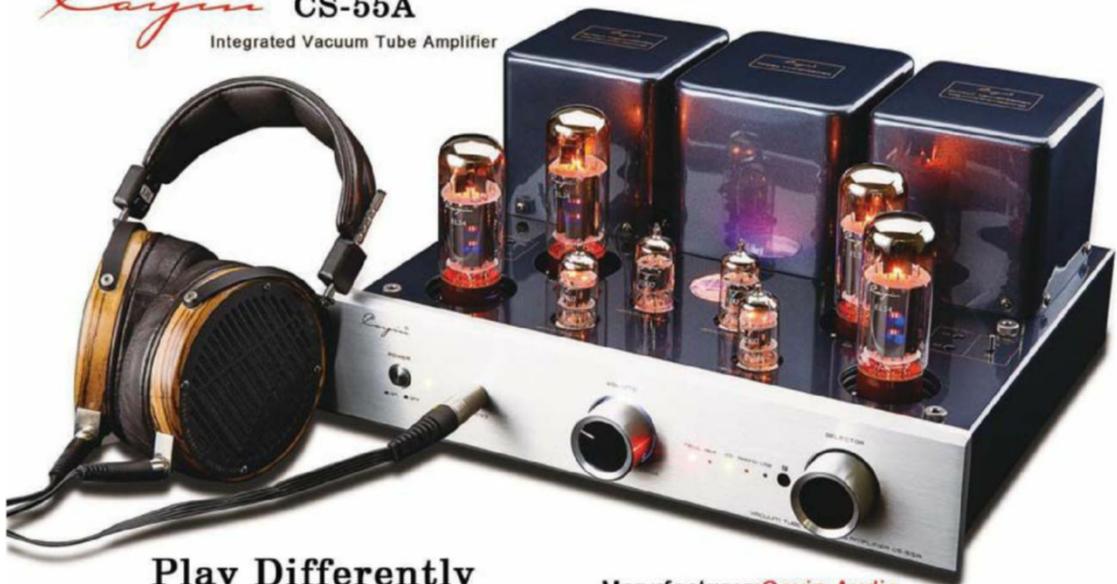
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JOHN ATKINSON

Audeze LCD-4

HEADPHONES

Life is too short to put up with poor-sounding headphones, I mused the other morning, during my 60-minute commute on the NYC subway. All around me, straphangers gripped smartphones and listened to multicolored Beats, noise-canceling Boses, white Apple earbuds, and, only rarely, Sennheisers and Grados.

Most of my personal listening these days is through Audeze's large, open-back, circumaural LCD-X headphones, which I bought following my review of them in the March 2014 issue.¹ (On the subway I use the Ultimate Ear 18 Pro in-ear monitors,² which provide much better isolation and are not as visually intrusive.) At \$1699, the Audeze LCD-Xes are undoubtedly expensive, but offer superb sound quality, and a tonal balance that is more to my taste than the almost equally expensive and well-regarded Sennheiser HD800s.³ Then Audeze upped the headphone ante with the LCD-4s, which cost an astounding \$3995!

I saw that price, gulped, shut my eyes, strapped on a seat belt, and asked for a review sample.

Technology

In March, my colleague Tyll Hertsens reviewed the LCD-4s for *Stereophile's* sister site InnerFidelity.com;⁴ I refer you to his review for a more detailed discussion of the LCD-4s' design than I have room for here. Briefly, these large headphones look very similar to the LCD-Xes, other than a wooden shell around each planar-magnetic drive-unit, a chromed rather than black back plate, and a thick blue rather than thin black cable.

While both models have thin-film diaphragms with Audeze's patented Fazor elements, which act as waveguides to match the acoustic impedance of the diaphragm to that of the air, the LCD-4s' "nano-grade" Uniforce diaphragms are just 0.5 micron (0.5µm) thick. (The diameters of human hairs range from 30 to 100µm.) According to Hertsens, the diaphragm material is drawn, in a lengthy and largely proprietary process, through a device that slowly deposits



a very thin layer of aluminum on the surface, and is then spooled onto another roll. When the entire roll is on the take-up spool, the process is repeated in the opposite direction, resulting in an aluminum layer with an extremely fine grain structure.

Because the conductive layer is much thinner than that used in the LCD-Xes' diaphragms, the LCD-4s have a much higher specified impedance: 200 instead of 20 ohms. While both use a push-pull array of powerful neodymium magnets on both sides, the LCD-4s feature Double Fluxor

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/headphones/sennheiser_hd800_headphones/index.html.

4 See www.innerfidelity.com/content/technologically-impressive-lcd-4-planar-magnetic-headphone.

SPECIFICATIONS

Description Open-back, circumaural (over-ear) headphones with planar-magnetic drive-units using neodymium magnets, and earpads of premium lambskin or leather-free, microfiber supersuede. Transducer: 106mm. Maximum power handling: 15W (for 200ms). Maximum

sound-pressure level: >130dB at 15W. Frequency range: 5Hz-20kHz ("extended out to 50kHz"). Total harmonic distortion: <1% through entire frequency range. Nominal impedance: 200 ohms. Sensitivity: 97dB/1mW. Optimal power requirement: 1-4W. Supplied accessories:

single-ended 1/4" TRS to 2x4-pin mini XLR cable, balanced 4-pin XLR to 2x4-pin mini XLR cable, travel case.

Dimensions Cable: 94" (2.4m) L. Weight: 37.5oz. (600gm).

Serial number of unit reviewed 4142333.

Price \$3995. Approximate

number of dealers: 80. **Manufacturer** Audeze LLC, 1559 Sunland Lane, Costa Mesa, CA 92626. Tel: (714) 581-8010. Fax: (702) 823-0333. Web: www.audeze.com.

magnets with a flux density of 1.5 teslas, to increase the sensitivity to a practical level.

Adjustment of fit is via notched metal rods attached to each earpiece, which fit into the sprung headband of carbon fiber and leather. Electrical connection is via a mini-XLR/Micro-dot XLR at one end of the cable for each channel, these marked L or R, and a 1/4" stereo plug at the other end. An alternate cable fitted with a four-pin XLR plug is also supplied, but not a 1/4"-to-3.5mm adapter, as the LCD-4s are not intended for use with smartphones. The headphones and accessories come in a small, smart black case; and, like all Audeze headphones, the LCD-4s are made in America.

Listening

I primarily drove the LCD-4s with a single-ended connection from the Pass Labs HPA-1 amplifier (reviewed elsewhere in this issue). I also tried the Audeze 'phones with a balanced connection from the Ayre Acoustics Codex D/A headphone amplifier, using Nordost Heimdall and Cardas Clear balanced cables, as well as those supplied with the Audeze. At the end of the review period I received a sample of Audeze's new The King headphone amplifier, designed by Bascom H. King. I did some brief auditioning with this amp, but will report more in a future issue.

The LCD-Xes excel in low-frequency performance, but the LCD-4s were bass *champions*. The 1/3-octave warble tones on *Editor's Choice* (ALAC files ripped from CD, Stereophile STPH016-2) were audible down to the 20Hz limit, and, like the LCD-Xes, the LCD-4s spoke cleanly and evenly in the bass, with no audible distortion—a difficult test for headphones to pass.

My go-to music reference for low bass is a recording I

made in 2014 of Jonas Nordwall performing the *Tocata* of Widor's Organ Symphony 5 in Portland, Oregon's, First United Methodist Church (24/88.2 AIFF file). The primary mikes were a distant-spaced pair of DPA omnis, which are generous in the lows; through the LCD-4s driven by the Pass Labs, Jonas's bass-pedal notes were not only generous but had weight, depth, and power. Despite my brain being shaken by the mighty C1s (32.7Hz) and F1s (43.7Hz), there was no boom or blur; I could still hear the superb spatial definition given the upper-frequency pipes.

The LCD-4s excelled in the midrange, the organ's upper registers sounding clean and uncolored. A recent classical orchestral purchase was *Introit: The Music of Gerald Finzi*, performed by the Aurora Orchestra conducted by Nicholas Collon (24/96 AIFF files, Decca/HDtracks 00028947893578). The only jarring note on this superb album is *Clear and Gentle Stream*, whose melody is identical to Disney's "Whistle While You Work." I've been a fan of this very English composer since I first heard the luminous 1964 recording of Finzi's cantata *Dies Natalis* featuring tenor Wilfred Brown and the ECO conducted by Christopher Finzi, the composer's son. On both that recording (16/44.1 ALAC files ripped from CD, EMI Classics CDM 7 63372-2) and the new Decca, the tonal qualities, not only of the orchestral instruments but of Brown in 1964, and the solo wind instruments that replace the original vocal parts in 2016, were impressively true. As reproduced by the LCD-4s, there was no danger of confusing the distinctive lower register of the soprano saxophone with which Amy Dickson plays the vocal line in the "Salutation" from *Dies Natalis* with the cor anglais, which has a similar tessitura.

The solo violin in Finzi's *Introit* was reproduced by the LCD-4s as a narrow, stable central image. The high-frequency violin tone sounded sweet without being rolled off, even when the soloist plays harmonics. However, when Tyll Hertsens reviewed the LCD-4s, though he agreed with me about the Audezes' bass and midrange quality, he found their mid-treble too subdued and the top octave too strong, which made cymbals sound "breathier, less melodic." Yes, perhaps voices sounded sweeter than I was used to with the LCD-Xes, with less of an "intermoddy" treble character with high-level choral passages.

But I listened to many recordings with cymbals and generally liked what I heard. For example, in Van Morrison and Georgie Fame's live performance of "Moondance," from their *How Long Has This Been Going On* (16/44.1 ALAC files ripped from CD, Verve 314 529 136-2), the top-octave energy of the ride cymbals seemed in good balance with the metallic ring lower in frequency. Perhaps this is an example of Tyll's and my preferences differing—he *has* written in the past that "finding headphones that tickle your fancy is part of the fun of headphilia."

MEASUREMENTS

I don't measure headphones' acoustic responses, as this requires a system of dummy head and microphone. (See Keith Howard's article on this subject in the August 2008 issue.)¹ In addition, deciding what, precisely, is the optimal frequency response for a pair of headphones is neither obvious nor trivial.²

I did use my Audio Precision System One to measure the Audeze LCD-4s' impedance and electrical phase. The solid trace in fig.1 shows the impedance

magnitude with the headphones mounted on my head and facing my ears. The impedance is slightly lower than the specified 200 ohms, at 156 ohms across the audioband, and the electrical phase angle is very close to an even 0°.

The LCD-4s are very easy to drive, but the downside of that is a lower-than-usual sensitivity. Measured with a calibrated iTestMic USB microphone mounted in a flat baffle and Studio Six Digital's AudioTools iPad app, the LCD-4s' A-weighted voltage sensitivity was around 15dB less than that of the low-impedance LCD-Xes, and almost 20dB lower than that of the AudioQuest NightHawk and Master & Dynamic MH40 cans.—John Atkinson

Stereophile Audeze LCD4 Impedance (ohms) & Phase (deg) vs Frequency (Hz)

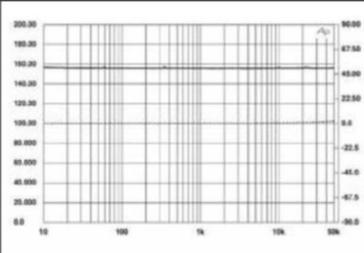


Fig.1 Audeze LCD-4, electrical impedance (solid) and phase (dashed) when mounted on JA's head and ears (20 ohms/vertical div.).

1 See www.stereophile.com/features/808head/index.html. See also www.innerfidelity.com/content/how-do-measurements-sound-audeze.

2 See Sean Olive, Todd Welti, and Elisabeth McMullin, "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.

Comparisons

The obvious match-up was with my Audeze LCD-Xes (\$1699), which are considerably more sensitive than the LCD-4s. This made matching levels tricky. (The calibrated 1dB steps of the Ayre Codex came in very useful here.) On repeated listening, I felt the less-expensive Audeze planars had a very slightly clanky quality in the upper midrange that could be heard in “Moondance” when the baritone sax took its solo. The slight leading-edge buzz on the double bass’s notes during its solo was less pronounced through the LCD-4s, and while the Xes and 4s had equally extended low frequencies, the midbass was a little fatter with the LCD-Xes than with the LCD-4s. Both Audezes got the slow-Leslie midrange character of Fame’s Hammond organ correct, however.

Next up was the Master & Dynamic MH40s (\$399), which Art Dudley wrote about in February.⁵ Art felt that the M&Ds sounded “clear and explicit—qualities they delivered in a manner that was smooth rather than brittle [and] tonally on the warm side of neutral.” Once I’d found and pressed the discreet un-mute button on the side of one earcup, I didn’t disagree with Art’s characterization, though I found the trumpet in “Moondance” had a bit more bite than through either pair of Audezes. The MH40s’ midrange also sounded more forward overall, which favored naturally recorded voices, though there was a bit too much energy for my taste in the region where Tyll Hertsens had found the LCD-4s lacking.

In the bass, the MH40s had less extension and more upper-bass bloom than the LCD-4s, which made them sound blurred in the low-frequency climaxes of my Widor recording. With the low-frequency warble tones, the 25

ASSOCIATED EQUIPMENT

Digital Sources Antipodes DX Reference music server; Logitech Transporter, PS Audio PerfectWave DirectStream D/A processors.

Headphone Amplifiers Ayre Acoustics Codex, Pass Labs HPA-1, Audeze The King.

Headphones Audeze LCD-X, AudioQuest NightHawk, Master & Dynamic MH40.

Cables Digital: AudioQuest Coffee, USB. Interconnect (unbalanced): AudioQuest Fire. Headphone: Cardas Clear, Nordost Heimdall, manufacturers’ own. AC: manufacturers’ own. —John Atkinson

and 20Hz tones were starting to break up a little at the same volume as the Audeze LCD-4s. But for $\frac{1}{10}$ the price of the LCD-4s, the Master & Dynamics MH40s sounded surprisingly satisfying. My only complaint was that, with my bigger-than-average pinnae, the M&Ds weren’t as comfortable as I need for long listening sessions.

Summing Up

Life is too short to put up with poor-sounding headphones. Not only do Audeze’s LCD-4s *not* sound poor, they’re the *best*-sounding headphones I’ve heard in the 45 years since I bought my first high-end cans, a pair of Koss Pro4AAs. If only the LCD-4s weren’t so expensive! ■

⁵ See www.stereophile.com/content/listening-158.



The image shows two silver, rectangular iFi audio devices. The device on the left is the iFi micro iUSB3.0, featuring a USB-A port and a USB-C port. The device on the right is the iFi micro iDAC2 DSD, featuring a USB-C port, a 3.5mm jack, and a 4.4mm balanced output. Both devices have the iFi logo on top.

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iFi micro iDAC2 DSD
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FOLLOW-UP

BY KEN MICALLEF & JIM AUSTIN

THIS ISSUE: Elac's Debut B6 stand-mount and the latest version of PS Audio's Power Plant are taken for test listens.

ELAC DEBUT B6 LOUDSPEAKER

After their big splash at the 2015 Rocky Mountain Audio Fest, and following Herb Reichert's munificent review in *Stereophile*, I was as pleased as a patch of pickled power tubes when John Atkinson delivered to my door the Elac Debut B6 loudspeakers.¹ What began as an audition turned into this Follow-Up review.

In his April 2016 review of the Debut B6, Herb wrote: "The main thing I noticed was how water-clear and relaxed the sound was: open, not grainy or stiff." He also observed that "my critical faculties were ambushed by the Debut B6's good tone and easy-flowing musicality."²

Is there much more one can desire from a stand-mounted speaker for under \$300/pair?

I've long been on a quest for a pair of minimonitors that could deliver the goods, boogie-wise, joined to such equally important (to me) sonic traits as palpability, texture, dynamics, soundstaging, and, perhaps most important, tonal purity. My DeVore Fidelity Orangutan O/93s (\$8500/pair) consistently hit high notes in all of those regards, delivering full-blown sonic goodness and so much more, 24/7.

Depending on the recording, the warm-hearted apes can sometimes overwhelm my diminutive Greenwich Village residence, enveloping me from head to twinkling toes in

glorious music, yet with an occasional loose lower octave or two. Alternately, while my chunky Snell J Type/II speakers (\$400/pair used, eBay) can't equal the DeVores in most areas, their concise soundstage, transparency, and pinpoint imaging always serve the music. I'd hoped the more contemporary design of the Elac Debut B6 would surpass my dreams and somehow do it all in one tiny-tot package, and for the remarkable price of \$279.99/pair!

Inside their very sturdy box, the Elacs weigh little—14.3 lbs each—which made the seven-floor climb to my penthouse pad a breeze. I unboxed the speakers and placed them atop a pair of 24"-high Bowers & Wilkins stands, which are coupled to my wood-slat floor with 1" steel spikes. Recalling my friend and audio compadre Steve Cohen's comment that the all-steel B&W stands might require sonic taming to defeat potential ringing, I placed four small (1/2") squares of mahogany on the stands' top plates, and the B6es atop those squares.

The Debut B6 is unassuming, even plain-Jane in its low-rent-looking vinyl veneer. But as with all loudspeakers, the magic happens inside. The speaker measures 13.9" high by 8.4" wide by 9.9" deep, and delivers its high-frequency messages through a 1" fabric-dome tweeter, its mid/lower-range notes via a 6.5" woofer with an aramid-fiber cone. The tweeter propels sound through a distinctive-looking, mesh-like, "deep-spheroid" waveguide," to quote Elac. The woofer is reflex-loaded with a flared port. The speaker's sensitivity is 87dB/2.83V/m; its nominal impedance is a fairly happy load of 6 ohms.

Once situated and fired up, the Elacs weren't finicky, performing well regardless of where they landed in my roughly 10' by 15' listening parlor. Positioned 3' from the front wall—the usual spot for my O/93s—the B6es immediately sounded clean and resolute. Bass weight and extension improved when I pushed the Elacs into the room's corners: palpability and texture, even more so. Placing them 14" from the side corners, 60" apart, and 7' from my listening spot added meat-on-the-bones solidity to the Elacs' purposeful (but never forward) sound. That's where they remained for part one of this Follow-Up, connected to my Shindo Laboratory Haut-Brion amplifier (\$11,500) via Auditorium 23 speaker cables (\$800/8' pair). Also in the system were my Kuzma Stabi S turntable (\$1500) with Stogi S tonearm (\$1425), Denon DL-103 cartridge (ca \$225), DL-103-specific Auditorium 23 step-up transformer (\$999), and Shindo

Allegro two-box preamplifier (\$8500). I also evaluated the Elac Debut B6es with other components I have in for review: Music Hall's MMF-7.3 turntable (\$1595, including Ortofon 2M Red cartridge),

As with all loudspeakers, the magic happens inside.



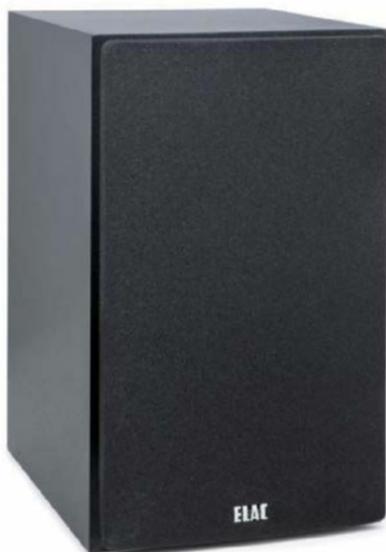
¹ Elac Electroacoustic GmbH, Rendsburger Landstrasse 215, 24113 Kiel, Germany. Tel: (49) 431-64774-0. Web: www.elac.com. US distributor: Elac Americas, LLC, 11145 Knott Avenue, Suites E & F, Cypress, CA 90630. Tel: (714) 252-8843. Web: www.elac.com.

² See www.stereophile.com/content/elac-debut-b6-loudspeaker.

and Unison Research's Unico Primo integrated amplifier (\$2150, or \$2400 with optional phono board; see my review elsewhere in this issue) driving the Snell J Type/II monitors via AudioQuest GO-4 speaker cables (\$528.75/6' pair).

BANG THE DRUM, LOUDLY: As a former percussionist, I collect percussion LPs of all genres. The instruments of the orchestral percussion section provide a rich dynamic range. If brilliantly played and well recorded, the snare drum, timpani, vibraphone, bells, bass drum, and triangle can exist as sonic touchstones of a sort that only the ear can detect and the heart can feel. Favorite percussion recordings include Ohana's *4 Etudes Choreographiques*, performed by Les Percussions de Strasbourg (LP, Limelight LS 86051), Charles Wuorinen's *Percussion Symphony*, performed by the New Jersey Percussion Ensemble (LP, Nonesuch H-71353), and the Percussion Group Cincinnati's *Music of Herbert Brun, Theodore May*, et al (LP, Opus One Box 604). Another favorite is Makoto Aruga and Percussion Ensemble's *Digital Percussion* (LP, Seven Seas K28C-165). Lest that title make you shudder, imagining sampled Lego pieces clicking and clacking in some Atari-like computer game, Aruga and his group perform Carlos Chavez's *Toccata for Percussion*, and it's brilliant!

Digital Percussion showed the B6's quick and plentiful rendering of dynamic range, tone, and texture. From *ppp* snare-drum rolls to thunderous bass-drum smacks and equally profound timpani rumbles, the B6es showed no signs of flagging (actually, this was true for every record put to them). And they sounded better as I amped up the volume. There was nothing "mini" here, but a liberal dynamic range expressed most joyously (for me) in the B6's impressive retrieval and delivery of bass. The B6 went lower more easily than any small box speaker I've heard, but that was only half the story. When issuing deep-barreled timpani, booming bass drums, or even coiling electric bass, the B6 combined each note's frequency—the low-tonnage warfare every hip-hop lover demands—with the instrument's texture, timbre, and grip. The B6 consistently rendered this visceral feast in utterly coherent fashion. Only when *Digital Percussion's* assortment of bells zinged forth did I notice a slight hardening or dryness in the B6's upper



Once situated and fired up, the Elacs weren't finicky.

frequencies. This trait, too, was consistent from record to record.

My curiosity piqued, I wanted to hear more of the B6's sweet way with woolly bass notes. I dropped on the Kuzma's platter Loscil's *Sketches from New Brighton* (LP, Kranky 171). Ambient electronic music is something I crave from time to time, perhaps to calm my senses during New York City's summers of urban heat and high-decibel street combat. Loscil covers me in lovely synthesizer fog and oily beats, the gelatin-like waves "possessing and caressing me" (to quote John Lennon). Like a locomotive releasing steam, the B6's squirming low-end bass tentacles filled the room. Its delivery of nearly subsonic bass drops confirmed the B6's bass-emitting prowess, which was seamlessly integrated with the speaker's upper mid and treble.

How would the B6 fare with voices? Playing Johnny Hartman's *I Just Dropped By to Say Hello* (LP, Impulse! A-57), I felt I was looking at the baritone singer's tonsils—the leading edges of his purr of a voice were extremely well defined. Kenny Burrell's guitar was drier than I recalled on past recordings, as was Hank Jones's tinkling piano. Milt Hinton's deepest bass notes were well extended, but the upper mids of his double bass sounded a wee tight, even slightly compressed. This dryness and tightening of upper fre-

quencies was a minor foible, particularly as it was joined seamlessly to the midrange and bass frequencies. And it never detracted from the Elac's elegant, musical sound.

Workin' with the Miles Davis Quintet (LP, Prestige PRLP 7166) and Kraftwerk's *Tour de France* (LP, Kling Klang STUMM 310-5099996610916) confirmed all of my previous findings. Miles's romantic hard bop blew sweet and cool: John Coltrane's tenor sax riffed incandescently, while Philly Joe Jones's ride cymbal swung hard, with excellent stick definition, decent body and decay, but little sense of "air" or space around the cymbal. Kraftwerk's driving bass blips pulled me in, like a humming, low-end tractor beam to my forehead, but there was a slight aridity and a hint of compression to the upper-register synthesizers. The B6's reproduction of both records was still very engaging, with absolutely zero sense of boxiness, chestiness, grain, or foreshortened notes. Carried on the Elacs' mighty bass notes, the music flowed, majestically and powerfully.

ELAC, MUSIC HALL, UNISON

RESEARCH: Changing perspective to a closer-proximity setup in a slightly smaller room immensely benefited the Elac Debut B6es. The speakers were now 4" from the front wall, sitting 3' apart, and 5' from my listening position. Virtually hemmed in on all sides, the Elacs were powered by the Unison Research Unico Primo MOSFET integrated amp (80Wpc into 8 ohms) with 12AX7-tube triode input stage, and fed by Music Hall's MMF-73 turntable. I felt I'd hit on a beautifully

synergistic system. Why can't you plan these things?

Compared to the larger Snells in the same system, the Elacs went deeper, sang more forcefully, and had a lush tonal balance. There was less "air," for sure, but also more muscle, more low-end extension, more tactile *oomph*. (And due to my nearfield listening position, I felt more immersed in the music than when the Elacs were powered by my Shindo-Kuzma setup: is this the allure of headphones?)

I continued to listen to the Elacs up close and personal. *Digital Percussion* now simmered and stormed, the various drums having more impact and greater density. They sounded as fleshy as a troupe of Kodo drummers kicking my shins. Dynamics were exceptionally powerful, particularly in one segment in which the rising swell of a gong is executed in unison with a missile-like snare-drum buzz roll. Again, no "air," but the overall sound was full, deep, and forceful.

"Trane's Blues," from *Workin'*, sounded more cohesive but just as swinging in the nearfield setup. Philly Joe's ride cymbal loomed larger, and Miles's trumpet flowed like liquid velvet. Paul Chambers's double bass pulsed grandly.

I thought Loscil's ambient electronic dread might present too much of a good thing so close to my sweet spot, but rather than overwhelm me, the Elacs simply condensed and focused the music—straight to my gut. The massive bass signals were fully transmitted, oily, and dank, sealing me in an ominous but pleasurable cocoon of synthesizers and what felt like dry heat.

The B6's strongest traits—resolution, bass rendition, dynamics, and wonderful leading-edge definition of instruments and voices—piled even higher in my happy nearfield cell. Careful to maintain the same ear-to-tweeter height (as I did throughout this review), I could sit there forever, being rewarded with high-definition, Technicolor-infused music on a practically celestial plane.

Returning to Johnny Hartmann's enjoyable croon, I still detected a slight aridity in the upper guitar and piano notes, but the overall sonic picture was so full, rich, and immersive that criticisms of the speaker's upper-frequency deficiencies now felt trivial. With the stereo acting as the control panel of my intimate music ship, I felt I could dial in anything—jazz, electronic, classical—heck, even some Ferlin Husky

or Rusty Draper—and the combo of Elac, Music Hall, and Unison Research would take me on a beautiful journey. **CONCLUSIONS:** During my listening for this Follow-Up, I had the chance to compare the Elac Debut B6es with Wharfedale's Diamond 10.1³ (discontinued; \$299 from various online retailers)—a slightly smaller speaker whose 5" woofer delivers far less bass extension/richness. Where the Wharfedales outperformed the Elacs, however, was in overall tonality—they were sweeter and more natural than the Elacs, whose dryish tweeter could sometimes make music sound ever so slightly processed. But this is nitpicking on a Donald Trump scale, blowing hot gas over what amounts to little reality.

The Elac Debut B6 is a prime music maker. Its faults are outweighed by its generous and flowing musicality, its graphically precise but never mechanical sound, its goodly retrieval of low-end fundamentals, and its thrilling dynamics. Anyone looking for an over-achieving stand-mounted minimonitor in the \$500–\$1000 range better shift their view—the Elac Debut B6 is a knockout. —Ken Micallef

3 See www.stereophile.com/content/wharfedale-diamond-101-loudspeaker.

PS AUDIO PERFECTWAVE P10 POWER PLANT AC REGENERATOR

Stereophile hasn't reviewed a PS Audio power regenerator since February 2009, when Robert Deutsch tried the company's then-flagship, the Power Plant Premier (\$2195).⁴ But earlier this year, as I prepared to write my review of PS Audio's NuWave DSD DAC (published in the May 2016 issue), a perfect opportunity to revisit the line came about: I read, in the owner's manual for the PSA DAC, that "power conditioners and the quality of the AC power can make a significant difference in sound quality." Eager to help the NuWave DSD put its best foot forward, I asked PS Audio to assist me in dealing with my AC power, which is marginal here in crowded New York City. They sent me their PerfectWave P10 Power Plant AC Regenerator (\$4999)—and John Atkinson asked me to spill some ink on this most recent of the company's clean-power flagships.⁵

SURFING THE SINE: Power conditioners can be as simple as chokes: big chunks of magnetic stuff, usually ferrous metal, wrapped around



your wire (or vice versa), and acting as inductors—and, hence, as low-pass filters, to remove high-frequency noise from the AC. Other, similarly passive power-treatment devices use fancier new materials and more sophisticated technologies, but PS Audio advises its customers not to put all their trust in AC power filters. They write, in the NuWave DSD's manual, that such devices may "bleach" the sound and

rob the music of life and dynamics." They should know: Their first power-treatment product, which went on sale 35 years ago, was an isolation transformer—itsself a passive device.

Not everyone agrees that passive power conditioners degrade the sound,

4 See <http://tinyurl.com/h9vp8s7>.

5 PS Audio, 4826 Sterling Drive, Boulder, CO 80301. Tel: (720) 406-8946. Fax: (720) 406-8967. Web: www.psaudio.com.

but the opinion can be defended on technical grounds: low-pass filters limit how fast current can flow—that’s what low-pass filtering means in the time domain—which means that they also limit how fast power-supply capacitors can recharge. (Whether that limitation is enough to affect the sound is, of course, a different question.) Another problem with power filters is that they can’t add back what’s missing—*eg*, the top few volts shaved from the sinewave that comes in through my wall (below right): a consequence of the overwhelming demand from all the other consumers and businesses with which my home shares the power company’s transformer.⁶ If the peaks of the incoming waveform are missing, the power-supply capacitors in my system may not get sufficient power when they need most to recharge.

PS Audio’s solution is to start from scratch: take the power coming in through the wall, rectify it, store it, regulate it, use it to generate a new and better AC signal, and then send it out (with usefully low impedance). Think of it as a highly specialized source component that outputs just one frequency, combined with a powerful amplifier. As long as your devices don’t crave more power than the Power Plant can deliver—1500VA⁷ peak, 1200VA continuous—it should be a near-perfect solution to the problem of crappy power, assuming crappy power is a problem that needs solving.

And that’s the key question: Is such a device actually necessary? The PerfectWave P10 Power Plant does what it says it does: It outputs a clean, high-power sinewave that’s presumably of better quality than the one that comes from the power company. But for decades now, audio companies and designers have been dealing with tired, polluted sinewaves by incorporating into their products sophisticated, highly regulated power supplies. Indeed, the NuWave DSD DAC, which I was reviewing when PS Audio sent me the P10 Power Plant, boasts *seven stages* of regulation. Shouldn’t that be enough?

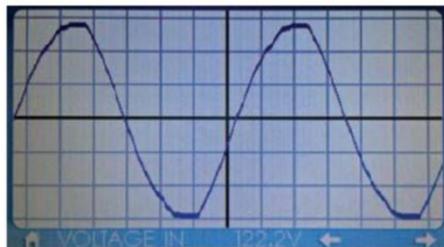
It’s true that the challenge for designers has increased over time. Especially in cities, circuits have become more crowded. With excess use and neglect, the electrical infrastructure has deteriorated—just like bridges and highways—and has not kept up with changes in technology. And now that wireless devices

and cheap switching power supplies have become ubiquitous, there’s a lot more high-frequency hash on our power lines than there used to be. But then, that stuff is so far above 60Hz that it should be possible to filter it out without doing audible harm. Do I *really* need to spend another \$5000 to get the most out of my fancy high-end gear?

AULD LANG SINE: Two paragraphs ago, I wrote that the P10 outputs a sinewave. But that’s not the only wave it puts out. The Power Plants—in addition to the P10, PS Audio sells the P5 (\$3499, 1200VA) and the P3 (\$2499, 750VA)—also output what the company calls MultiWave. PS Audio released their first regenerator, the P300, in 1997, and soon added a feature that made it possible for the user to adjust frequency, and to enjoy the performance differences that came about as a result: Is the bass more authoritative? Are the highs clearer? Is that smoke I smell?

Playing around with different waveforms, PS Audio’s engineers heard differences, sometimes for the better, sometimes for the worse, usually with tradeoffs. Eventually, they settled on one approach: a modified waveform with a wider peak than a sinewave has. PSA says this waveform recharges power-supply capacitors more effectively than a standard sinewave, which makes sense: The waveform is at or near its highest for more of the cycle. In the P10 and P5 Power Plants, MultiWave is available in six strengths, with each progressive step correlating with increased capacitor-charging time (and thus decreased power-supply ripple); the P3 Power Plant offers just one MultiWave setting.

The P10 is extremely heavy—73 lbs—and it looks impressive in its black finish (silver is also available). It has 10 outlets in five separately regenerated zones—enough to support a complex audio and/or audiovisual system. Two pairs of outlets are labeled High Current; these are the same as the others, except that, when first turned on, they limit the inrush of power to power-hungry components, which is



gentler on your devices and on your house or apartment’s circuit breakers. In addition to MultiWave, there’s a CleanWave output setting that you can use to degauss the transformers in your audio system.

An RJ45 socket on the rear panel allows Ethernet connectivity to a home network and, ultimately, the Internet. This doesn’t enhance the P10’s sonic performance, but does offer a number of control and convenience options: you can gather power-consumption and performance-tracking records, remotely schedule the P10 to turn on and to warm up before you get home from work, and assign names to individual zones and outlets. If you’d rather not bother with all that, you can make adjustments—and monitor your incoming and outgoing waveforms, complete with a ‘scope-trace graphic and distortion stats—via the color touchscreen on the front panel.

LISTENING: When the PerfectWave P10 Power Plant was feeding my entire system, based on DeVore Fidelity The Nine loudspeakers and including a Leben CS-600 amplifier and analog and digital sources, I experienced exceptional musical moments more often, finding myself sitting up and taking notice of some musical detail. Streaming the Tidal playlist “Wildwood Flower: Best New Folk and Americana” at CD resolution, I was startled by the creaminess of Dori Freeman’s voice in “Where I Stood,” from her eponymous first album (CD, Free Dirt DIRTCD 0074). The percussiveness of Kristin Fossheim’s fortepiano was visceral in the first movement of Beethoven’s Sonata for Cello and Piano 2 in G, Op.5 No.2, and Bjørn Solum’s cello had a pleasant buzz (24-bit/96kHz download, 2L 79). When, on a low note (as at 2:32), the cello’s body resonated strongly, the room shook; could this be the “better bass” that PS Audio says on its website that I should expect? Of course, the P10 doesn’t get *all* the credit—it’s on the recording, and it takes a whole system to reproduce it—but it was less impressive with my system plugged straight into the wall.

6 I’m oversimplifying a bit. Out-of-phase harmonics can reduce the peak amplitude of a waveform, and when that happens, filtering out those harmonics can improve the waveform’s shape. That’s not common, though, and in any event, it doesn’t change the basic fact that you can’t use a filter to restore missing energy.

7 Volt-amps and watts are usually about the same, but occasionally, current and voltage get out of phase. When that happens, the actual power delivered to a device—the actual wattage—may be somewhat less than the product of volts times amps.

Similarly, in the opening measures of Johan Kvandal's *Fantasy for Clarinet, Op.68 No.2*, also on 2L (SACD/CD, 2L 55)—a Meridian Master Quality Authenticated recording played through a non-MQA DAC, which means, according to Meridian, that it should sound a bit better than a CD—the close-miked clarinet had exceptional body. And when an early, large crescendo challenged clarinetist Fredrik Fors's dynamic range, his sound broke up in a way that's familiar to me (I've heard that sound live, from good seats), but that rarely comes across from recordings—at least not with such humanity. The P10 consistently helped bring out music's varied textures so that I was more actively engaged in it. It was hard not to listen.

There's evidence that the quality of AC power is especially important in digital audio. In his review of AudioQuest's JitterBug USB noise filter (\$49) in the September 2015 issue,⁸ JA related what happened when his computer broke and he began listening to CDs again with his Ayre Acoustics C-5xe^{MP} universal player: "Every disc I played sounded more solid, more corporeal than I remembered from the many times I'd played the same tracks from the Mac mini. The low frequencies sounded more authoritative, much as they had when I bought a Mark Levinson No.31 CD transport (now long since retired with mechanical problems)." With the JitterBug—a purely passive device that conditions a component's USB outputs—JA found that music from his Mac mini sounded much more like what he'd experienced with the Ayre: "The low frequencies acquired more of the authority I experience with CDs."

I heard the same thing in my home, with my system plugged into the P10: more authority in the low frequencies. JA's observation (and mine) illustrates the importance of power—the height of waveforms, not just their timing—for digital sources, which is where I've noticed the most improvement with the P10.⁹ I've already mentioned the Power Plant's effect on music's textures, and the increased bass authority; with the P10 in the system, I also found that the aural images reproduced from digital sources—specifically, PS Audio's NuWave DSD, and their DirectStream DAC, which I borrowed from JA—were also fleshier, more corporeal, and better located in space. The sound with the P10 also seemed more



Another problem with power filters is that they can't add back what's missing.

natural and less electronic—almost suggesting a physical rather than electronic playback medium. As I wrote in the review of the NuWave DSD, a wood block sounded like a wood block, not a recording of a wood block.

CONCLUSIONS: In this age of improving power supplies, is a device like the PerfectWave P10 Power Plant necessary? That will depend on the quality of your incoming AC, something that varies from region to region.¹⁰ My apartment building is small by Manhattan standards—just 25 apartments—but it's attached to similar buildings on right and left, with another one just behind. Right now, my MacBook Pro detects 33 wireless networks. Then there are the dimmer switches, switching power supplies, and cheap electronic transformers attached to low-voltage lights. All of those things affect my power supply—and this summer, the more than 30 window air conditioners in my building will suck even more energy from my AC.

Even as I write this, in March—still in heating season!—the P10's built-in scope tells me that the power coming out of my wall has 4–5% total harmonic distortion. The result is a dejected-looking wave more sawtooth than sine: it looks as if it's about to break. To mix metaphors, its peaks are like erstwhile mountains in West Virginia coal country (speaking of decrepit power infrastructure). Again, the reason this happens is the reason it matters: The peak of the household-AC waveform corresponds to the point where the

capacitors in the power supplies of my audio components recharge. Chop off that peak, and the power supplies in my gear are starved at least a little bit, even when the available power seems ample.

It's not surprising that such a dejected-looking sinewave could suck the joy out of music. I knew it was possible that fixing my power would make my music cleaner and more accurate. What I didn't anticipate was that it would make the music so much more engaging. Maybe more accurate *is* more engaging—an appealing thought. Anyway, the PerfectWave P10 Power Plant may be an essential accessory for any audiophile who lives in a neighborhood like mine. A power conditioner—sorry, *regenerator*—may not be a sexy purchase, but I'm going to have a hard time sending this thing back.

But, again—it depends. If you live in a quiet valley with a little stream running through it, and your house is served by its own private transformer, you may not need a power regenerator to get the kind of sound I'm getting with the P10. (I lived in a place like that for some 10 years; unfortunately, the acoustics sucked.) If you live in the US, PS Audio makes it easy to find out: You can audition a PerfectWave P10 Power Plant—or any of the other components for sale on their website—risk-free via PSA's home-trial program.—**Jim Austin** ■

8 See www.stereophile.com/content/audioquest-jitterbug-usb-noise-filter.

9 About 10 minutes into a YouTube video (www.youtube.com/watch?v=Wv1XWedFgDY), Ted Smith, who designed PS Audio's DirectStream DAC, points out that imprecision in the rail voltage has an effect very similar to that of clock imprecision in digital components—it causes a form of "jitter"—and the higher the frequencies a device operates at, the more critical that imprecision becomes.

10 It's also true that some components can more easily overcome the problems created by degraded AC power, but without testing, it's impossible to know.

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RECORD REVIEWS

David Bowie, Glenn Frey, Phife Dawg, Merle Haggard, Dan Hicks, Ernestine Anderson, Lonnie Mack, Maurice White, Blowfly, Otis Clay, Steve Young, George Martin, Prince. The closing months of 2015 through spring 2016—must rank among the most devastating periods ever for the loss of important and influential songwriters and musicians.

In New Orleans, that most essential city of American music, the loss has been especially keen since the passing, in November, of Allen Toussaint, 77, from a heart attack following a concert in Madrid, Spain. In a career that lasted more than 60 years, Toussaint did it all: songwriter, performer, A&R rep, record producer, and owner of a record label and a recording studio. He collaborated on albums with Paul McCartney (*Venus and Mars*), provided horn arrangements for the Band's *The Last Waltz*, and employed a house band at Sea-Saint Studios, in New Orleans, consisting of Art Neville, George Porter, Leo Nocentelli, and Zigaboo Modeliste—an amazing quartet that later became the Meters.

Perhaps the best thing about Toussaint was that, in a town filled with colorful if less-than-savory characters, he was a class act as a musician and as a human being. It's fitting, then, that his final recording project, *American Tunes*, completed just before his death, is a work of great taste and decorum. Almost entirely instrumental, with just Toussaint at his piano, the album was recorded in two sessions: at his home studio, in New Orleans; and in Los Angeles, with such musicians as Bill Frisell, Greg Leisz, Van Dyke Parks, Charles Lloyd, and singer Rhiannon Giddens (though the instrumental accompaniment is spare throughout). The album is a fantastic and esoteric tour through the Great American Songbook, as selected by the old master himself. Both sessions were produced by Joe Henry, who worked with Toussaint on his next-to-last studio album, *Bright Mississippi* (2009).

The other thing that Toussaint was

EDITOR'S PICK
RECORDING OF THE MONTH



ALLEN TOUSSAINT
American Tunes

Nonesuch 554644 (CD). 2016. Joe Henry, prod. Ryan Freeland, eng., Wesley Seidman, Monique Evelyn, asst engs. ADD? TT: 49:31

PERFORMANCE ★★★★★
SONICS ★★★★★

throughout his entire life was New Orleans piano professor—perhaps the last in a long, distinguished line, and a skill often obscured by his many other talents. It's natural, then, that after a performance of Toussaint's own "DeLores' Boyfriend," *American Tunes* continues with two songs associated with rent-party luminary Thomas "Fats" Waller: the Waller original "Viper's Drag," then "Confessin' (That I Love You)," a robust, good-time tune also associated with Louis Armstrong, who recorded it often. Accompanied only by drummer Jay Bellerose and bassist David Piltch, the rhythm section from the L.A. sessions, Toussaint proceeds at a jaunty pace, capturing some of the number's trademark sassiness.

This album is being billed as Toussaint's tribute to Henry Byrd, aka Professor Longhair. In one of Fess's best-known tunes, "Mardi Gras in New Orleans," Toussaint shows what a great interpreter and arranger he was by draining the song of its usual manic energy and chugging pace, and remaking it as a fabulous, spacious jazz number

taken at leisurely pace, with a vibe of "summertime, and the livin' is easy." The relation of Toussaint's refashioning of the song into a near ballad with a simple ending and final chord coda, to Fess's famous party hymn, is at best tangential—and, for that, it's almost unspeakably wonderful. Two more Fess tracks, "Big Chief" and "Hey Little Girl" appear on the CD and a pair of extra tracks, "Her Mind is Gone," and "Bald Head," are bonus tracks on the double LP.

At another point here, Toussaint takes on another very different player, Bill Evans, and his "Waltz for Debby." Adding a light broth of New Orleans funk, he transforms another tune inextricably associated with the artist who created it into his own seriously arranged but joyously played frolic. There's a lightness and a masterful playfulness to the entire album that make it an appealing epilogue to Toussaint's career.

There are also three Ellington numbers: "Lotus Blossom" (by Billy Strayhorn), "Come Sunday," and "Rocks in My Bed," the last two of which include the rich, expressive singing of Rhiannon Giddens, of the Carolina Chocolate Drops.

Oddly enough, Toussaint's reading of his own "Southern Nights," perhaps his biggest hit single, is strangely disengaged and meandering. Perhaps, with that tune, he'd already said everything he had to say.

While *American Tunes* is very much Part Two of *Bright Mississippi*—which included covers of tunes by Django Reinhardt, Thelonious Monk, and Jelly Roll Morton, among others—the music chosen here seems a little closer to Toussaint's heart. He had more to say on a number of these songs, particularly in the finale, Paul Simon's "American Tune," where he sings his final lines on record:

*You can't be forever blessed
Still tomorrow's going to be another
working day
And I'm trying to get some rest
That's all, I'm trying to get some rest.*

—Robert Baird

CLASSICAL


BEETHOVEN
Symphonies 4 & 5

Nikolaus Harnoncourt, Concentus Musicus Vienna
 Sony Classical 88875136452 (CD). 2016. Martin
 Sauer, prod.; René Möller, eng. DDD. TT: 70:41

PERFORMANCE ★★★★★

SONICS ★★★★★

This is the final recording made by the late Nikolaus Harnoncourt, who was at the forefront of the early-music movement. Always the master of surprises of tempo, balance, and dynamics, he fascinates with both his brilliance and perversity—the latter word being affectionately tinged.

The performance of the Fourth is marvelous, the opening hypnotic and eerie in the same manner as the first note of Mahler's First—it just lingers in the air. The second movement's theme song is a thing of beauty; Harnoncourt keeps it as graceful and gracious as possible, and the timpani and the strings' underlying commentary are always clear. The entire work is optimistic, and Concentus Musicus Vienna play it with rhythmic perfection.

The Fifth is a different work from the one we know. In the accompanying booklet, Harnoncourt states that it is a “non-symphony” (huh?), and that the famous opening chords are not, as is always claimed, Fate knocking at the Door, but a knocking from within. Therefore, the first movement is here played matter-of-factly, the violins sounding reduced. Throughout the symphony, the period brass bray, woodwinds are highlighted, and the pizzicato strings dance almost sarcastically, but the fey effect of the third movement brings the mighty splendor of the start of the last movement into brilliant effect. But the symphony's final seconds—the most notorious pauses between chords in all of music—are here perverted, Harnoncourt opting to pause for weirdly long periods of time, and wildly off any beat. It may make you scream.

Even in his valedictory recording, Harnoncourt remains fascinating, glorious, and infuriating.—Robert Levine


CHOPIN
Four Ballades, Berceuse, Four Mazurkas Op.17

Yundi, piano
 Deutsche Grammophon 481 2443 (CD). 2016. Helmut
 Burk, prod.; Rainer Maillard, eng. DDD. TT: 56:00

PERFORMANCE ★★★★★

SONICS ★★★★★

Yundi (he's dropped “Li” from his name) has been famous and appreciated for 15 of his 33 years, having won the International Chopin Piano Competition at 18. He is indeed a fine pianist, even if his amazing technique doesn't always allow for sounds other than grand and muscular. He tames that tendency here in the gorgeous Berceuse (Cradle Song), his left hand gently swaying, the variations lightly dancing above.

The playing of the Ballades is technically perfect, even the insane, fiery *presto* that ends the first, and his use of *rubato* is wonderfully effective, never allowing bathos to creep into the earlier, tender passages. In fact, all of the Ballades, played impeccably, are devoid of affectation and flow naturally. Some may find this approach un-Romantic and a bit dry, but the poetry of the start of Ballade 2 is ravishing, and all of Ballade 4, a monster of counterpoint, is an exciting combination of muscularity and clarity.

Yundi misses the nationalistic Polish inflections of the Four Mazurkas Op.17; he doesn't bother to try, and just plays directly and handsomely. The section in No.1 marked *risoluto* (resolute) is just that—clear and decisive—and the *rubato* before the reappearance of the piece's opening is most welcome. The waltz of the tiny No.2 properly begins with a bang and ends with a whisper, and the gorgeous “blue” feeling of No.4 is kept going through the slightly crooked dance at its center; it ends the CD on a dreamy, atmospheric note. This very nice recital disc is a bit short at 56 minutes, but there are no ego trips, and the recording is spotless.—Robert Levine

ROCK/POP


BLACK MOUNTAIN
IV

JagJaguwar 277 (2 LPs). 2016. Black Mountain,
 prods.; Randall Dunn, prod., eng.; Stephen McBean,
 Joshua Wells, engs. AAD? TT: 56:11

PERFORMANCE ★★★★★

SONICS ★★★★★

Even before rock's current drought in inspiration and genuine talent, the search for influences to guide and inspire was only natural. Today, though, if you have no ideas of your own, influences become rich sources to mine and perhaps build a career on, if you can tweak them enough that no one notices. On *IV* (all nods to Led Zep's *IV* intended), guitarist Stephen McBean and Black Mountain—variously pegged as a stoner rock band, a classic-rock copycat, and a prog-rock throwback—manage to be *all* that. Yet, as on their preceding three albums, they add enough innovation to their blizzard of 1970s influences to create music both retro and new.

Echoing the exhortation “MEANT TO BE PLAYED LOUD” that Bowie and the Stones once printed on their albums, *IV* warns: “For those concerned: There is both guitar and synthesizer on this album.” Synths, which once clipped the cojones out of '80s rock, are used liberally. In “Cemetery Breeding” they perkily accent the verse lines and provide a swelling smear of sound behind the chorus before taking a solo spot preceding the guitar solo. While BM's method may sound like a bad repeat of '80s rock, the imagination applied to this and constant churn of identifiable influences is fascinating. Perfect? No. But Black Mountain's music is all about process and constant exploration. The elemental riff rock of “Constellations” may be a bit too early KISS for some, “Space to Bakersfield” (and perhaps all of side 4 of this two-LP set) too Pink Floyd for others, and “(Over and Over) The Chain” too like Rush's *2112* even for Neil Peart fans—but it's hard not to root for a band that finds so much new in what's old.—Robert Baird



DAVE INSLEY
Just the Way That I Am

DIR DIR-RM 120 (CD). 2016. Chris Burns, prod.; Joe Gastwirt, mastering. DDD? TT: 43:46

PERFORMANCE ★★★★★
SONICS ★★★★★

The White Horse, in East Austin, has defied the gentrification encompassing the rest of this fabled city. It's a bar where you can close your eyes and think you're back in the 1970s, when songs were the city's most important product and music its reason for being. Dave Insley, a regular performer at the White Horse, has made an album that would make Doug Sahm, Townes Van Zandt, Waylon, Willie, and the rest of them proud. *Just the Way That I Am* is perfectly balanced between the sturdy baritone in which Insley sings his songs and the straightforward, old-school C&W accompaniment that frames them.

A great breakup song, "Win-Win Situation for Losers," pits Insley against the world-weary singing of Kelly Willis, before the two of them join in glorious harmony on the chorus. Beth Chrisman adds a gorgeous fiddle solo for emotional punctuation.

Insley is a great storyteller. When "Dead and Gone" begins with a version of "Taps" worthy of a war drama, followed by the deadpan line "My wife and my girlfriend met at my funeral," you know you're in for a heady tale.

In "Arizona Territory, 1904," Insley manipulates Marty Robbins's gunfighter ballad "Big Iron" into a psychological thriller about a killer gunned down by his older brother when he can't bring himself to draw on his sibling. "The air is crystal clear and pretty cactus flowers bloom out in the desert," Insley sings, lingering on the image with a novelist's skill. "I'm dying in the street but I still smell the pretty flowers in the air."—John Swenson

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SUUNS
Hold/Still

Secretly Canadian SC329 (CD). 2016. John Congleton, prod., eng.; Dave Smith, eng. AAD? TT: 46:46

PERFORMANCE ★★★★★
SONICS ★★★★★

This is your brain on drones. Initially, the book on Suuns—pronounced *soon*, apropos of naught unless you happen to know that, in Thai, the word means *zeroes*, their original name for themselves—was that the Montreal band shone somewhat dimly. To some, they came across as jittery shoegaze fans anxiously casting about for indie cred but never quite deciding if they wanted to be from Brooklyn (think: low-wattage Black Dice) or Britain (synth slumming à la Clinic).

But with the arrival in 2013 of *Images du Futur*, it gradually became clear that this was a group not to be dismissed. That same year, Suuns was shortlisted for Canada's vaunted Polaris Prize.

Hold/Still, then, takes a sonic sledgehammer to any remaining preconceptions. Traveling well afar from their studio comfort zone in Canada to Dallas, Texas, to tap the talents of producer John Congleton (War On Drugs, Sleater-Kinney), Suuns swaps "dreamy" for "dirty," "clarity" for "caustic," in a full-on drone assault guaranteed to give indieniks shivers and audiophiles hives. With chanted, heavily treated vocals and a flat, brutally monolithic sound, they serve up a heady mélange equal parts Swans/Sonic Youth noise ("Fall"), minimalist Suicide-like synth-thuggery ("Instrument"), and pulsing motoric pop directly descended from Stereolab and Neu! ("UN-NO").

By the closing track, "Infinity" (which adds yet another influence: Spacemen 3 psychedelia), one is frankly exhausted from all the foregoing textural and tempo twists—almost like the comedown from a particularly harrowing drug trip. *This is your brain on Suuns.* Any questions?—Fred Mills



MIKEY SWEET
Road Dog Gospel

mikeysweet.com (CD). 2016. Danny Bernini, prod., eng.; Alex Saltz, mastering. AAD. TT: 39:05

PERFORMANCE ★★★★★
SONICS ★★★★★

Few 31-year-olds claim Townes Van Zandt as their favorite artist. Mikey Sweet does, and damn if he doesn't channel into his songs that late, great Fort Worth icon. Sweet is an old soul with a young heart, and *Road Dog Gospel*, his second album, is packed with gorgeous original songs in the same league as defining work by fellow storytellers Steve Earle, Todd Snider, and even Van Zandt.

While many performers Sweet's age follow trends and say little, the music on *RDG* is sublime and honest. "Oklahoma Wind" feels like a long-lost Woody Guthrie song. Sweet recalls seeing a newspaper headline about a devastating tornado hitting a school. Ryan Hommel's high-lonesome pedal steel is heartbreakingly poignant, and Sweet's song is indeed a loving tribute to those who perished.

Like most of *RDG*'s songs, "Driftwood" was written in Asheville, North Carolina. It's about a street kid fighting inner demons, roaming from town to town. In real life, Sweet's random encounter with him led to enduring friendship—and this cinematic song worthy of John Prine.

The tempo quickens for "Brick Wall," which in barely two minutes tells of an itinerant musician who goes from busking with his "two-string fiddle" to getting arrested for trespassing and being thrown in jail. Run DMC's "Walk This Way" was stuck in Sweet's head when this song presented itself, and it's catchy as hell.

RDG was recorded with Sweet's band live in the studio and straight to tape, which only adds to its authentic back-porch feel. Sweet is the real deal who's lived his songs. His writing is so evocative, so pure.—David Sokol

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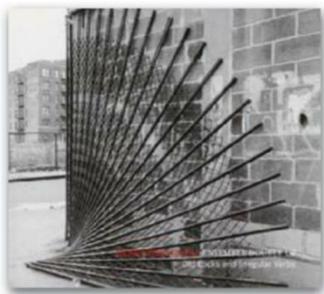
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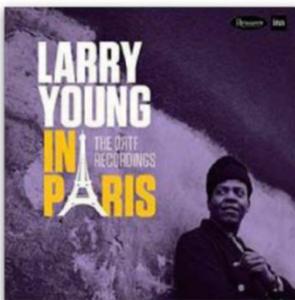
Henry Threadgill, composer; Román Filiú, Curtis MacDonald, alto saxophone; Jose Davila, tuba; Christopher Hoffman, cello; Jason Moran, David Virelles, piano; Craig Weinrib, drums
Pi 64 (CD). 2016. Liberty Ellman, prod., mix; Michael Marciano, Rich Lamb, engs. DDD. TT: 47:01

PERFORMANCE ★★★★★
SONICS ★★★★★

Threadgill, an avant-garde saxophonist, flutist, bandleader, and composer, won a Pulitzer Prize for his 2015 album, *In for a Penny, In for a Pound* (also on Pi). For this follow-up he's formed his first new group since 2001: two pianists, two saxophonists, and—carried over from his previous band, Zoid—a cellist, a tubaist, and a drummer. Pianists are a novelty for a Threadgill ensemble, and Jason Moran and David Virelles, the best-known players here, are often the focus of attention. But Threadgill himself plays not at all, instead leading the musicians through an album-long tribute to the late Butch Morris, who made an art of conducting improvisers.

The work is divided, somewhat arbitrarily, into four numbered parts/tracks; the music is continuous. Dissonant but not atonal, with hardly a readily identifiable melody, it never loses its edge. The pianos begin with an off-kilter duet; the band enters, and the tuba plays lyrically over a pizzicato cello line. The brief Part Two begins with melodious cello over tuba before abruptly giving way to a drum solo.

Part Three; a saxophone enters and the music grows more agitated, mimicking an improvised session. The pianos perform a rambunctious duet, followed by an urgent sax solo with the band, a sudden silence, and an unaccompanied sax solo. The mood grows pensive as, one by one, the other instruments reenter. Part Four is a somber elegy, the pianos rhapsodizing before the saxophones, cello, and tuba join in solemn harmony, then rise to a discordant climax. It's contemporary music at its finest.—Larry Birnbaum


LARRY YOUNG
In Paris: The ORTF Recordings

Larry Young, organ, piano; nine others
Resonance HCD-2022 (2 CDs). 1964-65/2016. Zev Feldman, prod.; George Klabin, Fran Gala, sound restoration. AAD? TT: 105:57

PERFORMANCE ★★★★★
SONICS ★★★★★

Until now, the highly regarded archival projects of Resonance Records have dealt with famous names: Coltrane, Getz, Montgomery. *In Paris* is different. It rescues a cult figure from encroaching oblivion. It is the first new release under Larry Young's name in 38 years.

Young (1940-1978) played organ in a style outside the dominant Jimmy Smith tradition. His harmonic language, founded on fourths, was personal. His subtle touch and smooth, legato lines gave his sound a distinctive lightness. Yet he was a charter member of a groundbreaking jazz-rock power trio, the Tony Williams Lifetime. He also played with Miles Davis, Jimi Hendrix, and Carlos Santana, but by the end of his short life (he died at 37), his career was in decline.

The material on these two CDs comes from early recordings made for a French jazz radio program. It is an uneven assortment. But Young, a sideman fully formed at 24, jumps out of this music. Even when he comps for horn players—including tenor saxophonist Nathan Davis and 19-year-old trumpeter Woody Shaw—he provides intriguing content. When he solos, his modal modernity is stunning. In Shaw's "Zoltan," he evolves a large, diverse concept, unified by thematic recurrence and building to a dramatic but logical climax. Briefly alone with two drummers, he creates a complete design from a compendium of fresh ideas about "Mean to Me."

In Paris will make many people who missed Larry Young go searching for more. They should start with *Unity*, his masterpiece, recorded in 1966 for Blue Note.—Thomas Conrad

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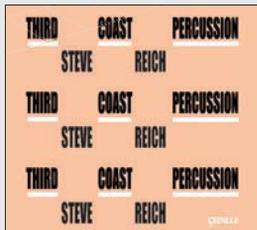
Sincerely, Bill Low



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MANUFACTURERS' COMMENTS

THIS ISSUE: Lyra, ModWright Instruments, Unison Research, Nordost, and PS Audio respond to our reviews of their products.



Erratum

In the May 2016 issue of *Stereophile* (p.125), we illustrated Robert Levine's double five-star review of Third Coast Percussion's new recording of works by Steve Reich (Çedille) with the cover art of Kronos Quartet's recording of Reich's *WTC 9/11* (Nonesuch). Our apologies to Çedille Records and to Third Coast Percussion. The correct image is reproduced on the left.—**John Atkinson**

Lyra SLs

Editor:

Thank you, *Stereophile*, for such a positive review, and to Michael Fremer for his insightful review and kind words.

I cannot overstate the importance of Michael's comment that "even this level of accomplishment assumes that your phono preamp has enough gain and low enough noise to accommodate the halved output." The reason Lyra positions the lower-output SLs as low-volume specialty

I agree that solid-state and tubed designs each have their strengths and differences.

models is that the majority of audiophiles are much better served by the standard cartridge output level (with around 0.5mV output). If the phono stage suffers from insufficient gain, or from noise or electronic colorations, the non-SL models are far more likely to deliver satisfying results. Also, the SL models make setup issues easier to hear, and therefore demand a more experienced and careful user.

Generally speaking, unless a user is absolutely certain that an ultra-low-output cartridge will benefit their analog system rather than highlighting its deficiencies, they should stay with the standard-output models. However, given an outstanding phono stage, turntable, and tonearm, and a cartridge setup that is spot-on, the results will be as revelatory as Michael described.

Jonathan Carr
Lyra

ModWright Instruments PH 150

Editor:

I want to thank Michael Fremer for a thorough and well-written assessment of our PH 150 Reference tube phono stage.

To clarify slightly, the first gain stage, with 6C45 tubes, is the only part of the circuit that uses solid-state devices—in this case, FETs. The remainder of the analog circuits are inductively loaded and coupled. Michael mentions that filament current regulation (rather than voltage regulation) is said to produce a warmer

sound. I did not realize this, and it was not my intent. Rather, this method allows for cleaner DC filaments and less noise.

I agree that solid-state and tubed designs each have their strengths and differences. The line between the two becomes less clear over time, but I admittedly prefer tubes in my source and preamp. The comparisons made in this respect were right on and appropriate.

Dan Wright, President
ModWright Instruments (MWI)

Unison Research Unico Primo

Editor:

Thank you so much for Ken Micallef's thorough review of the Unison Research Unico Primo. We appreciate the chance to respond to a couple of issues brought up in the review.

What happened during the two deliveries was not typical—our packing materials have always withstood shipping around the world, with a minimal amount of these incidents. With input from Colleen Cardas Imports, however, we have decided to redesign our boxes and packing materials for the challenges of domestic shipping within the United States. The US market is very important to us, and we will be implementing these changes immediately to reduce these risks and to build on our reputation for beautiful, reliable products that can be passed down from generation to generation.

As far as the measurements go, we have a few comments. Mr. Atkinson states that "Channel separation for a 1kHz line-level signal was a little disappointing, at 65dB R-L and 70dB L-R, and decreased with increasing frequency, reaching a poor 40dB at 20kHz." The Unico Primo uses only one tube to amplify signal in both channels, which can limit the channel separation. As you move up the Unico line, a tube is used in each channel to achieve a better separation rate. As Mr. Atkinson suggests, this design choice was made to keep the cost of the amplifier at its very affordable price point—especially when you consider that our amplifiers are made by hand in Italy.

Mr. Atkinson also commented that "Fig.5 reveals that the noise floor is dominated by spurious at the AC mains frequency of 60Hz and its harmonics." As the result of extensive testing

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and listening tests, we chose to use low overall feedback to obtain a better sound, but that choice makes the circuit more sensitive to noise. So these measurement results reflect those listening preferences.

In addition, Mr. Atkinson notes that “The distortion signature at 1kHz and low powers appears primarily to be third-harmonic in nature (fig.9), but at higher powers, the second harmonic and higher-order odd harmonics make appearances (fig.10).” This result is expected, as it is typical of the input-tube stage. The same can be said for the measurement in fig.11, which is even rated at double the power.

Finally, Mr. Atkinson states that the “Unico Primo exceeded its specified maximum output power of 80Wpc into 8 ohms (19dBW), clipping (defined as 1% THD+noise) at 105Wpc (20.2dBW). However, into 4 ohms (fig.7), the output voltage dropped, the amplifier clipping at 135Wpc (18.3dBW), which suggests that its power transformer is undersized.” We state in our specifications that the Unico Primo achieves 80W at 8 ohms. If the amplifier clips at 135W at 4 ohms, we consider this to be outside its stated parameters.

We are very grateful for this opportunity to discuss the Unico Primo design, and we are happy that Mr. Micallé enjoyed it so much.

*Alessio Fusaro
Unison Research*

PS Audio PowerPlant P10

Editor:

Thanks to Jim Austin for a thorough explanation of how our PowerPlant regenerators work, and how they improve the performance of audio systems. A cliché of component performance goes along the lines of “it was as though veils had been removed,” and one of the most effective ways of removing those veils is to reduce the noise levels of the system. Ensuring that the power going into the system is as noise-free as possible seems to us to be an obvious way of improving performance, but it’s often relegated to “tweak” status by both audiophiles and professionals.

The viewpoint at PS Audio is that, to paraphrase a Southern expression, “if the



power ain’t happy, ain’t nobody happy.” Unless the system is fed stable, clean power, it will never achieve all that it is capable of. Bass will be inadequate, highs will be veiled, dynamics will be squashed.

Jim’s experience is an excellent illustration of power problems in an urban environment, a situation familiar to many of us. The ideal situation for system power is likely both contradictory and unattainable: the user would be in the middle of nowhere, with no local sources of noise or interference, with a dedicated power line directly from a nearby transformer—and yet right down the road from the generating station.

It’s unlikely any of us will find ourselves living in such a spot. Most, like Jim, will live in a building with many others, with an elderly and overloaded grid overlaid with noise from hundreds of switching power supplies, dimmers, and who knows what else. For the real world, one of our PowerPlants will be the best solution for supplying clean, protected power to expensive components.

And, as Jim notes, PowerPlants can be purchased from PS Audio with a 30-day, risk-free home trial. The only thing a listener has to lose is power-line crud and reduced system performance!

*Paul McGowan, Founder & CEO
PS Audio*

Nordost Valhalla 2 Reference

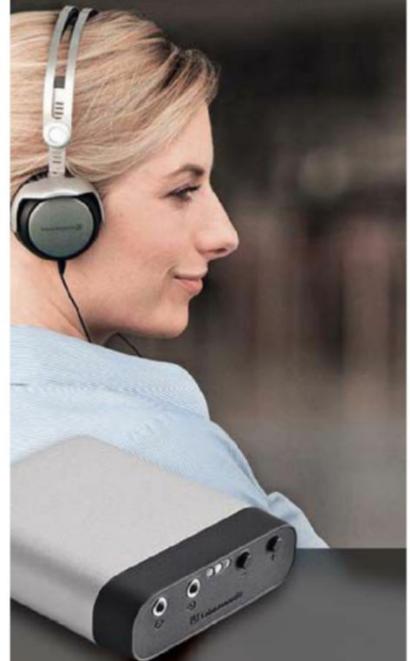
Editor:

On behalf of Nordost, I would like to thank Brian Damkroger and the *Stereophile* team for a wonderful and perceptive review. It was very important to us that the first person to review our original Valhalla cables had the opportunity to hear the improvements that have come from our carefully wrought cable designs. Enhancing our already stellar Valhalla range was a challenging feat. In order to succeed, we spent a great deal of time in research and development, not only perfecting the layout and geometry of each purpose-built cable, but also creating our own patent-pending connector: the Holo:Plug®. It is very gratifying to see that our hard work and efforts to see this through have been recognized in this excellent review. Brian took an incredibly thorough approach to his review process, and we feel that this shines through in his article. He has identified the key components in the Valhalla 2s that contribute to their outstanding success, and has given consumers valuable insight into our Reference line of cables.

*Joe Reynolds
Nordost*

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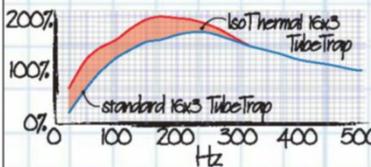
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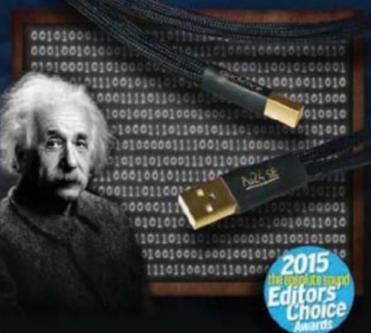


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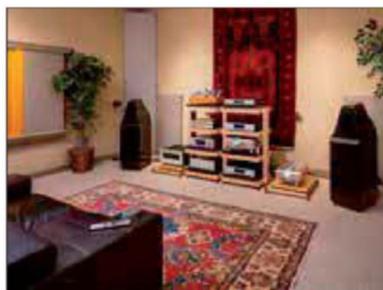
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AURAL BY ROBERT BAIRD ROBERT

Apex Blues

It's always enlightening to speak with guys who were there when selling records was still a viable business. Back when talent gushed, records flew off shelves, and the money rolled in—the time before writing code became the coolest, when desiring a career path in the music business didn't automatically scream, "Why?"

Recently, when a family event drew me to Chicago, I stopped by Delmark Records, in the Irving Park neighborhood, to chat with Bob Koester. Having recently closed Jazz Record Mart, his retail store in downtown Chicago, and sold all its stock to online music seller Wolfgang's Vault, the 83-year-old Koester now works exclusively out of the cluttered Delmark offices, where he's also trying to open a retail store.

So how do you start with a man whose career in making and selling recordings has included such diverse masterpieces as: an unreleased Sun Ra album (purchased from Boston's Transition Records); Junior Wells's *Hoodoo Man Blues*, one of the undisputed milestones of Chicago blues; and a fortuitous left turn that resulted in being the first label to record the avant-garde jazz of Chicago's Association for the Advancement of Creative Musicians (AACM). What advice, Mr Koester, would you give anyone wanting to go into today's record business?

"Don't. The record business, since downloading, has become a really tricky thing. You put out a record, and the first year you sell a thousand or two, maybe. The second year: five, ten copies," says the man who still gets a twinkle in his eye when talking about the biz. "Delmark does not record artists who don't sell their records at gigs. They go out of print if artists don't sell them at gigs. And if they only play Chicago, that's okay. They don't tour, but the audience does. It's mostly out-of-town people in Chicago clubs."

As for the Record Mart, a landmark among Chicago record stores, the rent had risen to \$12,000/month (Delmark Records can still be purchased online, in stores and from the label's rudimentary website). Koester says he misses it. "I would go in on Monday to meet with the guys. And I'd go in on Saturdays, and I'd spend the other four days here at Delmark. Now, I don't know what to do on Saturday."

A native of Wichita, Kansas, Bob Koester moved to St. Louis to attend college. After a stint selling records out of his dorm room, he and a partner founded Delmar Records, on St. Louis's Delmar Boulevard. One of the first releases Koester recorded and released on the renamed Delmark

label was *Live at the Barrel*, by the underrated St. Louis trumpeter Dewey Jackson, an early idol of Miles Davis's. In 1958 Koester moved to Chicago, and the following year bought Seymour's Record Mart. Among the sweetest Delmark titles are the records he made with Magic Sam. Delmark has just released on CD an expanded edition of Samuel "Magic Sam" Gene Maghett's *Black Magic*, originally released in 1968, a year before the Chicago singer and tremolo guitar player's untimely death, at the age of 32.

"Magic Sam was a real good guitar player, but I don't record good guitar players in blues. I record good singers, because the voice is the most important part of the blues.

Some of the great singers are not that good on guitar. B.B. King is a startling example. He's excellent on guitar, but you notice he doesn't play very much while he sings. Blues is a vocal music. Most whites think it's a guitar music with incidental vocal accompaniment."

Delmark's most famous competitor, at that most famous address, 2120 S. Michigan Avenue (hence the Rolling Stones tune of the same name), was Chess Records, launched in 1950. One of Koester's rare interactions with Phil and Leonard Chess produced a classic bit of Delmark lore.

"When we recorded *Hoodoo Man Blues*, Buddy Guy suggested that I oughta call Chess and make sure it's okay with them [for Guy to play on the album]. Chess said, 'Okay, record him, but he doesn't sing. And you don't use his name.' Now, there was a British guy working in the store, so I asked, 'Would you like to choose the pseudonym for Buddy Guy?' And he says, 'Well, a buddy is a friend, and a guy is a chap—why don't you call him Friendly Chap?' And that's why the first 7000

copies of the record are credited to . . ."

As for *Hoodoo Man Blues* itself, "It just really is a damned good record. Not because of anything I did—it's totally in Junior and Buddy's hands. Mostly Junior."

Most fascinating of all the 550 releases in the Delmark catalog are the AACM artists Koester signed and recorded, such as Roscoe Mitchell, Muhal Richard Abrams, and Anthony Braxton. "I didn't understand it, but it wasn't bullshit," he says of their music, with the hint of smile. "They were really into what they were doing. I remember once, a few years ago, I'm driving along, humming one of their songs, and I figured, 'Well, now I'm finally understanding it.'" ■

Music Editor Robert Baird (RBaird@enthusiastnetwork.com) finds all this talk of having too many records patently absurd.





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