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# GUIDE TO VINYL PLAYBACK

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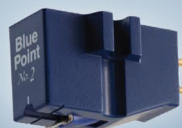
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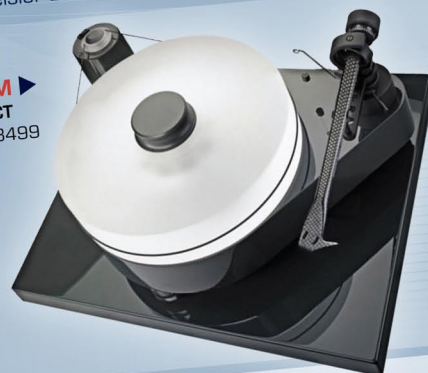


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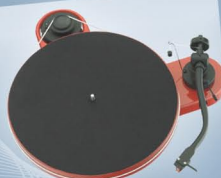
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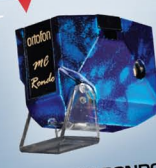
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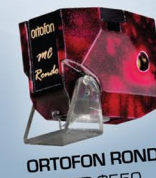
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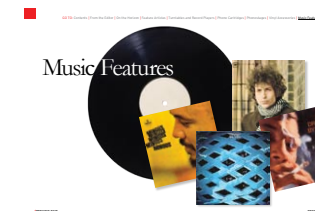
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GUIDE TO

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# FROM THE Editor

**T**here's something about vinyl records and turntables that polarizes audiophiles. If you're into vinyl, you're into it in a big way. If not, you see LP records as an antiquated format that you wish would simply go away.

I didn't realize the depth of passion on both sides until I published a letter in the February, 2011 issue of *The Absolute Sound* from reader Ed Heath. In that letter, entitled "Down with Tubes and Vinyl," Mr. Heath argued that a \$50,000 turntable could not equal the sound quality of a CD played back on a \$1500 Sony disc player. Moreover, Mr. Heath objected to this "archaic, inferior technology" appearing in *The Absolute Sound* and displacing coverage of digital formats that Mr. Heath suggested were "preferred, owned, and used by a staggering majority of the readers." Mr. Heath's diatribe ignited a flood of partisan letters attacking or defending analog playback.

I have a few observations about this controversy. First, more than half the readers of *The Absolute Sound* listen to vinyl records, a percentage that is continually increasing. This is a far cry from Mr. Heath's putative "staggering majority" of readers who listen exclusively to digital. Second, why is it necessary to crown one format as superior sounding and to concomitantly reject the other format? Virtually all of us who listen to vinyl also listen to digital. Musical enjoyment can come in many forms; it's shortsighted to exclude *any* format from your menu. Third, in trying to understand the hostility among some to vinyl, I concluded that their objection is based purely on theoretical grounds; they have never heard good analog and believe that vinyl simply *can't* sound good. The idea that a 134-year-old mechanical system in which a diamond chip is dragged through grooves in a piece of plastic is superior to 21st Century digital technology affronts their sensibilities.

I also think that not all listeners hear things the same way. For some, the occasional tick or pop of vinyl jolts them out of the immersion in the music. For others, the distortion imposed by standard-resolution digital never allows that sense of immersion in the first place. Both types of listeners are "right" in their preferences.

Since moving to Southern California and having a parade of world-class reference gear through my room, I've been visited by a number of skilled and experienced listeners from the industry. The listening usually begins with CD as the source (actually, a Sooloos music server feeding a Meridian 808.3), followed by SACD (dCS Puccini and U-Clock), and then by vinyl playback (Basis Inspiration turntable and Air Tight PC-1 Supreme cartridge). This CD and SACD playback is, in my experience, as good as it gets. In fact, visitors are surprised by the ease, smoothness, and dimensionality of CD-quality digital audio. But then something happens when I play vinyl; the listener simply enters a different realm. The sound takes on a different texture that results in a different—and deeper—connection with the music. The sense of magic is intensified. This isn't just my perception; it's been the universal reaction among my visitors.

Does this mean that I can listen only to vinyl, or that I would play only LPs for visitors evaluating the system? No way. In fact, most of my listening time is with the Sooloos/Meridian system, and I enjoy it immensely on every possible level. But I enjoy vinyl in a different way.

There's enough music out there, and high-end audio is a big enough tent, for all of us to get musical satisfaction from whatever source we can. Digital and vinyl both have their virtues, and as music lovers we'd be shortchanging ourselves to limit our exploration of the world of music by the technology delivering that music.

It's all good.

Robert Harley

*Click here to turn the page.*

## ON THE HORIZON

# New Analog Products

Neil Gader



### Clearaudio Innovation Compact Wood

The Innovation Compact Wood is based on the technology of the Innovation Wood (a TAS Golden Ear winner), but uses a single plinth without the stainless steel sub-platter. Its resonance-optimized chassis shape is based on proven Clearaudio three-point design—a combination of Panzerholz (bulletproof wood), aluminum skins, and aluminum pods. It uses Clearaudio's patented CMB (ceramic magnetic bearing) technology, where the platter magnetically levitates on an inverted bearing attached to a low-friction ceramic shaft. The high-torque DC motor is exclusive to Clearaudio and is equipped with electronic optical speed control (33 1/3 rpm, 45 rpm, 78 rpm) controlled in real time via an infrared sensor. The high-density, dynamically balanced 2.75" POM platter provides excellent dimensional stability. Dual tonearm capable, as well.

**Price: \$7000, (\$9450 with choice of Magnify Carbon or TT3 Tangential tonearm).**

[musicalsurrroundings.com](http://musicalsurrroundings.com)

### Clearaudio Double Matrix SE Record Cleaner

Clearaudio's new Double Matrix SE (Second Edition) record cleaner is a substantial improvement over the original Double Matrix (TAS 2007 Accessory of the Year). It sports a new rigid and damped aluminum cabinet, significantly reducing ambient noise during operation of the powerful vacuum system. It adds improved wash/vacuum applicator arms with automatic fluid-injection to clean both sides of the record simultaneously without any grooves contacting a platter and with complete protection of the label. It offers bi-directional rotation and a new continuously adjustable rotation-speed control to provide the most effective and efficient cleaning of the record grooves. Built at the Clearaudio factory in Germany.

**Price: \$4000.**

[musicalsurrroundings.com](http://musicalsurrroundings.com)





## ON THE HORIZON



### Brinkmann Audio Bardo

Brinkmann's second model to feature its magnetic-direct system is the Bardo. It sports an acrylic platter mat, the same spindle and bearing found in the company's Balance 'table, and includes an outboard power supply. The tonearm base of the Bardo can be rotated and secured without play to allow a simple and precise adjustment for all tonearms between 9 and 10.5 inches. And Brinkmann will drill the base to accept the tonearm of the customer's choice. The output sockets found on the back of the turntable can be equipped with either RCA or XLR jacks, and it is also possible to install tonearms with DIN connectors or fixed cables. The Bardo spins at either 33.3 or 45 rpm. Fine speed adjustment is via an LED indicator. The entire unit weights in at 32.6 pounds, not including the supplied polished-granite base.

**Price: \$8000.**

[onahighernote.com](http://onahighernote.com)



### Bergmann Magne Airbearing Turntable

The Magne Airbearing Turntable is Bergmann's entry-level airbearing turntable. The airbearing process is frictionless, minimizing bearing noise and yielding exceptional speed stability. The Magne also includes a linear-tracking airbearing tonearm, a dry, smooth, and quiet air supply; an external power supply, and a heavy clamp to stabilize records. The Magne's plinth is a solid block of high-density composite, topped by an 18.5 pound aluminum platter, a 3.7 pound aluminum sub-platter, and a polycarbonate mat. The Magne's platter is supported by a thin film of smoothly flowing air, creating silent, friction-free movement. It is centered by a steel spindle with a low-friction polymer bearing running through the layers. The tonearm is a hollow tube of aluminum and carbon damped on the inside, balanced by a decoupled counterweight. A powerful belt-driven DC motor regulates record speeds, including finely tunable settings for 33 and 45 rpm.

**Price: est. \$12,000.**

[aaudioimports.com](http://aaudioimports.com)

### Okki Nokki RCM Record Cleaner

The Okki Nokki RCM is a German-made record cleaning machine. It consists of a heavy-duty motor/turntable and vacuum system encased in a compact aluminum chassis. The motor function provides for ultra-quiet forward and reverse operation. When used with the supplied goat-hair cleaning brush, the forward/reverse turntable motion allows for extremely effective groove scrubbing. Once cleaned, the record can be vacuumed using the aluminum suction arm. The residual dirt and fluid is then removed by suction and transferred into the internal liquid reservoir, which has a sensor that will shut off the machine when the reservoir is full. Supplied accessories include a standard 12" LP suction arm, goat-hair cleaning brush, record clamp, grounded detachable AC cord, and a small bottle of cleaning fluid concentrate. Available in black or white finish.

**Price: \$499 (\$540 w/dustcover).**

[sumikoaudio.net](http://sumikoaudio.net)



## ON THE HORIZON

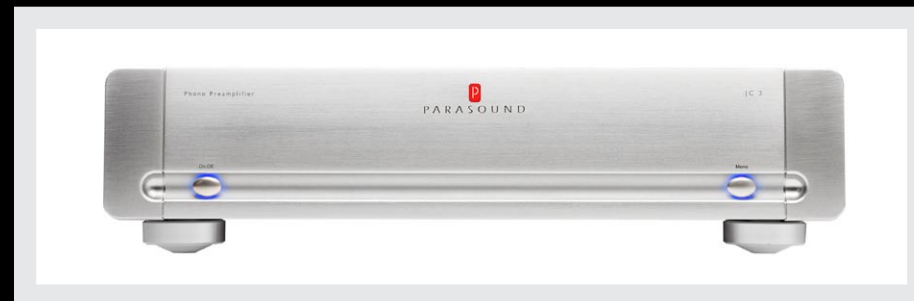
### Parasound Halo JC 3 Phono Preamp

The Parasound Halo JC 3 Phono Preamplifier is a high-performance dual-mono phono preamplifier designed by John Curl. With solid construction and clean design, each channel is housed in its own extruded aluminum enclosure and further isolated from the power supply with 3/8-inch-thick low-carbon milled-steel partitions. It abounds with top-quality parts, including Vishay-Dale resistors and REL capacitors in critical circuits. In fact, the passive EQ parts values and quality are the same as in the original Curl-designed Vendetta SCP2B.

A custom-made, three-position input-impedance switch provides for 47k moving-magnet cartridges, 100 ohm moving-coil cartridges, and 47k moving coils. To further reduce AC line noise, the JC 3 includes a built-in AC line conditioner.

**Price: \$2350.**

[parasound.com](http://parasound.com)



### Benz-Micro Ruby Z and Ruby ZH Cartridges

The Benz-Micro Ruby Z and Ruby ZH have been upgraded to full “S Class” status. They feature the new Zebra wood body, second only to Ebony for its resonance characteristics, offering bass weight and pitch definition, midrange linearity, and high-frequency clarity with a natural musicality. The new MicroRidge stylus is featured, providing enhanced trackability, resolution, and groove integrity. The generator is based on the Ruby square plate. The low-output Ruby Z is best used with phonostages offering greater than 60dB gain, loaded at 400 ohms or higher. With an output voltage of 0.7mV, the ZH is ideal for tube phonostages in the 50-60dB gain range, less efficient systems, and prefers a 47k ohm load. The Ruby Zebra cartridges weigh only 10.6 grams—ideal for a wide range of tonearms.

**Price: \$4000.**

[musicalsurrroundings.com](http://musicalsurrroundings.com)



# ***Vinyl Lives: The Rise and Fall and Resurgence of the American Independent Record Store,*** **by James P. Goss. 260 pp. Aventine Press**

Wayne Garcia

**F**or lovers of the vinyl LP, those who have witnessed the near-death and subsequent rebirth of flat plastic sound, James P. Goss' title is enough to warm the heart. *Vinyl Lives*, indeed.

Over the course of this A-to-Z look at 25 independent American record retailers, Goss, whose writing has been found in numerous magazines, and who also wrote the book *Pop Culture Florida*, not only profiles the people behind some of the country's most beloved record stores, he also delivers some fascinating facts and insightful behind-the-scenes opinions on the state of the business.

The names of these places are a great indicator of the spirits behind them. How about Nashville's The Great Escape; Austin's Waterloo; Goner Records of Memphis; New York City's Zig Zag Records; Seattle's Bop Street Records; Chicago's Out of the Past, or, with three locations in California, Amoeba Music.

I wasn't particularly surprised to note that, with the exception of the husband and wife team Paul and Jill Epstein of Denver's Twist and Shout, every

shop owner in this book is male, and—*ahem*—usually middle-aged to boot. But then it's really no surprise that male baby-boomers should be the ones to grow up to own independent record stores. Story after story in *Vinyl Lives* charts the early years of the men behind the scenes. They tell of teen and often pre-teen moments when music at the very least ignited something within, and sometimes changed the course of lives. And most of these guys grew up in homes where music, even if only recorded, played a key role. As Paul Epstein recalls, "My father had the biggest record collection of any of his friends and my brother and I kept that up, with me taking it to an insane level."

Of course it takes a certain passion, daring, and drive to open—and maintain—any small business, and that spirit permeates this book. Although vinyl may live, especially within our audiophile bubble,

in the greater world it still accounts for but a tiny percentage of music sales. Goss cites 2006 figures that show vinyl at just 0.6% of domestic sales, but jumping 37% in 2009. In other words, still small potatoes when compared to digital downloads. Though these types of stats vary in accuracy, what's clear is that being an independent record retailer is still a very tough way to earn a living.

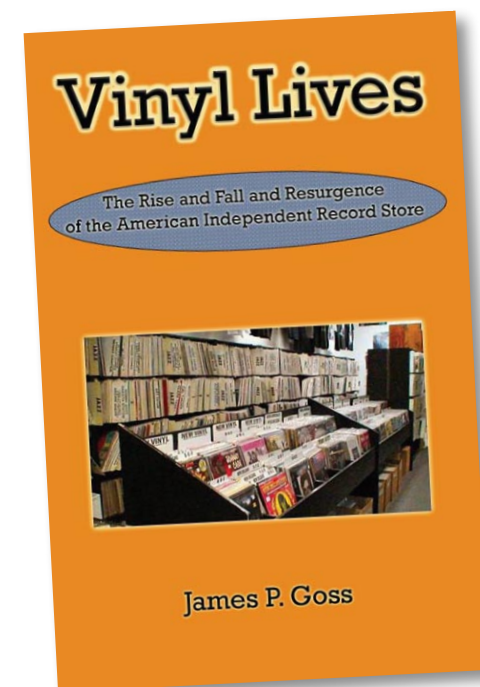
Many of these stores—such as Amoeba, my local haunt—and Music Millennium in Portland, Oregon, have long held live in-store performances by names both small and large: Paul McCartney has performed at Amoeba's L.A. store, and Randy Newman sang at Music Millennium's twentieth anniversary.

Of course, in a business where the carrier itself has changed so much over the 26 years since the CD was introduced, diversity is a key to survival. Although most of these stores focus on music,

DVDs, of course, posters, T-shirts, and other items add important numbers to the bottom line. And vinyl sales represent an increasing part of that figure. Mike Davis of New York's famed Academy Records says that new vinyl sales account for 25 - 30% of sales, adding "I think downloading is affecting CD sales more than vinyl sales... Downloading renders the CD irrelevant."

Despite the book's title, and generally upbeat point-of-view, a small number of the profiles in *Vinyl Lives*—from Mill Valley's Village Music to Florida's Backbone to once independent and then giant Tower Records have asterisks next to their names that indicate dates of closing.

Most of all what Goss' book accomplishes, chapter after chapter, is to show that a good record store is more than simply a place to purchase music, it's an important cultural spot that can be the heart and soul of a community. **tas**



# Back in the Saddle Again

Mastering Engineer Extraordinaire Doug Sax Talks  
with Neil Gader

**D**oug Sax has probably made a greater contribution to LP sound quality than any other living human. As founder of The Mastering Lab, he cut thousands of LP masters with his all-tube signal path and brought better sound to the masses. And as the co-founder of Sheffield Lab, Sax became the father of the modern direct-to-disc recording—and of *stereo* direct-to-disc recording.

Now, ten years after putting his lathes in storage to focus exclusively on digital mastering, Sax has opened a new LP mastering room in Ojai, California. I visited Sax in his new room and spoke to him about tubes, vinyl, digital, and surround

## What is your view of vinyl's resurgence—does it have legs?

I think it has legs to the point that I've taken my Mastering Lab lathes and cutting amps out of storage so that I can actively cut vinyl. I wouldn't do that if I didn't think the resurgence was real. How long it remains real—I don't know. But it's still in the upswing in users, in turntables being sold, and in the number of young people going into it. And almost everyone you talk to has a different reason why he's into vinyl. Once you get someone used to hearing better sound he can't go back. If he could, there would be no audiophile magazines. So, as a business owner, I suspect it's real and I expect to bring in income from that technology.

## Is its popularity nostalgia-based. Just a ritual for empty-nesters?

The biggest difference between and LP and a CD is in its use. The LP died because you couldn't play it in the car, and I think it's coming back because you can't play it in the car. I am serious. If you really get into it, you have to be in a real room with real speakers. You can't be at a computer or jogging. I find that young kids who are into vinyl say: "I don't know what it is; I just get into it more. I'm not being assaulted." That's because they're not doing five other things at the same time. And because the record is fragile and they can't search easily, they play it through—listening to five songs in a row on a side.



## In a sequence determined by the artist.

Exactly. I've had clients who've said that that doesn't matter. Users are just going to go: "Next, next, next." And I say, "Yeah, what about the guy who buys it and actually wants to listen to it?" They say, "Oh, well, in that case I wouldn't want to have five slow songs in a row and then three fast ones."

## When you originally mothballed your lathes, was there much grieving?

Actually, none. That's because I'd really done the grieving much earlier with the advent of the compact disc, which, as you know, was essentially what put Sheffield Lab out of business. I couldn't give away a direct-to-disc record. You could rail on about the fact that CDs were made on really bad

converters with 14-bit measured performance. That they were way off from what you could do on an analog tape, let alone what you could do on direct-to-disc. But as a business proposition, that didn't matter. So the shock was not putting that lathe down in 2000, since it was already being used less and less. The shock was taking all the equipment out of MGM (Sheffield Lab's studio) in the late 1980s. The studio was built with four lathes in a row in one room, and a mix room. It had been a labor of love, and it was suddenly considered worthless. I couldn't sell the lathes for enough to pay for them—that was the shock. So having the lathes go out of The Mastering Lab ten years later wasn't anything. The Mastering Lab is what I do for a living and I was mastering like mad. I just wasn't mastering to vinyl.



## FEATURE - Doug Sax Interview

### So what went through your mind when you decided to reinstall them a few years later?

Well, I didn't want to. People were saying: "They're cutting vinyl!" And I said, "I don't want to hear about it. Been there, done that." And then I started noticing that they [clients] were starting to order cutting masters—high-resolution cutting masters from 96kHz and in some cases 192kHz/24-bit files. These had the potential to absolutely sound better than the compact disc, as they weren't truncated to 16-bit. They [recording engineers]

were being more conservative and weren't pushing any digital limiters or compression or anything. If I'm making the cutting master, it's not going to have any digital limiting on it whatsoever. I decided I have to be part of this because there are not a lot of people that cut here anymore.

### Has the technology changed in terms of your work?

As far as the LP is concerned, no. As far as what might feed the LP, yes, because now you might be feeding it from digital files, from high-resolution

192 or 96/24-bit, which supplies a very reliable and consistent source. But surprisingly the only real improvement has ostensibly been going to DMM [Direct Metal Mastering] cutting and that's had flaws in the past—it never won audiophile support. Now, they've apparently fixed the flaws, and they have better copper. But for rock 'n' roll, for high-energy music? For example, I'm going to be doing the Roger Waters albums on vinyl and they have extraordinary low end, requiring an astonishing amount of vertical modulation. We use up the full depth available on a lacquer master. You can't do anything like that on DMM. It's very thin; you can't go deep. For that kind of thing it could be an absolute joke.

### What is the appeal of mastering versus multitrack engineering?

I've never able to handle more than one or two channels at a time. The Mastering Lab actually opened up at the end of 1967 and we were mono until September of 1968, with 45 singles all mono up until the early 80s. So when they say "back to mono," I say I never left. The thing that interested me about mastering was the sound of a record. And I'd done experiments starting at the end of 1968 with Lincoln Mayorga where we recorded with no tape, straight to disc. My brother (Sherwood) was the technical man. I was into hi-fi and I heard what this pure disc medium could do at that time. I'd never heard a lacquer, and that disc medium has virtues that I'd never heard before. I was bit. There's a sound to it. We didn't make that particular direct-to-disc, but it was the inception of Sheffield. And we learned enough about disc-cutting to think there'd be a market for a stand-alone mastering facility. [Note:

Sheffield Lab's first commercial direct-to-disc releases began in 1968.] Sheffield's successful records showed that we understood how to produce a record. All the elements were in the room. All the decisions, all the miking, mixing. It's a really good way to prove you know how to make a record. There are a lot of terrible, terrible direct-to-disc records.

### You must've experienced some problems?

We never actually did. Lincoln did the first three records and was such a good producer. Every note was written and the arrangements worked out. So if you got a reasonable balance it worked. It was orchestrated in hi-fi. So from day one we knew what it took; we weren't experimenting. We didn't go in wondering what we needed to do. We knew the musicians, we hired them, we rehearsed, we got the groove we wanted, and it was done.

### Some direct-to-disc performances seem tight or inhibited.

Well, we had the best musicians. The best example I can give in terms of what you would hope for is having a roomful of musicians who get excited—excited that the notes they are playing are going to be heard, forever. That they aren't going to get dumped in the mix. They knew it was already mixed down as they played it.

### Does being a musician yourself inform your mastering work?

Not necessarily. It's more of a sensitivity to music and the elements of music.



## FEATURE - Doug Sax Interview

### Then does it take a different skill set to master the L.A. Philharmonic or Pantera?

A mastering engineer has to have very catholic tastes—global, worldwide. We don't create. However, there are mastering engineers who do dramatically more processing than we do, and do create a sound that's sometimes very interesting. [Bob] Ludwig takes pride in the fact that you can bring him a piece of crap and he'll give you a hit record. I disagree with him on that. I don't think that's what a mastering engineer does. What a mastering engineer does do—since almost all the tapes that come in have music on them—is find the music. You have to be able to see where it's going. If I give it some weight and so forth, it's going to be better. The mastering engineer does that. And should do that. But we don't create. I'm sorry.

It's pathetic that the best thing you can buy in 2010 is an LP—an artifact from the 1960s.

### But you must have desperate clients who come in and say: "My tape sounds like crap; can you save it?"

But they don't say, "Can you make me a hit record?" If they say it sounds like crap and can you make it sound less crappy, the answer is yes. But you have to know the limitations. And you have to be able to hear all the elements.

### Beyond the LP what do you see?

The other thing I hope takes off is high-resolution music on Blu-ray. You can put non-compressed 24-bit/192kHz audio surround or two channel on it, and I'm hoping that's where it goes. Even though the LP is a technology I'm conversant and feel totally comfortable with, it's pathetic that the best thing you can buy in 2010 is an LP—an artifact from the 1960s. For me, if I could go home and listen to a disc in 192kHz the way I hear it in the studio, you could keep your LPs. Parenthetically, now that we're up and running and I'm working with Josh Florian who makes the best 192kHz converters that I think exists, we're going to do some live classical guitar recording right to the disc and we're going to go play it.

### Like the terrific Sheffield recording of guitarist Michael Newman?

Yes, but we have better mikes now. We can come up with something that is just startling. Just like a single play off a lacquer of something live—it's got a wow factor; it's an amazing format.

### What about surround?

You can quote me on this. Properly done, surround is meaningful, particularly in popular music when it's done creatively like *The Dark Side of the Moon* in SACD-surround. (James) Guthrie did it; it's stunning. He's a superb engineer. I have surround here. I'll play it for anybody and mouths drop open. It's also music that lends itself to surround. But to not make it available on Blu-ray? The industry has been so myopic. It requires a unanimity of format, and players that are compatible worldwide. It's going to be up to the consumer to decide. tas

# WHAT PRICE PERFECTION?

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Rega's approach to turntable design has always been deceptively simple. With a clear focus on information retrieval from your LP — and not flamboyant design features that add nothing to the sound — Rega combines precision engineering with affordability.

The truth is, it's what you don't see about a Rega turntable that makes it so special. You'll appreciate its simplicity of design night after night as you re-discover the remarkable sound only vinyl on a Rega table can produce. You'll fall in love with your old records all over again.

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Handcrafted in the U.K. for over 35 years.

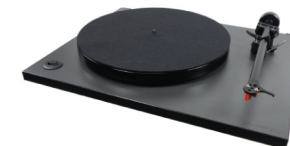
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The Sound Organization is Rega's USA distributor. [www.soundorg.com](http://www.soundorg.com)



RP1 \$445



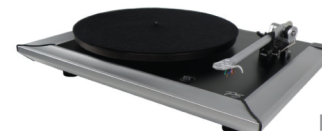
RP1 \$640  
Performance Pack



P3 \$895



P3 \$1295  
High Gloss Colors



P5 \$1395

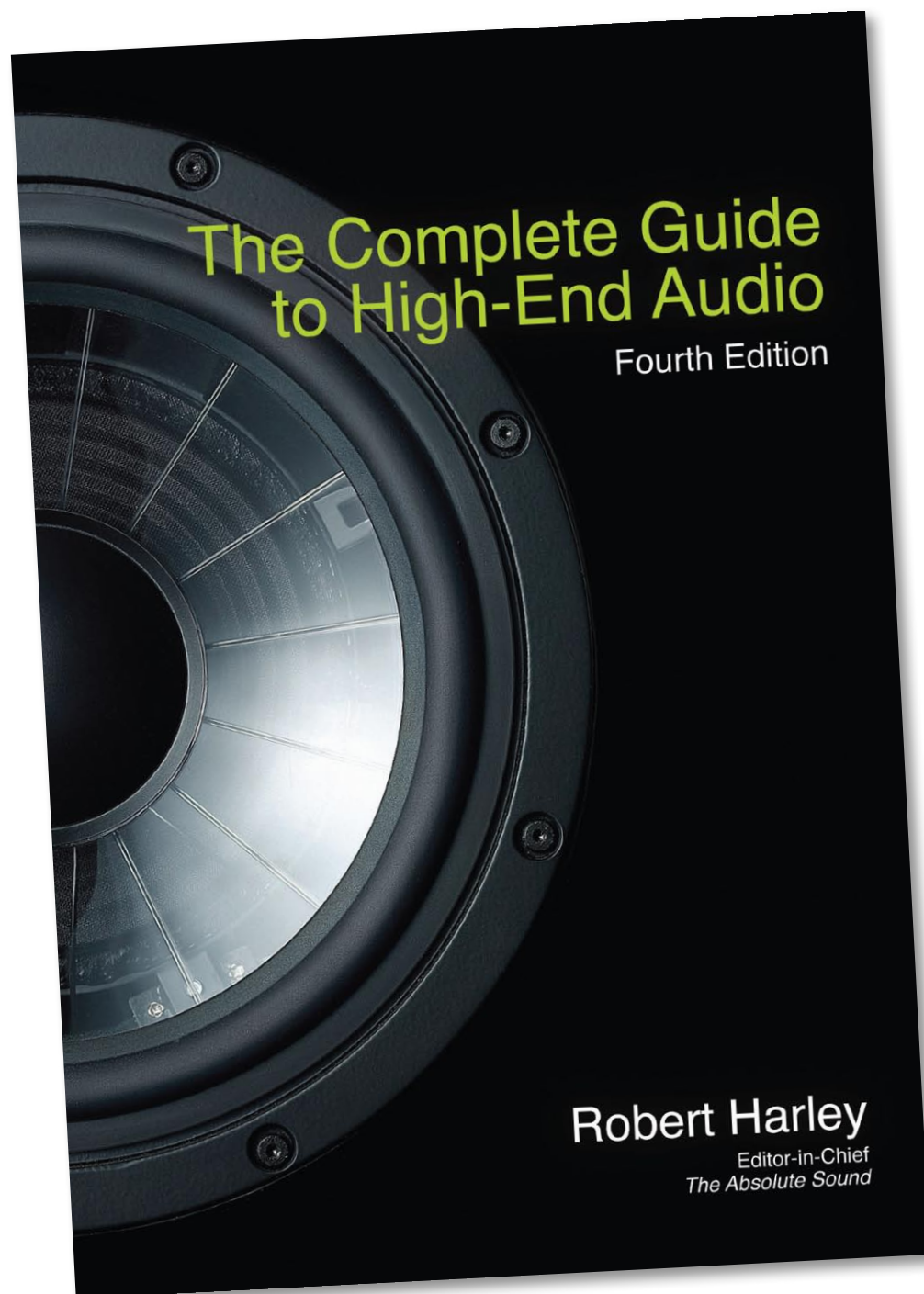


P7 \$2695



P9 \$4995





# Vinyl Records in the 21<sup>st</sup> Century

Robert Harley

Excerpted and adapted from *The Complete Guide to High-End Audio*, Fourth Edition.

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**I**n 2009, sales of LP records more than doubled the figures for 2008. The vinyl record was the only packaged music format to report increased sales in 2009. Vinyl records outsold SACD and DVD-Audio combined in that year. Although records still account for only a small percentage of all music sold, the fact that this archaic technology is thriving in a world of MP3 players and Internet downloads is remarkable.

The resurging popularity of the vinyl record is a testament to its fundamental sound quality. Not only do LPs deliver a musical realism unmatched by standard-resolution digital audio, they also represent a completely different approach to music listening. At one extreme is the person who downloads MP3 files at the lowest possible bit rate, and listens to them in the background on a cheap portable player and \$5 ear buds, while engaging in some other primary activity. Listening to an LP couldn't be more different. Placing an LP on a turntable signifies your intention to set aside all other activities and turn your full attention to the music.

The high-end audio industry has responded

to vinyl's spectacular comeback with a flood of interesting new turntables, tonearms, cartridges, and phono preamplifiers, not to mention accessories for getting the most out of a record collection. Specialty audiophile labels have licensed classic recordings of the past and reissued them in magnificent sound. Today's LPs are mastered and manufactured with a level of care unimaginable 20 years ago. The LP was once a cheap commodity; now it's an art. The result is that we're now hearing, for the first time, the full measure of the LP format's greatness.

The renewed interest in vinyl playback is largely driven by two demographic groups. The first is young adults who value the LP's sound

## FEATURE - Vinyl Records in the 21<sup>st</sup> Century

quality, tactile nature (including the cover art and liner notes), and “retro-cool” factor—qualities missing from MP3 downloads. The second group driving vinyl sales is the music lover who grew up listening to records, but abandoned them in favor of CD. After 25 years of listening to digital this kind of listener is now dusting off his records and discovering anew the musical pleasures and sonic quality possible with today’s LP playback systems.

If you haven’t heard a good LP playback system, I encourage you to visit a specialty retailer who can demonstrate the potential of vinyl, or attend a consumer-audio show where turntables are prevalent (more than a third of the 120 exhibit rooms at the 2010 Rocky Mountain Audio Fest featured LP playback).

The general public’s perception that CD is vastly superior to LP (remember the “Perfect Sound Forever” marketing campaign for CD?) is perpetuated because very few listeners have heard high-quality LP playback. When done right, LP playback has an openness, transparency, dynamic expression, and musicality that cannot be matched by CD. There’s just a fundamental musical rightness to a pure analog source (one that has never been digitized) that seems to better convey musical expression. There’s a saying in high-end audio circles: CDs sound great—if you never listen to vinyl. That is, you don’t know what you’re missing until you hear good LP playback.

This isn’t to say that LP playback is perfect. It suffers from a variety of distortions such as mistracking, ticks and pops, speed instability, surface noise, cartridge frequency-response variations, inner-groove distortion, wear,

and susceptibility to damage. But for many listeners, these problems are less musically objectionable than the distortions imposed by digitally encoding and decoding an audio signal. Moreover, the best turntables, tonearms, and cartridges substantially reduce these annoyances while maximizing the strengths of LP playback. In fact, today’s best LP playback systems are remarkable in their ability to make you forget that you are listening to anything but music.

Converting the binary ones and zeros of digital audio back into music has been likened to trying to turn hamburger into steak. Some listeners can hear past the LP’s flaws and enjoy the medium’s overall musicality. Other listeners can’t stand the ritual of handling and cleaning records—not to mention keeping the turntable properly adjusted—and think CD is just fine. I think of it this way: LP’s distortions are periodically apparent, but separate from the music; digital’s distortions are woven into the music’s fabric. Consequently, analog’s distortions are easier to ignore. If you’re inclined to think CD is without fault, and you’ve never heard a properly played LP, give yourself a treat and listen to what vinyl can do before you write off the possibility of owning a high-quality turntable.

My suggestion that some audiophiles spend as much as 40% of their total system budget on an LP front end may strike some as excessive. After all, how much of an effect can the cartridge, tonearm, and especially the turntable have on the reproduced sound compared to the contributions of amplifiers and loudspeakers?

The answer is that the components at the front of the playback chain should be of at least

as high quality as those at the end of the chain (loudspeakers). The LP playback system’s job is to extract as much musical information from the LP grooves as possible, and with the greatest fidelity to the signal cut into the LP. *Any musical information not recovered at the front end of the playback system cannot be restored later in the chain.* It doesn’t do any good to have superlative electronics and loudspeakers if you’re feeding them a poor-quality, low-resolution signal from an inadequate LP front end. If the music isn’t there at the start, it won’t be there at the finish.

The importance of the turntable was first brought to the world’s attention by Ivor Tiefenbrun of Linn in the early 1970s. He sold his turntable by walking into audio dealerships unannounced with the turntable under his arm, and asking the store owner to listen with him to the best system in the store with the store’s turntable. Then they listened to the store’s least expensive system hooked up to the Linn LP12 turntable. When the store owners heard their most modest system outperform their most expensive system, many became convinced of the turntable’s importance. (When asked by the store owner “But how can I sell this to my customers?” Tiefenbrun responded “The same way I just sold it to *you*.”) It took years of these kinds of demonstrations to convince the audio community that the turntable was a significant variable in a system’s sound quality. Today, no debate exists over the turntable’s importance in achieving good sound. **tas**

Excerpted and adapted from *The Complete Guide to High-End Audio*, Fourth Edition. To order, call toll-free 800 888-4741 or visit [www.hifibooks.com](http://www.hifibooks.com).





## EQUIPMENT REVIEWS

# Turntables and Record Players

# Music Hall MMF-2.2, Pro-Ject Xpression III, Rega P3-24, Nottingham Analogue Interspace Jr.

FOUR LP PLAYBACK SYSTEMS FROM \$450 TO \$2K

PAUL SEYDOR

It is the boon of vinyl that some of its most attractive qualities—musical warmth, naturalness, space and atmosphere—are often evident in even its most modest applications, the bane that its defects—pitch instability, phase anomalies, tracing and other distortions, all the surface detritus of LPs—evident in even the most expensive and sophisticated. I've been lucky at TAS to review and thus enjoy at length several very expensive turntable/arm combinations, including a few that are undeniably at the state of the art. My longstanding reference is a vacuum-hold-down Sota Cosmos with Graham or SME arms, my new recent reference the magnificent Basis 2200/Vector 4 combination. So when Robert Harley asked if I'd tackle a survey of four lower-priced record-playing packages, I was quick to accept. From a certain point of view, price-no-object design is easy. But when every dime counts, where do you compromise?

## INTRODUCTION AND GROUND RULES

The four products here range from a pair of economy setups (\$450–\$699) through a budget model (\$1390) to a moderately-priced design on the cusp of what I think most people outside the audio community would call expensive (\$1999).

They are all belt-driven, two-speed (33/45) integrated turntables, meaning they include arms, three of them with phono pickups already fitted. All the buyer has to do is unpack them, follow the simple instructions, and start playing records. In the fourth, I mounted an appropriate pickup.





# EQUIPMENT REVIEW - FOUR LP PLAYBACK SYSTEMS FROM \$450 TO \$2K

Ground rule number one is that each package is evaluated entirely as supplied by the manufacturer. Obviously somewhat different results would be obtained with other pickups, but time limitations prevented such investigations. Rule two is that each turntable was located on a low cabinet that houses the rest of my source and electronic components, including my reference turntables. This solid, built-in cabinet isolates almost as well as a wall-mounted shelf. This last detail is not insignificant, as all four turntables are fixed-plinth designs, that is, lacking any sort of tuned sprung- or hung-suspensions by which low frequencies capable of causing acoustic feedback are filtered or otherwise reduced. The common wisdom is that the relatively low

price of these setups suggests comparable systems lacking deep bass and dynamic range. But subwoofers are pretty cheap these days; and even my supposedly bass- and dynamically-challenged Quad 2805 ESLs can generate levels loud enough to stress each of these turntables from time to time.

The third rule is that while comparisons are inevitable, in no sense should this be considered a “shoot out.” Think of it, rather, as a kind of snap-shot of representative alternatives in the current under-\$2000 market.

**POINT-AND-SHOOT ANALOG**

Music Hall’s MMF-2.2 turntable is a badge-engineered version of Sumiko’s Pro-Ject

Xpression III, both originating from Pro-Ject’s plant in the Czech Republic. Despite differences in materials, cosmetics, and pickups, the basic turntables are identical, their dust covers, felt mats, wall-wart power supplies, motors, motor suspensions, and belts interchangeable (the MMF’s belt even has “Pro-Ject” imprinted on it). The MMF’s platter is metal alloy, the Xpression’s acrylic; the gimbal arms are identical except that the MMF’s is metal alloy while the Xpression’s has a carbon-fiber tube. The MMF’s feet are a rubber-like compound, the Xpression’s machined cones. The Xpression’s plinth is finished in a high-gloss smoky grey, the MMF’s in a hot Ferrari Red (of which Music Hall’s Roy Hall is inordinately proud in his amusing YouTube



## SPECS & PRICING

<b>Music Hall MMF-2.2 Limited Edition turntable with arm and Music Hall Tracker pickup</b> <b>Price:</b> \$450	<b>MUSIC HALL</b> (516) 487-3663 musicchallaudio.com
<b>Pro-Ject Xpression III with arm and Sumiko Oyster pickup</b> <b>Price:</b> \$699	<b>SUMIKO</b> (510) 843-4500 sumikoaudio.net
<b>Rega P3-24 with RB301 arm and Exact 2 Phono Pickup</b> <b>Price:</b> \$895 (turntable and arm); \$595 (cartridge; \$495 if purchased with the P3-24); \$1295 (turntable, arm and TT PSU power supply); \$375 (power supply)	<b>THE SOUND ORGANIZATION</b> (972) 234-0182 thesoundorg.com
<b>Nottingham Analogue Interspace Jr. turntable and Ace Interspace Arm</b> <b>Price:</b> \$1995	<b>GINGKO AUDIO</b> gingkoaudio.com
<b>Cloud 11 Vibration Control Platform</b> <b>Price:</b> \$449	<b>NOTTINGHAM ANALOG STUDIOS</b> (408) 971-6159 nottinghamanaloguestudios.com

## EQUIPMENT REVIEW - FOUR LP PLAYBACK SYSTEMS FROM \$450 TO \$2K

video). Music Hall supplies its own Tracker pickup, Sumiko's one of its Oyster models. Music Hall's package costs \$450, Sumiko's \$699.

The tonal balance of the MMF, which comes via the UK, is weighted squarely in the midrange, albeit with a little more upper-midrange, lower-highs energy than I like, but which seems to appeal to contemporary British tastes for a little extra brilliance. The low end plumbs no depths—probably a good thing, given the lack of suspension—but is well balanced with nice enough definition. I went immediately to the demanding Bernstein Carmen on DG, the beginning of Act IV, the festivities outside the bullring. My notes run to “very pleasing,” bass “a little whompy,” “excellent lateral soundstage, foreshortened depth.” Despite a tendency to homogenize textures and colors in this most colorful of recordings, I found myself caught up in the sweep of the performance.

Switching to the Xpression III brought an all around improvement, not dramatic but noticeable: more precision in the imaging, wider, deeper soundstage, better clarity and rendition of tone color. Tonal balance is also more natural. Neither setup can boast an especially wide dynamic envelope, but the Xpression's opens out a bit more.

Classic's Kind of Blue reissue brings a study in contrasts. The Xpression is at all times smooth and mellow, even when the saxophones and Davis's trumpet should have more of the edge they display on more accurate setups, a quality certainly in evidence on the MMF. But the MMF also sounds less at ease and more confined.

One of the best tests I know for resolution remains the unaccompanied “Moon River” on Jacintha's Autumn Leaves [GrooveNote], where

the feed chords from the piano bleed ever so slightly through her headphones. No surprises: both setups caught some, missed others (most), the Xpression a bit more able to separate them out.

Big stuff again: on Argo's Procession of Carols for Advent Sunday, from King's College, Cambridge, choir, large congregation joining in the hymns, and powerful pipe organ, both did surprisingly well for such modest setups. The Xpression revealed greater clarity and detail, finer resolution of movement, and a fuller, more integrated soundstage. To take just one small example: when minister reads the lessons, the Xpression lets you hear his voice echo all the way across the soundstage, whereas the MMF more or less confines it to right side where he is situated. The trebles hitting their highest notes constitute as torturous a tracking test as I know: both pickups stopped just short of positively shattering, while their suppression of surface noise, pops, ticks, and the like is average.

The strength of the both the MMF and the Xpression is that they embody the analog warmth that many like, their limitations for the most part subtractive rather than additive, always the preferable compromise.

### THE NEXT LEVEL

The British firm Rega's P3-24 comes with Rega's RB301 arm and Exact 2 pickup, the package selling for \$1390, a \$100 savings below the same items purchased separately (the arm and pickup are available separately, the turntable only with the arm). The P3-24 derives from the P3—as do both the Pro-Ject and Music Hall turntables—which beginning in the early eighties was for the better

part of almost two decades the budget alternative in the UK if you couldn't afford a Linn Sondek. Familiar from the P3 are the felt mat and glass platter, svelte low-profile plinth (wood composite but here lighter and more rigid), rubber feet, and dust cover (very effectively decoupled). But the skin-deep similarity belies a new motor, derived from the more expensive P9's, boasting lower vibration, obviously desirable when mounted directly to a plinth this lightweight and rigid. The RB301 arm is also an improved version of the RB300 (maybe the highest selling arm in the

world and subcontracted by many other turntable manufacturers for their own integrated packages). As with the Music Hall and Pro-Ject, set up is baby simple and foolproof.

The P3-24 improves upon the MMF and Xpression in all areas. The Bernstein Carmen immediately shows off the P3-24's attractive personality: big and bold, with a lot of warmth and color. Those on a tight budget looking for some suggestion of the size and scale that super tables provide may find their dreams addressed, if not answered. The festivities outside the bullring





## EQUIPMENT REVIEW - FOUR LP PLAYBACK SYSTEMS FROM \$450 TO \$2K

explode with much of the vigor and vitality of more expensive rigs, and even a good bit of the control. Ultimate depth is lacking but the soundstage is wide, and all the complex comings and goings of the various groups within it are handled with considerable aplomb. Bass is ample with more definition and less “whomp” than the previous two entries.

Overall tonal balance favors the midrange, lower midrange, and mid- and upper-bass, with a lot of warmth and body that make this among other things a vocal lover’s dream, or any other kind of acoustic music as well. It catches the distinctive timbres of Doris Day and Jacintha superbly, the same for Sinatra and the older Fitzgerald (both notoriously difficult to get right if there is any deficiency in the lower midrange).

Transparency, clarity of line and texture, and vividness of tonal color and timbre are also areas where the P3-24 setup represents an easily audible step above the economy alternatives. A couple of magnificently raucous recordings of period festivals staged for the microphone easily demonstrate its superiority, the Rega reproducing the soundstages to realistic effect. On *The Christmas Revels* and the glorious *Fete de l’Ane* (a magnificent Harmonia Mundi recording from the eighties reissued by Speakers Corner), the P3-24 is lively, dynamic, and highly involving, the varied colors of the motley collection of “olde” instruments a cornucopia of aural scents and flavors. Period bells and other high-lying percussion have the kind of zing that suggests the *Exact 2* is a little topky—reminding us that this, like the MMF, is also a contemporary British design—but I do mean a little, the rise smooth and easily corrected with a good tone control.

Kings’ College Advent Sunday Procession of Carols torture test was likewise reproduced with greater control, finesse, and imaging specificity (crucial in this recording, where the choir comes in the from the back, crosses, seats itself on the right, then retraces its steps at the end of the service). Excellent tracking and handling of surface noise and other vinyl non-desiderata.

On Classics’ *Kind of Blue* reissue, the Rega projects the instruments more into the room, as it were, and there’s some welcome bite and edge to the saxes and trumpet when called for. Bass is also deeper and more extended, cleaner and more articulate too. However, certain notes in the bass jumped out in such a way as to suggest that the lack of any sort of isolation apart from the rubber feet is allowing a small cluster of resonances to be excited. Turning down the volume eliminated or otherwise reduced this effect, which further suggests it’s feedback related. (A reason why I think this effect more noticeable on the Rega than on the MMF or Xpression is, ironically, the Rega’s fuller, deeper bass response.)

The importer also sent along Rega’s TT PSU (\$375), an outboard power-supply with a built-in amplifier that generates a 24-volt AC balanced-signal of less than 0.05% distortion, claimed to be unaffected by fluctuations in line voltage. The not subtle improvement brings a significant increase in overall control, composure, dynamic range, and pitch stability. One example: the opening of Classic Records’ 33-reissue of Belafonte at Carnegie Hall reveals more stable imaging, a wider, deeper soundstage, better ambience retrieval, greater clarity and definition (especially in the bass), a presentation at once more relaxed yet involving.



Substantially more expensive than the Xpression and MMF, the Rega P3-24’s level of performance is easily commensurate with its cost. Moreover, the RB301 arm is good enough to handle considerably better pickups.

### THE “AUDIOPHILE” ALTERNATIVE

If those quotation marks look ominous, they’re meant to. At \$1999 sans pickup, Nottingham Analogue’s Interspace Jr. with Ace Interspace Arm is by far the most expensive in this group and by an equal measure the most frustrating, an “audiophile” product in the best and worst senses of the word. Also the quirkiest, to wit, according to Nottingham’s chief designer/guru Tom Fletcher, any motor strong enough to bring a platter up to speed generates enough vibration

once the platter is rotating to degrade the sound. (I have no opinion on this, but I wonder how the folks at Basis, SME, Sota, Linn, etc. would reply.) Fletcher’s novel solution is to eliminate the on/off switch and keep the low-torque motor running all the time; to play a record you give the platter a spin by hand to bring it up to speed; when finished, you stop it by hand. (Cross my heart I am not making this up.) I confess I rather enjoyed this idiosyncrasy, not least because stopping play and stopping the platter now become one operation—which may suggest I’m easily amused, but as you may be less so, forewarned is forearmed.

As to the worst, let me add them up. This is the one package here that requires the end user to mount the tonearm and supply his own pickup—the superbly neutral Ortofon 2M Black, reviewed

## EQUIPMENT REVIEW - FOUR LP PLAYBACK SYSTEMS FROM \$450 TO \$2K

by Neil Gader in TAS 182, struck me as an appropriate match in performance, price (\$599), and type (it's a moving-magnet). Yet Nottingham's "instructions"—this is one of those products that requires a fairly prodigious sense of irony—consist of four scrappily printed, barely stapled-together sheets of paper with photographs necessary to do the job so lacking in resolution as to be useless. I imagine most people who've set up a turntable will be able to figure it out, but how encouraging is that? The unipivoted Ace Interspace arm—who invents with these monikers?—has two omissions. The lack of a finger lift is merely annoying (I really hate headshells that lack fingerlifts, but at least the Ace's cueing is accurate). Inexcusably stupid, however, is the absence of any means of securing the arm when not in use. Admittedly, Nottingham flanks the cueing platform with posts that prevent the arm from swinging too far in either direction (though they're hardly foolproof); but if the platform isn't in the up position, the stylus could still be damaged. And relocating this setup requires lifting and walking very carefully, otherwise the arm bounces around like a pingpong ball.

It gets worse: there is an antiskating mechanism but not a single word anywhere in the "instructions" about how to set correct values. A bit of Internet research informed me Fletcher suggests setting it by ear—exactly the kind of careless snottiness that makes people impatient with high-end audio. Yes, of course, I too use my ears to set anti-skating, but only to trim it in, not to find the correct ballpark-setting in the first place, which is the job of the engineers to establish consistent with arm geometry, bearings, tracking force, etc..

One thing more, the worst: the interconnects, quite long as tonearm cables go, are without



question more susceptible to picking up stray 60Hz hum than any I have used in over four decades of playing vinyl. Even crossing them over an AC cord at a right angle doesn't much help, and don't even think of running them parallel to one. At one point I wound up balancing them over a double-fold album propped on end in order to get the hum unintrusive at listening levels above moderately loud. As the cables are hardwired, changing them is not an option. Do not even consider purchasing this product without being absolutely certain that any hum is inaudible at your typical listening levels in your system in your home.

In view of what I've just described, you'd be right in thinking I'd have liked nothing better than to pronounce this a stinker and call it a day. But, as I say, this is also an audiophile product in the best sense. Once I cued up the first LP—the Bernstein Carmen again—it became obvious within, oh, five seconds that this also is one very good-sounding setup. I don't need a lot of words here. Suffice it to say that in every aspect and area of reproduction and with every LP I've discussed so far, the Nottingham easily eclipses the economy-priced setups in all aspects of performance and matches or noses out the Rega in most. With a tonal

balance slightly to the warm, dark side of neutral, the Nottingham/Ortofon setup displays a solidity in the imaging and soundstaging and a musical life and vitality against an impressively quiet background (once you deal with the hum issue) that begin to suggest more expensive setups (suggest, not approach or duplicate).

One large reason for this, I believe, is the Nottingham's substantial, heavy, and dense plinth, which makes the Jr. one of the very few non-suspended turntables I've used that does a pretty decent job of isolating the stylus/record interface. A light tap on the plinths of any of the other three sends a "bonk" loud and clear through the speakers. But you can tap the Jr.'s quite vigorously without hearing much of anything. (That the Jr.'s platter is also heavy and better damped is also to the point.) And make no mistake, this translates into a real-world performance advantage: long before structural-borne acoustic feedback actually breaks through, it makes itself felt as a subtle—or not so subtle, as the case may be—smearing of articulation and muddying of detail in the bass, a vague clouding over in the lower midrange, a general loss of dynamics. The Nottingham betrayed little hint of these unless played very loud (see sidebar).

The last thing I played before wrapping things up is Henryk Szeryng's elegant, silver-toned performance of Bach's first Partita for unaccompanied violin from an old Odyssey release, the instrument so magically suspended in air as to banish all thoughts of a diamond tracing vinyl grooves. The Nottingham's lovely musicality, its lifelike way with voices and instruments, its freedom from undue stress and strain at all but loud listening levels—these attracted me in a way



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### GINGKO AUDIO VIBRATION CONTROL PLATFORMS

As I was nearing the end of the survey, Gingko Audio, which has been marketing dedicated isolation platforms for VPI turntables, sent its Cloud 11 Vibration Control Platform (\$449). Designed by Vinh Vu, one of the company's two partners, Gingko's platforms make ingenious use of rubber balls for isolation and a kind of suspension. The 11 comes with a total of five balls and will support up to fifty pounds—figure 10 pounds a ball. Setup couldn't be easier: Place the balls in dimples on the base, place the platform on top of them, place the turntable on it.

As I had wrapped up the survey with the Interspace, I started there, expecting little improvement, as its isolation already seemed so good. Less than a minute into *Kind of Blue*, I was picking my jaw off the floor. The improvement was staggering: in the bass alone, greater clarity, definition, detail, pitch stability, and dynamic range. Removing the Cloud resulted in an undifferentiated wodge, thick, phlegmatic, and mushy. The Bernstein *Carmen* was even more revelatory: greater clarity and control all across the band and up and down the scale, far greater inner detail and imaging stability, an overall presentation smoother, more natural and relaxed.

Inasmuch as the Interspace was less excited by external disturbances to start with, I expected I'd hear even more dramatic improvements with the lower priced turntables. Not so. There was still improvement aplenty, but not to the degree I expected. Then I remembered that the MMF, Xpression, and Rega setups are all too lightweight to work op-

timally with the 11. Using three balls in a triangular configuration—the minimum possible—requires a 30-pound component, which leaves the Rega ten pounds shy, the other two more than that. Vu then shipped two prototypes soon to go into production: the Cloud 14B (\$499) and the Cloud 14A (\$599), both of which have wooden inlays to increase weight, while the 14A also boasts a thicker, heavier platform. This was more like it, a substantial improvement along the lines discussed so far, and it gets better as the platforms get heavier. The 13A also brought a noticeable increase in definition of texture as well as of pitch. A non-audiophile friend happened to stop by and I asked him to listen. His words: Off the Cloud “the bass sounds bigger but very indistinct, almost watery”; on the Cloud, “it's tighter, and everything else sounds more precise—cleaner.”

The bottom line? With loud playback levels and/or big, demanding music, especially in the bass, the effect of taking any of these four turntables off the Gingko platforms is to make it seem almost literally broken. Which raises the question why I didn't hear them that way during the survey? Three reasons, I think. First, once I began the evaluations, which consumed two months, I resolved to do all my serious listening through only these four turntables, nothing else. Constantly comparing them to the reference Basis 2200/Vector IV/Ortofon Windfeld setup would have been unfair. It is a curious fact of the way our audio memory works that we quickly become adjusted to the terms and conditions of whatever the listening

experience happens to be. This is a good thing—otherwise how could we enjoy the systems most of us own after hearing the very best, let alone live music?

Reason two is that improvements wrought by the Gingkos were confined mostly to louder playback levels, big or complex music and ensembles, and/or bass frequencies. Which leads to reason three: Once I had become accustomed to the combined performance of these turntables as the broad “norm,” it was only in retrospect that I realized I had also begun to adjust my listening habits to their limitations, especially as regards volume levels. I am not a headbanger, but I do like natural levels, which can sometimes be loud. Yet throughout the two months I had been holding the levels to moderate at best to avoid exciting vibrations that stress and strain the reproduction.

My experience with after-market isolation platforms for turntables is limited to the Gingko Clouds and Max Townshend's Seismic Sinks. The Sinks are more effective, not least because they are heavier and better damped, their more compliant “air-bladder” suspension (i.e., a tube that you fill with air using a bicycle-tire pump) managing to get the resonant frequency down really low, around 3Hz or below, as compared to the Cloud 11's 13Hz. All this makes for better isolation and filtering of structure-borne disturbances.

When I raised this issue with Vu, he said that users have experimented with other balls, including squash balls, which, being squishier, would lower the system tuning and improve compliance.

(I note with interest that Max Townshend once said that squash balls placed under a home-made platform would come close to achieving what his Seismic Sinks do.)

But after-market isolation platforms remain band-aids. Like the Townshends, the Gingkos are exceptionally good band-aids that I recommend virtually without qualification; but I would still personally choose turntables with true tuned sprung or floating suspensions, because isolation is more effectively addressed.

The Gingko isn't going to make a \$450 MMF as good as a \$900 Rega P3-24 in all the areas where the Rega is superior. But at louder listening levels it will improve bottom-end definition, clarity, pitch, and overall dynamic range. Of course, putting the Rega atop a Gingko then raises the Rega above the MMF to the same degree.

Is it worth adding a Gingko to a turntable like the MMF, which more than doubles the cost of the setup? It seems an absurd proposition, yet the improvements are more audible than what you will hear from most accessory products, including cables, interconnects, line conditioners, cones, pods, pucks, mats, clamps, weights, yak, yak, yak. But, hey, you can answer the question yourself, thanks to Gingko's 30-day money-back guarantee, to which I'll add a guarantee of my own: put on *Kind of Blue* at a healthy level and listen for thirty seconds—the difference will be loud and clear in all senses of those words. The pun is as unavoidable as it may be egregious, but the ball's now in your court. **PS**

## EQUIPMENT REVIEW - FOUR LP PLAYBACK SYSTEMS FROM \$450 TO \$2K

that nothing else in the survey quite did.

### RECOMMENDATIONS AND CONCLUSIONS

While it's obvious in this survey that performance rises with price, all four products offer good or better value. The Nottingham gets a little closer than the rest to the super 'tables in several areas; but I am far from certain that over the long run I could live with its idiosyncrasies or its touchy susceptibility to hum, much as I like the sounds it makes. Also, keep in mind that Rega's outboard power supply still brings the total of the Rega setup in at \$234 under the Nottingham's sans pickup. The price of pickup that most users will buy increases this difference by another \$400-800, more than enough to outfit the Rega with a good after-market isolation platform, which in turn elevates its performance considerably. I'd buy the Rega for the best compromise among price, performance, reliability, and ease of setup and use.

In fact, I did buy the review sample of the Rega because I have use for a turntable in my editing rooms, where every now and then we need to import an LP into the AVID for temp music in a feature I'm editing. The P-24 is nice sounding, attractively priced, and so easy to carry I can tuck it under one arm. But when it comes to my home system, my serious system, I just need something better than any of these setups. If that sounds cavalier in an economy that's declining as vertiginously as ours at the time of this writing, it's all a matter of perspective and priorities: my wife and I drive cars we purchased second-hand and keep a long time, and I am perfectly content with timepieces by Timex and Fossil.

Which is to say that if the \$2700 for the

Nottingham/Ortofon were coming out of my checking account, then inasmuch as I consider suspensions an absolute necessity for serious vinyl playback, I'd buy instead a Sota Sapphire (\$1995), a Rega RB301 arm (\$495), and any good \$200 pickup by Ortofon, Sumiko, Clearaudio, the usual suspects. Owing in large part to the peerless isolation of the Sota's renowned suspension, this would get me not only better performance right away (especially at louder levels), but also the ability later to add Sota's vacuum hold-down/electronic flywheel (equivalent to Rega's TTS PSU) and better pickups. Yeah, yeah, I know, that's already a long way from the modest point-and-shoots where this survey began. But, hey, vinyl's an insidious enchantress that way—like the sirens of yore, she's always beckoning you further and further out . . .



# Clearaudio Concept, Pro-Ject RM-9.2, and Thorens TD 160

## Three Affordable Turntables

Wayne Garcia

**F**or me, the analog versus digital debate is similar to one in the wine world, where “Old” versus “New” World advocates often engage in passionate arguments in defense of not only their preferred regions, but styles, winemaking techniques, and flavor profiles. And though I enjoy many New World wines, I’m a strong advocate of the Old World. Because to me, if you really want to understand what pinot noir or chardonnay are all about, then you need to know Burgundy; or for the cabernet lover, Bordeaux; or for sangiovese, Tuscany. After all, these regions have been making wine and cultivating these same varietals in the same vineyards since the Middle Ages, and are where these grapes have consistently achieved the greatest possible expression.

When it comes to music reproduction, as advanced technologically and sonically as digital currently is—and one assumes that progress will only continue—there remains, to these ears, a degree of expressiveness, call it heart or soul, to analog that continues to elude even the best digital. I’m not saying that I don’t enjoy listening to digital recordings, but that over time, I, like other audiophiles I know, have drifted back to playing mostly vinyl LPs.

That said, there’s plenty of room in life for us to enjoy a New World pinot as well as an Old World one, or a compact disc or digital file alongside a

vinyl LP. But since this issue is all about analog, we thought a look at three reasonably affordable turntables would be of interest to not only potential first-time buyers, but also to those who already love analog but might be curious about what you get at three different price levels.

### CLEARAUDIO CONCEPT WITH MC CONCEPT CARTRIDGE

Let’s get this out of the way right now—Clearaudio’s new Concept turntable and cartridge combo offers a hugely rewarding analog experience at a very attractive price. The ’table alone sells





# EQUIPMENT REVIEW - Clearaudio Concept, Pro-Ject RM-9.2, and Thorens TD 160

for a reasonable \$1400, and the cartridge goes for \$800. Bundle them together, as many other manufacturers are also doing, and you save a few hundred bucks: Importer Musical Surroundings sells the pre-set-up package for an even \$2000. Made in Germany, the Concept is a sleekly handsome, low-profile design that, as with designs from companies like Rega, relies on a low-mass, non-resonant plinth and carefully designed working parts to make its musical magic. Moreover, for those who want an audiophile-grade

playback system without having to futz with the sometimes nerve-wracking job of setting the thing up, the Concept is about as “plug-and-play” as you can get. The cartridge is pre-mounted at the factory, and critical issues such as overhang and offset angle, tracking force, VTA, and azimuth are all pre-adjusted. All you need to do is level the unit via the three tiny spiked feet, mount the belt and platter, and you’re ready to go. Note, however, that the factory settings are worth double-checking. For instance, although the basics were

just fine, in transit the tracking force had shifted upward from 2.0 to 2.5 grams, and the azimuth was off a few degrees. For something meant to track groove walls measuring mere hundredths of an inch, these are not insignificant differences, as I would hear (and easily correct). The 30mm (approximately 1.18”) thick Delrin platter rests on a lightweight sub-platter that is belt-driven by a decoupled DC motor. A handy control knob allows you dial-in speeds of 33.3, 45, or 78rpm. The latter may not be something

many of us will use, but for vinyl lovers whose record collections span the decades it is an unusually welcome touch. The new Verify tonearm features a “friction-free” magnetic bearing. It too, is a handsome thing that exudes the same quality of construction found throughout this design. The arm, like unipivots, takes a little getting used to because, unlike fixed-bearing arms, it feels as if it might float away once it’s left the armrest. Excited to hear what the Concept sounded



## SPECS & PRICING

**Clearaudio Concept**  
Belt-drive, unsuspended turntable  
**Speeds:** 33.3 and 45 rpm  
**Dimensions:** 16.5” x 5” x 13.8”  
**Weight:** 28 lbs.  
**Price:** \$2700 (see “Pricing and Options” sidebar)

**Pro-Ject RM-9.2 with Sumiko Pearwood Celebration II**  
Belt-drive, unsuspended turntable  
**Speeds:** 33.3 and 45 rpm  
**Dimensions:** 17.4” x 7” x 12.8”  
**Weight:** 27.6 lbs.  
**Price:** \$2499, turntable only (\$3999 with cartridge)

**Thorens TD 160 HD with SME M2-9 arm**  
Belt-drive, unsuspended turntable  
**Speeds:** 33.3 and 45 rpm  
**Dimensions:** 17.7” x 7” x 13.5”  
**Weight:** 17.6 lbs.  
**Price:** \$4899

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## EQUIPMENT REVIEW - Clearaudio Concept, Pro-Ject RM-9.2, and Thorens TD 160

like, I did what most consumers are likely to: After getting the 'table leveled and the motor spinning, I started to play a favorite record. But the arm felt a bit off. That was verified—oops, no pun intended—by the first few seconds of Dylan's "Tangled Up In Blue," from 1974's *Blood On The Tracks* [Columbia], which sounded tonally unbalanced and lacking in rhythmic drive. This was when I discovered the shifts in the arm setup noted above. So while the Concept is *close* to ready to go out of the box, be sure to check any factory settings to ensure that they haven't been affected by transport.

Once tweaked, "Tangled Up In Blue" came back to life. The midrange—Dylan's voice, the acoustic rhythm guitars—was naturally balanced and musically involving. The brushed cymbal and snare and the kick-drum added dynamic momentum and punctuation, aided by good clarity, transparency, and a solid overall balance. With Jascha Heifetz's recording of Bach's *Unaccompanied Sonatas and Partitas* [RCA], the Concept brought a convincing sense of the instrument's presence, and the great fiddler's legendarily masterful technique—a tribute to the design's dynamic nuance and rhythmic precision. And as I heard with the *Third Tableau* from *Petrushka* [Athena/Decca], the same Ansermet-led performance I used in my cartridge survey elsewhere in this issue, the Clearaudio setup did an impressive job reproducing the air and space from which the orchestra emerges. While other, more costly designs, may better it by comparison, this \$2000 rig will not leave you wanting for much. The same goes for the loudest dynamic peaks, which come close, if not all the way, to being as explosive as those I hear from

my reference TW Acoustic turntable, Tri-Planar arm, and Transfiguration Phoenix cartridge. Pizzicato strings, cymbal crashes, thumped bass drums, and fluttering winds were effortless sounding and engaging, with a very fine sense of depth and detail, as, say, when the solo trumpet reverberates off the rear wall of the hall during the "Ballerina's Dance."

To put this in perspective, the cartridge in my reference vinyl playback system sells for \$500 more than this entire package—and my entire

setup costs six times as much. Although I'm not going to tell you that the Clearaudio Concept equals that performance, what I will tell you is that it is good enough in all the ways that count—resolution, dynamics, low-noise, and that hard-to-pin-down thing I'll call musical involvement—that I enjoyed the hell out of my time with it. Couple that with its terrific German build and finish, and the Concept strikes me as a hands-down bargain.



### PRO-JECT RM-9.2 WITH SUMIKO PEARWOOD CELEBRATION II CARTRIDGE

For \$2499 you can get Pro-Ject's new RM-9.2 as a stand-alone turntable. You may also consider one of the attractive bundles that U.S. importer Sumiko offers, which will pair it with either a Blue Point Special EVOIII cartridge (\$2749) or a Sumiko Blackbird cartridge (\$2999). And though I'm usually hesitant to spend other people's money, I'm going to suggest leapfrogging over those perfectly fine cartridges to go with Sumiko's third option, which is the RM-9.2 with Sumiko's Pearwood Celebration II cartridge (\$3999). By doing so you will not only save \$500 over their separate purchase prices, you will also get what I consider to be one of the great values in analog playback today.

An update of the RM-9.1, which Jim Hannon reviewed in these pages and which also received a Product of the Year Award in 2006, the 9.2 builds on that excellence with a few key upgrades. The three feet that fit into the underside of the plinth now feature "magnetic repulsion" (also rumored to be the title of Roman Polanski's next movie), which is said to "allow for isolation and mass to work in tandem to help filter resonances out of the 'table.'" The feet are also height-adjustable for precise leveling. In addition, the latest 9cc EVO carbon-fiber arm has a denser carbon-fiber weave to reduce resonances, while a new and more massive C-Collar adds rigidity to the bearing housing, which Sumiko says enables the arm and cartridge to be more nimble in a record's grooves. The arm's counterweight is now damped with Sorbathane, and it's also taller and less deep, which puts it closer to the bearing's pivot-point for greater freedom of movement. The final

## EQUIPMENT REVIEW - Clearaudio Concept, Pro-Ject RM-9.2, and Thorens TD 160

touch is more in keeping with a clean aesthetic design—the anti-skating weight now loops onto the C-Collar without having an additional, klugey-looking “clothes-line” holder sticking out from the arm’s pillar.

Upgrades to the original Pearwood Celebration include a new handcrafted Pearwood body, a more refined long-grain boron cantilever, and a new “ultra-low-mass Ogura Jewel Co. P9 (Vital Design) stylus.”

I do have one minor complaint that I hope Pro-Ject will take as constructive criticism: The cartridge connecting pins on the arm leads are of the old-fashioned split-triangle variety, which for some perverse reason are usually either too loose or too tight for most cartridges. They were too loose for the Celebration, which required me to ever so gently apply pressure with needle-nose pliers to get a snug contact. I hate having to modify factory parts, especially ones as delicate as these, which are easily damaged. Moreover, these leads are unworthy of a place on what is otherwise such an outstanding product.

Sonically, the combination is remarkable in ways that hold strong appeal for both the music lover and the audiophile in me. The Sumiko is notably easy and relaxed, yet also rhythmically incisive and dynamically explosive. It is warm and rich, yet also detailed and transparent.

These traits are simply there, no matter what music you spin over this outstanding combination. Jascha Heifetz’s *Bach* washes through the room, conveying the great violinist’s astonishingly articulate technique, dynamic expression, and powerfully resonant tone. His *Strad*’s rosy strings and richly resonant body are fully present—naturally warm, with a sweet,

liquid tone.

And though Dylan’s “Tangled Up In Blue” was smooth and freewheeling, the RM-9.2/Celebration II never sounded polite. Instead, the churning rhythms of the acoustic guitars and persistent snap of the brushed high-hat and snare and kick drum were delivered with a terrific sense of drive and musical momentum. One of Dylan’s finest vocal performances came across with just the right balance, with his one-of-a-kind phrasing and quirky inflections naturally rendered: “I must aD-mit I felt a little uneasy when she bent down to tie the l-Aa-ces of my shooooooooes/Tangled up in bluuuuuuue.”

Or again check out that Third Tableau from *Petrushka*. Team Pro-Ject/Sumiko conveyed a large and open soundstage of gorgeously toned, warm, and broodingly textured strings. Winds and brass, too, were outstanding—blazing horns, nasal oboes and bassoons—while the percussion battery was just as startlingly explosive as it should be. Again I was impressed by this pair’s easy sense of resolution across the frequency range. It really allows you to hear *into* the performance, and yet in no way is the sound analytical. And the sense of the third dimension is both natural and thrilling. Wait until you hear the sound of the solo trumpet reverberating off the rear walls of Geneva’s Victoria Hall, as it did when this performance was recorded back in 1957.

Though I prefer not to gush about these things, ORG’s just-released—and knockout sounding—45rpm set of Ella Fitzgerald’s *Rodgers and Hart Songbook, Volume 1* just about made me melt. On “You Took Advantage Of Me,” Ella’s unparalelledly creamy voice—surely one of the loveliest instruments in all of jazz—was



presented with a breathtaking sense of air and physical presence. She’s right there—front and center—with an equally present and natural-sounding ensemble to the sides and in back of her. Rhythm, pace, and musical drive were once again top-notch.

The Pro-Ject RM-9.2 and Sumiko Celebration II are easily one of the most musically engaging and satisfying setups I’ve had the pleasure to evaluate. They’re a great value, too. Mark it, Dude!

### THORENS TD 160 WITH SME MODEL M2 ARM

The audio bug bit me before I was old enough to drive. And before too long, license in my wallet, I began exploring the Bay Area’s (then stellar) array of specialty audio shops. The classic Thorens TD

160 MKIII, with its beautiful teak plinth, signature teardrop shaped knobs, and Isotrack arm is a unit I remember seeing—and lusting after—on many occasions.

Today, Thorens offers a modern take on the TD 160, which is available for \$2899 with Rega’s 250 arm, or \$4899 with an SME Model M2, which, unusual among today’s arms (though it, too, is something of a “classic”), features a detachable headshell for those who want to more readily swap out different cartridges.

Although it is based on the old 160, including the overall dimensions and supplied dustcover, the new model differs in several areas. In place of the old steel-spring suspension, the new 160 uses a “flexible plastic” conical suspension that, while not free-floating like the old suspension was, dampens the platter, motor, and arm-mount



## EQUIPMENT REVIEW - Clearaudio Concept, Pro-Ject RM-9.2, and Thorens TD 160

section from within the plinth. The single-piece acrylic platter contains a molded sort of sub-platter underneath, which is where you first place the belt, which in turn needs to be stretched out and over the synchronous motor's pulley with the supplied tool. It's a slightly awkward maneuver, but not that difficult to achieve on the first try. Two platter mats are supplied, which appear to be made of a cork composite. The instructions inform us that they are to be used either singly or in tandem depending on the thickness of the record—an effective, if unusual way to deal with basic VTA. Finally, the 160's base plate, arm platform, and small, conical, adjustable feet are made from what Thorens calls RDC (Resonance Dampening Compound).

If I find the choice of the SMEM2 arm an interesting one, in that, while it is as well engineered and built as one would expect from this venerable British manufacturer, it is not exactly a modern arm. Setup is a bit clunky; the cartridge pins are of the same frustrating type I described above (which again required the needle-nose treatment); the tonearm leads are short—they barely reached my phonostage, even after I placed the 160 as far back on my turntable shelf as I could—and while convenient for those who own more than one cartridge, that detachable headshell does not provide either the rigidity or coupling of a single-piece wand. As to a cartridge, for evaluation purposes I mounted the Transfiguration Phoenix (\$2500), which is my current reference for its combination of musicality, resolution, and lack of hi-fi artifacts.

Beginning with the Heifetz Bach LP, I found the TD 160/SME to be quite lively, with the

Transfiguration's natural voicing well intact. I did note, however, more groove noise than I'm used to, which seemed to also slightly diminish the music's dynamic ebb and flow.

On *Petrushka*, this quality manifested itself as a less transparent backdrop for the orchestra, in which the air around instruments and the illusion of three-dimensionality were good but somewhat audibly diminished by the not fully silent groove walls. Again, the tonal balance was very good across the range of orchestral instruments, but dynamic peaks were not as ultimately explosive as I would have liked.

My experiences with the Ella Fitzgerald and Dylan records were similar: The TD 160/SME combo was never less than warm and musically enjoyable, but it lacked the definition and transparency I've come to expect from today's best designs. **tas**

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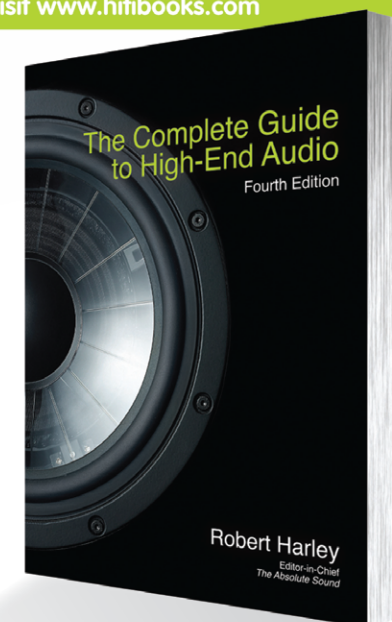
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# SOTA Sapphire Series V Turntable

## A Classic Revisited

Paul Seydor

The SOTA Sapphire turntable, which will be thirty next year, occupies an important place in audio history. Designed by the estimable David Fletcher (now retired from audio but the auteur of The Arm and the much missed Talisman pickups) and introduced in 1981, it put America on the map again as a manufacturer of state-of-the-art turntables (the acronym gave the company its name). The Sapphire was the first of just two turntables, the other being the Oracle, to challenge the near-decade-long hegemony of the Scottish Linn Sondek LP12 as the putative “best in the world.” No matter that such global pronouncements are unprovable and serve mostly to massage someone or other’s ego, thus began the so called “turntable wars” of the early eighties, the big three combatants the LP12, Oracle Delphi, and SOTA Sapphire.<sup>1</sup> For all the hectoring and acrimony that ensued—more among dealers, consumers, and audio reviewers, it’s worth pointing out, than among the designers themselves, who were friendly and oftener than not amused by the *sturm und drang*—all three shared two design principles that originated with Edgar Villchur’s Acoustic Research AR XA turntable from the late fifties: belt drive and tuned suspensions as a means of isolating the pickup/stylus interface from acoustic feedback and other environmental disturbances.



Each product had its champions (or defenders) and each had legitimate virtues and shortcomings. Linn, a pioneer in asserting that turntables do in fact affect the sound beyond such obvious matters as rumble and speed accuracy, boasted outstanding speed constancy and resolution, the precision machining of its bearing assembly without equal at the time (and even today bested by only a very few much more expensive competitors). But it also had a suspension that was difficult to set up, easily disturbed, and typically in need of readjustment over time, and a sound that, whatever its “tunefulness,” was moderately colored, especially in the mid and upper bass (in my opinion, in the upper midrange and highs too). The Oracle had an extremely sophisticated suspension system—superior

to the LP12’s, though even more notoriously difficult to set up—and exhibited fewer colorations and a beautifully transparent and airy presentation. The Sapphire brought a considerable increase in tonal neutrality, deep bass, and an altogether more balanced presentation; and despite some early speed-regulation teething-problems from the inconsistent Papst DC motors, the design reigned supreme in the areas of suspension tuning, long-term stability, ease of setup, and sheer effectiveness in isolating the turntable from its environment.

After introducing the Sapphire—named for the sapphire thrust-plate of the inverted bearing used in most SOTA turntables—Fletcher and his associate Rodney Herman went on to develop the first vacuum-hold-down platter

## EQUIPMENT REVIEW - SOTA Sapphire Series V Turntable

that actually worked and didn't damage records. With the record held in intimate contact with a platter that was also heavy and well damped, vinyl resonances were reduced by an order of magnitude and warps were rendered effectively nonexistent. Together these brought huge gains in significantly quieter backgrounds (i.e., suppression of the grunge and surface noises typical of vinyl playback) and much improved tracking. Thus was born the Star, and eventually the Cosmos, which remains SOTA's flagship suspended turntable. But the start of it all was the Sapphire, which despite two changes of company ownership retains the distinction, I believe, of being the turntable with the greatest product longevity without a change in model designation or fundamental design, and with complete backward compatibility.<sup>2</sup> The current owners, since 1997, are Kirk and Donna Bodinet, who retain Fletcher as a consultant, thus further ensuring product continuity and design expertise.

For most companies an achievement like this would be cause for celebration. But the Bodinets are a modest and prudent couple, so there appears to be no thirtieth anniversary model in the works. In lieu of which I thought it appropriate to revisit the Sapphire and see where the latest version stands in today's vinyl renaissance. I refer readers to my review of the SOTA Series III Cosmos in TAS 145 for a thorough description of how beginning with the fundamental laws of physics Fletcher reframed the problems of turntable design, in the process coming up with a new paradigm that holistically addressed such diverse issues as isolation, suspension tuning, long-term stability, control and suppression of

vinyl and other resonances, and ease of setup and use, including the ability quickly and easily to accommodate and thus change out tonearms of widely varying weight and type.

"Breakthrough" may be too strong a word, but Fletcher's design was certainly highly innovative and could easily claim several firsts, perhaps the most important being to combine two distinct and separate approaches to isolation and resonance control. Before the Sapphire, turntables with pretensions to state of the art either had tuned suspensions, such as the AR or the Linn, or were non-suspended, that is, fixed, sometimes on bases of high mass. The tuned suspensions were far more effective when it came to isolation, but the subassemblies were so light that unless placed on sturdy platforms (or preferably on shelves attached to walls) they were easily jostled, especially in the lateral plane, by activities as normal as walking.

Fletcher synthesized these two approaches by suspending a heavy platter and subassembly from springs, thus allying the superior isolation of a tuned suspension to the greater stability (e.g., resistance to jarring) of high mass. In the case of the Sapphire, this translates to a 14-pound platter mounted on a dense 22-pound subchassis. It also helps that, unlike the AR or the Linn, SOTAs employ a four-point *hanging* suspension, not the three-point kind that uses pressure adjusted springs which can easily go awry and that can be right only for an arm of a given weight. Suffice it to say that even after three decades, the isolation effectiveness of this system has rarely been surpassed and is equaled by only a few competing products (several Basis models, the SME 30). At 2.55Hz its resonant tuning is the

lowest of any turntable known to me.

Of course, raw numbers in and of themselves tell only part of the story. The quality of the springs, how they're wound or otherwise sprung, and the way damping is employed are equally important. The SOTA's springs are damped, but only minimally, the system depending on the weight of the platter/subassembly to stabilize it once it settles. One big advantage to this is long term. Assuming the springs are not hyperextended—an impossibility, as the subassembly will come into contact with the top of the feet long before the springs can be stretched beyond recovery—there's no reason why they should ever wear out. Another is that damping, because it stiffens the spring, always to some extent thwarts its compliance, thus reducing its isolation effectiveness, so the less you can get away with, the better. The trick is to dovetail the two to maximal interdependent effectiveness. In my experience no one has managed this better than A.J. Conti in the Basis turntables, but that contributes to very expensive designs. By using some damping but letting the springs and weight do most of the job, Fletcher's solution, elegantly simple, is effective in both application and cost. The weight of the platter also serves a damping function. Before the Sapphire the platters of all turntables known to me rang like bells when struck, the solution various soft mats between the platter and the record. The early Sapphires used a mat, too, but their platters didn't ring, producing instead a soft, dull thud when struck. Later SOTA platters used various layers of differing materials to reduce ringing even further, break up resonances even more, and eventually eliminate the need for a removable mat at all.

So if the basic design of the Sapphire is so sound that it remains unchanged to this day, what explains five series of revisions? There were too many changes to detail here, but mainly improvements in materials, damping, manufacturing techniques for better unit-to-unit consistency, motor, platter, and overall fit and finish. I'll note three representative examples. First, the subassembly now features a denser substrate for greater damping and the platter now incorporates machined cavities filled and balanced to the gram with constrained-mode damping, to reduce or break up resonances. The early removable platter mats have been replaced by SOTA's "Ultra-vinyl" mat that is pneumatically

### SPECS & PRICING

#### SOTA Sapphire Series V Turntable

**Rumble:** Less than -60db unweighted

**Wow & flutter:** Less than 0.04 RMS

**Suspension:** Four-point, stretched spring tuned to 2.55Hz

**Bearing:** Inverted

**Speeds:** 33, 45

**Dimensions:** 20-1/4" x 7-1/2" (to top of dust cover) x 16-1/2"

**Weight:** 44 lbs.

**Price:** \$2700 (see "Pricing and Options" sidebar)

#### SOTA SALES AND SERVICE

110830 S. Nagle, P.O. Box 247

Worth, IL 60482

(800) 772-SOTA

sotaturntables.com

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## EQUIPMENT REVIEW - SOTA Sapphire Series V Turntable

### PRICING AND OPTIONS

Debuting at \$795 thirty years ago, the Sapphire now costs \$2700 in the standard cherry finish and comes with SOTA's I Clamp and an MDF armboard precision cut for arm of choice. The increase seems fair given economic developments and product improvements since then (for comparison, the Linn Sondek LP12 retailed for around \$500 in 1972 and the entry-level now costs \$3590; the Oracle around \$1500 in the early eighties, the entry-level now \$8500). A series of optional extras includes a dust cover (\$215), the justly renowned Reflex Clamp (\$245 but only \$155 if acquired with a Sapphire), and the multilayered composite armboard (\$85), which offers superior damping and rigidity (an option I recommend and used on the model reviewed here). As for upgrades, pricing again varies with condition and vintage of the unit and extent of upgrade. If your plans are to bring an old Sapphire all

the way up to and then past a current one to, say, a Star with vacuum hold-down, there is something to be said for saving your dollars and doing it all at once, as the unit must be shipped to the manufacturer at your expense (not cheap given the weight of Sapphires). If you lack a convenient dealer, the Bodinets also offer a service whereby they will correctly set up an arm and pickup on any SOTA turntable and return the whole package ready in effect to plug in and play. (If the arm and pickup are purchased through SOTA, this service is free.) Finally, while there is no upgrade via retrofit path to the Cosmos from any models below it, the Bodinets do offer a trade-up policy, pricing again dependent on model, vintage, and condition of the traded unit. (The company offers a selection of attractively priced used SOTAs, which they lovingly restore to beautiful condition.)

pressed to the platter with high-grade EAR damping, an arrangement that makes for greatly improved record-to-platter contact and reduced vinyl resonances.

Second, the DC Papst motor, the one real *bête noire* of the early Sapphires, has long since been replaced by a superior high-grade AC synchronous motor. In older Sapphires the motor was mounted via an undamped metal plate to the plinth; in the new ones, a damped plate with rubber-encased well-nuts acts as a kind of shock

absorber. Together these changes result in even greater speed constancy and retrieval of musical detail.

Third, in the areas of fit and finish, Fletcher himself is the first to admit that, like many brilliant designers, once he completes a project conceptually, he becomes impatient with the execution. With The Arm, for example, for a while considered by many the best tonearm in the world, he always regarded his machinist as a co-designer. The early SOTAs didn't suffer much

in their basic performance, but they could be funky in their use of off-the-shelf parts, materials, manufacturing, even construction, and early on the company was far from meticulous in the selection of veneers. The Bodinets have attended to all this by offering a selection of beautiful wood veneers and solids that now extend across the top, machined bolts in place of the wood screws for the early armboards, a far more substantial dust cover, and myriad other aspects of the physical design and construction, including higher-quality parts. Clad in rich wood veneers and solids with a soft patina, the Sapphire remains handsome in a clubby kind of way that, rather like McIntosh components, is never *au courant* yet never out of style either. I've always found the clunky feet rather generic, but they are easily replaced by any number of after market cones or pods that fit the quarter-inch thread (including, I believe, the more far elegant ones supplied with the Cosmos).

How significant are these improvements in sonic terms? To audiophiles dedicated to what this magazine is all about and especially to those who love vinyl, they are very significant. But as is always the case with something that got the first-order solutions right from the outset, it's a matter of perspective. Not long ago I had occasion to install a new pickup in one of the earliest Sapphires ever made, circa 1982. Once I had finished, replaced the belt (which hadn't been done in over ten years), and cued up the first LP, I was immediately struck by how fine the whole setup sounded and was reminded again of one of the joys of SOTA ownership: There was nothing left to adjust, tweak, fiddle with, or otherwise worry over, literally nothing do except sit back and enjoy the music—all this from a turntable that

has been in almost daily use for 28 years!

This experience in turn reminded me of a point several distinguished audio reviewers have made again and again about SOTA turntables over the years, perhaps most succinctly expressed by the late J. Gordon Holt (for whom the SOTA was a reference) the last time he wrote about it (*Stereophile*, January 1988): "The sound from the SOTA is so solid and utterly tidy that it is all too easy to take for granted what a triumphant achievement it is: a turntable which, for the first time (in my experience), can be completely ignored. Like the ground you stand on, it's just there." Holt was talking about a Cosmos equipped with vacuum hold-down, but his words still apply to a considerable degree to a stock Sapphire. Indeed, vacuum or no, all SOTAs with suspended subassemblies are similarly unobtrusive, imperturbable, unflappable—they just plain *work*.

That "just there-ness" is the foundation of what has come to be known as the SOTA "sound": high neutrality and *very* low coloration; deep black backgrounds with commensurately wide dynamic range; rock-solid spatial presentation in both width and depth with equally exacting positioning within the soundstage; outstanding solidity, dimensionality, and texture to instruments and singers; and quite astonishing weight and depth in the bass. In all of these areas the latest Sapphires are better than their earlier counterparts, typically incrementally in each area but in the aggregate substantial. My ears also hear improved transparency, resolution, and pitch stability over the earliest models.

SOTAs have been a fixture of the audio world for so long now that, in lieu of a litany of

## EQUIPMENT REVIEW - SOTA Sapphire Series V Turntable

### ORIGIN LIVE TONEARMS

SOTA turntables in one form or another have been staples in my systems for almost thirty years, usually with arms by Sumiko or SME, occasionally a Rega. For this review, however, I wanted to try something new. Although the Sapphire is an excellent enough turntable to be used with the highest-quality arms, I decided upon a budget arm and a moderately priced one, both from Origin Live, a British firm getting enthusiastic press from across the pond. The importer, Jay Kaufman of Audio Revelation (Carlsbad, California, [audiorevelation.com](http://audiorevelation.com)), recommended the OL1 Modified (\$550), essentially a badge-engineered Rega 251, and the Encounter Mk III (\$1400), the lowest priced of the four arms wholly of Origin's own design and manufacture.

I began with the Encounter Mk III and the Ortofon Windfeld that has been my reference these last couple years owing to its absolute neutrality, superior tracking, and breathtaking transparency. A medium-to-high-mass arm most suitable for pickups of same with moderate or lower compliance, the Encounter boasts a couple of novel features. The main arm tube is carbon wrapped around an ebony (as in wood) interior, with dual pivots in the vertical plane and fixed in the horizontal. The "tap-it" test suggests the arm tube is well damped, but there is no provision for oil, silicon, or other liquid damping, even as an add-on. Setup is straightforward and uncomplicated. As for its sound, let me

straightaway say that the description of the Kings College Advent Sunday service in the main body of this review is based primarily on notes taken with the Encounter/Windfeld in use. Other recordings brought similarly excellent results. My notes make continued reference to the outstanding bass response: deep, ample, well defined, with no hint of dryness, indeed, rather the opposite—lots of satisfying bloom and openness, my kind of bass. But the "tunefulness *über alles*" gallery will likely also be pleased—there is resolution enough to get the toe to tapping. At one point during *Kind of Blue*, my three-and-a-half year old daughter said, "Dance with me, Daddy" (cross my heart, this is one of her favorite recordings). The midrange is notably rich, the high end smooth and extended. If I had any reservations—and that is already too strong a word—it is that here, way up top, is where the Encounter gives up some detail and focus to the best arms, such as the Vector 4 from Basis.

Just to get an idea what it would sound like with a pickup more in keeping with its price range, I switched to the Dynavector Karat 17D Mk III. Now as regular readers of mine know, I think this the absolute runaway bargain in mc pickups because its performance is easily equal to those costing multiples its \$895 retail; but the hidden kicker is a really superior arm is typically required to extract all it's capable of. So it already says much for the Encounter that it allowed the Dynavector to strut its stuff

examples, let me just describe how it performed reproducing the *Kings College Advent Sunday Service of Lessons and Carols* [Argo], one of my longstanding and most challenging references. When the choir enter from deep in the left channel, come forward, then cross to their stalls, the passage is seamless at every point along their path whether moving from front to back or left to right. When they sing "Twas in the Year that King Uziah Died," it's obvious they have moved closer and are now near the organ screens, as the acoustics are more excited there. When the choir again move from points five and six (referenced to the jacket diagram), it should be obvious they've advanced beyond the organ screens. The support provided by the massive organ is prodigious; yet despite the reverberant acoustic you can hear clear differentiations in pitch, and at no point does the presentation ever become thick or congested, despite how much is going on: a choir of men and boys, a huge pipe organ, at least four readers, and the congregation joining in for several hymns, with the choir moving about from time to time. When the choir and congregation sing together, the former are always distinct. While all this is happening the representation of the fabled Kings' ambient signature, its glorious reverberant acoustics, is never lost.

SOTAs have a reputation in some quarters for being somewhat warm, dark, and heavy-sounding and also for being "relaxed," as opposed to "tuneful," "toe tapping," or—that grotesque coinage so beloved of our British brethren—"pacey." In revisiting the Sapphire for this review, I pulled out every recording I could find in search of any hint of sluggishness, lack of "timing" or punch, excessive warmth or

heaviness. I found absolutely no evidence for any of these things unless they happen to inhere in the performance. Everything from Stravinsky at his most rhythmically intricate and complex to the most numbingly simple-minded head-banging is reproduced precisely, energetically, and with point and requisite impact. There is no question, however, that SOTAs from the Sapphire upward allow for bass of greater weight, amplitude, and depth than many turntables, but the operative word here is *allow*, as in source-dependent: When it's there, the Sapphire reveals it; when it isn't, it doesn't add it. By contrast, most merely "tuneful" turntables, which typically are lighter, achieve their rhythmic punchiness precisely because they do not allow the full weight of bass to come through.

As for the matter of "darkness," which sometimes goes hand in hand with an allegation of diminished transparency, here we come up against the SOTA's signature neutrality, which in turn is a function of how successfully the design manages to damp vinyl and other resonances and spurious noises. For me the least salutary development in audio this last quarter century or so has been the proliferation of tweeters with rising top ends, one byproduct being that authentic neutrality up high has now come to be perceived as "dark sounding," while a truly clean top end—that is, top extension that is flat, not rising, and free from ringing and other resonances—is all too typically found to be "dull." Yet no component capable of retrieving the kind of ambience in the Kings College Advent recording can possibly have "darkness" as an intrinsic characteristic. As with the rhythm issue, I pulled out LPs with the most demanding top ends I could find—a notable

## EQUIPMENT REVIEW - SOTA Sapphire Series V Turntable

with virtually no cramping of its high-kicking style. Here were all the exuberant musicality, the incredible transparency, the unbridled dynamism that define this splendid pickup.

But there is more. Time was running short and I hadn't yet got to the other Origin. Since I was already listening to the Dynavector, I mounted it in the OL1 Modified. I'll indulge no suspense: Here was one of those wonderful synergisms that constitute a recurring joy for this reviewer. Something about the Karat in the OL1 on the Sapphire clicked into place such that everything sounded musically right and satisfying. I'm not about to suggest the OL1 is a better arm than the Encounter, only that in the company of these components its performance was way disproportionate to its modest cost and bare bones design. Back to Kings College once more: about the only thing I would withdraw from my description is that there was a smidgeon—please understand I am being very picky here—less control, inner detail, amplex of bass response, and confidence in the overall presentation.

Lest this be taken as a sweeping recommendation, some caveats. Like all Rega arms, the OL1 has no provision for height adjustment, an omission that alone has always disqualified Rega arms for me, especially if they are used with any of the more advanced stylus geometries, where the relationship of the stylus to the groove is critical and can only be correctly aligned by raising or lower the arm. In the case of the Dynavector and the Sapphire, it was just luck of the draw that the

OL1's arm height happened to be correct for the Karat. There is no guarantee this will be the case with other pickups or on other turntables—indeed there is every possibility that it will not be the case.

Origin's modifications to the stock Rega are three: replacing all factory wiring inside and out; replacing Rega's polymer stud (i.e., the section of the arm tube behind the bearing housing) with a metal one; and replacing the stock force fit counterweight with one that is secured with a set screw. I did not have a Rega 251 on hand for comparison, but I can say that I do not recall hearing any Rega arm that performed as well as this, at least to the extent that it's possible to separate what the arm is doing from the rest of the setup.

Before this review I wasn't aware how many budget and moderately priced arms are out there. In fact, the number is surprisingly large (one popular audiophile online vendor lists fourteen under \$1500). I have almost no experience of any of them apart from integrated turntables I've reviewed that have been supplied with one or another. But if these Origins are representative of what audiophiles can enjoy by spending relatively little money while expending lots of care in the matching of components, nobody has any basis for complaining that genuine high-end audio is the preserve of the wealthy. If I absolutely had to live with the Sapphire/OL1/Dynavector combination as my only vinyl playback setup for the rest of my days, deprived is about the last thing I would feel. **PS**

example the beginning of Sheffield's *The Name is Makovich*—where the purity, clarity, transparency, and intertransient silence with which the high-lying percussion is revealed are almost beyond criticism.

The Sapphire is not perfect. It doesn't have the extreme resolution, control, “blackness ten times black” background quietness, and elusive sense of life and vitality of a few (very few) of the “super” turntables (a group in which I place the Cosmos, by the way). But it does nothing positively wrong, and when matched with suitable arms, pickups, and source material, its presentation is so involving, satisfying, and well isolated from anything that might disturb playback that I never find myself thinking, “Gee, if only this were better,” or “It's not as good as a Basis 2200 or an SME 30.” Like the late Mr. Holt or my friend with that early Sapphire, I just forget it's there and enjoy the music.

As with so much in audio, you pay your money and take your pick. For me—I emphasize the subjective nature of the statement I'm about to make—the Sapphire is the least expensive turntable in my experience that takes you to the threshold of what the “super” turntables are all about. Every turntable I've heard that costs less sacrifices a bit too much for my priorities, while those that cost more net increasingly diminishing—though by no means insignificant or unworthy—returns for a great deal more money. And no other turntable protects your investment as well when it comes to backward-compatibility and future upgrades.

“Classic,” according to several dictionaries I consulted, means “serving as the established model or standard,” “having lasting significance

or worth, enduring,” “adhering or conforming to established standards and principles,” “work recognized as definitive in its field.” By any of these criteria the SOTA Sapphire seems to me to be a genuine classic: Its thinking and engineering embody time-honored models of physics, damping, and mechanical behavior; its suspension has long been recognized as at least one form of definitive; and it has certainly endured, surviving the merely trendy, fashionable, and vogueish as a recognized benchmark for the continuing validity and vitality of vinyl sources in an increasingly digital world. So I shall finish by raising a hale and hearty glass to the Sapphire of the 21st Century, stronger and, in a sense, younger than ever: *Salud! Prosit! tas*

<sup>1</sup> By the time the Goldmund Reference, various VPIs, and some others came along, the disputes had long since dissipated, probably because vinyl was facing more formidable madness in the march of digital.

<sup>2</sup> Linn, too, set a standard in this regard, but LP12s before a certain serial number cannot be retrofitted to the present version. Oracle claims previous Delphis can be upgraded to the Series VI reviewed by Jonathan Valin recently, but as yet this appears to remain an optimistic promise, not a reality.



# Townshend Audio Rock 7 Turntable

## Return of a Legend

Robert E. Greene

The original Townshend Rock Reference turntable is one of the legends of audio. Unusual and inventive in design, fabulous in sound, but never widely available, the Rock Reference is now a rare collector's item. Its less expensive successor, the Rock III, also offered extraordinary sound quality and many of the same unique design features (my review is reprinted at <http://www.regonaudio.com/RockMarkIII.html>). Now the legend continues with the arrival of the Rock 7 and continues unabated: The Rock 7 is one amazing turntable design. Anyone coming anew to Townshend's design ideas will be immediately intrigued. And everyone, whether familiar with earlier versions or not, will be deeply impressed by the sound. All the Townshend turntables have incorporated a unique approach to arm-damping, involving viscous-damping at the front end of the arm, right next to the cartridge, using a distinctive damping trough. (Detailed explanation in a moment.) When one thinks about it, what could be more logical? One wonders why the idea is not almost universally applied. If you wanted to stop something from vibrating, wouldn't you grab it directly rather than attach a stick to it and hold on to the far end of the stick? And of course a cartridge is supposed not to vibrate at audible frequencies at all, to sit absolutely still except for the motion needed to keep it centered over the groove as the record plays. And yet this totally logical and singularly effective idea is unique to Townshend Rocks, outside of an appearance years ago in a Mapleknoll model only briefly available.



The trough-damping gives a solidity to the sound that one seldom otherwise encounters in vinyl playback. The arm in the Well Tempered Amadeus, with its bearing via damping only, comes close. And absolutely non-resonant arms with more conventional bearings and correct damping like the Moerch series can also perform superbly. But the front-end damping adds something special. And front-end damping in theory can be added to any arm! The Townshend front-end trough-damping is an add-on: the

“paddle” is attached via the cartridge-mounting screws, so any tonearm can be used on the Mark 7 complete with trough. (Strictly speaking, the trough is an option, but you would be unwise to omit it.)

The new Townshend has, true to its ancestry, the characteristic Townshend sound—the uniquely solid sound characteristic of mastertape and live mike feed, the sound that once heard is never forgotten. The 'table is straightforward to set up and the setup is completely stable. The only slightly tricky point is that the

motor housing, which is a separate unit, needs to be leveled carefully so that the (round) belt does not travel up and down the driving surface on the sub-platter. But once this is set, it stays set. Once set up, the turntable works easily and consistently. And the sound.... ultra-silent background and imperturbable solidity.

### HOW IT WORKS

Let's take a quick walk around the operational features. The 'table is suspended on springs. These are

## EQUIPMENT REVIEW - Townshend Audio Rock 7 Turntable

adjustable, but it is recommended that they be set to maximum and that leveling be done by moving and then locking an ingeniously mounted weight on the side of the turntable, opposite the arm-mounting, which can be moved in two dimensions horizontally. The turntable can be leveled front to back and side to side using this single weight, which is then locked into position. This system is easy to use, and completely effective, absolutely stable and not a source of spurious vibration. The motor is in a separate box that sits next to, and slightly behind, the 'table. (As noted, this box has to be carefully leveled to get the speed stable, but once this is done, speed stability is very good; in the higher-priced version of the table to come [see below], speed stability will be even more stable, so to speak.) The motor drives a subplatter by a belt, the subplatter using a tight-tolerance sleeve-bearing with a micro-layer of oil drawn up from a well at the bottom. This gives, in effect, a subplatter riding on a fluid layer—ultra-low noise. The platter slips over the outside of the subplatter shaft that contains the bearing sleeve. The record is clamped to the platter by a screw clamp.

The distinctive trough-damping works as follows: With the record put on the platter and clamped down, the trough full of damping fluid is swung over above the surface of the record. The trough is in the shape of a circular arc, so that as the arm travels across the record, the “paddle” (actually a small tube) that is attached to the front of the arm sticks down into the damping fluid and moves through it as the record plays. When you are through with a side, you raise the arm with the cuing device, swing the arm out to its side position, swing the trough off to its side position out of the

way and you are ready to remove the record, and play another.

The damping fluid is very viscous. Don't give a thought to the possibility that the fluid will slop on the record when you are moving the trough over the record to start with or backing it out to the side when it is time to take the record off. Slopping won't happen. I have used the Rock III, which has the same system, a lot and never slopped a drop. The routine of trough over and then trough back out of the way becomes totally automatic. After a few times, you do not give it a thought. But the sonic benefits...those you will give a thought to, indeed!

### THE SOUND

We can all recall those magic moments when we first heard something that redefined our concept of what was possible in audio. Chances are that you will have an experience like this the first time you hear a Townshend turntable. Actually, something like this tends to happen every time, even after you are familiar with the sound of Townshend. The experience will become familiar, but it will never become stale.

A few other turntables, the Well Tempered Amadeus for example, have as silent, as “black” a background in absence of bearing noise. The comparison is interesting. The Well Tempered system is a little like a Stradivari to the Townshend Guarneri, in a sense: both superb, but one viewing the world from the top down, one from the bottom up. The differences are not enormous, both systems getting at the essentials of the sound actually on the record. But the Townshend has a kind of solidity that is its very own.

Dan Meinwald, Townshend's U.S. distributor,

brought the Mark 7 over already essentially set up (with an Origin Live OL1 arm and an AKG P8ES v.d.H II cartridge, alas no longer available). After some final setup—leveling primarily and a speed check—we decided to listen to one of our mutual favorites, the Water Lily recording of Ali Akbar Kahn entitled *Indian Architecture*. I was not so fortunate as Dan to have been at the recording session, but I have listened for many hours to the Water Lily mastertape of my work with Kavi Alexander in recording the Philadelphia Orchestra, and on other occasions. The sensation of hearing through the whole vinyl situation back to the tape or even the live microphone feed was uncanny.

And the magic of the music made itself felt immediately. As with any great recording, the tendency was to forget to listen for sound as sound and simply listen to the remarkable music, remarkable here indeed. But if one forced one's attention on sound as sound, one was hard pressed to find any fault at all. At its best, the vinyl medium can seem really “the most not there in the circuit,” as Doug Sax once described the ideal vinyl experience. And with the Rock 7, it seemed all but not there in the circuit at all. (Well, except for the fact that almost no commercial record is actually punched in its true center. I await the turntable designer who follows the lead of the late E. Nakamichi in addressing this major source of pitch instability by providing a record-centering mechanism. This is the obvious thing that separates vinyl from mastertape sound, no matter how perfect the playback setup is otherwise, and no contemporary turntable addresses it.)

On direct-to-disc recordings, the sense of direct access, of non-vinyl, of no medium at all, of hearing the live microphone feed directly, was

really stunning. Sax's own *Confederation* was absolutely jaw-dropping as sound, and a lot of fun as music, if not the spiritual journey embodied in *Indian Architecture*.

This type of sound, this sense of hearing directly back to source, is in general terms the common property of all good vinyl playback. Certainly the Well-Tempered Amadeus offered an equally silent background and sonic purity. But as it happens, part of the extreme form of the directness of sound that the Rock 7 gives is related to the front end damping of the arm/cartridge combination.

This can be checked. The Rock can be operated without the trough, simply by leaving the trough in its “idle” position, swung away from the record. The sound is still good—this is a fine turntable as such. But the bass becomes less solid and the whole less tightly controlled and stable. Perhaps there are people who admire vinyl not for its real virtues but for its potential failings—resonances, ringing, and the like—who might prefer the sound

## SPECS & PRICING

### Townshend Audio Rock 7 Turntable

Type: Belt-driven turntable

Dimensions: 20" x 6" x 15"

Weight: 33 lbs.

Price: \$3000

### EAR-USA

1087 East Ridgewood Street

Long Beach, CA 90807

(562) 422-4747

ear-usa.com

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## EQUIPMENT REVIEW - Townshend Audio Rock 7 Turntable

sans trough more. But anyone who knows the sound of mike feeds or mastertapes—or music—will want the trough back in use instantly.

One of the interesting features—especially to the potential purchaser—of the arm-trough damping is that it tends to minimize the differences among tonearms. The front-end damping in effect disconnects the cartridge's behavior from the arm's behavior in good part. I did not investigate this systematically with the Mark 7, but I did with the earlier Mark III. Less than stellar tonearms still gave excellent performance, with the front-end damping reducing, effectively short-circuiting, most of the effect of the arms' own resonances. However, the issue of the mass-loading by the arm remains. And the soon to appear Moersch Anisotropic arm, with greater mass in the horizontal plane (or more precisely greater moment of inertia) than in the vertical will offer improved bass over other arms, even in the presence of the front-end damping (as well as in other situations). Still, the bass was superb as is. The damping does its job!

There is a certain perception that turntable design can be pushed on and on to ever more stratospheric heights by making things larger and more expensive. And I suppose one could imagine pushing the ideas of the Townshend even further. And indeed there is an improved (and much more expensive) version of the Mark 7 in the works, with a special power supply, in which the 33/45 speed change is done electronically and with a flat belt used, which gives (according to Max Townshend) greater speed stability and some improved structural aspects.

Still, the current Townshend Mark 7 gives very much the impression of getting what there is to get out of the records. The Rock Mark 7 as it is

represents a triumph. I would listen to this turntable before I bought anything at any higher price. There are many fine turntables around that have almost magical sonic qualities. Like the Well-Tempered Amadeus, the Townshend Rock 7 shows what remarkable results can be obtained, not by flinging mass and money at the problem, but by inspired engineering. And some of the sonic virtues of the Rock 7 are otherwise unavailable elsewhere at any price. The trough rules! **tas**





# Oracle Delphi Mk VI Record Player

## Form and Function

Jonathan Valin

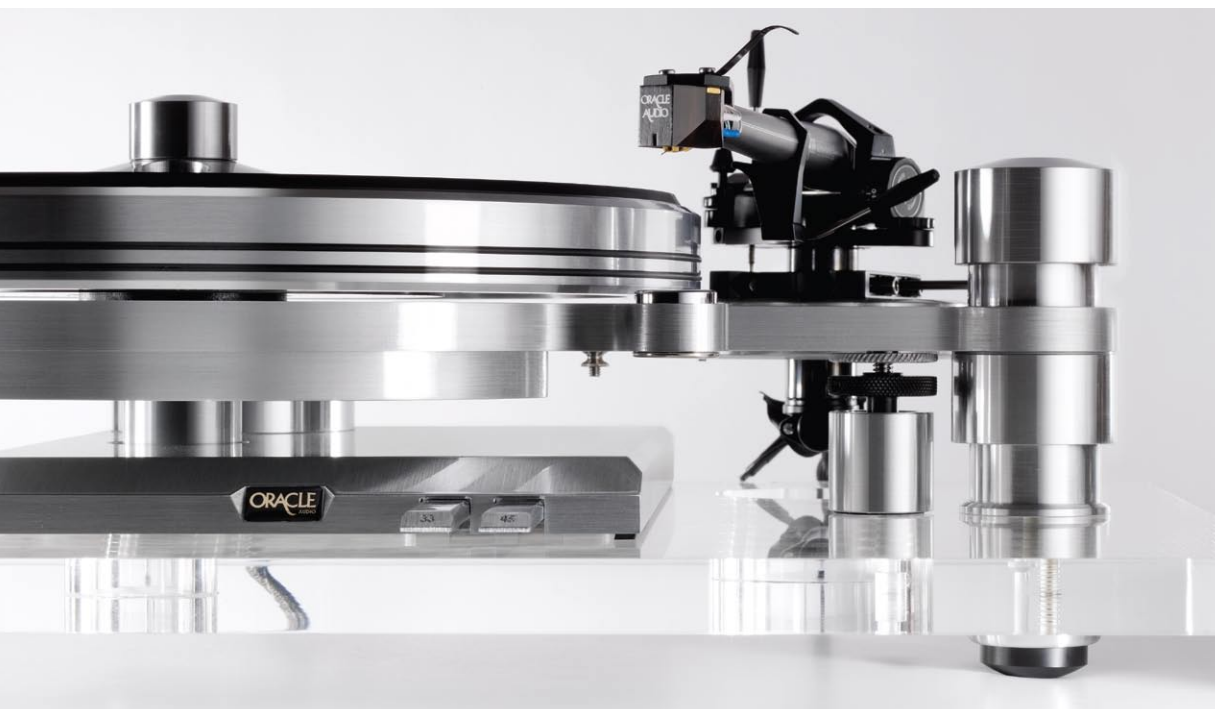
**G**iven that Oracle Audio Technology has been in business for thirty years it may seem odd that I've never owned one of its turntables. Haven't owned a Linn, either. Yep. I missed out on the two 'tables that more or less divided the audio world between them from the nineteen-seventies into the nineteen-nineties. Of course, I've heard Oracles and Linns many many times, with many different arms and cartridges, in my home, at shows, at friend's homes, and in stereo stores (back when stereo stores actually sold turntables). But I never purchased either one. Happily, this little slip-up on my part doesn't matter much. When a company has been around forever and a day, like Oracle has, it invariably means that it started with sound fundamentals—and those fundamentals don't change from iteration to iteration. The Delphi Mk VI may have been spiffed up quite a bit, but its design is basically the same as it was when the Oracle was conceived back in 1979. So, in a way, in reviewing the Mark VI version of the Delphi I'm also finally getting the chance to review that very first Oracle.

That first 'table was the brainchild of Canadian Marcel Riendeau—then a philosophy teacher at the University of Sherbrooke in Quebec with a deep interest in music and, given the Delphi's famous good looks, other beautiful things. The way the story goes Riendeau originally wanted to import high-end turntables, but, like Hans-Peter Gabriel of Analog Audio Systems (later acquired by Da Vinci Audio Labs), he couldn't find one that met his standards. So, like Gabriel, Riendeau

decided to come up with a 'table of his own. "Perhaps because of my university background," Riendeau told me, when I asked him about the birth of the Delphi, "I did my own 'philosophical study' of a number of the analog pretenders-to-the-throne of the time—from Cotter, Linn, Micro-Sieki, Thorens, Win, etc. My goal was to analyze the key elements that impacted sound reproduction for better or worse: the record, the groove, the supporting elements (platter/



## EQUIPMENT REVIEW - Oracle Delphi Mk VI Record Player



sub-chassis), the suspension system, etc. Then I asked myself how each of these elements should ideally interact and, more importantly, how each element should be designed to fulfill its necessary technical contribution without becoming part of and adding to the recorded music being reproduced. As I saw it, the key was not for the stylus to play the record; it was for the stylus to play the groove!”

For the stylus to “play the groove,” Riendeau had to find a way to keep the stylus “in the groove.” Anything that might disturb its composure as it travelled down that long and winding road to end-of-side silence—any resonance or vibration or feedback from outside the playback system

(or inside it)—was engineered (beautifully) out of the Delphi. While a few items have been improved on the new table and two important features have been added to the Mk VI version (I’ll get to these shortly), Riendeau’s core philosophy of “groove isolation” and the core mechanisms he used to implement this philosophy remain the same. These include the spring-loading of the subchassis and platter via an elegant (albeit not entirely unproblematic—for which see “Set-up Notes”) tripodal suspension system.

The way this system works is much easier to describe than to fine-tune. Three aluminum “suspension towers” are attached to the clear acrylic bottom plate of the Delphi; during

assembly, the end user fills each one of these towers with prefabricated damping assemblies that include at least seven different damping materials attached to sizeable bell-shaped springs of different tensions. (The bell shape of the springs prevents “frequency build-up” from coil to coil and ensures the proper resonance frequency of 3.5Hz no matter what weight tonearm is used.) The three “legs” of the hand-brushed-aluminum subchassis—which look a little like the crankshaft ends of piston rods—slip over and “float” atop the piston-like spring assemblies inside the towers’ bushings. The platter, in turn, sits upon the “floating” subchassis with its bearing spindle extending through a hole in the subchassis’ center and into a thrust-plate bushing attached beneath the subchassis.

The Oracle’s platter may not ride on air like a Walker’s does, but it is certainly isolated—as are the tonearm, the stylus, and the record itself—from external and internal physical vibration by the precisely controlled “springiness” of the suspension on which every moving part rests. When the springs are properly adjusted, the platter is also perfectly leveled by that suspension and by rotation of the adjustable Delrin feet on the bottom of the acrylic base.

While the Delphi’s suspension system has remained more-or-less the same since Marcel Riendeau first designed it (oh, the subchassis is a little larger in the Mk VI version, with better weight distribution to offset heavier contemporary tonearms), the table’s bearing has undergone a number of changes over the years, evolving from a conventional bushing to the “dual-tripod” system currently in use. “If you magnify the spindle/bushing interface,” says Jacques Riendeau,

Marcel’s brother and the current head of Oracle Audio Technologies, “you realize that the rotating spindle in the bushing is working somewhat like a rocking chair on a floor: In addition to the rotation there is also a wandering effect (back-and-forth and side-to-side movement of the shaft within the bushing). We thought about how to eliminate this wandering effect, and the dual tripod was our solution.”

The “dual-tripod” comprises six polymer screws distributed inside the bearing-shaft bushing to maintain even contact with the spindle and keep it from wobbling. “We started to use this system on the Mk IV in 1996,” says Jacques Riendeau,

### SPECS & PRICING

#### Oracle Delphi Mk VI Record Player

**Type:** Belt-driven, spring-suspended, viscous-damped turntable with outboard power supply

**Speeds:** 33.3 and 45rpm

**Dimensions:** 14.5” x 19” x 6”

**Weight:** 35 lbs.

**Price:** \$8500 (turntable and “Turbo” power supply).

Supplied options: Oracle/SME V tonearm, \$5950; Oracle “Thalia”/Benz-Micro LP S-MR moving-coil cartridge, \$5500

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## EQUIPMENT REVIEW - Oracle Delphi Mk VI Record Player

### ORACLE DELPHI MK VI SET-UP NOTES

I might as well begin by saying that setting up the Oracle Delphi Mk VI is a royal pain in the ass. Oh, the thing comes packaged beautifully—every part is clearly and carefully labeled. But the instruction manual...well, it's not the last word in clarity. It is written in English—sort of. Quebecois English. Reading it may make you feel a little like you're talking to one of those French fur trappers in a Western film set in 1840, but you'll be able to follow the sense of it. Organization, however, is, uh, lacking. For instance, the instruction manual begins with a two-page explanation of how to install the MVSS system. Of course, installing the MVSS system is the *last thing* you do with this turntable, but there it is on page one. (This might be excusable since the MVSS is an entirely new feature; however, there are other spots in which instructions or procedures you think should logically come next, don't. There is method in this madness, but it is a little maddening.)

More frustrating by far are some of the physical/mechanical legacies of a thirty-year-old design. Take attaching the drive belt, for instance. Unlike every other belt-driven turntable I've owned, the drive belt of the Delphi Mk VI doesn't go from the capstan of the motor around the outer perimeter of the platter. No. It goes around a small hub on the *inside bottom* of the platter. This means that you have to hook it around the hub before you fit the platter and the bearing spindle

(which is attached to the bottom of the platter) into the hole in the subchassis that leads to the oil-filled thrust-plate bushing attached beneath it. While you're lowering the platter with one hand, you must hook a finger or two of the other hand through the drive belt, pulling it taut so that it can clear the motor and won't slip off the hub, and then release the belt just before the bearing shaft drops down into the bushing, so that the belt fits *precisely* around the capstan. If this sounds tricky, you don't know the half of it. The trouble—or one of the troubles—is that if the belt doesn't land exactly where it should on the capstan, it slips off the inner hub. You then have to repeat the whole damn procedure—lift the platter back off the subchassis with the bearing shaft now dripping oil, and hope that that oily shaft doesn't contact or drip oil on the belt. (Good luck with that, BTW.)

Then there are those *farchacdat* spring assemblies in their towers. Though each spring has a different inherent tension (appropriate to the function it serves on the 'table), you do have to adjust the height of all three of them to get the subchassis and the platter to float in ideal balance. This adjustment involves raising the springs and, if you go a little too far, lowering them, until the gap between the spring-loaded tower bushing and the base of the tower is just wide enough to let you squeeze a supplied

“but with contact points at 100° x 130° x 130°. With the new Mk VI we use an even distribution of contact points at 120° x 120° x 120°. This allows us to achieve a more accurate calibration, and at the same time we find there is even more stability at the contact points against the spindle.”

Another thing that has changed is the bearing thrust plate. Ceramic in the earliest models, it was switched to tungsten carbide in the Delphi Mk V, and in the Mk VI is now made from Torlon high-strength plastic. According to Jacques Riendeau, “Torlon polyamide-imide (PAI) has the highest strength and stiffness of any thermoplastic. It also has outstanding resistance to wear.” Bathed in a precise measure of lubricant, which the user injects into the bushing's well before inserting the bearing shaft, the bearing rotates near frictionlessly against its Torlon thrust plate and, thanks to the “dual-tripod” system, without any rocking.

Perhaps the biggest change on the Mk VI—in fact, not a change but an entirely new addition—is what the Riendeaux call the MVSS (Micro Vibration Stabilizer System). Reminiscent of the silicon-based stabilization system that John Bicht added to his spring-suspended Versa Dynamics turntable, MVSS uses three small containers of low-viscosity silicon fluid that sit on the acrylic bass beneath plungers threaded into the bottoms of the subchassis' three legs. The free ends of the plungers are lowered a precise number of turns into these little silicon reservoirs and then secured in place via a locknut. In this way any vibrations that the “floating” subchassis and platter see aren't just damped and dissipated by the spring-loaded towers but also by the silicon fluid. MVSS may seem a little redundant given the

elaborate spring-loaded tower system, but I get the impression that it is Oracle's way of adding the damping of a more massive, constrained-layer support structure without actually adding more mass. Given the Oracle Delphi Mk VI's unusually high resolution of low-level detail, it certainly appears to work.

Also new on the Mk VI are a Urethane drive belt (made by the same outfit that supplies A.J. Conti at Basis) and a hard-acrylic platter-mat that Oracle claims makes for a superior impedance match with vinyl discs. Though relatively lightweight, the Delphi's 8.8-pound aluminum platter is constructed for maximum rigidity, minimum resonance, and a superior “fly-wheel” effect, with most of its mass distributed around its outer edge. The Delphi Mk VI also uses the same screw-down “record clamp” system that Oracle pioneered in the original Delphi Mk I. The 'table's AC synchronous motor is designed to provide maximum start-up torque and minimum operating energy (like that of the AAS Gabriel/Da Vinci turntable)—and the 'table does, indeed, start up with alacrity and reaches speed almost instantly. The power-supply electronics for the motor are housed in a slim outboard box that is connected to the turntable via a supplied umbilical cord. Rotational speed for 33.3 rpm and 45 rpm can be adjusted via setscrews in the power supply box, although the 'table was delivered with both speeds dead-nuts on.

My version of the Oracle Delphi Mk VI came with two significant and pricey options: a \$5950 SME V tonearm and a \$5500 Oracle Thalia moving-coil cartridge. (Though both of these items are rebranded by Oracle, the tonearm is almost identical to SME's own version of



## EQUIPMENT REVIEW - Oracle Delphi Mk VI Record Player

measuring tool into it. (This “tool” is a zany item that aside from gap-measuring seems to have two unspecified vestigial functions, like a pair of appendices.) It’s easy enough to raise the springs. You just turn the top cap of the tower counterclockwise, take a measurement with that “tool,” turn a little more, and then, when everything is just so, you’re done. Right? Uh, no. You see the subchassis and platter tend to “settle” a little bit after you’ve taken your measurements. So the gap is likely to be a little too narrow. (It may also be that you turn the spring a little too far, raising the spring and closing the gap a little too much.) Sounds like it should be simple to fix, doesn’t it? Just twist the tower cap in the opposite direction. Well...guess what? You can’t turn the tower cap in the opposite direction. The only way to lower a spring that has been raised too much is—now,

hold your breath—to disassemble the tower, remove the spring assembly, and turn the spring on its spindle by gripping the bottom coil with needle-nose pliers. Oh, and I forgot to mention that to disassemble the spring tower, *you have to remove the platter and the subplatter and that drive belt you just spent two hours trying to get right!*

In my considered opinion, assembling an Oracle Delphi Mk VI would be a far more effective torture than waterboarding. It took me the better part of a day to put mine together. The sound was well worth the effort—I’ll admit. But, honestly, if you have the option, I *strongly* suggest that you have an experienced Oracle dealer (or owner) assemble the ‘table for you, especially if (like me) you’ve have no previous experience with the vagaries of Oracles. JV



the V, save for the addition of MCS150 mono-crystal tonearm leads and internal wiring, and the cartridge to Micro-Benz’s superb LP S-MR, reviewed by HP elsewhere in this issue.) With the arm and cartridge, I was supplied with a complete \$19,950 record player (all prices in Canadian dollars), and my review will necessarily be of the entire package. Happily I am also currently using the wonderful Benz LP S-MR cartridge on my \$57,000 Walker Proscenium Black Diamond Mk II record player, which made cross-comparisons of the same LPs on the two record players a slightly fairer proposition.

It may not be very scientific but it has been my experience that record players (and, to some extent, loudspeakers) tend to sound a bit the way they look. Smaller, more lightly-constructed ones tend to be a little “lighter,” more nimble, and transparent sounding, while larger, more massive ones tend to be denser and richer in tone color and more authoritative in dynamics, although sometimes with an attendant price paid in transparency and pace. Though he certainly wasn’t agreeing with this observation, Jacques Riendeau said almost the same thing when he wrote (in an e-mail to me): “There is something about the quickness, the sharpness, and the openness of the new Mk VI that cannot be found in other designs!”

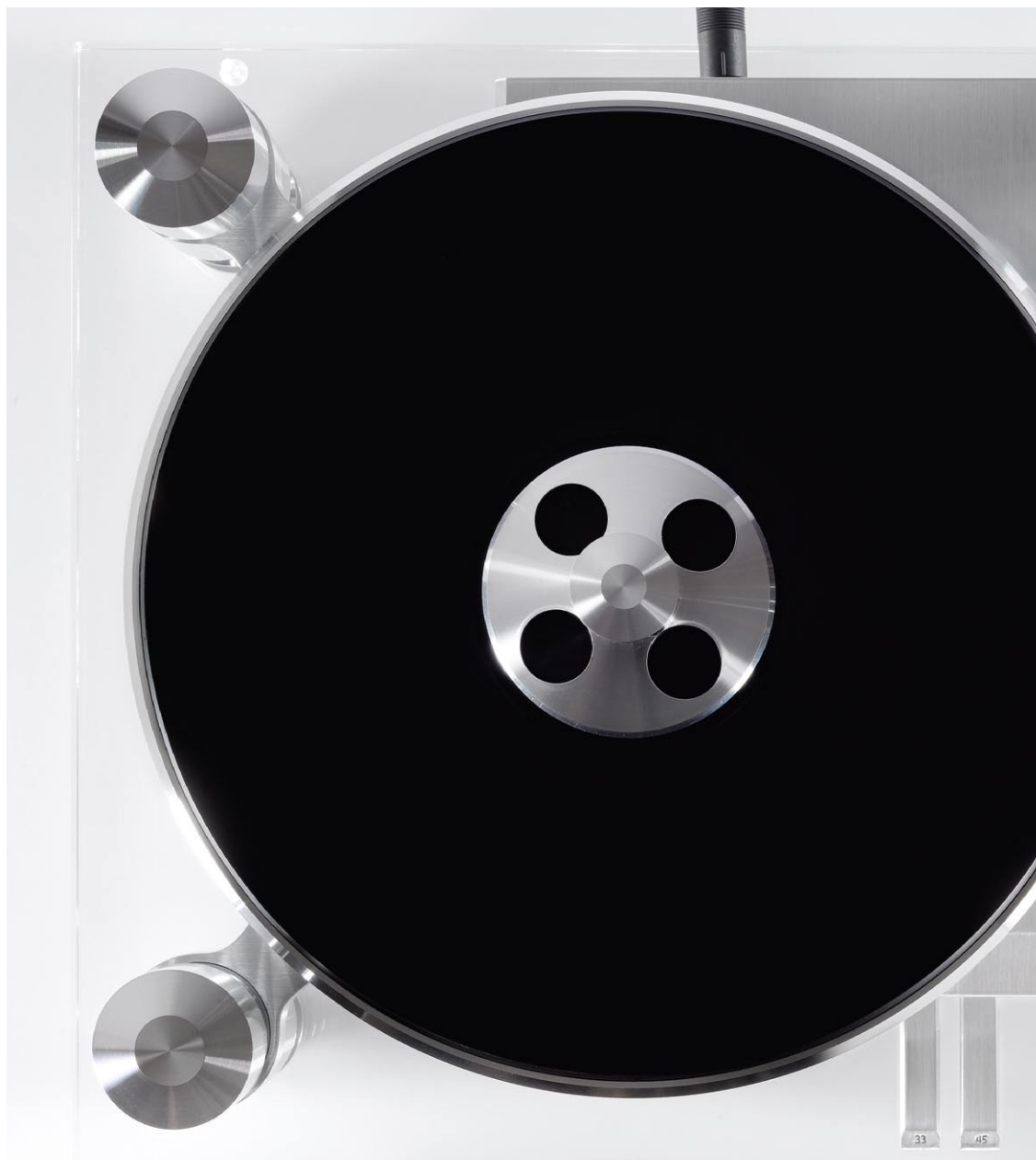
Quickness, sharpness, and openness are pretty apt descriptors of the sound of this record player. Indeed, if Jacques were to have added “realism” to his list of plusses, I’m not sure I could improve on it.

Take the song “A Case of You” from Diana Krall’s *Live in Paris* [ORG] LP. Though Krall doesn’t have the same range or the same rich resonant timbre

of Sarah Vaughn—about whose voice I wrote in our last issue in my review of the Audio Research Reference 5 preamp—she still has a very complex timbre. As with Vaughn, you can hear the way Krall tosses notes from chest to throat to palette to nose very clearly via the Walker ‘table—the way she strikes just the right not-quite-settled (because not quite coming from a settled place emotionally) tone of clear-eyed helplessness for her wised-up, but still lovestruck delivery of this half-ironic, half-besotted Joni Mitchell love song. You can also hear Krall constantly pounding on the *una corda* (soft) pedal at the start of the piece to add the matchingly appropriate subdued colors and intimate volume to her sophisticated presentation.

Through the Oracle, this presentation changes a bit. Like vintage ARC gear (though sweeter and considerably less bright), the Oracle seems to concentrate more of its energy in the mid-to-upper midrange and lower treble, comparatively leaning out the upper bass and lower midrange, which is where the Walker works a good deal of *its* timbral magic. To my ear this is not a bad thing because it accentuates everything that lives in the top half of the frequency spectrum, which is to say most of the information about transients, overtones, and decays. As a result, though the Delphi Mk VI Krall’s voice loses a bit (not all, by any means) of its occasional chestiness and lush throatiness on certain notes, it gains tremendous presence (it literally comes forward in the mix), and is so clearly separated from the ambience of the studio that Krall almost sounds the way one of those cardboard figures that pops up when you open certain greeting cards looks. It is an astonishingly three-dimensional (and incredibly

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realistic) effect. Add to this a wonderfully clear recovery of echo and ambience (among the best I've heard on a non-linear-tracking record player). While the sound of the *una corda* pedaling is not as weighty or prominent as it is via the Walker, some of the *effects* of that pedaling and of Krall's softer touch are more obvious. By this I mean that rhythms and dynamics sound more crisply defined and "pacier." In addition, the Delphi's treble is simply marvelous—rich, sweet, and highly dimensional through the brilliance range with a little congenial softness on the very tiptop. On the final refrain of "Fly Me to the Moon" from the same *Live in Paris* album, the metal of the cymbal, as Krall repeats "in other words," is more fully and realistically "there" than I've heard it sound before on *any* record player—not a fizzy, evanescent spray of color, as it usually is, but a solid, three-dimensional, multi-hued disc of bronze being struck by wood.

On most recordings, the Delphi simply sounds quicker and a tad lighter weight than the Walker (though it is not running faster—I checked). It's as if the Oracle were playing just a little ahead of the beat, adding its own very light touch of rubato, which creates foot-tapping pace and in-the-room presence at a small (but audible) cost in the full development of certain tone colors and of certain kinds of performance details that live in the lower midrange and upper bass, precisely where the Walker gives you the whole enchilada.

As it does with many mini-monitors, the slight desaturation of upper bass and lower midrange timbres (and it is slight—this 'table does not lack for power or color in the power range and, unlike mini-monitors, has excellent albeit less weighty midbass and very deep bass) has a salubrious

effect on the perceived clarity of instrumentation and of many performance details—and also on the recovery of non-performance details, such as the persistent traffic noise outside Walthamstow Hall at the start of the second movement of Schoenberg's Five Pieces [Mercury], which I've simply never heard reproduced so clearly and nakedly by any record player (mainly because the roar of the cars and buses is usually buried under the colors and resonances of bassoon and doublebasses). Musical effects such as the dramatic contrast between that sweet jocular cabaret mandolin in the third movement of Webern's own Five Pieces for Orchestra and the forbidding rumble of the muted bass drum that rolls out like grim misfortune from behind and beneath it are exceptionally vivid and effective. (Just in passing, it's remarkable how much music of the teens and twenties—both of these pieces were composed within about five years of each other, between 1909-1913—seemingly acknowledge that volcano above which Western civilization was then dancing and, come the thirties, into which it would plunge headfirst. On the other hand, the contrast between fleeting joy and despair is as old as music itself, though in the dissonances of Schoenberg, Berg, and Webern it almost seems and sounds as if it were invented new—as if both joy and despair were coming from one and the same place and at one and the same time, as if what was being discovered or rediscovered wasn't mere Romantic joy and angst but the sinister bedeviling ambivalence of the unconscious mind.)

On a sprightly pop recording like *Rough Mix* [Atco], where most of the instruments play and both of the vocalists (Ronnie Lane and Pete



## EQUIPMENT REVIEW - Oracle Delphi Mk VI Record Player

Townshend) sing in the heart of the heart of the midrange, the sound of the Delphi Mk VI could scarcely be bettered. Its pace, clarity, resolution, quick dynamics, and three-dimensionality bring a liveliness and lifelikeness to these oldies but goodies that I haven't experienced since the album was new to me. I even got a little of that old *frisson* when Townshend goes "Ahhhh!" after the long string-orchestral interlude toward the finish of "Street in the City"—that's the kind of midrange pop and presence the Delphi is capable of. (I gotta admit that through the Walker that exclamation didn't thrill me in the same way.) I should also mention that on "Street in the City," or the Schoenberg Five Pieces for that matter, the 'table's soundstaging is unusually wide and deep, which, in combination with its three-dimensional pop-up imaging, makes for an extraordinary diorama-like effect. On certain recordings the instruments and voices are so "there" it almost seems as if you could get up from your listening chair and walk among them.

I could happily live with the Oracle Delphi Mk VI's presentation. In fact, I think I did live with it—or at least a considerably less refined version of it—years ago, with the Panasonic SP10 MkII, which had some of the same pace and clarity and also, like the Oracle, slightly thinned down timbre (though it did not have as much bloom and air and light as the Delphi Mk VI). Yeah, the Walker Proscenium Black Diamond Mk II will give you more—of just about everything. It is, overall, a considerably more neutral, lifelike, and faithful presentation (so, with slightly different emphases, is that of the AAS Gabriel/Da Vinci record player). But for the money (and it is so *much* less money), this package gives you a

whole lot of what "absolute sound" and "as-you-like-it" listeners are looking for in a high-end phonograph: presence, transient speed, tremendous foreground/background separation, superb imaging, wall-to-wall soundstaging, toe-tapping pace, and outstanding resolution of inner detail. As any vintage ARC owner can tell you, this combination of sonic virtues goes a *long* way toward creating a realistic presentation. To go all the way will cost you at least forty thousand dollars more. If you're made out of money, go right ahead—you'll get what you pay for. If you're reaching for the stars in analog playback but don't have Walker or Da Vinci dough, I can think of several very nice places to pitch your tent (the TW Acoustic Raven and Basis 2200 Signature, for examples), but if lifelike presence and pace are your foremost criteria I can't think of a better one than here with the Oracle Delphi Mk VI. **tas**



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# Clearaudio Innovation Wood Turntable

Living Up to its Name

Jim Hannon

**C**learaudio's Innovation Wood turntable combines some stunning innovations along with other improvements that have been applied to much of the Clearaudio line during the past four to five years, like ceramic magnetic bearing (CMB) technology and lightweight yet extremely dense materials to damp resonances and improve isolation. Some of these improvements have not only trickled down from Clearaudio's breathtaking Statement turntable, they have also seemingly trickled up from less ambitious models. I have always admired the engineering, machining, and German-precision of earlier-generation Clearaudio 'tables, known for their clarity, accuracy, and resolution. My admiration increased dramatically after I reviewed the Clearaudio Ambient, with its lightweight but incredibly dense Panzerholz plinth. It was as if the bullet-proof wood had helped the sound become more harmonically fleshed out. For me, this was a welcome improvement to Clearaudio's sonic signature, helping to make instruments and voices sound more natural and lifelike without a loss of clarity.

Next, I reviewed the modestly priced Clearaudio Performance with its ceramic magnetic bearing (CMB), which floated the platter using magnetic repulsion, resulting in increased transparency. The magnetic bearing seemingly lifted veils between the music and listener so that one

could almost reach out and touch the orchestra on a fine recording like Prokofiev's Symphonic Suite of Waltzes [Cisco Music]. Fortunately, CMB magnetic-repulsion technology was subsequently added to the Ambient and most other Clearaudio 'tables. Moving up in class, I used the Clearaudio

## EQUIPMENT REVIEW - Clearaudio Innovation Wood Turntable

Anniversary, developed in honor of Clearaudio's 25th Jubilee anniversary, as my reference for quite some time. This 'table combined a CMB bearing, a synchronous motor housed in a massive stainless-steel case, and a large platter floating atop a Panzerholz plinth (sandwiched between two aluminum plates) in a star configuration optimized to reduce resonances and accommodate up to three tonearms. When the Anniversary was coupled with the Helius Omega Silver-Ruby tonearm and a Micro Benz Ebony H phono cartridge, the sound of the front end was very good with explosive dynamics without breakup, bass solidity and weight, see-through transparency, fast transients, an incredibly broad and deep soundstage, and stable imaging. I had not heard anything better for less, and it put several more expensive systems to shame.

The Innovation Wood, ostensibly a replacement for the Anniversary, raises the bar still higher on what a \$10,000 'table can do, outdistancing the fine Anniversary in several areas, most notably in pitch stability. Its speed accuracy reminds me of my dearly departed classic Technics SP-10 MkII direct-drive 'table, but without the motor noise. Using the same Helius/Benz combination, I immediately noted the absolute pitch stability on recordings of solo instruments, like Johanna Martzy's violin on J.S. Bach's BWV 1001, BWV 1006 [Coup d'Archet] or Arthur Rubinstein's piano on Chopin's Nocturnes [RCA] and on vocals ranging from Ella Fitzgerald to James Taylor. For me, even a slight pitch waver on a sustained note caused by minute speed variations destroys the illusion of a live performance. If you are as sensitive to this as I am, the Innovation Wood will be a revelation, and it does not require an additional external speed controller. Save for the direct drive SP-10 MkII, the speed stability of the Innovation Wood surpasses all the 'tables I've had in house, even those that I've married with the fine VPI SDS, as well as the Sota Star with its speed controller and the SME 20/12.

A new motor, massive sub-platter, CMB, and optional peripheral ring all contribute to the Innovation Wood's remarkable speed accuracy. The new high-torque, decoupled DC motor with "real time" optical speed control uses an infrared sensor, a high-

precision reflection scale, and a speed circuit that result in less cogging, less variation due to AC fluctuations, less vibration, and more speed stability than the Anniversary's precision AC synchronous motor. This is one turntable that gets up to speed in a hurry and offers convenient electronic speed change (33 1/3, 45, 78rpm) at the push of a button. The Innovation Wood also uses a massive, dynamically balanced, stainless subplatter, derived from the Statement, which when combined with the optional Outer Limit peripheral ring, produces a nice flywheel effect.

The Innovation Wood also offers other notable advancements over the Anniversary. It sports two stacked yet decoupled Panzerholz plinths, rather than the Anniversary's one, with more damping in the sandwich construction, superb leveling locking feet, and a new platter machined from POM instead of acrylic. It accommodates two, rather than the Anniversary's three, tonearms and provides an excellent platform for both linear tracking and pivoted tonearms.

As with the Anniversary, to affix the record firmly to the platter I highly recommend the combination of the Clearaudio "Outer Limit" peripheral ring along with a high-quality record clamp. I had very good results with the modest HRS clamp and even better ones with Clearaudio's own massive Statement record clamp. This wonderful record-clamping system is on a par with some of the best vacuum-hold-down systems, but without the slightest risk of small dust particles being trapped in the grooves on the underside of the record, producing annoying "pops and ticks" when that side is played. Of course, if you meticulously clean both sides of the record at once and keep the platter free from dust vacuum hold-down is great, but I preferred the ease of use of Clearaudio's disc clamping approach and quickly became adept at using the stainless-steel peripheral ring and a record clamp.

When coupled with the Helius (see sidebar) and Benz, these advancements in the Innovation Wood lead to a more relaxed, natural, spacious, and detailed sound, with marvelous bass solidity, articulation, and extension. You'll hear deeper into the

performance as more subtle details emerge, like the tasteful caress of Roy Haynes' brushes across the cymbals or the air fighting to escape Clifford Brown's muted trumpet on *Sarah Vaughan* [EmArcy Records/Speakers Corner]. On recordings that call for it, like Rachmaninoff's *Symphonic Dances* [Turnabout/Analogue Productions], the sound is big, dynamic, and bold, as you hear it in a concert hall, with precise imaging and a reference-quality soundstage that is completely illuminated with excellent width and depth. The leading edges of transients are preserved so percussion instruments have amazing snap, and tympani strikes are so explosive they'll send shivers down your spine. PRAT fans will love the way the Clearaudio keeps their toes tapping on a wide range of recordings. Moreover, the Innovation Wood's superb pitch stability enables voices and instruments to seem like they're more clearly focused and transparent recordings like Sam "Mr. Soul" Cooke's *Night Beat*

### SPECS & PRICING

<b>Clearaudio Innovation Wood Turntable</b>	<b>Benz Micro Ebony H Cartridge</b>
<b>Bearing:</b> Clearaudio CMB bearing	<b>Type:</b> Moving coil
<b>Drive:</b> Belt	<b>Output:</b> 2.5mV
<b>Motor:</b> High-torque DC-motor with electronic optical speed control ("OSC")	<b>Weight:</b> 10.7 grams
<b>Speeds:</b> 33-1/3, 45, and 78 rpm	<b>Recommended Tracking Force:</b> 1.8 to 2.2 grams
<b>Speed accuracy (measured):</b> +/-0.2%	<b>Price:</b> \$3500
<b>Signal-to-noise ratio:</b> 84dB	
<b>Dimensions:</b> 18.86	<b>MUSICAL SURROUNDINGS</b>
<b>Price:</b> \$10,000 (Options as tested: Clearaudio Outer Limit peripheral ring, \$1250; Clearaudio Statement clamp, \$900)	5662 Shattuck Avenue Oakland, California 94609 (510) 547-5006 info@musicalsurrroundings.com musicalsurrroundings.com
<b>Helius Omega Silver-Ruby Tonearm</b>	
<b>Type:</b> Fixed-pivot captured bearing	
<b>Effective length:</b> 10" (9" and 12" versions are also available)	
<b>Price:</b> \$4750	

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## EQUIPMENT REVIEW - Clearaudio Innovation Wood Turntable

[RCA/Analogue Productions] sound more like live performances.

Okay, some exotic 'tables get even closer to the sound of a live performance or the mastertape in a couple of specific areas, but at a significant price premium. Music does not emerge from quite the same inky dark black background with the Innovation Wood as it does from the SME 20/12, nor does it achieve the spooky silence of the reference Clearaudio Statement with its magnetic drive. But make no mistake: The Innovation Wood isn't far behind in each of these areas. For those of you who like tests, the Innovation Wood/Helius/Benz combo sailed through the Telarc *Omnidisc* torture tests with excellent-to-outstanding results, only tripping up on the highest level of reproducing canon shots (as have all the other turntable systems I've tried).

The Clearaudio Innovation Wood is a brilliant achievement and sets new price/performance standards in several areas. Its pitch stability is stunning, and when mated to a first-rate arm like the Helius Omega Silver-Ruby and the surprisingly good Benz Ebony H cartridge, its soundstaging approaches reference quality. I applaud Clearaudio for migrating so much innovative technology down to more affordable products like the Innovation Wood. Now how about magnetic drive? **tas**

## HELIUS OMEGA SILVER-RUBY TONEARM

With the revival of analog a few years ago, Geoffrey Owen of Helius Designs decided to introduce a series of new tonearm designs after more than a decade of relative stasis. The Helius Omega Silver-Ruby tonearm occupies the top rung in the Helius line, and it is a gem in more than words alone. Owen has significantly advanced his innovative tetrahedral bearing design, using twelve large rubies in the Silver-Ruby version of the Omega instead of the tungsten bearings in the standard Omega to produce a captured bearing with extremely low absolute friction and single-point contact on all surfaces.

Save for the ruby bearings, internal wire, and color, the two Omega arms are mechanically similar. The Omega Silver-Ruby is silver with black counterweights, whereas the arguably more beautiful standard Omega version is anodized black with silver counterweights. Both are 10" arms—a size that Mr. Owen suggests approaches the reduced tracking-error distortion of a 12" arm without the latter's inertia or mounting problem. The Silver-Ruby

uses cryogenically treated single-strand Litz silver wire, instead of the standard Omega's copper. Each signal leg consists of two twisted pairs, one channel counter-twisted to the other, thus using nearly 8 meters of silver wire per arm. You can also order the Silver-Ruby with other options like a detachable headshell, 12" or 9" effective arm-lengths, or additional counterweights to extend cartridge compatibility to a range of 5 to 23 grams.

To minimize or control tonearm resonances so they do not impinge on the purity of the musical signal generated by the cartridge cantilever in the groove, this technically sophisticated arm is dynamically balanced, damped by differential masses to control the pivoted motion of the arm, and has non-coincident bearings. There are numerous small touches everywhere that contribute to this arm's remarkable performance, like bracing ridges machined into the fixed headshell, microadjustment of tracking downforce, and a collet clamping baseplate. The internal cue construction comes at the expense of set-up

convenience, and it lacks adjustable VTA during play, but one can't argue with the sonic result.

The Omega Silver-Ruby lacks the ease of setup and cartridge-swapping of a Graham, or the easy micro-adjustments of the Triplanar, but the Helius' sound, or lack thereof, is first-rate, and in some respects, revelatory. If the rest of your system is up to it, the Omega Silver-Ruby's ability to reproduce a rock-solid, precise, and complete soundstage, without truncating the rear of the stage, is reference quality. It has exceptional tonal neutrality and clarity across the sonic spectrum, with deep, dynamic, and articulate bass without bloat or overhang, and naturally extended highs without any stridency. You will not hear any blurring of the leading edges of transients with this low-coloration arm, which approaches the openness one experiences with some of the better linear-trackers. I was so taken with the Helius Omega Silver-Ruby that I nominated it for a Golden Ear Award and suggested that designer Owen had effectively eliminated the "tone" from the "arm."



# Bergmann Sindre Straightline Tracking Arm and Turntable

## Thor's Turntable?

Paul Seydor

The Danish designer and manufacturer Johnnie Bergmann named his Sindre, a new straight line tracking integrated turntable, after *Sindri*, a dwarf in Norse mythology who forged Odin's golden ring and Thor's hammer. While forging and hammering are pretty far removed even as metaphors from the tasks of playing a record, this would hardly be the first time in the history of audio that a product's name is at once allusive and elusive, and Scandinavians do seem to love actually *naming* their products as opposed to assigning mere model numbers (have a look at the Ortofon catalog or stroll through any IKEA). Bergmann clearly intends to invoke a spirit of workmanship worthy of the gods, which could also be construed as adding hubris to obscurity. Fortunately, there is nothing dwarfish about the Sindre's performance, and its craftsmanship is certainly of a high order indeed. In the remarks that follow I will be making some criticisms of aspects of the design, but I should like it understood from the outset that the Sindre is one of the finest turntables I have ever used and that I enjoyed every minute of the time I had it in house.

As every reader must know, pivoted tonearms are intrinsically compromised because they inscribe an arc across the record, whereas a record master is cut radially, that is, the front to back axis of the cutting stylus is held at a right angle to the groove as it tracks along a radius. Assuming correct arm geometry and pickup alignment with respect to offset and overhang (according to formulas developed in the 1940s and before), lateral tracking error (LTE) of pivoted arms can be reduced but reaches zero at only two points. Everywhere else there is a deviation from

tangency with consequent penalties in distortion. In practice the significance of LTE appears to be rather small when arms and pickups are properly set up, its audible consequences even smaller (e.g., the loudest distortion products tend to be of the relatively benign second order harmonic variety). But high-end audio is nothing if not perfectionist, for which reason straightline tracking—henceforth SLT—arms have long been something of a holy grail among designers and audiophiles.

In the late seventies and early eighties I went

through a period where I tried out several SLT integrated turntables (these did *not* include the Goldmund, way beyond what I could afford) and found them all lacking in one way or another when compared to my preferred setups (Thorens/SME, Linn, later various SOTAs with The Arm or SMEs). The SLTs' putative tracking advantages were more than offset by any number of problems in the arms and/or their associated tables (see sidebar). Owing to these experiences, I was too discouraged to try some highly regarded separate SLT arms, notably the Eminent Technology, the

forerunner to all subsequent airbearing SLTs, including the Sindre's. So when Robert Harley proposed this assignment, interest and anxiety were piqued in about equal measure.

### DESCRIPTION AND SETUP

Priced at \$21,000, the Sindre comes as three boxes: the integrated turntable, an outboard controller/power supply for the motor, and an outboard air pump for the airbearings. With its clean lines and black/silver/white color palette, the main unit is appropriately Danish in its elegant



## EQUIPMENT REVIEW - Bergmann Sindre Straightline Tracking Arm and Turntable

simplicity, but this simplicity belies a good bit of sophistication in thinking and engineering. The nucleus of the design consists in the use of airbearings for both the arm and platter assemblies. In an arrangement reminiscent of the Air Tangent, Bergmann uses a fixed open pipe with tiny vents along the top. The back of the arm tube is attached to a light, rigid, short sleeve that fits around the air pipe and allows the arm to glide as if friction free. As dust and grit can easily cause an airbearing to hang up, the pump is outfitted with a filter (easily replaceable should the need arise).

The arm is mounted at the factory; its base, counterweight, and bearing assembly are made from a hardened aluminum alloy, the tube from carbon fiber. Setup is straightforward and easy (despite a manual that, as translated from Danish, is as risible as anything I've read from the Far East). Vertical tracking force is static, set by a counterweight, so a gauge (not supplied) is needed. Vertical tracking angle is set by loosening a screw on the arm base and raising or lowering the column as required. For accurate pickup positioning, the Sindre comes with an easy to use aluminum jig that fits over the spindle; on the jig is a radial line from the spindle to a second line that intersects it at 90° near the outer edge of the platter. Simply position the pickup so that the stylus cues down at the crosshairs (the shank aligned with the intersecting line), then check it again at any other point along the radius. Once the stylus cues down on the radius at any two *separate* points, you've finished this adjustment. In place of a headshell in the ordinary sense of the word, an aluminum headpiece terminates into a narrow head beam with a half moon cross-

section. Over this fits a crossbeam to which the pickup is fitted. The crossbeam is not otherwise attached to the headpiece until the pickup is installed and tightened down, whereupon they form in effect a clamp around the head beam.

There are two things I dislike about this arrangement. First, the lack of a proper headshell to which the pickup body can be solidly attached might be the cause of one of the few tonal anomalies I heard from the Sindre (more about this later). Second, and more important, in an application where precision is of the essence, there really should be a *default* setting for level *vis-à-vis* the platter/plinth which can be easily returned to. There is none on the Sindre. Once you get the stylus positioned for correct radial tracking, you've got to loosen the crossbeam to adjust the azimuth; but if you loosen it too much, the stylus will likely over or under shoot the radius, at which point you have to redo that adjustment. In practice, this was not quite so frustrating as I'm making it sound, but I was struck that an arm of this sophistication was not better thought out here.

There is also a more important reason why I dislike the absence of a default to level. Eyeballing azimuth by dragging out mirrors—I almost wrote “smoke and mirrors”—and other paraphernalia is hardly the most reliable way to get it right, but that only brings up the question of why it wasn't done right *before* the pickup left the factory. I've climbed on this soapbox before in these pages and I shall do so again now: any pickup costing more than a couple of hundred dollars that needs after-factory adjustment to achieve correct azimuth ought to be returned. It is shameful that there are pickup manufacturers who justify the thousands of dollars they charge for their

products on the basis of claims to precision engineering and exacting craftsmanship yet cannot guarantee something as fundamental to stereo reproduction as correct azimuth, in effect leaving the quality control to arm designers and us consumers.

The only other aspect of the arm that raised an eyebrow is the cueing mechanism. Running parallel to and below the shaft through which air is vented is a second, smaller tube that extends through the arm base, where it is attached via a rubber O-ring to a large knob. To engage cueing you simply turn the knob, which causes the tube to engage a small pin sticking out from the bottom of the arm at the back, thus raising or lowering it. The trouble is, there is no damping or cushioning of any sort, which means that the speed of the cueing is as fast or as slow as you turn the knob. The uninformed buyer expecting the typical damped mechanism could easily turn the knob so fast that the pickup actually hits the record when down-cueing or goes sailing into the air when up-cueing. *And there is no warning about this in the manual.* As I already knew about the issue before the turntable arrived, I experienced neither surprise, but it is grossly irresponsible of Bergmann and/or its domestic distributor Aaudio Imports not to put a very big alert in the manual. Otherwise the cueing not only works superbly, it is the most precise I've ever used: absolutely accurate to the groove, with no drift. (For all I know the lack of damping partly accounts for its accuracy. Fair enough, but just let the buyer in on it!)

The turntable is belt driven by a DC motor controlled by an outboard power supply that selects and affords fine adjustment of speed

(33/45). According to the literature, the turntable's air bearing consists “of two aluminum discs between which the air supply creates a thin frictionless air film. The spindle is centered in a bearing housing made of a very hardwearing and extremely frictionless technical polymeric. The material, which is vibration muffling in itself, has a five times longer life than bronze bearings.” A seven pound aluminum subplatter supports the nearly nine pound acrylic platter, with an aluminum clamp that screws onto the threaded spindle. Fitting the belt is a little tricky because it has to be done partially “blind” as it were, but otherwise there's nothing to setting up the platter except adding some supplied oil to the spindle well and carefully fitting the spindle into the well.

### SPECS & PRICING

#### Bergmann Sindre Straightline Tracking Arm and Turntable

**Type:** Straightline tracking air-bearing arm and turntable

**Effective arm mass:** 10 grams

**Motor:** Belt-drive, DC, 33/45 rpm

**Dimensions:** 18.7" x 19.7" x 18.26"

**Weight:** 50 lbs.

**Price:** \$21,000

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## EQUIPMENT REVIEW - Bergmann Sindre Straightline Tracking Arm and Turntable

### STRAIGHTLINE TRACKING AND ITS DISCONTENTS

As the accompanying review indicates, the Sindre tonearm is an exceptionally well-executed SLT that works superbly, reliably, and consistently. But is radial tracking as such the most important capability an arm can have, all other things being equal? Not always or necessarily. For one thing, a big problem that has plagued designers is how to move the arm across the record. Most use either an electronic servo drive or an airbearing; both can be made to work well, but they tend to be expensive and are not always trouble free. For another, since SLT arms are shorter than pivoted ones, any errors in pickup alignment are magnified, often enough to negate the advantages of radial tracking because they remain constant across the record (equally true for any errors in the stylus/shank assembly that escape the QC department of your pickup manufacturer).

Inasmuch as the actual distortion from the LTE of pivoted arms (or at least its audible effect) appears to be relatively small, many question whether SLTs are even worth the trouble. In "Straightline to Nowhere?" (*HiFi News*, December 2004), Keith Howard reported a series of tests using computer simulation to determine if the LTE distortion from a correctly set up nine-inch pivoted arm with perfect geometry is audible. He concluded that it was "potentially audible" (my

emphasis). Unless I missed something in his report, these tests did not involve an actual arm with an actual pickup tracking an actual record, merely a computer simulation of same, while the "potentially audible" differences were discernable—to the extent that they were at all—only on a comparative basis using very carefully selected material.

Of course, all other things are rarely equal. It's arguable that quality and type of bearings, whether and how damping is employed, the materials used and the mass are all more important or as important—these without even mentioning the caliber of engineering and manufacturing or the obvious fact that lateral tracking is only one parameter of one component of the three principals that constitute a record playing setup.

I have no wish to scare anyone off an SLT arm. From everything I've read and from my experience with the Sindre, SLT arms of today are worlds superior to most from the distant past. But straightline tracking alone will not guarantee you the reproduction of your dreams. As the designer of a highly regarded pivoted arm once observed, "You know, listening to a record, you don't suddenly exclaim, 'Ah,' in relief, when the stylus reaches its two tangent points." Nor do you begin to squirm as it moves away from them. Indeed, you don't even notice. **PS**

Recessed on the back of the plinth are a pair of WBT phono jacks (no signal cable is provided, so the user must supply his own), connectors for the air hoses to the outboard pump, and a pair of recessed screws that adjust air pressure for the airbearings. The manual is not terribly clear how much pressure should be applied (nor are there any indicators) and at least one reviewer reported having some difficulties here. I had none. Turn both adjustments to minimum. For the turntable, raise the pressure until the platter, once up to speed, spins without producing any scraping noise against the subplatter. For the arm Bergman supplies a plastic cylinder to obviate the need to set the air pressure with the pickup installed. Place this cylinder over the air tube, then slowly raise the pressure until it glides smoothly with seemingly no friction. That's pretty much it.

The pump operates quietly enough that it can be left out in the open, but the long air hoses and the generic industrial appearance suggest placement out of sight in a cabinet or even in another room. But this also involves an inconvenience, as there is no way to turn the pump on and off except at the pump itself, another surprising oversight in a product this thoughtful and expensive. Surely Bergmann could have figured a way to incorporate the pump's on/off function onto the motor control chassis, which is designed to be placed near the turntable. With no room on the equipment shelf, I had to place the pump in the cabinet below. Unless I wanted to bend down and open the cabinet door every time I used the turntable, I had to plug the pump into one of those switches that plugs into an AC outlet. A one time only annoyance, you might say, and the switch was cheap enough, but I'd still call

this pretty Mickey Mouse even if the Sindre were priced a whole lot less than it is.

I've gone into the design and setup of the Sindre in such detail because I know I am far from alone in being skeptical about the advantages of SLT arms in practice (again, see sidebar), especially with respect not only to setting them up but to their being able to maintain their adjustments without constant fussing, tweaking, and other sorts of attention. In my experience the Sindre really does represent something of a breakthrough for an integrated SLT turntable in eschewing needless complexity of engineering and setup while being seemingly full-featured—not to mention fool-proof—in operation. My complaints about the head piece, the cueing mechanism, and the on/off arrangement of the air pump notwithstanding, I've rarely had installing and aligning pickups go quicker, easier, or more accurately than here; and once I performed the other tasks of setup and adjustment, all quite simple and easy, no further trimming or attending to was necessary. Functionally, the Sindre performed flawlessly throughout the entire review period—rarely has playing records been more pleasurable.

### LISTENING

The first thing I do when reviewing a new turntable before listening to a note of music is to check its isolation characteristics. This may seem a curious, if not perverse way to begin the listening section of a piece about a turntable that features a truly superb SLT tonearm; but the Sindre's plinth is fixed, not suspended, and regular readers of mine will know of my preference for tuned, sprung suspensions as the surest way to protect the stylus/record interface from structure-borne



## EQUIPMENT REVIEW - Bergmann Sindre Straightline Tracking Arm and Turntable

disturbances. No matter how heroic the damping or behemoth the mass, I've never found a fixed plinth arrangement that is anywhere near as effective as a tuned suspension when it comes to physical isolation.

In my listening room all turntables are mounted on a sturdy, built-in cabinet secured to both the floor and the walls. My usual practice is to cue the stylus to a record on a stationary platter, turn up the volume, and tap the surface of plinth. In the case of the Sindre, nothing, not a burp. I raised the volume and tapped harder. Nothing. I raised the volume even more, made a fist, and lightly but firmly pounded on the plinth. Still nothing. So I hit it with considerable vigor and was able to produce the slightest, and I do mean *slightest*, thump through the speakers, so low in level it wouldn't have disrupted quiet conversation. Finally, I pounded the surface of the cabinet as hard as I could with absolutely no audible effect whatsoever. This is *not* only by an order of magnitude the best isolation I have ever experienced from a fixed-plinth turntable, it is the only time I've ever not felt the need for after market remedies with one! Bergmann attributes this to a combination of the Sindre's massive plinth/base, which is constructed of three separate layers of high density particleboard and rests on three metal cones, and the airbearing, which has been designed to act as a kind of "spring."

So how *does* it sound? In a word, superlative. Outfitted with an Ortofon Windfeld, my reference this last year or so, the Sindre sailed with ease over just about every stretch of round black sea I launched it upon. Quite early into the evaluations I noticed two outstanding characteristics that I cannot say for certain owe to the radial tracking but

that logic suggests do. First, my most difficult to track LPs really do seem to have been negotiated a bit more cleanly and confidently, especially at side ends where the climaxes of so many big works occur. I have one LP in particular—an Argo recording of the Advent service at Kings College—that I've never been able to track absolutely cleanly without at least some residual shatter, especially when the boys' voices go way up high. I have no idea if it even *can* be tracked absolutely cleanly, but the Sindre/Windfeld came closer than anything else I've used, if only by a smidgeon. And in general very hot sibilants on closely miked singers' voices seemed to sound a hair or two cleaner as well.

Second, by a slight margin imaging with respect both to the soundstage and to the position and/or movement of players and singers within it was more precise, stable, and predictable than from any other vinyl setup with which I've had long experience, while depth appeared to be limited only by the recording venue and the disposition of the microphones. This was made particularly evident by an old favorite I was inspired to pull out: the marvelous *King James Version*, a Sheffield direct-to-disc that was a much-trusted reference in the days when vinyl ruled the world. The miking here offers a middle perspective so that the sense of a big band playing in a beautifully reverberant acoustic (a church in Santa Barbara, I believe) is captured with striking realism, likewise as reproduced.

Of course, the Sindre shines in many other areas. Take resolution: During Father Christmas's monologue near the opening of *The Christmas Revels* I became aware of the venue, the size of the room, its acoustical character, the distances

to the side and back walls (even what they seem to be made from), as I rarely have before. Complex, thickly scored passages with a lot going on in them, such as are to be found on this recording or my trusty Bernstein *Carmen*, are rendered with truly remarkable inner detail and clarity. If you enjoy following scores, know that you can pick out a voice, an instrument, a contrapuntal strand or fugal line and follow it with ease, assuming the mics picked it up and the musicians have balanced it to be heard.

Yet such intimacy is never at the expense of the big picture or the gestalt. In Classic Records's handsome reissue of the Everest recording of De Falla's *Three Cornered Hat*, it was thrilling to hear the opening fanfare emerge with such richness of atmosphere and integrity of spatial presentation, the soprano sounding as if she is with the orchestra, not apart from it. Even more satisfying was to hear her apparently offstage appearance on the second side sound as if she really were offstage or at least quite distant, yet with the voice projecting into the acoustic of venue. An old recording of the musical *Camelot*, made in England with Laurence Harvey as Arthur, recorded very naturally, albeit with orchestra and chorus placed behind the soloists, was staged for the gramophone: in the ensemble scenes, such as "The Merry Month of May" and "Fie on Goodness," the performers move about in a very realistic way that makes the drama come movingly to life. The Sindre's way with dynamics is similarly lifelike, unforced and effortless at the loud end of the scale, refined and nuanced at the quiet end.

As these examples suggest, the Sindre leaves little to be desired in the areas of resolution,

clarity, control, and dynamics. When it comes to tonal balance, I became aware of what appear to be just two anomalies. Before describing them, let me say that I am far less confident than many of my colleagues when it comes to ascribing tonal characteristics to arms and turntables. This is because it is impossible to listen to them in isolation, only as a three-part system. All one can do is describe the sound of the setup and compare it to the sound of other setups one has some (preferably long) familiarity with, hoping that a reliable consistency will emerge over time.

As readers may recall from earlier reviews of mine, the Ortofon Windfeld in the Basis Vector 4 arm on a Basis 2200 arm/turntable yielded a more dead neutral tonal balance than I've experienced from any other pickup, and some other reviewers, using it in different arms and turntables, came to pretty much the same conclusion. The Sindre/Windfeld combination yielded similar tonal neutrality throughout most of the range except at the top and very bottom. With every recording I use to evaluate high frequency clarity, airiness, and definition (try the opening cut on Sheffield's *The Name is Makovich*), the sound is as clean and well controlled as I've heard from any setup and considerably superior to most. Indeed, it's a sound that in its precision I'd liken almost to a scalpel. But I also heard a slight Yang, as opposed to Yin, cast, what I'd characterize as a very subtle but consistent "brilliance." I use the quotation marks because the effect cannot be described as glare, it doesn't sound like ringing (at least as it typically manifests itself to my ears), and it's so mild it doesn't throw the timbre of instruments off. It's rather like the frisson of brilliance you sometimes hear if you move closer to the performers. As I

## EQUIPMENT REVIEW - Bergmann Sindre Straightline Tracking Arm and Turntable

heard a similar effect with the Dynavector 17D III, which rivals the Windfeld for flatness of frequency response if properly loaded (I run all moving-coil pickups correctly loaded), I am led to wonder if perhaps the lack of a full sized headshell on the Sindre arm means that some spurious low level resonances at the stylus/vinyl interface are not being suppressed or passed along to be drained away as heat in the chassis.<sup>5</sup>

At the bottom of spectrum the bass is deep and superbly articulated with respect to pitch, rhythm, definition, and overall responsiveness. Nor is this at the expense of size and scale, as the organ in that Kings College Advent service demonstrates with a vengeance. Yet, though I wouldn't call the bass in the least dry, it nevertheless doesn't quite open out with that sense of ultimate bloom, airiness, and freedom that I hear from some other setups (notably my Basis reference, the SME 30, and the SOTA Cosmos, though the last named, while hardly deficient in resolution, doesn't quite equal the Sindre's). I'd make a parallel observation about how the Sindre handles noises typical of vinyl: it is "merely" excellent rather than outstanding, its background impressively black without quite reaching that really deep, deep blackness I've heard from a few other turntables. On the other hand, when it comes to that elusive sense of live music vitality, the Sindre has it in spades. If you're lucky enough to have a copy of M&K's *For Duke*, put on "Take the A Train" and just try to sit still.

### CONCLUSION

The few reservations I've expressed about the Sindre should be read in the context of the most minute and exacting comparisons made at the

highest levels of performance of the finest record playing setups in my experience. These are comparisons the Sindre need not fear, and the effects I've described are not obtrusive and are of a low enough order they must be listened for. If I wouldn't personally choose to replace any of my longstanding references (especially the Basis Vector 4/2200), I could nevertheless live happily with it indefinitely without feeling so much as a moment's deprivation. By way of suggesting just how great both my esteem and my enthusiasm are for this superb product, allow me to relate a telling experience. The first recording of chamber music I ever bought was the Yale Quartet's of Beethoven's Opus 132 on Vanguard from the late sixties, which has managed to survive some forty years of various purges of my LP library (it's still available on compact disc and well worth searching out). Almost as if by magic the quartet aurally materialized, the four players palpably arrayed across the front of my listening room, sounding for all the world like real musicians playing real instruments, the famous passages in the second movement where Beethoven has the strings imitate the sound of a bagpipe so delightful they brought a smile to my face, while the "Convalescent's Holy Song of Thanksgiving" in the third movement was transcendently radiant and serene. When sound reproducing equipment can in effect disappear and replace itself with experiences like that—and this was but one of countless instances of the Sindre's alchemy—well, let's just say I can neither imagine nor bestow higher praise. tas

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## HP's Workshop

ADVERTISEMENT

### Clearaudio Statement playback system and Goldfinger V2 moving-coil cartridge

Nevertheless, the Clearaudio Statement is one of the most thrilling components I have encountered in the past 20 years. It is just awesome, and immediately so, from the first listen on.

It, along with the new version of the Goldfinger cartridge, represents a return to form for this German company after some years of dabbling in high-definition sounds—you know what I mean, forward, highly defined to the point of etchedness, with thunderous bass and solid-state-sounding highs. Its superiority to ordinary turntables is evident from the moment the first disc lands on its 42-pound acrylic platter...

This was a five-year project, Suchy said, "to find out what is possible if you push everything to the theoretical limit." To my surprise, Suchy, when the Continuum Caliburn—its logical competitor was mentioned—paid it great respect, saying that, via the use of computers, its designers were attacking the same problems that Clearaudio was in, say, "analog as opposed to digital" fashion.

And so, how does it sound? And how does it not sound?

The very first thing you'll notice about the Statement, once the needle is on the disc, is how very quiet it is—everything is. It's almost supernatural, this effect. You just don't hear those things we take for granted in all LP playback...

The Statement magnetic-drive system is much more elaborate; perhaps it has to be given the sheer weight, solidity, and mass of the 'table. It outdoes the strengths of the other two 'tables, and goes further in reducing other forms of resonance—don't ask me, just yet, what they are—that cause smearing and blurring of transients, even down to the articulation of individual notes. And it achieves this with well-nigh perfect naturalness: There is no sense of edge or strain, or of any undue emphasis or "enhancement." It is a sense of ease at all playback levels I do not recall hearing until now.

For me, one of the more amazing things the Statement allowed our listeners to hear came during the last movement of Rachmaninoff's Third Piano Concerto [Janis, Dorati, Mercury]. Many folks consider this, as do I, to be "the" best of the many modern versions, in both performance and sound. It is a familiar standby here in Sea Cliff. But until the Statement/Goldfinger system I never heard all the individual notes articulated in the fiendishly difficult piano runs. It sounded, at times, as if Janis had three hands (really and truly). There was another and unexpected level of musical information unveiled from the recording. It's enough to give you a deeper appreciation of Janis' keyboard wizardry...

There is more to detail here. But, let me say, that until I return for Part II of this analysis, with the Statement I felt as if I were hearing mastertapes, not discs. Now, in fact, I have heard the mastertape of the Kije, thanks to Classic's Mike Hobson, at Bernie Grundman's studio in L.A., and so my comparison is no idle modern-day-reviewer's cliché. Let me put it another way: In many of these recordings, the Bartók for one, you don't have the sense that you are listening to an LP, a record. You can easily fool yourself into thinking you are listening to a performance of the music, not what it was like "live" but how it was, virtually, on the mastertape. For one thing, the bass dynamics alone will catch you by surprise, because they emerge from a velvet background of silence, and that can be startling. Supernatural is the word of choice for me at this moment...

I haven't heard any component that exceeds the Statement in defying ordinary analysis, because what it does is so new and so emotionally satisfying that it (temporarily, I hope) defies conventional criticism. That's how good it is.

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# AAS Gabriel/Da Vinci Turntable and Da Vinci Grandeeza Tonearm

**Hats Off, Gentlemen!**

**Jonathan Valin**

**S**ometimes people ask me what I listen for first when I review a new piece of equipment. Usually I tell them “a closer analog to the sound of live music,” which is true enough in an official-TAS-decoder-ring sort of way. But if I were being less high-minded, I’d simply say: “More.”

More of what? What I haven’t heard before. To me, hearing new things in old-favorite recordings means that what I was listening through before (sometimes for decades “before”) was somehow veiling these things and that what I’m listening to now has lifted that veil. Of course, if I’m hearing more of some things I’ve never heard before and less of others I’ve heard many times before, then veils are being lifted *and* dropped, and the trick is to weigh the balance.

Frankly, until fairly recently this last was almost always the case. Audio gear, even great audio gear, tends to giveth and taketh away in almost equal measures. For instance, the TW Acoustic Raven AC-3 turntable (with Graham Phantom arm) that I reviewed so favorably in last year’s

analog issue was and is a paragon of beguiling musicality, reproducing timbres with a richness that made great recordings sound even greater. That was the “more” part. The “less” was that it made recordings I know for a fact to be problematical or downright mediocre sound semi-great, too.

Or take the MartinLogan CLX that I reviewed in our last issue. Here was a speaker that set a new standard (in my experience) of colorless transparency to sources—kind of the polar opposite of the TW Acoustic in that it told you precisely how well or how poorly a performance was recorded, making great LPs or CDs sound astoundingly realistic and lousy ones sound astoundingly artificial. That was the CLX’s (quite



## EQUIPMENT REVIEW - AAS Gabriel/Da Vinci Turntable and Da Vinci Grandeeza Tonearm

considerable) “more.” (Actually, there is a good deal more to its more—for which see my review.) Its “less” was that it had virtually no deep bass, rolling off abruptly below about 55–60Hz.

In both of these cases the “more” substantially outweighed the “less,” and a high recommendation was easy to make. Indeed, in spite of its lack of low bass the CLX has joined my little pantheon of the greatest loudspeakers I’ve heard (which, for the record and the moment, includes the Rockport Hyperion, the Magico Mini II, the Symposium Acoustics Panorama, the MBL 101 X-Treme, and the Kharma Grand Exquisite, with the Magico M5 waiting in the wings).

All of this brings me to the subject at hand, the drop-dead-gorgeous, Ferrari red \$48,500 AAS Gabriel/Da Vinci turntable with the \$11,635 Da Vinci Grandeeza twelve-inch tonearm. Why the lengthy preface? Because the Da Vinci record player delivers not just more but *so much* more I’ve never heard before from LPs—good, bad, or indifferent—that it has to be counted the most remarkable non-linear-tracking record player I’ve heard in forty or so years of listening. Obviously the Gabriel/Da Vinci is lifting veils or, to put this differently, substantially lowering noise. (I will get to the kinds of noise and the manifold effects this has on LP playback in a short bit.) Why it is doing this can be explained, I think, by differences in the way it works.

First, the AAS (Analog Audio System) Gabriel is a magnetic-bearing turntable; indeed, after the pioneering Platine Verdier, it is the oldest magnetic-bearing design, dating back to the 1980s when a music-loving Swiss engineer named Hans-Peter Gabriel, frustrated by the limitations of the ‘tables then on the market, developed one of his own.

Although it has gone through three revisions since the original iteration—the current Model 3’s bearings, motor, motor controller, and feet are entirely Da Vinci’s work—the fundamentals have stayed pretty much the same.

A massive (57-pound, four-inch-high) platter, made of a dense aluminum alloy with a high copper content (shades of TW Acoustic), with a powerful ferrite ring-magnet inset into its base sits on a thick lubricated vertical bearing set into the ‘table’s massive, cylindrical, Birch plywood “plinth”—like a cylinder sitting inside a slightly larger cylinder. Another ring-magnet, inset into the wooden “floor” of the plinth, repels the ring-magnet in the bottom of the platter, causing the entire platter to rise a good 4mm up the bearing. This “levitation act” decouples the platter from the bearing around which it rotates, greatly lowering

or eliminating the transmission of noise from axle to platter. Although some have argued that springs or fluids are the only ways to isolate a turntable platter (or tonearm) from vibration and prevent bearing chatter, an air gap is clearly another.

Second, the Gabriel uses Da Vinci’s twelve-inch Grandeeza tonearm on a separate cylindrical arm pillar, also made of dense Birch plywood. (Although separate outboard arm pillars are not uncommon today, they were when Gabriel first designed his ‘table. Indeed, part of the reason he decided to make his own analog playback system was that he owned three arms and couldn’t find a ‘table that would accommodate all three.) Those of you already deeply into vinyl probably know about the Grandeeza tonearm. It has a helluva reputation—and, at nearly \$12k, a helluva price tag. Though there is a little “bling” involved in this

pricing (the gorgeous Grandeeza can be had in a 24k gold or, as in the case of the one supplied to me, a rhodanized platinum finish), most of the cost is for materials and precision assembly. Why those materials are so important has to do, in part, with the length of the arm.

It is well known that a twelve-inch arm, with its smaller arc of travel across the surface of a record, substantially reduces tracing distortion and tangency error, which is a very good thing to do. However, it also increases the arm’s effective mass (it *is* three-inches longer, after all, than a typical nine-inch arm) and changes its resonance characteristics. To optimize mass distribution and control resonances, Da Vinci uses a unique combination of materials chosen to achieve the utmost musicality: an arm tube made of tapered Brazilian rosewood (also called “tonewood” because of its historical use in the bodies of fine violins and guitars), a bronze and steel bearing block, a bronze headshell, and copper/tungsten counterweights, all manufactured and assembled with fanatical care. (No golf or squash balls here.) Perhaps the literal jewel in the Grandeeza’s crown is its incredibly high-precision double-gimbaled arm-bearing. This is not a conical device but something very much akin to what you would find in a Patek or a Breuget wristwatch—a timepiece-like bearing that uses eight rubies and steel bearing-bolts handfitted to the highest tolerances by one of Switzerland’s foremost watchmakers.

Although the Grandeeza has a surprisingly-high-sensitivity magnetic anti-skate mechanism (a simple screw that you literally turn by hand, in and out), that antiskate screw and the counterweights are the only functional adjustments on an arm that otherwise deliberately forgoes any other



## EQUIPMENT REVIEW - AAS Gabriel/Da Vinci Turntable and Da Vinci Grandeeza Tonearm

loose or loosenable parts, which Da Vinci regards as potential sources of resonance and user-error. If you think that missing out on an azimuth adjustment or some elaborate VTA mechanism—here adjusted by unscrewing the high-precision bolts that hold the Grandeeza arm-pillar to its arm-mount collar and then physically moving the arm up and down by hand within the limit of its pillar's travel (it sounds best and is designed to be used when set within the first third of the pillar's length)—then do what Da Vinci suggests you do: Listen to the arm and decide for yourself if what's been left out compromises the sound.

Third, the Gabriel uses an unusual belt-drive system. The highly stable and exceptionally quiet stepper motor and motor controller, designed by Da Vinci's chief engineer and CEO Peter Brem, are milled from a solid aluminum block that is set in a third cylindrical Birch plywood cylinder, with the hollow spaces filled with a special damping compound. What makes this design unusual is its astoundingly low tension. Da Vinci's belt (made of a special compound also of Brem's design) is intended to be set so that it makes the loosest contact I've ever seen between a belt and a platter—you know you have the motor-to-platter distance right when the belt is just a finger-push away from slipping off. The motor is designed to take advantage of this low-tension interface, ramping the platter up to designated speed when it is first turned on almost as quickly as the standard-setting TW Acoustic did, and then reducing current flow to the motor to a level that is precisely enough to keep the (levitated) platter rotating at the right number of rpms. Although Peter considered a magnetic-drive engine (and every other kind of motor), he came

to the conclusion that this low-tension/loose-belt solution best prevented vibration from the motor being transmitted to the platter.

Fourth, the Gabriel uses extremely-heavy-duty “vertical damping” feet made of what appear to be thick cylinders of steel, aluminum, tungsten, and God knows what else. The design is again Brem's, and as he is currently seeking a patent on it, he is loath to talk about it in detail. On their bottoms the feet have large rounded tips, and, after three of these feet are screwed into the underside of the turntable plinth, motor pillar, and arm pillar, these tips are easily rotated to level the 'table, motor, and arm. (Da Vinci supplies you with bubble-levels and an Allen wrench to facilitate this.)

As effective as the feet are—and they are far more effective than the massive, ball-bearing Finite Elemente feet that were supplied originally with the Gabriel—I would still recommend that the entire record player be placed on a suitable isolation stand (I use a Symposium Isis with a huge Symposium Ultra sitting atop it), to further enhance the substantial reduction in noise and coloration and distortion that this record player achieves. (But then I recommend that any turntable, suspended or not, be put on a stand that prevents floorborne vibration from disturbing it.)

How does this lowering of bearing noise, arm resonance, and motor vibration affect the Gabriel/Da Vinci's sound? Well, if you read my CLX review in our last issue you already know. Much of the standard-setting transparency to sources that so distinguished the CLX was due to the Gabriel/Da Vinci's own standard-setting transparency to LPs. Indeed, I've never heard a

more transparent turntable and tonearm in all my years and days.

The Gabriel simply passes through more information about how recordings were made than any other analog source I've heard (though the Walker Black Diamond is very close and has its own strong set of virtues, which I will come to in a bit, I'd have to say that the Gabriel outdoes it here).

Through the Gabriel overdubbed voices or multi-miked instrumentalists, such as those on the Joni Mitchell album *Hejira* [Warner], won't just sound artificial; they will sound like individual soundstages within the overall soundstage—little spots of time and space that are unmistakably different in miking, tone, ambience, and even shape than the other spots of time and space that make up the rest of the stage. Obviously, I've heard the effects of multi-miking many times before with other turntables, but I've never heard them turned so clearly into the auditory equivalent of photographic double (or triple or quadruple) exposures. The effect is uncanny—like peering over the mastering engineer's shoulder as he mixes down the mastertapes.

This is a leap in low-level resolution such as I've never experienced before from a turntable/tonearm, and it isn't just reflected in the true transcription-level reproduction of engineering and mastering effects. The Gabriel/Da Vinci has several other just-as-spectacular tricks up its roomy sleeve.

I mentioned one of these in the CLX review—the incredible expansion of dynamic range that the Gabriel/Da Vinci seems to effect on all recordings, particularly on *pianissimo* (soft) passages. When it comes down to it, I've long felt

that LPs (and CDs to a far greater degree) don't reproduce *pianissimo* passages of music with anything approaching lifelike realism. Indeed, what we think of as a *pianissimo* on a typical record player is really closer to a *mezzopiano*—yeah, it may not be as loud as what precedes or what follows it, but in an absolute sense (rather than a relative one) it doesn't come close to the breathtaking whispery softness and clarity of a true *pianissimo* in a concert hall.

To be honest, I always thought that this compression of *pianissimo* passages was part and parcel of listening to recorded music—that the accumulated noise floors of microphones and tape players and mixing consoles and cutting lathes and the plating/pressing process (not to

### SPECS & PRICING

#### AAS Gabriel/Da Vinci Turntable and Tonearm

**Type:** Belt-driven magnetic-bearing turntable with free-standing motor/motor controller and free-standing 12-inch double-gimbaled tonearm

**Weight:** 194 lbs. with one tonearm pillar; 313 lbs. with four tonearm pillars

**Price:** \$60,135 as tested (\$48,500 for turntable in Ferrari red with one motor and one arm pillar; \$11,635 for Grandeeza 12 tonearm in rhodanized platinum finish)

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## EQUIPMENT REVIEW - AAS Gabriel/Da Vinci Turntable and Da Vinci Grandeeza Tonearm

mention those of stereo systems themselves) were simply too high to accommodate a cello playing a *pianissississimo* (*ppp*) at around 50dB SPL or a horn's *pianissississimo* at about 47dB SPLs. When all this accumulated noise was combined with our own tendency to "turn up the volume" because of the ear's relative insensitivity to certain frequencies at low levels, you inevitably ended up with *pianissimos* that sound more like freight trains than feathers.

That's what I thought—until I heard the Gabriel/Da Vinci. But I was wrong—and this has been one of the most incredible revelations in all my years as a listener. The Gabriel/Da Vinci has proven to me conclusively that vinyl and stereo systems are capable of a dynamic range I didn't dream was possible. Here, folks, for once is a record player that can capture and reproduce a *pianissimo* not just with utter clarity but also with genuinely lifelike whisper-softness (provided, of course, that the overall playback level is properly set). I mentioned Sylvia Tyson's sweet nearly inaudible accompaniment on the refrain of the old folk song "Blue" (from *Ian and Sylvia* [Vanguard]) in my CLX review—a passage that, in the past, I had to turn up to hear clearly (and in so doing destroyed the musical effect that she and her husband Ian were aiming for—destroyed the delicacy of the performance by making loud passages too loud and aggressive). On the Gabriel/Da Vinci, for the first time the recording can be played back at a level that makes both soft and loud just right, preserving the dynamic inflections of the performers as they were intended to be heard. Both delicacy and power are reproduced intact, as they are on countless other recordings from things as small as the beautifully crafted Semmler

Trio for Violin, Cello, and Piano [CRI] to things as vast, busy, and colorful as Stravinsky's *Petrushka* [Decca].

The truth is you simply can't get overall dynamics right unless you get *piano*-to-*pianississississimo* passages right; as soon as you turn the volume up to make the soft passages more audible, you make loud passages too loud, altering the range of contrast between them. The Gabriel/Da Vinci gets *p*-to-*pppp* right, making the outbursts of *f*-to-*ffff* that much more dramatically effective. This was brought home to me to sensational effect when I listened to Hungaraton's absolutely world-class recording of Attila Bozay's eerie (and slightly nutsy) *Improvisations* for zither. (Yeah, I know—this isn't one you easily or regularly reach for on your record shelf.) Most of us associate the zither with *The Third Man* theme or *Tales from the Vienna Woods*, and I have to admit that it is not an instrument I listen to on an ordinary basis. But this superb recording is a *tour de force* of sound and performance. In addition to being an interesting classical composer, Bozay was apparently the Jimi Hendrix of zitharists, and on *Improvisations* he shows off what I take to be every possible effect this chiming dulcimer-like instrument is capable of—stinging pizzicatos, eerie glissandos, tinkly *sul* (and what I think may be *supra*) *ponticellos*, weirdly gorgeous chordal effects—making every sound the zither is capable of from the dying away of the airiest harmonics to the full-bodied tone of very strongly plucked notes available to the ear. The thing of it is, the Gabriel/Da Vinci makes them available to the ear, too—making *fortissississimos* sound startling *fff* and *pianississississimos* (and this record's one of the few that's got 'em) truly *pppp*. And it does this

all with utter clarity and lifelike duration, holding even the most softly sounded notes for what can seem like the eternity that they last before dying off into silence.

This brings me to the third of the Gabriel/Da Vinci's astonishing virtues: its recovery of low-level detail. Although it is implicit in the 'table and arm's other two great strengths, the Gabriel/Da Vinci's resolution—its ability to lower a noise floor you thought was unlowerable and dig out minutiae never heard before—is truly standard-setting in my experience. Quite honestly, I've never listened to a record player that is this finely and clearly detailed, and I've never listened to an LP through it—recent or ancient—on which I did not hear not just one or two new things but a plethora of *piñatas* I'd never heard before.

There is—dare I say it?—a tape-like quality to this masterpiece of a record player. Not just in the detail it digs up, not just in its astonishingly expanded dynamic range, and not just in its transcription-level revelation of engineering and mastering techniques, but in its—to use HP's great word—continuousness. Its even-handed, undistorted, unforced, uncompressed ease. It just doesn't seem to have any of the emphases—the hot spots—that other 'table/arms have—those wide or narrow bands of pitch and dynamic that get extra accent (perhaps due to extra noise and resonance). It is one utterly smooth, utterly transparent, utterly lucid, utterly neutral, utterly lifelike customer.

Some of you are probably wondering at this point where my long-time reference, the \$40k Walker Black Diamond air-bearing linear-tracking record player, fits into all of this. Well, side-by-side with the \$60k Gabriel/Da Vinci I would say.

The linear-tracker is better (as linear-trackers are) at the tail ends of records; it has a more expansive soundstage, bigger images, more air (or at least air that is more audible) between those images, fuller bass, denser tone color, and more body and dimensionality. If the Gabriel/Da Vinci sounds like a CLX (without the rolled-off bass and dynamic range limitations), then the Walker Black Diamond Sounds like an MBL X-Treme. In other words, they are both great. The two most lifelike analog sources I've ever heard.

So which should you buy? Well, which do you want? The Ferrari or the Lamborghini? I can't answer this for you (or the few of you who still have change in your pockets). I can say this with utter confidence, however: If you don't want to deal with the complexities of an air-bearing turntable—the large pump, the elaborate plumbing, the routines of maintenance—and you have an extra \$20k lying about, then, IMO, you really don't have an option. The AAS Gabriel/Da Vinci turntable with Da Vinci Grandeeza twelve-inch tonearm is the best non-linear-tracking record player I've ever heard (and by a country mile). If I were in the market for the state of the analog art and didn't want to futz with the Walker, it would be my only choice.

Hats off, gentleman, a work of genius! **tas**



# Walker Proscenium Black Diamond Mk II Record Player

## Long-time Companion

Jonathan Valin

**F**or almost ten years, every time I've listened to LPs I've listened through some version of the Walker Proscenium belt-driven record player with integral air-bearing, straight-line-tracking arm, air-bearing platter, and air-suspension feet. No matter what else has changed in my stereo (and everything else has changed in my stereo), it has remained a constant reference, for one simple reason: It has always sounded just that much more like the real thing than any other analog front end I've compared it to (and I've compared it to some very fine 'tables and arms). I've reviewed previous versions of this classic twice (last time in Issue 167). Now, Walker Audio has released a new iteration, the Proscenium Black Diamond Mk II, that is its best effort yet. (Owners of older Walkers can easily upgrade.)

There are good reasons for the Walker's persistent superiority as an analog front end. First, in a segment of the high end where "well made" is taken for granted, it is *extremely* well made of durable, painstakingly tested, often cryogenically treated, ultra-high-quality parts that don't or have yet to fail. (There is an exception to this that I will discuss below, but the problems I've had with it are my doing, not the Walker's.) Once it is set up—and setup by its designers, Lloyd Walker and Fred Law, is included in the purchase price—every standard adjustment from VTA to

VTF to azimuth to viscous damping of the arm (straight-line-trackers do not need anti-skating compensation) is simple to make or unmake in precisely repeatable increments. For instance, if you're into tweaking VTA for each and every LP, which I am not, the Walker makes the procedure a snap. Just loosen a setscrew on the tonearm pillar via the supplied Allen wrench (a toolkit, complete with everything from precision electronic VTF meter to cartridge-alignment tool to rotational-speed-setting strobe and test record to spare belts and assorted other tools and parts, comes with every Walker);

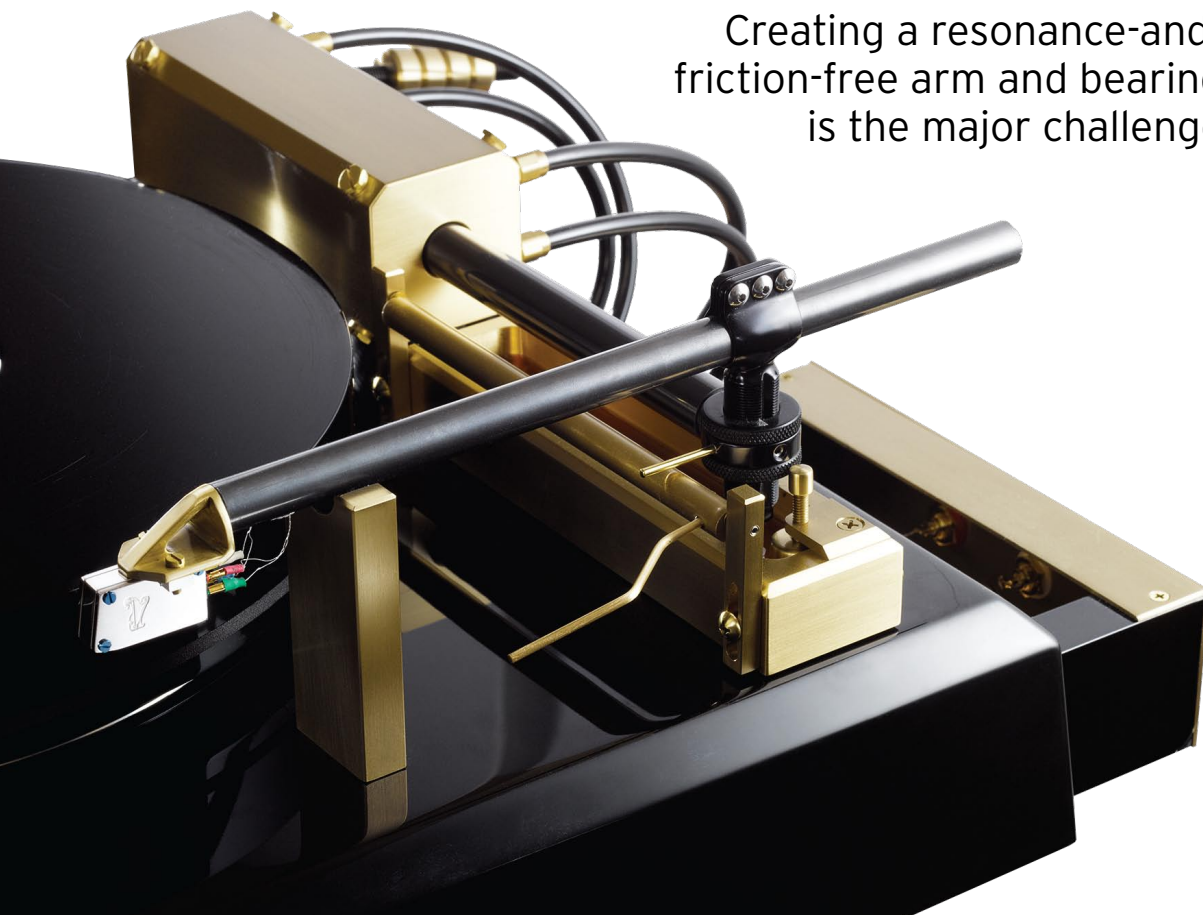


## EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player

turn two knurled knobs on the pillar up or down, depending on whether you want to lower or raise the rear end of the tonearm (there are markers on the knobs which allows you to return to your starting point); re-tighten the set screw; and that's it. Setting VTF is even simpler. Most non-engineering types, including me, are intimidated by elaborate devices such as the Walker and shy

away from making adjustments, lest they screw something up irreparably. Short of tearing off the tonearm or dropping the 'table from a height, you literally can't screw something up irreparably on this record player. You don't have to leave a trail of breadcrumbs behind you because you'll never get lost in the woods; there is always an easy way back to wherever you started.

Creating a resonance-and-friction-free arm and bearing is the major challenge



But the Walker's excellence isn't just a matter of the precision, durability, intuitive simplicity of use, and repeatability of settings of all of its adjustable parts. This is also a record player that exemplifies a certain take on the reproduction of music via LPs—what might be called the “transparency-to-the-mastering-lathe” approach.

Though there is a great deal to be said for pivoted arms—and I myself am a huge fan of several, particularly the twelve-inch Da Vinci Grandezza—one thing that can't be said for them is that they track the undulations inscribed in the grooves of records in the same way those undulations were originally cut into those grooves. As I'm sure most of you already know, the stylus (or chisel) of the cutting head on an LP mastering lathe moves across a lacquer blank in a straight line, traveling from the outer perimeter to the run-out grooves along a radius rather than in an arc. Assuming arm and cartridge are properly aligned, when an LP is played back via a straight-line-tracker like the Walker Black Diamond, your stylus is traversing the exact same radius that the stylus of the cutting head traversed when it cut the record. Your cartridge is never at a slightly offset angle to that ideal radius, as it necessarily is with a pivoted arm (save for the two points in its arc where the stylus transects that radius). What this means in practice is that straight-line-trackers eliminate the tracking and skating distortions, and consequent uneven stylus and groove wear, of pivoted arms.

If tracking a record in a straight line were all there were to it, all record players would track in straight lines. But, of course, that isn't all there is to it. To explain the problems, I'm going to borrow

(well, steal) a point from a well-written article on tonearm design that Geoff Husband penned for the Web-zine *TNT-Audio* some years ago. (Go to <http://www.tnt-audio.com/int.html> to read the entire piece.)

As Husband points out, you wouldn't have a problem keeping your stylus tracking correctly if LPs were truly flat and if the grooves in them unfolded in one long straight line, like tape does through a tape recorder. You could just fix the cartridge in some extremely durable non-resonant medium above the record, as tape heads are fixed above tapes, and let that long straight groove play out beneath it. The only movement the stylus would then see would be the movements induced by the modulations cut into the groove walls.

Unfortunately, records aren't flat and their grooves aren't cut in straight lines. The surfaces of LPs are all warped to some extent (even the best of them) and their grooves are cut in spirals. What this means is that you can't fix a stylus and cartridge in one position, like tape heads are fixed, and let the record just “unfurl” beneath it; stylus and cartridge are going to have to be attached to something that allows them to move freely both up and down (to handle warps) and side-to-side (to follow that spiraling road from the perimeter of the disc to the run-out grooves). In other words, the cartridge is going to have to be attached to a tonearm with a bearing at the other end that permits these vertical and lateral movements.

Bearings mean friction; tonearms mean mass; together they mean resonances that get added to the musical signal.

Creating a truly resonance-and-friction-free

## EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player

arm and bearing is the major challenge for any tonearm designer. In fact, completely eliminating all friction and resonances are impossibilities. With tonearms, the best that can be hoped for is to reduce their resonances to minims and to ensure that those resonances occur at some place where they won't play havoc with the musical signal or be exacerbated by record warps (roughly somewhere below 15Hz and above 7Hz). With bearings, the best that can be hoped for is to make ones that freely permit the requisite amount of up/down and side-to-side movement without twisting and without "chattering in their races" (ringing like little bells and therefore sending their own resonances and those that get reflected to them from the arm and the cartridge back down the tonearm to the stylus).

Tonearm bearings come in several conventional forms, the most common of which are damped single-point bearings (as in uni-pivot arms) and multi-point bearings (as in gimbaled arms). Though more complex, expensive, and difficult to execute, there is a third way of creating a relatively frictionless, non-resonant tonearm bearing, and that is by using a gas (usually pressurized air) to fill the tiny gap between the bearing and the parts whose movements it is facilitating and constraining. This so-called air bearing is what the Walker Proscenium Black Diamond Mk II is equipped with. (The Walker also uses an air bearing on the massive platter of its turntable.)

Here's how Walker's air-bearing arm works. The Black Diamond tonearm, which is a medium-mass arm made in a single piece of uniform diameter from some secret ceramic-composite so hard it can only be cut with diamond saws

(thus the name), is attached at its far end to a spindle made of the same material as the tonearm. (The arm can be viscously damped and its center of gravity can be adjusted to suit the compliance of your cartridge.) As the Black Diamond travels across a record, that spindle passes through a five-and-a-half-inch-long hole in a large rectangular brass block at the back of the 'table. The walls of this hole fit around the spindle so tightly that the arm virtually cannot be moved when the arm's air pump is off. When it is on, however, air is injected at high pressure through tiny jets inside the bronze bearing block; that air forms a lubricant film between the outer surface of the spindle and the inner surface of the hole in the bronze block. *Voilà*, an air bearing.

The first time you use an air-bearing tonearm like the Black Diamond you will be amazed that the arm, which previously resisted movement, suddenly seems to move effortlessly in the lateral and vertical planes, as if it is floating on air (which it quite literally is). That film of air has all sorts of other mechanical advantages (including damping resonances), which is why air bearings are so often used in very-high-tech industrial applications (for instance, under electron microscopes [*and in the support structure and turntable of CD mastering machines—RH*]). However, air bearings, at least when they're used in tonearms, can also have their downsides. The air-bearing arm on a turntable I used to own some twenty years ago was so finicky that the slightest bit of dust or even a single fingerprint on the spindle would cause the arm to freeze when the "dirty" segment passed through the air bearing, instantly producing a tic on the LP

being played. It is this kind of behavior that gave air-bearing tonearms a bad name. The Walker, I am delighted to say, *has never done this*. Not once in nearly ten years. Whether its tolerances are different, its air pressure higher, or its design (which provides a bearing along a much longer length of the spindle) simply more successfully executed, the Walker arm never freezes up.

The Walker's turntable, as noted, is also an air-bearing design. Here pressurized air is piped into the miniscule gap between platter and subplatter, creating (as is the case with the arm) a gas bearing. It is even more amazing to see the Walker's air-bearing turntable at work than it is to see the arm, for the platter weighs seventy pounds and is almost literally locked in place when the air pump is off. When it's on, the massive platter floats like the tonearm on a microscopically thin layer of air which, thin as it is, is still sufficient to lift the platter off the subplatter and allow it to rotate so freely that even after you turn off the motor the thing keeps rotating for half-a-minute or longer. That's how low in friction the Walker's air-bearing turntable is.

One of the chief differences, by the way, in the Mk II version of the Walker that I am reporting on is the number of jets in the arm's bronze bearing block, which has gone up from eight to sixteen. The entire air-supply system for arm and platter has been enhanced. So has the damping of the outboard motor block, which drives the single belt that powers the seventy-pound platter. (The accuracy and reliability of Walker's motors and motor controllers are legend, which is why so many non-Walker-owners use Walker controllers with their 'tables.) I can't say for certain whether

the increase in the number of jets and the better air supply have made for "stiffer" air bearings, but I can say that the sound of the Mk II version of the Walker Proscenium Black Diamond has improved over the last version that I reported on in Issue 167. And the last version was the most lifelike record player I'd ever heard.

You may recall from that review, in which I compared the Walker to the Kuzma Stabi XL with Kuzma Stabi Air Line straight-line-tracking air-bearing arm, that I gave the prize in overall realism to the Walker. The Walker was also superior in neutrality, timbre, soundstaging, and lifelike imaging. But the darkish Stabi did hold an edge in detail and large-scale dynamics. When I reviewed the AAS Gabriel/Da Vinci magnetic-bearing turntable with Da Vinci's superb twelve-inch Grandezza gimbaled arm in Issue 191, I

### SPECS & PRICING

#### Walker Black Diamond Mk II

**Type:** Belt-driven record player with integral air-bearing arm, air-bearing platter, air-suspension feet and outboard motor, motor controller, and air-supply box

**Price:** \$79,000 (including installation)

#### WALKER AUDIO

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## EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player

also found that it had a slight edge in low-level resolution, in softer passages (where it set a new standard of dynamic scaling), and overall transparency, and was pretty close to being the Walker's equal in overall neutrality.

This was before the Mk II version of the Walker Proscenium Black Diamond had made its way into my system. I can now report that any gaps in performance between the Walker and either the Kuzma or the AAS Gabriel/Da Vinci have been closed. In fact, the latest Walker has taken a slight lead over the other two in low-level detail, dynamics (large and small-scale), and transparency to sources, while maintaining its advantages in timbre, soundstaging, imaging, and overall realism. This is the most lifelike Walker yet, which means it is the most lifelike source I've heard—yet. (There is a 15 ips reel-to-reel tape player on the horizon that could upset the applecart, and later in the year I'm expecting a Mk II version of the Gabriel/Da Vinci, which may prove competitive judging from past experience.)

Musically, what the improvements in the Walker's low-level resolution buy you is a small but audible increase in the clarity of inner lines. Details that were just a bit more difficult to hear in the past—like those harps doubling the doublebass pizzicatos in the Passacaglia of Lutoslawski's Concerto for Orchestra [EMI] or the notes of the basso ostinato in the third movement of Riccardo Malipiero's beautiful Quartet No. 3 [Italia], which uses the same series that Berg used at the beginning of the Sixth Movement of his *Lyric Suite*—are now clearly audible. Being able to hear, for instance, that the bass line in the

Malipiero piece is an ostinato rather than a more random walking bass increases your appreciation of the composer's skill and your understanding of the structure of the composition and of the effect the music is intended to have on you.

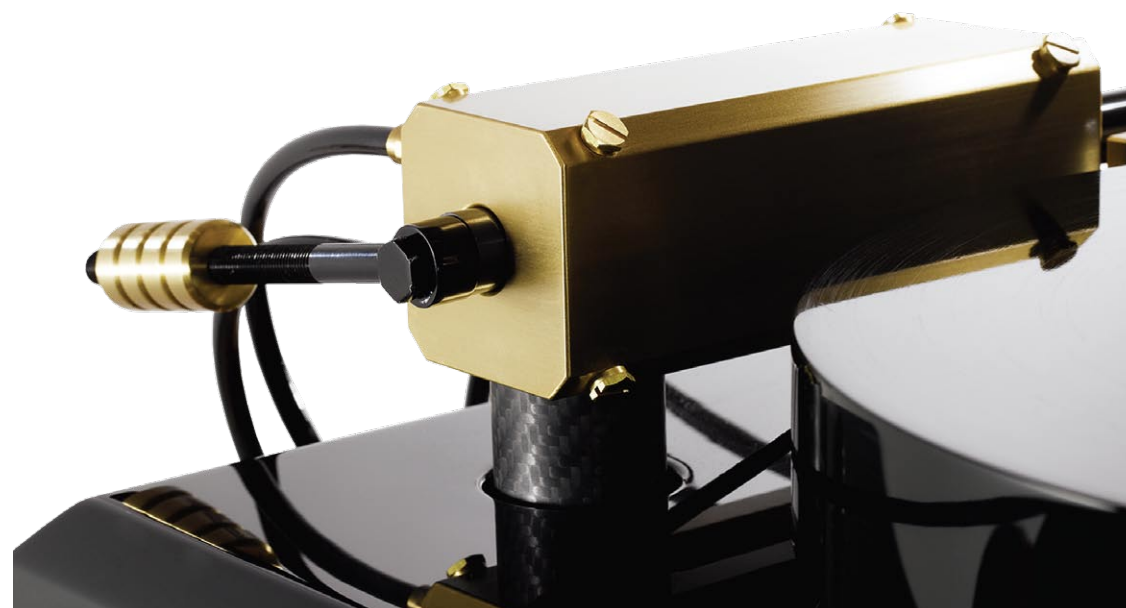
This small increase in resolution, coupled with the Walker's slightly improved dynamics, also has a magical effect on your appreciation of the skill with which a performer is playing a piece. The pleasure you take in something like Attila Bozay's bravura (albeit nutsy) *Improvisations for Zither* [Hungaroton], for instance, depends entirely on your ability to hear (and enjoy) how skillfully and wittily that zither is being played—and it is being played in ways that make deliberate use of all the sounds this chiming lute-like instrument is capable of producing. Through the Walker the sound of the Bozay piece is a thing of mouth-clapping wonder. Any advantages that the AAS Gabriel/Da Vinci had on the softer side—on *pppp*-to-*mf* passages—any advantages the Kuzma had on the louder side—on *mf*-to-*ffff* passages—have been mitigated or eliminated. From crashing fortissimos on massive chords to flickering pianissimos on single strings, the Walker makes every note fully audible. Moreover, its way with the durations of tone colors is very nearly as impressive as that of the TW Acoustic Raven AC-3 (though the Walker was and is less dark and Technicolored in balance, and more realistically neutral and transparent than the AC-3). The Black Diamond Mk II hangs onto the lovely little partials of those plucked and strummed zither strings right down to the brief silences that follow their dying out with a completeness that makes other 'tables' (the AC-3 excepted) utterance of harmonics sound

foreshortened. Likewise, on "Gospel Ship" or "Pretty Boy Floyd" from *In Concert* [Vanguard], you'll hear the amount of tremolo Joan Baez adds to (or subtracts from) her delivery of each word of a lyric in precisely the way she wanted you to hear it. (If you've ever read *Positively Fourth Street*, you'll know that this tremolo did not come easily to Baez; she cultivated it to add expressive softness, sweetness, and lilt to passages where her pure keen soprano might otherwise have been too powerful or overwhelming.)

In addition to clarifying music and performance, the new Walker's increased resolution and dynamic range has a third effect: It clarifies engineering. You may recall from my review of the AAS Gabriel/Da Vinci 'table how impressed

I was with its transparency to sources, which I attributed in part to a lower noise floor. Well, the Walker Proscenium Black Diamond Mk II now equals the Gabriel/Da Vinci in this regard, revealing the same details of engineering and mastering without losing its superior grip on the sound of the real thing. All of the examples I noted in my review of the Gabriel/Da Vinci—the potting in of Joni Mitchell's backup vocals on "California" from *Blue* [Warner] and the clipping of a mike preamp on Leon Redbone's *Branch to Branch* [Warner], for instance—are now made as fully present through the Walker as they were through the Swiss 'table.

The Walker's soundstaging and imaging have always been nonpareil, and this hasn't changed.



## EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player

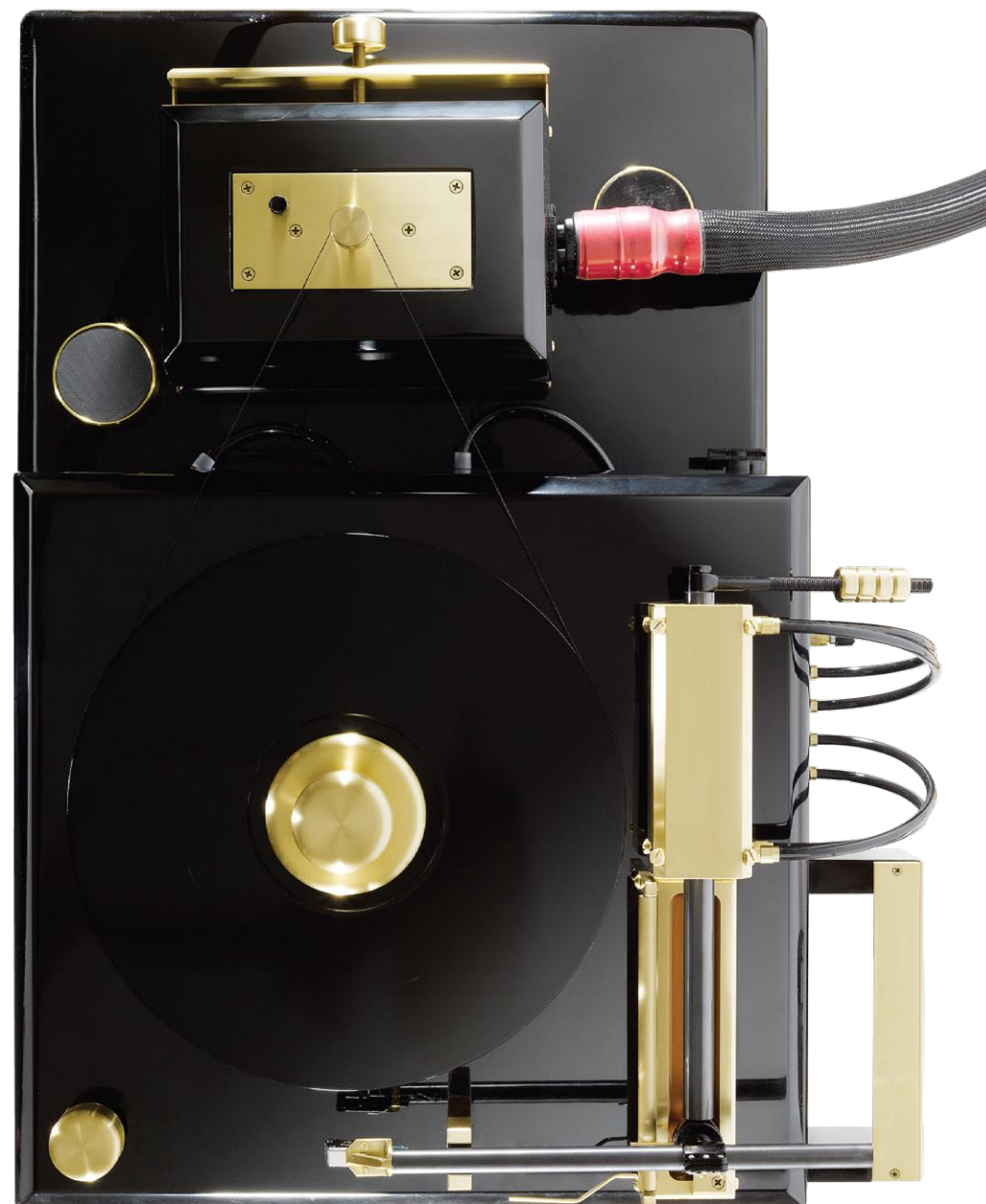
Equipped with a cartridge capable of superior width, height, and depth of stage, the Proscenium has not been equaled by any other 'table/arm I've had in house. It simply goes wall-to-wall, floor-to-ceiling with a really expansive LP. More importantly—*most* importantly, actually—with a really great LP, the Walker now sounds even more like the absolute than it did in the past, and in my experience it was always the champ in this key regard. Instruments simply sound just a bit more like themselves through the Proscenium Black Diamond Mk II.

Downsides? Well, it's expensive—at \$79k (including delivery and installation), more expensive than ever, though not as expensive, as Lloyd points out in the interview that follows this review, as the highest-priced 'tables on the market. It is bigger, heavier, and more complex than a non-air-bearing device. You must find a place for its air pump, which is housed in a large separate box and you must cope with the air-supply tubes and air-return tubes that run from the pump box to the plumbing underneath the 'table's chassis. (It is easy to tape these small-diameter tubes to baseboards, making them virtually invisible.) In its favor, the pump in its large pump box is very quiet. For years, I kept it in the listening room nearby the 'table and was seldom aware of its presence. Finally, there is some periodic maintenance involved with the Walker. Every couple of months you must empty a bottle in the pump box that collects the oily condensate expelled by the pump; you must add oil to the pump every two-to-three months to ensure that it is fully lubricated; and, most importantly, you must remember to turn that pump off after every

listening session. I can't emphasize this last point enough. If, late at night, you forget and leave the motor running for several days, you stand the risk of burning the pump motor out, although, speaking from experience, the damn thing is sturdy enough to take a good deal of unintended abuse. To avoid any possibility of catastrophe, I would suggest plugging the pump into one of those wall-outlet timers and setting the timer for, oh, four-to-eight hours tops (depending on how long you think you'll be listening). This way, if you forget to turn off the pump (as I and every other Walker owner have on occasions), the timer will turn the pump box off for you.

When the Walker is first unboxed and installed, it may strike you as an unusually and intimidatingly complex device. It is not. The complexity and number of its parts are, as Lloyd rightly says, designed to make it easier to use. And once installed, it is easy to use. It *is*, also, the single most neutral and lifelike source component I've yet heard or had the pleasure of using.

The Walker has been my analog-source reference ever since I started writing for TAS again. In its newest and best iteration, it will remain my reference for the foreseeable future. I cannot recommend it highly enough. For LP lovers, for devotees of the absolute sound, it is the very stuff that dreams are made of. **tas**





EQUIPMENT REVIEWS

# Phono Cartridges



# Denon DL-103, Ortofon MC Rondo Red, Lyra Delos, and Benz-Micro SLR Gullwing

A look at four excellent moving coils—what you get from \$229 to \$3000

Wayne Garcia

Cartridges are fun and rather remarkable little things. While we know what they do, and can watch as they trace their way along a record's groove, we can't really see the stylus at work as it hugs and maneuvers its way through those microscopic vinyl trenches. And perhaps in no other component category—outside of loudspeakers—can one find such a wide array of designs, sonic styles, price points, and values. As it is with speakers, a new cartridge can make a huge, sometimes transformative, difference to our systems.

But with Web sites such as Acoustic Sounds, Elusive Disc, and Music Direct listing hundreds of models from under a hundred bucks to well into the multi-thousands—and few dealers with more than a tiny handful available for audition—actually hearing these miniature wonders is another matter.

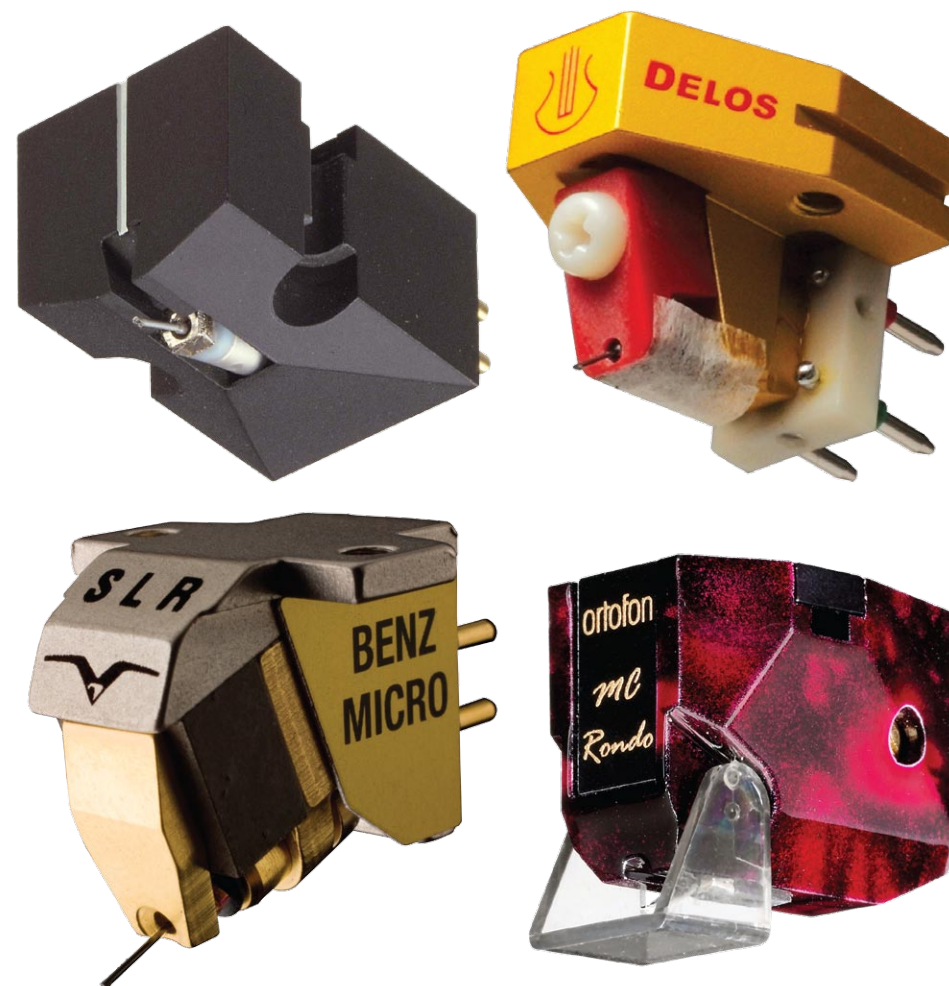
What follows does not pretend to be either an exhaustive survey or a definitive account. Instead, it's a snapshot of what four well-respected models covering a wide range of prices sounded like in my current system, and my impressions of how each performs, with an attempt to explain what you, the potential consumer, might expect as you step up the ladder.

About that system, which was constant throughout these listening sessions, the basics included my reference analog rig—the TW-Acoustic Raven One turntable and Tri-Planar Ultimate VII arm (normally accompanied by a Transfiguration Phoenix cartridge)—the Artemis Labs PL-1 phonostage, and the Cary Audio SLP-05 preamp and 211-FE monoblock amplifiers I reviewed in our last

issue. Speakers were Magnepan MG 1.7s, with Tara Labs cables throughout (see my Associated Equipment list at the end of this article for the complete list).

As anyone who has mounted even one cartridge knows, setting up and aligning something as tiny as a stylus, with essentially zero-margin for error, can be a nerve-wracking task. Risky, too, because all it takes is one slip-up to turn your expensive new toy into a sickeningly bent-cantilevered wreck of a thing. So take it slow, and make your life easier by using the best tools you can afford (or find a good dealer to manage this for you). The tools I employed, and most valuable they proved to be, were the Feickert “universal” protractor, AcousTech's electronic stylus force gauge, the terrific Musical Surroundings/Fosgate Fozgometer azimuth-adjust meter, and Analogue Productions' Test LP. Without them, I would have surely gone mad before this process was finished.

Although I listened to a good many LPs during my evaluation sessions, in order to simplify and focus my



## EQUIPMENT REVIEW - Denon DL-103, Ortofon MC Rondo Red, Lyra Delos, and Benz-Micro SLR Gullwing

comments I've selected just six tracks from four records to illustrate my points: Frank Sinatra's renditions of "Blues In The Night" and "Guess I'll Hang My Tears Out To Dry" from *Only The Lonely* [Mobile Fidelity/Capitol]; Wilco's "Hell Is Chrome" from *A Ghost Is Born* [Nonesuch]; Thelonious Monk's "Abide With Me" and "Well You Needn't" from *Monk's Music* [Analogue Productions/Riverside 45rpm]; and the Third Tableau from the Ernest Ansermet/L'Orchestre de la Suisse Romande recording of Stravinsky's *Petrushka* [Athena/Decca].

### DENON DL-103

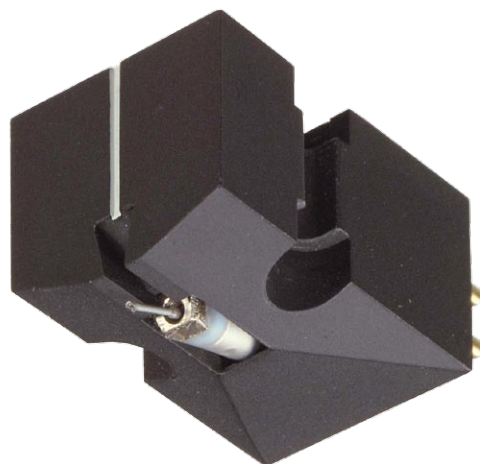
For this round-up I was initially to have received the slightly upscale version of Denon's venerable DL-103 (the "R" version)—favored by none another than Dave Wilson, regardless of price, for its tonal accuracy and overall balance—but instead, perhaps due to a communication mix-up, I ended up with the straight DL-103. Whichever model you consider, at \$379 and \$229 respectively, this true classic, which has been in production since I got into this hobby in the mid-70s, must be counted among audio's most remarkable values.

Indeed, I had a distinct feeling of *déjà vu* as I unpacked the DL-103, because, as it was with so many audiophiles, the original DL-103D was one of the first moving coils I ever owned. And during my retail years I must have sold dozens of them. The flashbacks continued as I mounted the 103, because it has been ages since I installed a cartridge whose body wasn't countersunk to directly accept head-shell mounting screws. As in days of yesteryear, you need to affix small nuts to the mounting screws as they protrude through the cartridge's underbelly—which is definitely

harder now than it was when I had a 25-year-old's eyesight. But, hey, for \$229 retail that's a minor hassle one can overlook.

I hope to get my hands on an R for a follow-up report, because if, for a mere \$150 up-tick, it significantly betters the plain DL-103, it should prove to be an item worthy of special notice.

But first let me be clear, as good as it is and as superb a value, the DL-103 is far from perfect.



But please, as I list its strengths and weaknesses, keep that recession-busting price point in mind. Also note that, as with all cartridges, the 103 will improve as its cantilever and coils loosen up and settle in.

You'll notice the 103's character from the get-go. As Sinatra's "Blues In The Night" starts up the Denon was immediate sounding and tonally quite neutral. Sinatra's voice sounded natural, without any harshness or brightness; so did the trumpet, string section, and cymbal. On "Tears Out To Dry," Sinatra's phrasing was articulate, and his delivery

moving. Bass lines, however, were just a bit slow and a little cardboard-like in texture, and there was a noticeable grain to the strings that persisted to certain degrees across the spectrum. In addition, the 103 is not the most transparent sounding thing out there—a thin veiling overlays the sound.

Turning to Wilco's "Hell Is Chrome," the palette of tone colors lacked the richness one hears with the more exotic contenders, and the DL-103 was also less extended at both frequency extremes, evident with bass lines as well as when Jeff Tweedy rips loose with his electric guitar solo, which was also a touch ragged around the edges. Still, dynamic range was quite good, and the performance exciting.

Playing the Monk tunes, the 103 brought an added earthiness to already earthy tracks. The throaty voicing of the horn quartet on "Abide With Me"—Coltrane and Coleman Hawkins on tenors, Gigi Gryce on alto, and Ray Copeland on trumpet—sounded uncannily like four vintage instruments, to the point where you could almost see the tarnished brass and road-earned dings. And though the dynamics and bass were a tad subdued as "Well You Needn't" kicked in, the plink and plonk of Monk's off-kilter piano were well served, and the naturalness of Trane's tenor seemed to zero in on the Denon's sweet middle zone. Interestingly, turning the volume up to almost life-like levels here seemed to open the cartridge up, as if it had been waiting for a more challenging workout.

The DL-103's neutrality was again on display during *Petrushka*. Flute, cymbals, pizzicato upper- and growling lower-strings, and bass drum all displayed a natural weight and texture. And though the air around the instruments was not as, er, airy as with pricier models, depth was very good and the

performance was again captivating and exciting.

Please make note that I'm in no way trying to damn such a fine product for what it doesn't—nor should it be expected to—do. Consider, as well, the system context—mine is a far costlier and more revealing one than the 103 is likely to see action in. I'm simply calling it as I heard it.

Is the DL-103 flawed? Sure, what isn't? But even though its shortcomings are readily heard through higher-resolution systems, it nevertheless impressed this listener by displaying excellent musical strengths at a price anyone interested in a decent analog rig can afford. Which is pretty darn impressive—especially for such an old-geezer of a design.

### ORTOFON MC RONDO RED

The \$550 Rondo Red is the entry-level "Rondo" model in this venerable Danish company's extensive range of cartridges (37 tiny trackers appear on Ortofon's Web site). According to Ortofon, the injection-molded body is made in Japan utilizing a new material comprising fifty-five-percent wood pulp in a resin matrix. The shell is then finished in a decorative lacquer, the color of which gives the model its name (other Rondo cartridges are the \$800 Blue and \$1050 Bronze).

The Rondo Red's sonic signature is smooth and warm, somewhat restrained, and never flashy. The Sinatra tracks displayed good focus, and decent, if not knock-your-socks-off depth. The overall balance is very pleasant, and sure to please those who find moving coils to be overly bright sounding. The Rondo Red excels at moments such as the acoustic guitar intro to "Guess I'll Hang My Tears Out To Dry," where the rendering of the instrument's body and strings was impressively realistic. Pace

## EQUIPMENT REVIEW - Denon DL-103, Ortofon MC Rondo Red, Lyra Delos, and Benz-Micro SLR Gullwing

and timing were also very good, as was the feeling of Sinatra and the orchestra interacting with one another. This was certainly aided by the Ortofon's refined dynamic shading, which brought a nice sense of lilt to the song, as well as the air (bloom) heard around Old Blue Eyes' voice.

Turning to Monk, the Ortofon displayed a richer range of tone colors than the Denon, but its top-end smoothness came across as soft or rolled-off. That said, Monk's piano, the horn section, and Art Blakey's kit were well reproduced and life-sized, with a good, if not superior, sense of being able to "look" into the recording space (which this LP has in spades). When Blakey's turn to solo came, his drums were dynamic, but lacked ultimate explosiveness.



On Wilco's "Hell Is Chrome," the Rondo Red continued to lack upper-frequency extension but once again it excelled in the midrange. And while Jeff Tweedy's vocal was easy and natural, and the rhythm guitars and piano quite good, the guitar solo was too restrained, leading me to conclude that, if rock is your thing, the Rondo Red probably

won't be.

On the other hand, *Petrushka* allowed the Rondo Red to display a more than satisfactory bottom-end weight with percussion and lower strings, and upper-end air with cymbal and winds. As this recording's remarkable three-dimensional soundstage unfolds with the "Ballerina's Dance," the Rondo Red was quite good, if not as dramatically stunning as our final pair in this survey. Yet again, though, it was most gratifying to hear how good a \$550 cartridge can sound in much costlier surroundings.

### LYRA DELOS

The new \$1500 Delos cartridge from Lyra aims—and claims—to solve an issue critical to optimizing a moving-coil's performance: the proper orientation of the cartridge's magnetic circuits, signal coils, and core.

As Stirling Trayle of U.S. importer Immedia explained it, "MC cartridge performance is optimal when the angles are all aligned. Any significant difference in those angles will cause the formation of a strong and directional flux that will flow constantly from the magnetic circuit into the signal core. This directional magnetic flux will orient the core toward a specific direction and make it impossible for the core to move with equal ease in all directions, which is necessary for proper cartridge performance. Think of it as a kind of electromagnetic damping that hinders the free movement of the stylus in the groove."

The problem, according to Lyra and Immedia, with "conventional" moving-coil designs is that optimal alignment occurs only with the cartridge at rest, i.e., *not playing*. As soon as a record hits the groove, and tracking force is applied, that delicate balance is thrown off, compromising resolution,

tracking ability, and dynamic range.

To solve this issue, Lyra designed the body of the Delos—as well as that of the upcoming Kleos (\$2750)—to have an unusually shallow angle, as well as asymmetrically cut dampers on the cartridge's suspension system. "With the cartridge at rest and no tracking force applied, the shape of the asymmetrical dampers puts the signal coils and core into a more upright angle than the magnetic circuit," Trayle continued. "When the proper tracking force is applied, however, the force of the stylus pushing on the LP causes the asymmetrical dampers to become symmetrical in shape."

The resulting uniformity of operation during playback is said to not only improve dynamics, tracking ability, and resolution, but also to remove much of the guesswork, such as proper VTF and VTA, from the set-up process. As Stirling instructed, "If you find you end up using a tracking force below 1.7 or above 1.8, something is wrong. The Delos is dialed-in by the builder, Yoshinori Mishima, to center the coil in the flux field and provide the correct VTA for a level arm at 1.75 grams. For some reason I found 1.77 grams nailed it for this sample." The way I would know if this was correct with my setup, Trayle told me, was that, when everything was just-so, the record would sound quieter and the music louder.

Minimal tuning, and a bit of deliberate off-tuning, confirmed his prediction. An exceptionally quiet background is indeed the most immediately striking aspect of this design. It is also very well balanced and notably coherent across the spectrum, tonally natural, texturally rich, and very quick of response.

Sinatra's "Blues In The Night" opened with excellent focus, a firmly rooted bass line with well-defined pluck, and a fine sense of the Capitol

recording studio's ambience and the reverb employed. The Delos also has a lovely dynamic ebb and flow, which highlights Sinatra's unparalleled way with a lyric phrase, especially evident on the lovesick "Tears Out To Dry."



"Hell Is Chrome" displayed a fine feeling of instrumental complexity and warmth with the thickly textured electric guitars and keyboards, as well as outstanding pace and timing. Drummer Glenn Kotche's cymbals and snare were very natural, and I was again struck by the Delos' silent background, which revealed Tweedy's vocal articulation, while the harmonic layering of the electric guitar break, with its peeling highs, never turned harsh.

The 19th century hymn "Abide With Me" kicks off *Monk's Music* as a brief horns-only intro, and the Delos shows its ability to portray the richness, body, and individual beauty of each instrument. With "Well You Needn't," the Delos was very transparent, portraying a life-sized soundstage and oodles of air in the recording and also around the instruments.



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Monk's piano seems as nimble as a cat leaping a fence, and when Coltrane is awakened from his slumber with shouts of "Coltrane! Coltrane!" his solo unleashed a gorgeous palette of tonal possibilities. Ray Copeland's trumpet was taut and focused, naturally drier tonally, and his solo shows the Delos' upper registers to be both bright and sweet (meaning, true to the instrument), while Art Blakey and bassist Wilbur Ware's break was a model of clarity, precision timing, and musicality. And during Blakey's solo, the Delos filled the wall of my listening room with such a strong presence of his kit that it rivaled that audiophile warhorse, the *Sheffield Drum Record*.

Stravinsky's *Petrushka* only confirmed what the rest of my listening had told me. The Delos displays a wonderfully lively dynamic response, sounds consistently fast and responsive, with a rich thicket of tones and textures. From bass drum wallops to light cymbal pats to growling bowed strings, from moments of dynamic hush to explosive outbursts, the Delos also conjured an impressive illusion of three-dimensionality.

While I won't claim to have heard every contender in this price range, it seems to me that Lyra's design work with the Delos has yielded something quite special: a beautiful performer that sets a new standard in its class.

### BENZ-MICRO SLR GULLWING

The new SLR Gullwing (\$3000) from Albert Lukaschek of Benz Micro's and Musical Surroundings' Garth Leerer is a stunning-sounding moving-coil cartridge.

Part of this Swiss firm's new "S Class" of hand-made moving coils—which ranges from the \$700 SH L, M, and H (low-, medium-, high-output)

to the \$5000 LP S—the new series is intended to improve performance and value through upgraded body designs, core materials, and styli. And though, yes, it is the most expensive model of this group, I believe that the SLR ("L" for low-output, "R" for ruby) again illustrates that we are currently witnessing a leap forward for cartridge performance at all price points (there is also an "H," high-output, Gullwing at the same price).

With its "open-air" body, the Gullwing bears a strong visual similarity to Benz's popular Glider model, but is actually a descendent of the Ruby as well as the new, top-of-the-line LP S. Like that model, the Gullwing (but no other "S Class") has a frame machined from solid brass, which makes its 12.2-gram weight nearly double that of the 6.8-gram Glider, and more rigid and less prone to vibration. The Gullwing's generator uses a ruby plate and large neodymium magnet similar to those found in the Ruby and LP S, and incorporates the Benz Dynascan S stylus, which is side-bonded to a solid boron cantilever.

As I said a moment ago, this is one sweet cartridge, as you'll hear from the moment it touches down into your favorite grooves. One area is transparency. There is simply a lessened sensation of something—meaning layers of electro-mechanical fingerprints—between you and the music than you get from excellent if somewhat less transparent models. So when Sinatra and company hit the downbeat, it's as if the music somehow magically materializes out of the air in your room, as opposed to the air generated by all the gear sitting in it. That may be a long-winded of saying that it sounds more immediate, more real, and more produced than *reproduced*, but I want to stress that somehow the

air also *feels* different in the way it is charged—as if suddenly lighter, cleaner, and less thick; Pacific Ocean air as opposed to East Coast summer air. On "Blues In The Night," you'll hear this in the way the muted trumpet appears to sound free-floating, more airy and extended. Or during "Tears Out To Dry," when Sinatra's reverberant voice, his subtle volume changes and inflections, suddenly become that much more musically clear—as in the way he rhymes words such as "handsome" and "ransom," without making it seem obvious or contrived.

On *Petrushka*, the Gullwing delivered a remarkable facsimile of the orchestra itself, which seemingly occupied a larger, wider, and more three-dimensional soundstage than I'd previously heard. Once again, the sensation of the room's ambience, and also of the air surrounding and separating the instruments, the way they were situated, and their physical relationships to one another, was a wondrous thing, as if each player suddenly had more elbowroom to perform in. And this recording's very wide dynamic swings and lightning transient bursts made listening to the Gullwing a thrilling musical experience. Focus is likewise first-rate, as, for instance, with the flute and snare drum passage that morphs into a puppet's woozy dance tune.

Outside of my time making music with an alto sax-playing friend, I'm not sure if I've ever experienced the feeling of pressure from horns the way I did with "Abide With Me." That sensation of air being blown through reverberating brass, with ribbons of creamy tone colors, made the players sound "right there." And unsurprisingly by this point, "Well You Needn't" was an effortless romp across an acoustic space that seemed

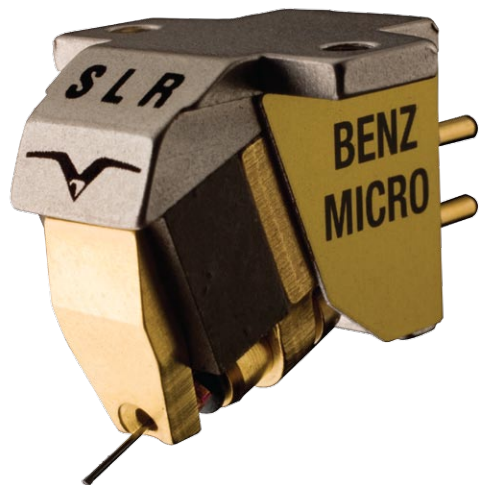
## SPECS & PRICING

<b>Denon DL-103</b> Output voltage: 0.3mV Recommended tracking force: 2.5 grams Weight: 8.5g Price: \$229	<b>DENON ELECTRONICS</b> 100 Corporate Drive Mahwah, New Jersey 07430 (201) 762-6500 usa.denon.com
<b>Lyra Delos</b> Output voltage: 0.6mV Recommended tracking force: 1.7-1.8 grams Weight: 7.3g Price: \$1500	<b>IMMEDIA</b> 1516 5th Street Berkeley, California 94710 (510) 559-2050 immediasound.com
<b>Ortofon MC Rondo Red</b> Output voltage: 0.5mV Recommended tracking force: 2.3 grams Weight: 10.5g Price: \$550	<b>ORTOFON INC.</b> 500 Executive Blvd., Suite 102 Ossing, New York 10562 (914) 762-8646 ortofon.us
<b>Benz-Micro Gullwing SLR</b> Output voltage: 0.35mV Recommended tracking force: 1.8-2.0 grams Weight: 7.8g Price: \$3000	<b>MUSICAL SURROUNDINGS</b> 5662 Shattuck Avenue Oakland, California 94609 (510) 547.5006 musicalsurrroundings.com

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to have boundaries well beyond the walls of my small listening room. Monk's piano was solid, out-of-tuneful, and focused, the rhythm section driving him on to greater intensity. Ray Copeland's trumpet was more complex, airier, and extended. Not hi-fi bright but bright in the way trumpets are in life. And the bass and drum break really cooked, with Blakey's kit delivering the kind of almost-scary physical force drums have when you're in the same room with them.



Wilco's "Hell Is Chrome" came across as both super-solid and easy, with airy cymbals, and rich yet crystalline guitars, organ, and piano. Jeff Tweedy's voice was layered with surprising overtones given his limited vocal range, and his guitar solo, too, erupted with layers of feedback-laced harmonics. And yes, sometimes the little things are what make listening to music over a great system that much more rewarding, as here when after each of Glenn Kotche's snare taps you hear the air respond with

a slight after-bounce. In combination each of these things adds up to something that helps bring us that much closer to the real deal.

I got so caught up with the Gullwing—and on a tighter than usual deadline—that I nearly forgot something importer Garth Leerer suggested that the transformer-coupled Artemis phonostage might not be an ideal match with the cartridge's ruby (no-iron) generator. You mean it might just sound better than what I've already heard? If so, and if my editors agree, I will happily submit to test this baby with other phonostages, and will report back. *tas*

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# Sumiko Palo Santos Presentation Cartridge

## Perfect Balance

Neil Gader

**W**ith a name like Palo Santos Presentation, it's hard to imagine anything less than a high-achieving audio component. This is Sumiko's latest flagship cartridge, and it is indeed an achievement. A low-output moving coil design, the Palo Santos Presentation is the culmination of improvements and advances from materials to manufacture.

Of these advances, the most significant, says Sumiko, is the new generator anchoring system, wherein the front yoke makes a high-pressure fit against an Alnico magnet—a technique that Sumiko states improves rigidity and reduces resonance and background noise. Mounted on a long-grain boron cantilever, the Palo Santos uses an ultra-low-mass Ogura Vital Design PH diamond stylus—a costly design profile that removes excess “moving mass closest to the tip of the cartridge, leaving only that which is deemed vital.” Sumiko characterizes the result as “working with only the heart of the diamond.” Heart? Who knew? The Palo Santos foregoes the conventional suspension material of butyl rubber, opting for the longer-term tracking ability of more stable, longer-lasting polymer material. Weight is 8.3 grams. Finally, the handcrafted wood body (sumptuous Brazilian rosewood) is shorter in

height, making it easier on the eye (and nerves) to mount and align this cartridge. Nevertheless, steady hands are a requisite given the absence of a stylus guard.

The output voltage of 0.5mV places the Santos in the sweetspot for moving-coil enthusiasts, an output that is robust enough to perform with the vast majority of phonostages and also provides excellent signal-to-noise ratio. Optimal tracking force is said to be 2.0 grams, and I found that to be just right. Playability was uniformly excellent. The cartridge never mistracked even at sound pressure levels that sometimes transformed my room into *The Hurt Locker*. The instruction manual is comprehensive and addresses common set-up concerns, making appropriate suggestions about everything from azimuth to vertical tracking angle (VTA). With the SME V as my reference tonearm, I tend to run the arm

tube parallel to the surface of the record, which in my view imparts the smoothest overall tonal balance from most recordings.

Sonically, the Palo Santos has one of the most unhyped sounds that I've heard from a moving coil. It boasts dimensionality and presence, and speaks in a single voice. It may not immediately grab you when the stylus first alights in the groove—the initial sensation is more of a contemplative and soothing *ahh*, rather than a heart-stopping, head-ducking *whoa!* But the Palo Santos is a conniver as it ever so slowly draws you into its naturalistic web, conveying complexities of timbre and space and atmosphere so authentic that they make it easy to let the cartridge go uncredited. By this time, the Palo Santos has got you in its clutches. Essentially midrange neutral, its signature subtly veers to the warmer end of the spectrum, a bit

laid-back but far from bloodless, with just a hint of upper-treble shading. The soundstage of the Palo Santos strikes me as less forward than some, a characteristic I noted during “I’ll Be Seeing You [*Pop Pop*, ORG],” where I found Ricki Lee Jones had stepped back slightly in the mix. However, that’s not to say it’s a laid-back performer in the low-energy sense of the word. It isn’t. It’s almost easier to portray the sonics of the Palo Santos in terms of what it doesn’t do, or, more accurately, overdo. The Palo Santos is not a *That’s Entertainment*-style cartridge, pulling out all the tiresome audio tricks. It’s far more Bolshoi than Busby Berkeley. Transients are quick but don’t draw the kind of attention of some cartridges that seem pre-sprung on hair triggers. And the PSP doesn’t X-ACTO-knife images or widely spread orchestral layers. Yet, it doesn’t overlook these elements, either.





## EQUIPMENT REVIEW - Sumiko Palo Santos Presentation Cartridge

While I don't think it quite sends the full breath of unrestricted harmonic air billowing through the treble, it also doesn't suggest any of the falsely tipped-up energy that is just as likely to be high-frequency electronic noise from elsewhere in the recording chain rather than on the recording itself.

In fact, to appreciate the scale of its "presentation," listening to pure, unamplified acoustic music is a must. One of my most natural recordings is Vaughan Williams' *The Wasps* Overture [RCA] where the Palo Santos truly strutted its stuff. The violin section, imitating a swarm of wasps, swirls and sweeps across the soundstage, soon to be joined by the brash

brass with the ominous growls of bass viols adding to the tension. The ethereal presence of the harp to the right of center stage is notable for its articulation, but in my view it shouldn't harden or overwhelm in its forwardness. The Palo Santos strikes the appropriate balance. It renders low-level timbre beautifully—the dark nasality of an oboe, the heavier shading of a viola, the buoyancy of a violin, or the classical guitar on the cut "Private Investigations" from the latest reissue of Dire Straits' *Love Over Gold* (reviewed in this issue on p. 127), an instrument that only sounds strident in a poor recording or because of tonal inaccuracies in the playback chain. The cartridge revels in small differences, like the grade of grit of the sand blocks throughout this track. Only in minor ways does it leave some performance on the table. It flags ever so slightly in bottom-end resolving power and crunch. And I've heard a bit more air and bloom from orchestral strings and winds and generally finer low-level harmonics, but all in all, that is pretty much the ballgame.

In my view the success or failure of any high-end component hinges on its ability to strike a balance among a vast landscape of sonic ideals. You'll be hard pressed for both time and money seeking a cartridge that significantly betters the Palo Santos Presentation. It's a cartridge worthy of flagship status with a price that's approachable and with performance that to these ears is very nearly beyond reproach. *tas*

### SPECS & PRICING

#### Sumiko Palo Santos Presentation Cartridge

**Type:** Moving coil phono cartridge with polymer suspension, long-grain Boron stylus, line-contact solid diamond, gold-plated brass pins

**Frequency response:** 10Hz-40kHz +/-1.5dB

**Channel separation:** >30dB @ 1kHz

**Output:** 0.5mV

**Tracking force:** 1.8-2.2 grams

**Weight:** 8.3 grams

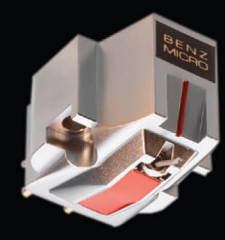
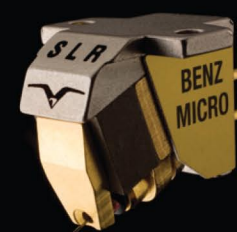
**Price:** \$3500

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# Ortofon Rondo Blue Moving-Coil Cartridge

Getting It Right Where It Matters Most

Paul Seydor

Whenever I'm reviewing phono pickups, one of the first recordings I reach for is Doris Day's *Hooray for Hollywood*, a Columbia album from the early days of stereo. An extraordinary number of pickups, even very expensive ones, don't get Day's voice right, making it either too sharp and piercing (a rising top or untamed ringing) or not light enough (a presence suckout and a lower midrange bump), or sometimes just a little nasal. Ortofon's new Rondo Blue nailed it right out of the gate: bright and clear but not edgy, with real body and a "human," as opposed to electronic, texture, without excessive sibilance.

Suitably impressed, I started through the rest of my usual repertoire of singers. Ella Fitzgerald's is a lower, weightier instrument with a lot of smoke in the timbre, which is how the Blue rendered it on *Let No Man Write My Epitaph* in Classic Records' superb reissue. Jacintha is a singer I've heard live and at close range; her voice is heard *a cappella* at the beginning of "Moon River," from her Johnny Mercer collection on GrooveNote, its distinctive beauty accurately reproduced (detail freaks will be happy to know that even the quietest of the piano chords bleeding through her headphones are retrieved). Vintage Sinatra from vintage Capitol on *Nice 'n Easy* has all the familiar wood and warmth that we expect and treasure from this greatest of popular singers. If you share my colleague Ken Kessler's view that Capitols of the fifties are the

best vocal recordings ever and are in the market to replace your pickup, add this new Ortofon to your short list.

From pop and jazz to classical: Verdi's *Macbeth* (DG) at La Scala from the eighties when Claudio Abbado could be a hair-raisingly exciting conductor. Just listen to the choral outburst when news of the murdered king is announced or the distinctive Italianate sonority of the La Scala brass. Strings—I've moved to Vienna with the Philharmonic—have a lovely sheen and just the right brilliance. When a pickup gets voices and orchestral timbres right, most of the really critical tests are pretty much passed.

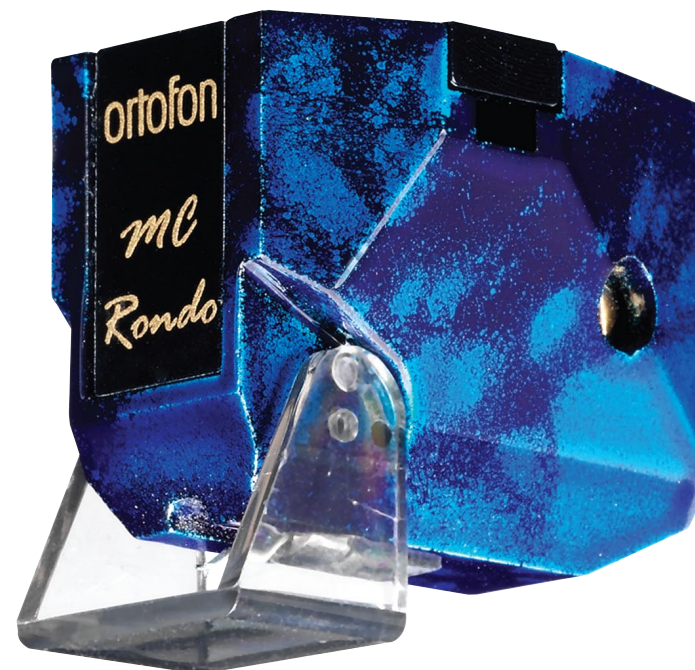
If I were to generalize about the Rondo Blue's sound, it would be this: a natural midrange, an extended but nonaggressive top, and a bottom

end that is quite strong if a bit on the extravert side. Transparency is good enough to obviate the need to worry about it as an issue, and the dynamic presentation is powerful when called for, but can be delicate and nuanced too.

I've reviewed several Ortofons in the last ten years and found they begin more or less at excellent and go up from there. The outstanding Kontrapunkt series has already been replaced by the somewhat pricier Cadenza series, while the original pricepoints of the lower Kontrapunkts are now covered by the Rondo line. Rondo bodies are made in Japan from a wood-composite material as a cost-effective means of controlling and suppressing resonances and then given ritzy painted-lacquer finishes. The Blue occupies a middle position in the series, above the Red and below the Bronze. The series itself is

intended to bring the considerable sonic virtues of the company's higher-priced pickups to a more attractive price point, which for the Blue translates as \$800. That's still not cheap when you figure you can buy perfectly good pickups for a couple of hundred dollars (to say nothing of a wonderful integrated amplifier like the NAD C326BEE for \$500), but those other pickups don't come with an Ortofon pedigree and they weren't designed by Per Windfeld, the company's resident genius this past quarter century and longer.

It's obvious from the listening that the Rondos come from Windfeld's stable: the overall neutrality, the grip and control (that chorus in the *Macbeth*), terrific bass response and dynamic range, and a top end that is both smooth and articulate. This last pair of characteristics does require some



## EQUIPMENT REVIEW - Ortofon Rondo Blue Moving-Coil Cartridge

careful attention to loading, which is also the case with other Ortofon. You'll get the sound I'm describing here between 50 and 60 ohms (the latter the theoretical ideal of ten times the value of the internal impedance, 6 ohms for the Blue). Go much below 50 and you'll start to sacrifice some air and ambience, high-lying percussion will lose shimmer and sparkle, and dynamics will begin to suffer; go a lot above 60 and you'll start to get splash and bogus brilliance. Windfeld's care in thinking, design, and manufacture must be mirrored in the application; if 2.3 grams tracking force is recommended, as it is, then use it and you'll be rewarded with good tracking and suppression of surface noise.

The Rondo Blue is an under-a-grand pickup that offers many of the advantages of higher-priced moving coils without breaking the bank.

So what don't you get? The usual things. Compared to a Kontrapunkt C (\$1900) or a Windfeld (now \$3750), you won't hear the transparency or the scalpel-like precision as regards definition, imaging, and soundstaging; the Blue doesn't track quite so confidently on my most difficult records, nor do I sense the same ultimate control of the bottom end or that paradoxical combination of iron grip yet utter relaxation. But there's more similarity than difference. For example, one of my standard checks for holographic imaging and soundstaging is the entrance of the lone recorder player at the beginning of *The Christmas Revels*:

He comes in from deep in stage left, advances, and crosses to the right, where he recedes and exits. The Rondo Blue presented this movement seamlessly. Or take the *Procession of Lessons and Carols for Advent Sunday* from Kings College [Argo]. As the choir enters from deep in the left and moves forward you can gradually hear its sound fill the space as it echoes off the opposite wall. When the congregation sings, the Blue does a great job resolving the requirements of volume versus loudness.

There's a quality about the Blue that I really admire but find difficult to define. I get the impression that Windfeld did not try to push this design to do things that he could not make it do well at the price point (like super-transparency, ultra-wide dynamics, or envelope-expanding resolution). The result is a pickup that on the vast majority of recordings never seems to misbehave, get frazzled, or do anything that detracts from the pleasure of listening to music. There's a kind of rightness to the presentation that lets you listen for long periods without fatigue. Yet it doesn't achieve this even-handedness by withholding vital information or being especially forgiving. I played an old Mobile Fidelity recording of Lorin Maazel's *Pines of Rome* and *Roman Festivals*, and the highs were every bit as fierce and piercing as Mo-Fi's of those days could sometimes be. (How glad I was that the NAD C326 BEE integrated amplifier I used for part of the evaluations has tone controls!)

Where does the Rondo Blue fit into the marketplace? Pretty much where Ortofon has priced it: an under-a-grand pickup that offers many of the advantages of higher-priced moving coils without breaking the bank. At its price it comes into direct competition with Dynavector's

17D Mk III Karat (\$895). I prefer the Karat (more dynamic, more neutral, more transparent), but the Karat comes with a hidden caveat: It really needs to be treated like a pickup costing from two to four times its price when it comes to associated components, for only in an arm the caliber of a Basis Vector or Graham Phantom does it realize its full potential. The Rondo will perform quite nicely in most of the arms and turntables it's likely to be used with. Enthusiastically recommended, then, as a pickup both for its terrific value and its obvious overall excellence. And there is its wonderful way with voices. **tas**

### SPECS & PRICING

#### Ortofon Rondo Blue Moving-Coil Cartridge

**Frequency response:** 20Hz-20kHz +/-1.5dB

**Impedance:** 6 ohms

**Recommended loading:** 10-200 ohms (50-60 optimal)

**Tracking force:** 2.3 grams

**Weight:** 10.5 grams

**Price:** \$800

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# Shelter 901 MkII, 9000, and Harmony MC Moving-Coil Phono Cartridges

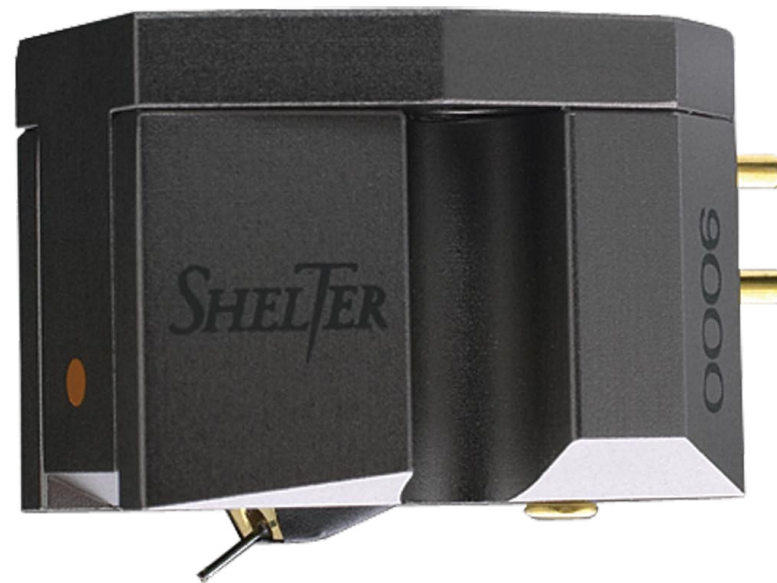
Putting Music First

Chris Martens

It would be fair to say that Shelter built its reputation for making “music-first” phono cartridges through three of its first moving-coil models imported to this country: the 501 MkII, 901, and 90X. Though exhibiting somewhat different sonic personae and performance traits, these three shared one unmistakable common denominator, namely, a sense of ease and grace that told listeners these cartridges were more about capturing the essential *feel* of the music than about punching checklists of audiophile virtues. In short, Shelters are created by a designer whose primary concern is getting the overall sweep and flow of the musical presentation right—even if this entails sacrificing the extreme “nth” degree of perfection in any one performance area. Accordingly, Shelters are best suited for people self-secure enough to relax and take joy in hearing beautiful music beautifully reproduced—not for audio neurotics prone who worry whether their cartridges are giving them enough of sonic quality “X” or too much of quality “Y.”

Eventually, the 901 and 90X were discontinued and then supplanted by Shelter’s 5000, 7000, and 9000 models. When I reviewed the Shelter 5000 and 7000 in TAS 180, I reported that designer Yazuo Ozawa’s stated goal with these new models was to offer a range of cartridges

that would preserve traditional Shelter musical values, yet add “more life,” sonically speaking. The term “more life” meant, as I explained in the review, making a deliberate choice to enhance detail, to increase perceived transient speed, and to provide more sharply drawn dynamic



# EQUIPMENT REVIEW - Shelter 901 MkII, 9000, and Harmony MC Moving-Coil Phono Cartridges

contrasts. The 5000 and 7000 largely succeeded in this mission, though it would probably be fair to say that some listeners missed the arguably more gracious sounds of the original 901 and 90X. (When it comes to the sonic truth-to-beauty continuum, there's no doubt that those early Shelters were, well, true beauties.)

This brings us to the present, where we have on hand three fascinating Shelter models for your consideration. First up is the new Shelter 901 MkII, which as you'll learn in a moment represents the marriage of old-school and new-school Shelter thinking. Next comes the Shelter 9000, which stands at the top of the "thousand-series" pecking order and is a fine practical example of Ozawa's design philosophy of putting music first while making a conscious effort to add more life to the playback equation. Finally, we have Shelter's new flagship model, the Harmony MC, which represent a groundbreaking design effort on Ozawa's part. Let's look at each model in turn.

## SHELTER 901 MKII: SOMETHING OLD, SOMETHING NEW

The 901 MkII sells for \$2100 (placing it directly between the Shelter 5000 and 7000 in price), and it is quite literally the result of combining something old with something new. Specifically, the 901 MkII combines the old-style body of the original 901 (which is smaller and lighter than the massive, anodized aluminum bodies of Shelter's later models), with a motor assembly containing all of the updates found in the "thousand-series" Shelters. As I noted in my review of the 5000 and 7000, those updates include "new front yoke assemblies, redesigned bobbins, and improved

internal wiring," along with "boron cantilevers fitted with ... 'nude' elliptical styli." I asked Shelter importer Arturo Manzano of Axiss Audio if the 901 MkII's configuration should be taken to mean that the cartridge was a virtual "Shelter 6000" by another name.

"No, I don't think so," he said. "You'll have to judge for yourself, of course, but I think the 901-style cartridge body has a bigger impact on the sound than you might expect." And Arturo was absolutely right; the 901 MkII looks and sounds like a best-of-two-worlds design. On one hand, it carries forward much of the vibrancy, lushness, and grace of the original 901, while at the same time exhibiting the heightened transparency, transient speed, and dynamic snap of the "thousand-series" Shelters. This, as you might expect, is a highly appealing combination of virtues, because it makes the 901 MkII at once extremely revealing and evocative to listen to, while enabling it to be at least somewhat forgiving of imperfect recordings. Let me provide some musical examples to show how these characteristics play out with real-world recordings.

Let's first look at the 901 MkII's sound on an old but very well done studio recording: James Taylor's "I Was Only Telling a Lie" from *JT* [Warner Bros.]. This track exposes a deeper, darker part of Taylor's vocal range, which the Shelter conveyed with excellent warmth, while capturing the unmistakable touch of sardonic humor in Taylor's voice (the song is about a driver who woos and then promptly abandons "truck-stop cuties"). Providing perfect backing for the track is Danny Kortchmar's scorching, swamp-inflected electric guitar, whose sound the 901 MkII simply nails, capturing the instrument's

gleeful, energetic howl. But the twin engines that really drive the song forward are the funky, syncopated, and perfectly intertwined sounds of Leland Sklar's bass and Russ Kunkel's drum kit. The Shelter did a beautiful job of expressing the granite-like solidity and weight of Sklar's bass, while conveying the jaunty bounce, pop, and shimmer of Kunkel's kick drum, snare, and cymbals. At every turn, the cartridge captures not just the sound but also the "feel" of the singer's voice and of the backing instruments—all with a presentation that is full of dynamic energy and life.

Yet the 901 MkII is just as adept at reproducing

more serious classical fare, as I discovered when playing the David Oistrakh, Maxim Shostakovich, New Philharmonia Orchestra performance of the Nocturne (*Moderato*) movement of the Shostakovich's Violin Concerto No. 1 [EMI]. Several things made the Shelter's rendering of the performance memorable: the dark bass section sonorities at the start, the plaintive voices of the woodwinds as the movement unfolds, the clear yet very smooth and full-bodied tonality of the string section throughout, and the delicate and haunting sound of the celesta, which seems ethereal and almost crystalline in its clarity even though it is heard as a background instrument and not as

## SPECS & PRICING

### Shelter 901 MkII moving coil phono cartridge

**Output:** 0.55mV  
**Internal resistance:** 9 ohms  
**Tracking force range:** 1.4-2 grams  
**Body:** Compact, aluminum  
**Cantilever:** Boron  
**Price:** \$2100

### Shelter 9000 moving coil phono cartridge

**Output:** 0.65mV  
**Internal resistance:** 10 ohms  
**Tracking force range:** 1.4-2 grams  
**Body:** Large footprint (elongated octagonal shape), anodized aluminum  
**Cantilever:** Boron  
**Stylus:** Elliptical nude diamond, 0.7 x 0.3 mil  
**Weight:** 11 grams  
**Price:** \$3500

### Shelter Harmony MC moving coil phono cartridge

**Output:** 0.5mV  
**Internal resistance:** 15 ohms  
**Tracking force range:** 1.4-2.2 grams  
**Body:** Large footprint (elongated octagonal shape), solid carbon fiber (comes with carbon fiber mounting screws with polycarbonate fastening nuts)  
**Stylus type:** line contact nude diamond, 1.6 x 0.3 mil  
**Weight:** 8.5 grams  
**Price:** \$5300

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## EQUIPMENT REVIEW - Shelter 901 MkII, 9000, and Harmony MC Moving-Coil Phono Cartridges

a lead voice. But perhaps the most compelling element of all is the manner in which the 901 MkII reproduces the purity of Oistrakh's violin sound, which expresses Shostakovich's themes with tremendous angularity and incisiveness, yet never falls into brittle edginess or stridency. In fact, through the Shelter Oistrakh's violin always retains a signature touch of sweetness, albeit one that is subdued in this piece, with fantastic clear overtones on upper-range notes. Though the movement makes a broad range of dynamic demands, I found that both its macro- and micro-dynamic extremes fell comfortably within the 901 MkII's performance envelope. Overall, the 901 MkII's presentation is full of rich tonal colors and dynamic delicacy and power, while retaining that elusive element of graciousness that enables it to complement most types of music (and imperfect recordings).

### SHELTER 9000: TOP OF SHELTER'S "THOUSAND-SERIES" RANGE

The 9000 (\$3500) is the finest of Shelter's "thousand-series" models, which means it is, hands down, one of the two most revealing and transparent-sounding cartridges the company has offered to date (the other is the Harmony MC, which we'll discuss in a moment). Having now heard the 5000, 7000, and 9000 in my system, I can say with confidence that there's a predictable, linear progression upwards in performance (and, of course, price) among the three models in the range. At each step along the path you pay a bit more and in return receive solid, incremental improvements in detail, resolution, textural and timbral refinement, dynamics, and tracking capabilities. Given how good the 5000 and 7000

already are, this means the 9000 is a highly accomplished cartridge—one that does most things extremely well, with few if any significant drawbacks. What makes the 9000 very special, though, is the fact that it offers significantly heightened levels of purity and transparency without losing that underlying quality of musicality that is the hallmark of all Shelter designs.

By way of trying to understand the differences between the 901 MkII and the 9000, I put on one of my favorite and most realistic-sound jazz recordings: Charlie Haden's *Closeness* [Horizon/A&M], a series of duets featuring Haden and fellow jazz musicians. First up was the track "Turiya," where Haden teams with jazz harpist Alice Coltrane. What immediately enchanted me was the lilting, almost floating sound of Alice Coltrane's harp, which the 9000 reproduced in a masterful way, creating a vivid sonic impression of the instrument's large, arched frame, and of Coltrane's fingers flinging over the strings to set them in motion. In contrast, the Shelter enabled Haden's bass to sound deep, sonorous, and woody, so that the music was infused with a sense of quiet dignity and gravitas that appealed on both soulful and cerebral levels. Haden's very subtle fingering/tapping noises near the end of the track were mightily impressive, too—so that the 9000's sound crossed the line between superb imaging (which is, of course, a fine thing in its own right) to achieve a heightened level of "the-artist-is-present-in-the-room-with-you" realism.

As I moved on to a second track from the same album, one entitled "O.C."—for Ornette Coleman—the differences between the 9000 and 901 MkII became easier to discern. Through the 901 MkII, the overall presentation sounded

extremely clear and was infused, again, with a subtle vibrant lushness. Through the 9000, however, the upper midrange voice of Ornette Coleman's horn sounded noticeably more realistic and harmonically complete. On well-recorded material like this, the 9000 can really strut its stuff so that musically speaking there is more "there" there, though perhaps at the expense of losing at least some of the ease and grace of the 901 MkII. On "O.C.," Haden's bass solo is, somewhat uncharacteristically for him, fast paced and a little bit angular—perhaps because of the lively interplay with Coleman—and the 9000 kept pace with Haden's fleet fingering shifts without ever putting a foot wrong. Importantly, and unlike any number of more analytical-sounding high-end cartridges on the market, the 9000 always preserved the quintessential weight and warmth of Haden's bass tone. (Some cartridges render Haden's tone with an icy, almost blueprint-like precision that some mistake for "accuracy," but that does not ring true to the actual sound or "vibe" of a real acoustic bass..)

Like the 901 MkII, the 9000 proved quite fearless in tackling challenging classical or chamber music pieces. A good example would be the Charles Wourinen/New Jersey Percussion Ensemble performance of Wourinen's *Ringling Changes for Percussion Ensemble* [Nonesuch].

This record, which features radical moment-to-moment shifts in energy levels, reveals the 9000's overall dynamic acumen (the 9000 can go from zero to *ffff* and back again in an eyeblink), and also showcases the cartridge's authoritative way of handling the leading and trailing edges of notes—even ones featuring downright violent transient attacks. The composition features an astonishing

array of percussion instruments, and is arranged, says composer Charles Wourinen, with "the music divided between pitched and non-pitched voices." The result is a difficult-to-reproduce yet strangely beautiful piece of music that ranges from moments of whisper-quiet intimacy to explosive and at times bombastic percussion outbursts. Impressively, the 9000 handles *Ringling Changes* with almost offhand ease, capturing the shimmering ring of small cymbals and gongs alongside titanic drum thwacks as if both were child's play. While the 9000 may offer a slightly more analytical and therefore less easygoing and forgiving sound than that of the 901 MkII, it more than compensates by serving up heightened levels of transparency and dynamic agility.

### SHELTER HARMONY MC: WELCOME TO THE NEXT LEVEL

Because the external shape of the Harmony MC's body resembles that of the "thousand-series" models, you might be tempted to think of the Harmony MC as an "über 9000" of sorts, but one done up in stealth colors. But look closer and you'll discover that differences run much deeper.

For starters, the Harmony MC is one of very few cartridges to use a body built of *solid* carbon fiber (not just a carbon-fiber wrap applied to some other base material). From the outset, this construction feature means that the Harmony MC's body is light, strong, and incredibly rigid, and possesses terrific internal damping—qualities that make it an ideal mounting platform for the cartridge's motor mechanism.

Designer Ozawa has made two other key changes in the Harmony MC vis-à-vis his earlier designs. First, in what may seem a counterintuitive



## EQUIPMENT REVIEW - Shelter 901 MkII, 9000, and Harmony MC Moving-Coil Phono Cartridges

choice, Ozawa has given the Harmony an aluminum rather than a boron cantilever (the other top-end Shelters use boron cantilevers). According to Arturo Manzano at Axiss Audio, the aluminum cantilever was chosen because it transfers energy from the stylus to the coil bobbin even more efficiently than a boron cantilever does. Second, Ozawa has fitted the Harmony MC with a thin, blade-like, line-contact stylus rather than an elliptically shaped stylus (most other Shelters use elliptical styli). The line-contact stylus was chosen in the interest of improving the cartridge's groove-tracing capabilities, albeit at the expense of making the Harmony MC somewhat more finicky with respect to vertical tracking angle adjustments.

Together, these changes make for a cartridge that has a very low internal noise floor, whose stylus can and does follow groove undulations faithfully, and whose motor assembly more accurately translates stylus movements into output signals. As a result, the Harmony MC not only surpasses the strengths of the other Shelters by noticeable degrees, but also opens the door to a fundamentally different and better kind of performance. I say this because the Harmony MC is an extraordinarily quiet cartridge (in the sense that it appears to dramatically reduce the internal resonances and vibrations that to some degree afflict most other phono cartridges), and as a consequence lets you hear way down deep into the interior details of the music. Thus, low-level musical information that, I suspect, typically gets masked or obscured by noise in other cartridges suddenly becomes available to you with the flagship Shelter in play. Even so, the Harmony MC never overwhelms you with detail and never sounds sterile or antiseptic

in its presentation; instead, it keeps its eye on the prize, always maintaining Shelter's consistent, signature thread of innate, organic musicality.

The only catch is that the Harmony MC is arguably more particular about the quality of the recordings it is fed than other Shelter cartridges typically have been. This doesn't mean the Harmony MC will punish you if you choose to play mediocre-sounding records, but neither will it treat second-rate material as gracefully as, say, the 901 MkII might do. Also, be mindful that for best results you'll want to experiment to find the just-right VTA settings for the Harmony MC, since as a general rule line-contact styli don't take kindly to being tracked at the wrong angles.

To hear concrete examples of the Harmony MC's rich yet natural sounding detail, try putting a classic live jazz recording such as the Bill Evans Trio's *Waltz for Debby* [Riverside]. Then, listen very carefully both to the sounds of the instruments and also to ambience cues from within the interior of the club (in this case, the Village Vanguard). From the outset, the Harmony makes Evans' piano exceptionally realistic and believable, partly because it effortlessly allows you to hear—to borrow Jonathan Valin's term—the “action” of the instrument at work. In turn, Paul Motian's brushes on his cymbals and snare drum head becomes astonishingly alive-sounding and complete. You can easily make out the wiry sound of the brushes sweeping over the textured surface of the snare drum head, or gently activating the cymbals so that their dynamic envelopes expand into a golden shimmer and then gradually taper back towards silence. All too often, phono cartridges manage to make cymbals sound like bursts of white noise, but not

the Harmony MC; it gives you the real thing—the plainly metallic sound of hammered bronze-alloy discs being stroked by brushes and then allowed to resonate sweetly as their notes hover gently on the air. Finally, the supreme Shelter flat out nails LaFaro's fleet-fingered bass solos in a highly compelling way—partly because the string and body sounds of the large, wood-bodied instrument seem so right, but also because the sounds of LaFaro's hands and fingers on the fingerboard are so wonderfully consistent with the way a real acoustic bass sounds in the hands of a master. What the Harmony MC does better than most if not all other top-tier cartridges I've heard is both to retrieve exceptional amounts of low-level detail, and then *integrate* those details within the context of the larger musical whole.

Shelter's 901 MkII, 9000, and Harmony MC are each polished and accomplished performers, but ones that offer differing performance profiles and combinations of strengths, as I hope I've shown in this review. Yet for all their audiophile prowess, perhaps the best news of all is that these cartridges manage, each in its unique way, to remain true to Yazuo Ozawa's passion for putting the music first. **tas**

# Ortofon MC A90 Moving-Coil Cartridge

Reference Quality or Bust?

Jonathan Valin

**I** find myself in an awkward position here. I've never before commented on a Harry Pearson review (before you read this review, you first need to go to p. 75 and read what Harry wrote). Frankly, doing so makes me feel a little queasy—like a rabbinical student commenting on the Torah. Nonetheless, I was asked for my opinion of the A90 (installed in the linear-tracking Walker Black Diamond II record player), and was sent a second sample of the cartridge by Ortofon on which to form that opinion.

Why was I not sent the selfsame A90 that Harry reviewed? Well, therein lies a tale. You see Harry's A90 was not an "officially approved" review sample sent to him directly by the manufacturer; it came from tonearm-designer and Ortofon enthusiast Robert Graham, who simply wanted to share what he considered a good thing with Mr. P. After Ortofon read Harry's negative review (we always send advance copies of our reviews to manufacturers for comment and fact-checking), the source of Harry's sample led to a dispute. Since HP's A90 didn't come from the factory through the usual channels, Ortofon argued that something could have been wrong with it. Though we felt that the chances that Robert Graham had installed a faulty cartridge in his own tonearm in

Harry Pearson's system were nil, we ultimately decided that Ortofon had enough of a procedural point about provenance to justify our listening to a second "officially approved" sample. Thus, this comment. (Do keep in mind that if Ortofon hadn't raised the provenance issue, the only review of this cartridge you would be reading in TAS would be Harry's. And also keep in mind that, while Mr. P. is my mentor in all things audio, we do not always hear things the same way. No two reviewers do.)

That said, let me begin by saying that I fundamentally agree with Harry's description of the A90's sound. Where I disagree—markedly, I'm afraid—is in how I interpret that description.

For me, most of the problem centers on Harry's use of the words "bland" and "dull" ("[The A90]

is also very bland, and not a little dull especially toward the upper octave..."). Although I believe I know exactly what he means by these descriptors, they are not the words I would have chosen. The words I would've chosen are "low in distortion" and "non-resonant," which, of course, make all the difference in the world.

The A90 was, in fact, specifically designed to reduce distortion and resonance. All you have to do is take a gander at its "body" to realize how novel and extreme an effort Ortofon made to realize this goal. The A90 really doesn't have much of a body to resonate. It looks like a cartridge with the "middle" cut out. Where relatively massive rectangular sidewalls encasing the moving parts and magnet assembly would normally be found,

here there is...nothing. What you'll find, instead, is a relatively small, irregularly shaped, cowl-like enclosure at the front of the cartridge—in which the stylus, cantilever, and motor are sealed—and a spare four-pin terminal block at the back. The "unnecessary" (Ortofon's word), resonance-prone, purely structural material usually found in-between has been eliminated.

Ortofon was able to fashion this radically different cartridge body—which is built in a single piece, BTW—thanks to a new manufacturing process called SLM (Selective Laser Melting). You can find a little video on SLM (and see the lasers at work) at [http://www.ortofon.com/index.php?option=com\\_content&view=article&id=290&Itemid=321](http://www.ortofon.com/index.php?option=com_content&view=article&id=290&Itemid=321). What seems to be happening



## EQUIPMENT REVIEW - Ortofon MC A90 Moving-Coil Cartridge

here is that CAD-assisted three-axis lasers are literally welding micro-particles of stainless steel into a non-traditional geometric shape, building up its profile layer by layer with each pass of the lasers. The A90's moving parts and the magnetic system are built directly into this one-piece body, which has been designed to have just enough mass to “do the job”—and no more. Thanks to its laser-welded construction, that mass is very

### ORTOFON MC A90 SETUP

Like all cartridges, the A90 was a snap to install in the easy-to-adjust Walker air-bearing linear-tracking arm. (Judging by the sonic results, the A90 loved the Walker tonearm, although I'm sure it would be equally at home in any high-quality medium-mass pivoted arm.) Azimuth was dialed in (by Andre) via Feickert's Adjust+ software to maximize separation and channel balance, which, as noted in the review, measured very well. Tracking force was set at Ortofon's recommended 2.3 grams. VTA was set—via microscopic camera—so that the cartridge was at a 90.6° angle, which left the arm just about parallel to the record surface. (We also tried 91° and 92°.) I tried a variety of loadings, from 50 ohms to 47k ohms, settling on 1000k ohms as my choice for much (not all) music. (Ortofon recommends 10-100 ohms.) I used no viscous damping on the Walker tonearm with this cartridge. **JV**

stiff, dense, and internally well damped, making for a substantial reduction in resonance. (In the video referenced above, Ortofon shows how dramatically resonance has been reduced via SLM technology by dropping a conventional cartridge body to a countertop from a height; the cartridge body literally bounces off the countertop into the air with a sharp clattering noise. Ortofon then drops an A90 body from the same height; it hits the counter with virtually no bounce and a dull thud-like sound. It's quite an impressive contrast.) With all that “unnecessary” mass removed, the A90 is also much lighter in weight than a conventional cartridge (a mere 8 grams), making it (says Ortofon) an easier match with a wider variety of tonearms.

But Ortofon hasn't just reduced the resonances of the cartridge body. It has also reduced the distortions of the A90's motor and its stylus/cantilever. To ensure that the A90's magnetic field remains stable regardless of the movements of the coil armatures, Ortofon inserts what it calls a Field Stabilizing Element (FSE)—a small cylinder of silver-plated copper—inside the magnet system. The FSE is said to reduce “dynamic” and intermodulation distortion, thereby increasing resolution, spatiality, and the accurate tracking of micro- and macro-dynamic swings. In addition, Ortofon uses its patented Wide Range Damping (WRD) system—which involves attaching a small, heavy platinum disc sandwiched between two rubber absorbers of different properties to the far end of the cantilever—to increase trackability (which reputedly reaches 100µm at 315Hz at the A90's recommended VTF of 2.3 grams).

I don't know whether SLM, FSE, and WRD are the reasons, but the A90 is, indeed, a fine

measuring cartridge. Ortofon claims channel separation of better than 28dB; my friend (and cartridge-setup expert) Andre Jennings measured a little under 31dB. Ortofon claims a channel balance of less than 0.2dB; Andre measured less than 0.1dB (with azimuth adjusted for maximum channel separation). Ortofon claims improved trackability; Andre measured 38cm/sec at 1kHz with *OmniDisc*, which, though not Shure V15 territory, is very good for a coil—and this was without any viscous damping of the Walker tonearm. (The A90 also sailed through the +16dB 300Hz test-band of the *HiFi News Analogue Test LP*.)

I'm not sure what I was expecting when Andre finished tweaking the A90's setup. I guess something along the lines of an Ortofon from the 70s or 80s, which is to say, something bright, sterile, off-putting. That, folks, is not at all what I got.

Even right out of the box, the A90 was not a bright-sounding cartridge. Indeed, its treble seemed subdued, almost exactly in the way that the Magico M5's treble seemed subdued—that is, and once again like the M5, until something with a good deal of upper-midrange or high-frequency information came along. Take a recording like Christopher Campbell's *Sound the All-Clear* on the Innova label (see Mark Lehman's review in this issue). Played back through TAD's CR-1 Compact Monitors (along with the Magico Mini II and M5, one of the three most lifelike dynamic speakers I've auditioned, BTW, and a shoe-in for my reference system) via ARC electronics, I don't know that I've ever heard faster, cleaner, more realistic transient response—and *All-Clear* has superbly recorded transients from plucked violin

and koto, and sharply struck piano, cymbal, and snare, among a multitude of other instruments. And yet there was also a smoothness to this cartridge's delivery of transients, a purity, a lack of edginess and smearing that, initially, rather bewildered me. Some moving magnets have this kind of upper midrange and treble grace, but they don't have this kind of speed, impact, and

### SPECS & PRICING

#### Ortofon MC A90 Moving-Coil Cartridge

Type: Moving-coil cartridge

Output voltage: 0.3mV

Channel balance (at 1kHz): <0.2dB

Channel separation (at 1kHz): >28dB

Frequency response: 10Hz-80kHz (20Hz-20kHz +/-1dB)

Trackability (at 315Hz at recommended tracking force): 100µm

Compliance: 16µm/mN

Recommended loading: 10-100 ohms

Stylus type: Special polished nude Ortofon Replicant 100 on boron cantilever

Recommended tracking force: 2.3g

Tracking force range: 2.0-2.5g

Weight: 8g

Price: \$4200

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## EQUIPMENT REVIEW - Ortofon MC A90 Moving-Coil Cartridge

### THE ORTOFON A90

Harry Pearson

*The following is the complete, verbatim text of HP's review of the Ortofon A90 that was held from Issue 206's cartridge survey for the reasons JV has given. —RH*

Like the Benz and Clearaudio, the product of a European company whose moving-coil designs stretch back to the earliest days of the stereo LP. It managed to survive the early problems afflicting moving coils—problems ranging from nasty high-frequency peaks to troublesomely low outputs. [\$4200]

I shall neither linger long nor tarry here. The A90 has its ardent fans, including our pickup arm's designer, Bob Graham. I can see what he likes about it, given the "sound" of his somewhat sterile-sounding pre-Phantom arms: It is flat in response, and, as one audio maven said, perhaps in warning, perhaps in praise: "It's very literal."

And it is also very bland, and not a little dull especially toward the upper octave, and especially when it comes to reproducing loud harmonic complexities. It may be literal, but

it isn't consistent in the top octaves—the off-stage trumpet that opens the *Kije* suite is muted, while the piccolo, conversely, sounds pitched too high.

Yes, there is nice depth there, particularly on a real stage (Orchestra Hall in Chicago) and while the sound is quite clear, it lacks the quality of translucency that lets you hear into the music more deeply. Oh yes, it is also excellent on voices, as the Weaver disc well illustrates, but only okay on the acoustic instruments playing along. Oh yes, it is better off reproducing close-up sounds, though it does not distort soundstage depth.

Me? I couldn't wait to move along to the next cartridge in any of our sessions with the Ortofon. It was, I almost forgot to mention, the poorest tracking cartridge in the survey—it simply cannot handle massed brass and other instruments playing at top volume (vide, the horns and trumpets on the *Kije*.) Even the less-expensive Ortofon Windfeld tracks better; wish I had kept one on hand for this survey.

resolution.

Let's face it. Most moving-coil cartridges have a slightly rising treble response. Analog mavens are used to it; indeed, for many of us, it adds appealing energy to transients, scintillance to partials, and duration to decays. Since the A90

was not adding these things, I could see where, at first, it might seem a little too smooth and well-mannered, a little lacking in color and drama, a little, well, dull to some listeners.

This is certainly the way that HP heard it, and I heard what he heard. But...the more I listened

to the A90 the less I thought of it as lacking in drama and the more I thought of it as just not adding the resonances, physical and electrical, that I'd grown accustomed to with other moving coils. Ask our Music Editor, Mr. Lehman, who sat, gape-jawed, through the fabulous first side of *Sound the All-Clear*, whether this cartridge lacked drama. Like me, he would answer "absolutely not." With its incredibly clear, quick, lifelike attacks, its utter refusal to peak-up or brighten up or otherwise distort tone colors (top to bottom), its buttery smooth (and, yes, softish) treble, its audible reduction in image-blurring resonances, its exceptionally "quiet" (though not dead or "black"—not colored at all, in fact) background silences between notes, and its gigantic soundstage, the A90 made *Sound the All-Clear* and other well-recorded LPs gain in musical drama—and in naturalness.

Indeed, this has to be one of the fastest, cleanest, quietest, most clearly focused cartridges I've heard—and certainly among the most spectacular soundstagers. Every single instrument—and in *Sound the All-Clear* there are a zillion of them, often quite endearingly odd, scattered all over the stage—was clearly defined in its own acoustic space within a soundfield that stretched from wall to wall to ceiling.

It is also one of the highest-resolution cartridges I've auditioned. For example, on the very first LP I played with it—the Salerno-Sonnenberg/Rivers performance of the Prokofiev First Violin Sonata [MusicMasters]—I heard toward the close of the opening Andante, and for the first time, pianist Sondra Rivers' left hand playing accompaniment to the melody line that I could always hear her playing with her right hand. Now you could say

that you will inevitably discover new things with any new piece of gear—and that is true. But this is a record I'd listened to at least a hundred times, and I'd never heard Rivers actually sounding the chords before. Oh, I'd heard the harmonies they make, of course, but I'd never heard her *playing* the harmony—heard her fingers working the keys, her feet the pedals. Through the A90 I did. That, folks, is resolution!

In the midrange this cartridge has a three-dimensional vividness that is unusually realistic. On something like Ian and Sylvia's minimally miked *Four Strong Winds* [black-label Vanguard], the voices pop out at you like heads through a curtain. Both singers are "there" with a presence and realism that exceed that of other great cartridges I've reviewed. And yet, like HP, I thought Ian and Sylvia's instruments weren't as vividly presented as their voices. The guitar and Autoharp didn't have quite the voluptuous richness of timbre that they do with some other coils; nor, during instrumental breaks, did they "come forward" in the mix as much as they do with other cartridges.

Once again, this could mean one of two things: a) that the A90 is a little laid-back and reserved in character, or b) that it is more accurately preserving spatial relationships vis-à-vis microphone setups (what sounds like two widely spaced omnis on the Ian and Sylvia LP), and flat out refusing to warm up or prettify timbres and hype dynamics via peaks or resonances. HP, I think, would lean toward the former interpretation, I toward the latter. Why do I think my interpretation is right? Because the relative presence of accompanying instruments changes with the different miking/mixing of different recordings and because

## EQUIPMENT REVIEW - Ortofon MC A90 Moving-Coil Cartridge

transient response is superb and timbre neutral regardless of whether or not instruments are spotlighted or boosted in the mix.

Though HP complains about the cartridge's misbehavior at the far back and sides of the stage, I could hear no such anomalies with my sample (and no mistracking, either, though, to be fair, I tend to listen at lower volumes than Mr. P. and in a smaller room). Though I didn't have the RCA of *Lt. Kije* handy, I did have the Everest recording of this piece with Malcom Sargent and the LSO—itself a pretty marvelous bit of playing and engineering with a really vast soundstage (Walthamstow?). I detected no loss of resolution or focus at the sides or the back of the stage—anything but, in fact. That off-stage trumpet did not sound unduly muted, though it did sound suitably distant; nor did the capering, hup-two-three piccolo sound wrong in pitch. As it did with every other instrument in every other pitch range, the A90 reproduced doublebasses, bassoons, tubas, and big bass drums with spectacular focus and resolution—superbly tuneful bass that was exceptionally well defined.

As for the A90 lacking “translucency” (a word, I confess, that I'm not entirely comfortable with, as it literally means “diffuse” or “slightly opaque”), I think I hear what Harry means. For all its superb focus, resolution, low noise, and neutrality, there is a slight, almost mechanical sense of constraint to the way the A90 reproduces dynamics, timbres, and textures compared to the way a small few other cartridges reproduce these same things. This is not a matter of the sheer number of details the A90 reproduces—at which is it's the equal or superior to any cartridge I've reviewed—it is rather *the way* it reproduces them. It's as if the cartridge

is attached to a bungee cord that lets it fly freely and speedily to the far limit of its excursion, but then pulls it gently back. I could be wrong but I think (and my friend Andre thinks) this might be a tracing issue. The small handful of cartridges that do not give me this vague sense of mechanical constraint are equipped with micro-ridge styli that sit a bit deeper in the groove and “read” a bit more of the groove wall than the A90's Replicant stylus does. (Indeed, I heard this same thing when Da Vinci and Benz switched to micro-ridge styli.) In any event, this is almost a subconscious “problem,” which actually lessens as the cartridge breaks in. I certainly wouldn't worry about it.

When something doesn't sound like what you're used to, it does tend to throw you into a bit of a quandary. And the A90 *doesn't* sound like other mc's. Here is where I think the issue lies: Although damping out resonances and reducing distortions are generally regarded as good things, it has been my experience that killing off *too much* resonance can also seem to kill off some of the excitement of music (consider an overdamped listening room, for example). I'm not saying that the A90 does this, but I am saying that some listeners might, quite reasonably, hear it that way.

Whether you hear the A90 as overdamped, compressed, bland, or dull, as HP does (and as my friend Andre tends to, although he likes the A90 more than Harry does), or whether you hear it as setting a new standard of freedom from distortion and resonance as I do (and as my friend Mark Lehman tends to), I can't predict. By its very nature, this is going to be a controversial cartridge that has to be carefully auditioned before purchase. I liked it enough to leave it in my system as a reference (alongside the Da Vinci Grandezza,

Clearaudio Goldfinger v2, and the Benz LP S-MR); Harry couldn't wait to move on to something else. As I've tried to explain, I can see why he feels this way, even if I don't agree. To my ear, this is a groundbreaking product that does for cartridges some of the same things Magico, Rockport, and TAD have done for speakers—lowered their electro-mechanical signatures making them less audible as sound sources. For this, it earns my highest recommendation, with the proviso that it won't be every listener's cup of tea. **tas**



# Da Vinci Grand Reference Cartridge Grandezza

**Grander Yet!**

**Jonathan Valin**

**I**n Issue 193, I sang the praises of Peter Brem's wonderful very-low-output moving-coil cartridge, the Da Vinci Reference Grandezza, ranking it—alongside the Clearaudio Goldfinger v2 and the Air Tight PC-1 Supreme—as one of the three most lifelike transducers I've heard in my system.

Now, a year later, Peter and Da Vinci have come up with a revised version of that cartridge designated the “Grand Reference” that directly and successfully addresses several areas in which the original Reference was a bit weak or, at least, weaker than the competition, and does so without sacrificing any of the original's strengths, which is an altogether good thing.

You may recall from my first review that I thought the Reference was a virtual paragon of neutrality and transparency, with less “character” of its own than any mc phono cartridge I'd yet heard. The Reference simply wasn't “there” in the way moving coils usually are. It didn't add scintillant brightness to the treble, didn't lend midrange timbres an oil-paint gloss and glow, didn't turn the soundfield

dark or grainy, didn't hype details or transients (although it was incredibly detailed and fast). As a result, it sounded to my ear less like an electro-mechanical device and more like the real thing—at least when the real thing was well recorded. When it wasn't, it told you that, too, although thanks to a sweet and forgiving treble it never made poor discs unlistenable.

Of course, one man's sweet and forgiving is another's polite and enervated. Even a fan of the Da Vinci cartridge, like me, would concede that other cartridges outdid it in large-scale dynamics. The Da Vinci Reference Grandezza (especially mounted in Da Vinci's great turntable and tonearm) may have set a new standard of naturalness and articulation on mezzopiano-to-pianississimo passages but it wasn't a world-



## EQUIPMENT REVIEW - Da Vinci Grand Reference Cartridge Grandezza

beater on mezzoforte-to-fortississimo passages; nor did it have the deepest, most powerful bass of all the contenders. It wasn't as good a soundstager as some of its competitors, either, sacrificing a little stage width for superior depth and front-to-back clarity and perspective.

Now, if you were to try out the new Da Vinci Grand Reference on some of the same recordings that I mentioned in my review in Issue 193, you would at first be hard put to hear a difference between it and the original. Take Bruno Maderna's *Serenade No. 2* [Supraphon]. With the new cartridge you would hear, once again and with the exact same limpid clarity of line and neutrality of timbre as the old Da Vinci, the way Maderna lets the freshly sounded timbre of one instrument (such as a flute) harmonize with the decaying harmonics of the previously sounded timbre of another instrument (such as a violin), turning the piece into a kind of a gentle, magical, melting sound world in which eleven disparate instruments seemingly "complete" each other's utterances in *almost* the same voice. On Leon Redbone's mumbly-grumbly *Branch to Branch* [Warner], you would hear, yet again, the same hard-to-decipher lyrics made perfectly understandable (and you would hear that microphone preamp clipping, too, on "Sweet Mama, Papa's Done Gone Mad").

Even on a new LP, like Dan Hicks' superb and superbly recorded *Tangled Tales* [Surf Dog LP], you'll hear this same clarity of line, high resolution, and neutrality of timbre, here in the service of the marvelous way Hicks and the Hot Licks turn the 1919 fox trot "The Blues My Naughty Baby Gave to Me" into something straight out of psychedelic-cowboy/gypsy-bebop heaven,

complete with Django-like mandolin, Grapelli-like violin, and those marvelous chirping ("Hi, Bill!") Lickette backups. (FYI, a current Lickette, Darla Cohen, is married to one of *us*! Her husband is none other than The Lotus Group's Joe Cohen—the guy largely responsible for the Granada speaker.)

*But...* if you were to put something less relaxed on the turntable, something with tremendous energy, like, say the Czech Philharmonic's performance of compatriot Leos Janáček's incomparable *Sinfonietta* [Denon], the differences between the two cartridges would immediately become obvious.

Throughout this piece, Janáček uses huge wind and brass ensembles: a piccolo, two flutes, two oboes, an English horn, an E-flat clarinet, two B-flat clarinets, a bass clarinet, four horns in F, three trumpets in F, two bass trumpets, four trombones, two tenor tubas, a tuba, and nine—count 'em—trumpets in C. Friends, when this assemblage cries out in full voice, as it does so memorably in the first, third, and last movements, it achieves an almost barbaric martial splendor that leaves something like Respighi and his evocation of the Roman Legions in the piney dust. There is very little else in modern music as thrilling, beautiful, savage, and awe-inspiring as these great wind and brass fanfares—and very few pieces of music that rise to this glorious and fearsome height.

The first version of the Da Vinci cartridge would have given you all of these instruments (and everything else in the orchestra from strings to percussion) with utter clarity and natural timbre. But it would also have robbed you of some of their power, which robs the *Sinfonietta* of some

of its goosebump-raising majesty.

Mounted on the Walker Black Diamond Mk II (reviewed in Issue 202), the Grand Reference gives you Janáček's orchestra *and* its dynamics without limitations. The huge fanfares are, indeed, huge, and mind-bogglingly powerful right through quadruple forte. The Grand Reference tracks and traces so perfectly that even the loudest trumpet blasts never turn shrill or incoherent (assuming, of course, that your speakers and amplifiers are capable of handling all the energy this cartridge is feeding them at lifelike volumes). Indeed, I don't think I've heard the *Sinfonietta* to better effect on any record player.

In addition, the Grand Reference has added weight on the bottom. By this I don't mean that it adds any spurious darkness or phony lushness to the sound; I just mean that when the timpani go off in the *Sinfonietta* (or any other piece) they will shake the walls and floors as they do in life. Add to this a newfound breadth of stage, a wall-to-wall width that makes antiphonal passages that much more, well, antiphonal, and what was already a great cartridge is now an even greater one (and, though my no means cheap, still the least expensive option among the Big Three).

Do remember that this is a very low output mc (0.17mV), which means you're going to need a phonostage capable of boosting its output to line level without inviting excessive hum or RFI. I highly recommend the Audio Research Corporation Reference Phono 2 and the Soulution 750. **tas**

### SPECS & PRICING

#### Da Vinci Grand Reference Cartridge Grandezza

Type: Low-output moving-coil cartridge

Output: 0.17mV

Coil impedance: 3 ohms

Matching impedance: 3 ohms

Recommended stylus force: 2-2.2 grams

Weight: 20 grams

Price: \$7750

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# Air Tight PC-1 Supreme

World's Best?

Jonathan Valin

I've reviewed a number of very fine moving-coil cartridges over the past couple of years. Among the first was the Air Tight PC-1, TAS's 2006 Cartridge of the Year, which I reported on very favorably in Issue 173. What set the PC-1 apart was its transient speed and clarity, particularly in the midrange.

The PC-1 and PC-1 Supreme were designed by Y. Matsudaira in conjunction with Atsushi Muira of Air Tight. Mr. Matsudaira—the engineer largely responsible for some of the legendary coils from Koetsu and Miyabi—and Mr. Muira have been audio friends for the past 50 years. When Mr. Muira decided to design a cartridge, he went to Mr. Matsudaira for his expertise in cartridge building.

The original PC-1 used a new high- $\mu$  core and winding material (designated SH- $\mu$ X) that was said to have three times the saturation flux-density and initial permeability of conventional core materials. In plain English, SH- $\mu$ X allowed the PC-1's magnets to saturate more quickly at

much higher levels with fewer losses, greatly lowering noise and coloration and greatly increasing resolution in every regard. Details were clearer, timbres were truer, air was more plentiful, dynamics were more lifelike, and stage width, depth, and height were expanded.

Air Tight is now marketing a greatly improved, considerably more expensive version of the \$6000 PC-1, the \$9000 PC-1 Supreme. Some of the differences between the two cartridges you won't be able to see, such as the reduction in internal impedance in the Supreme's magnetic engine (down now to 1 ohm, according to Air Tight, thanks to almost 40% fewer windings in the coils). Some—like the changes in the cartridge body,

## EQUIPMENT REVIEW - Air Tight PC-1 Supreme

now much heavier and plated in gold to reduce susceptibility to resonance—you will. What I am certain you'll be able to do is hear the difference between the two, which is not small.

Air Tight says that its internal and external improvements have led to improved bandwidth, dynamic range, transient response, and phase behavior, and I can affirm by ear that each of these claims is true. The new cartridge goes lower with much better timing, focus, and resolution, goes higher with greater incisiveness, detail, and speed, plays big dynamic passages with greater power and control, and stages with even greater width and depth and focus than the PC-1 (which, let me remind you, was and is no slouch in any of these regards). It is also a *much* more neutral cartridge than the PC-1, which sounds a bit dark (a bit weighted toward the bass and softened in the

treble) by comparison, with considerably higher low-level resolution at both of the frequency extremes (and in the middle).

For an illustration of just how improved this new Air Tight is, put on a choral piece, like the Sanctus of the Stravinsky Mass [Columbia], and listen to the choir. The sheer width and depth of the stage, the count-the-heads clarity of the many individual singers ranged across the back and sides of it, the almost physical dimensionality with which the soloists at stage front are imaged, the comparative realism of the entire presentation are truly exceptional. There are other cartridges with this kind of staging and resolution—the Clearaudio Goldfinger v2, for instance—but the Air Tight's see-into transparency is really quite special. In the right arm (the Walker or the Da Vinci Grandeeza) with the right phonostage (the ARC PH7 or Audio

Tekne TEA-2000) and with speakers capable of very high resolution and neutrality themselves, there is less of a sensation of listening *through* an electro-mechanical transducer with the Supreme. It is almost like the moving-coil equivalent of the MBL 101 X-Treme or the MartinLogan CLX loudspeakers—it just gets out of the way more completely.

As of this writing, the Air Tight PC-1 Supreme has less of a sonic signature than any other moving-coil I've tested, making it, *possibly*, the best cartridge I've yet tested. I say “possibly” because if a component's transparency (in the sense of getting out of the way of the music, of disappearing as a sound source) isn't your foremost priority, then there are other cartridges that may outdo the Supreme or certainly run close alongside it in sheer dynamic excitement and that will definitely outdo it in sheer density of tone color (the gorgeous-sounding Koetsu Onyx Platinum, for example), although the Air Tight is nothing like a cool or analytical-sounding device. (I guess I should note that there is a new cartridge, the \$7300 Grandeeza from Da Vinci of Switzerland, which looks like a very promising contender.)

The truth is that there are simply too many terrific moving coils on the market to declare one the all-purpose winner. Too much depends on listener biases and equipment compatibilities (for which see my set-up sidebar). I can say this, however, with certainty. This is a *markedly* improved cartridge. If you liked the PC-1 (as I very much did), you will love the PC-1 Supreme. And if top-to-bottom speed, clarity, and transparency are what you most prize, you would be foolish not to audition this moving coil. Come what may, it is a world-class transducer. **tas**

## SPECS & PRICING

### Air Tight PC-1 Supreme

Type: Ultra-low impedance moving-coil cartridge

Frequency response: 10Hz–50kHz

Output: 0.4mV

Internal impedance: 1 ohm

Magnet: Neodymium #50

Recommended stylus force: 1.9 to 2.2 grams

Channel balance: within 0.5dB (1kHz)

Weight: 12 grams

Price: \$9000

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## SETTING UP THE PC-1 SUPREME

The more experience I have with different turntables and arms and cartridges, the more obvious it has become to me that when someone says, “I think Cartridge A is better than Cartridge B,” he should always add, “in my turntable with my tonearm.” For me, it is virtually impossible to isolate the way any one of these three items “sounds” from the way they interact. For me, you are always and inescapably listening to a “system” when you listen to a record player and cartridge.

Because of its own weight, its compliance, and its sensitivity to resonance, the Air Tight PC-1 will, in my opinion, do better in a

high-mass straight-line-tracking tonearm like a Walker Black Diamond on the Walker air-bearing ‘table or in a high-mass double-gimbale arm like the Da Vinci Grandeeza on a magnetic-suspended ‘table like the AAS Gabriel/Da Vinci. It may not fare as well on something like a uni-pivot Graham Phantom on a lower-mass, unsuspended ‘table like a TW Acoustic Raven AC-3.

The Supreme also likes to be loaded down to 500 ohms or less (I prefer 200 ohms with the ARC PH7) and tracks and sounds best at around 2.1 to 2.2 grams with the tonearm parallel to the record surface. **JV**



## EQUIPMENT REVIEWS

# Phonostages



# Musical Fidelity V-LPS and Clearaudio Basic Plus Phonostages

Vinyl Playback On a Budget

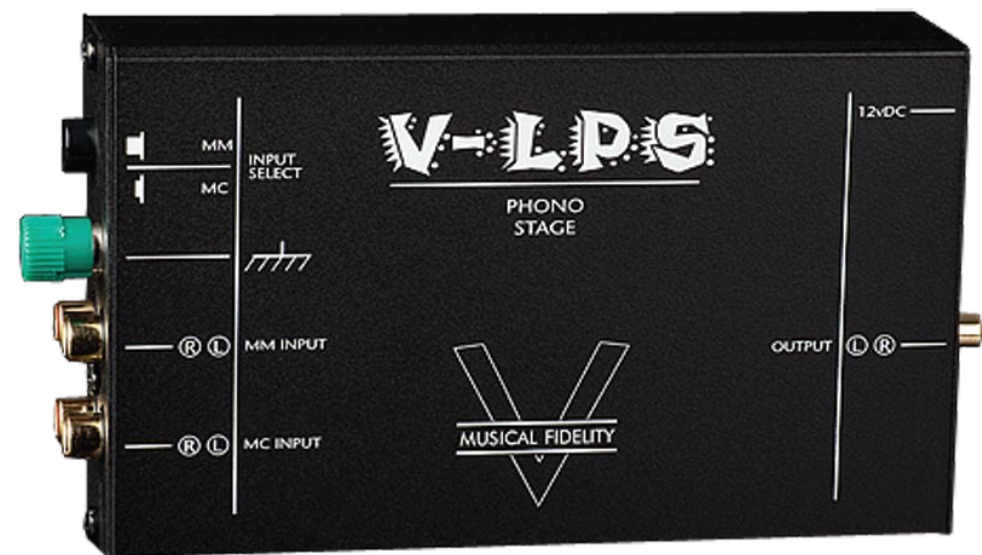
Neil Gader

Whether you're an analog rookie or an old-hand dusting off some early Shaded Dogs or EMIs, it's easy to have forgotten all that goes into a basic LP playback system. There's the turntable, tonearm, and cartridge, of course. A non-captive tonearm interconnect cable, in some cases, yes. But what do you plug that into? A vacant line-level input on your preamp or receiver? Nope, that'll never do. Barring an onboard phono input, usually reserved only for moving-magnet cartridge duty, you're going to need a phonostage to amplify and equalize the delicate signal being retrieved by the cartridge. The Musical Fidelity V-LPS and Clearaudio Basic Plus featured here walk out the door at under a thousand—well under in the case of the Musical Fidelity. They've both been designed with sufficient gain to amplify the outputs of moving-magnet and most moving-coil cartridges. They also offer significant options—easy to add when your budget allows.

## MUSICAL FIDELITY V-LPS

The V-LPS is listed at the improbably low price of \$149. Utterly unpretentious, its stamped chassis and input layout is meant to keep costs in line. It provides twin sets of RCA inputs, one for moving-magnet cartridges and one for the additional gain requirements of moving coils. Gain and loading is preset at the factory (40dB for mm, 57dB for mc) and no further adjustments

are available. A 12V wall-mounted power supply is standard equipment, but the optional V-PSU with three mini-plug inputs makes it compatible (simultaneously) with two other V Series products, the V-DAC converter and the V-CAN headphone amp. The aim of the more robust outboard power supply and the filtration it provides is to increase isolation and reduce background noise. Although it clocks in at \$249, more than the V-LPS itself,



# EQUIPMENT REVIEW - Musical Fidelity V-LPS and Clearaudio Basic Plus Phonostages

it will boost transparency and dynamic expression to such a degree that I wouldn't be without this upgrade for long.

Sonically, the V-LPS exceeded my expectations by a wide margin. Tonally it was a straight-shooter with a character that was just a hint laid-back and a little darker and fleshier through the midrange. The treble wasn't tipped up, although some of the chomp of the deepest low frequencies seemed missing. In fact, except for some nip/tuck to the soundstage and dynamic softening, the V-LPS hardly imposes its personality on the music at all. Vocals of all strengths and genders are naturalistic, with stable imaging you can lock onto. Deep-voiced singers like Mark Knopfler and Tom Waits have the weight and gravity that you expect, but the fact is the V-LPS gets timbre right across all vocal ranges. String sections are smooth if just a bit dry and lean.

Pitting the V-LPS against a reference-caliber phonostage like the JR Transrotor Phono One may seem unfair, but it wasn't the mismatch that one might have predicted. Sonically, the V-LPS's cooler palette contrasted with the butterscotch appeal of the Transrotor. Most subtractions, however, were relatively subtle. On a track like Ricki Lee Jones' "I'll Be Seeing You" from *Pop Pop* [Geffen/ORG] the Musical Fidelity was not as detailed at lower levels and slightly more forward

with the acoustic guitar, bass, and clarinet. Spatial relationships between players were narrowed somewhat and front-to-back dimensionality was more limited. Bass extension, though good, will not encompass the full timbre of doublebass or kick drums, or the jump of an electric bass, a trait I noted during the first verse of Elton John's "Indian Sunset" [DCC]. These instruments lost a bit of their individuality and bloom as they cascaded across the stage, and Sir Elton's piano gave up a portion of the isolation that normally places it to the right and slightly behind the iconic singer. Similarly, during Julie London's "Cry Me a River" from *Julie Is Her Name* [Boxstar], Barney Kessel's master-class guitar work didn't quite have the same string detail and his passing chords and complex inversions sounded a little more veiled. London's vocals settled a bit deeper into her chest—certainly not a bad place to be for most London fans—but it was slightly thicker and less lively, nonetheless.

Okay. It's not altogether perfect. But show me a better phonostage for less than a ticket to a Justin Bieber concert and I'll go back to digital. This is one super unit for the price, made all the better by the optional power supply. In short, a steal.

## CLEARAUDIO BASIC PLUS

The Basic Plus resides midway in the Clearaudio phonostage lineup. Jewelry-

like in construction, it's an elegant two-box component, housed in a beveled-accented cast-aluminum case with an identically proportioned power supply. It's so compact it's easy to position and connect, and even stackable if you're short of room. The Basic Plus keeps it simple with preselected gain and loading (40dB for mm, 60dB for mc) to accommodate the widest possible selection of moving-coil and moving-magnet cartridges. For those of us who feel the need to be more hands on with these settings, the Basic Plus might frustrate, but it never seemed at a loss handling the cartridges I threw at it. Outboard power supplies are pretty much standard operating procedure these days, but this one's a beauty employing a fifteen-pin connector to link with the phonostage module.

Expectations run high when a phonostage approaches the kilobuck range but the Basic Plus did not disappoint. First, it's profoundly quiet, an attribute that sets the stage for its rich resolving power and transparency. Its character is slightly forward, a bit cooler generally, but possessed of superb dynamics and speed. It's very revealing of low-level information but doesn't rely on hard edges or a laser-etched treble to extract music's more ephemeral details. The coolness that I mentioned may also be partly a result of the way an old-fashioned lack of noise and distortion impacts individual images.

## SPECS & PRICING

### Musical Fidelity V-LPS

Gain: 57dB, mc; 40dB, mm

Input impedance: 100 ohms, mc; 47k ohms, mm

Channel separation: >70dB

Dimensions: 1.67" x 3.75" x 6.67"

Weight: 12.25 oz.

Price: V-LPS, \$149; V-PSU Power Supply, \$249

### Clearaudio Basic Plus

Gain: 60dB, mc; 40dB, mm

Input impedance: 800 ohms/270pF, mc; 47k ohms/270pF, mm

Channel separation: >90dB

Dimensions: 4" x 6.5" x 2.4"

Weight: 3.3lbs. (with PSU)

Price: Basic Plus, \$900; Accu+, \$900

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## EQUIPMENT REVIEW - Musical Fidelity V-LPS and Clearaudio Basic Plus Phonostages

These images are firmly positioned and seem to project their own individual atmospheres—literal “breathing room” if you will. Such traits were never more in evidence than during Sheffield Lab’s classic direct-to-disc of *Growing Up In Hollywood Town*. Here, the Basic Plus had an almost buttery sound. The strings’ layers and dimensionality were stunning. For vocals the all-important sibilance range was clean but not harsh, a bit of silk to soothe the sizzle if you will. The bass drum during “Amanda” held all kinds of complexities. Not just extension, although it has quite a wallop, but also a tactile sense of the drumhead vibrating and throwing ripples of energy across the stage.

On a superb orchestral LP like Vaughn Williams’ *The Wasps Overture* [RCA], the Basic Plus delivered excellent extension and timbre from the bass viols. From the opening moments of this overture it established a low-frequency foundation and weight for the rest of the orchestra to play off of. Low-level detail was similarly very good, and I kept noting the expressiveness and articulation of the harpist, whose nearly constant presence helps characterize this piece. In contrast with my current reference, the Transrotor, I felt the Clearaudio didn’t quite hold the center of the soundstage as impressively, although it performed well in overall width. The Transrotor dove more deeply into the soundstage, creating the belly of the orchestra and retrieving more distinct layers from front-to-back. However, for the Basic Plus there was an extended focus and a sense of openness and air on top that surpassed the slightly darker and seemingly weightier Transrotor.

However, it was the Basic Plus’ low-level resolution that pretty much cinched it for me.

That conclusion came courtesy of Impex Records reissue of Willie Nelson’s *Red Headed Stranger*, a 1975 recording that is in many ways an antique in terms of recording style, but that, warts and all, has a startling immediacy and liveliness that have mostly been choked out of many contemporary recordings. In particular there is a kick-drum figure during the title track that is buried in the mix. Undaunted, the Basic Plus had at it and suddenly there it was—keeping time, fully in tune, and pushing air forward into my room.

### UNPLUGGED

The big “plus” available to Basic Plus owners is the optional Accu+ battery power supply. It uses dual NiMH batteries, hence, in this context Accu, for “accumulators.” The advantages of battery power are well established although not universally applied across this segment. Battery power provides direct-current but eliminates the need to rectify AC and then filter it to supply the audio circuits. In a perfect world this means no traces of the DC’s AC origins (called “ripple”) appears on the DC outputs. For the Accu+, a button on the front panel selects when the unit is running off the internal battery, and LED indicators light when the batteries are fully charged. When installed the Accu+ slaves to the phonostage via a fifteen-pin connector, while the power supply connects to the Accu+. Under battery power, the chief sonic difference is a less veiled presentation, with marginally more dynamic punch and an added layer of dimensionality. An improvement, yes, but, at \$900, not a game-changer.

In a way the Accu+ is a victim of the Basic Plus’ own stellar performance. The price of admission isn’t cheap, and much will depend on your

own system and the cleanliness of your power. Frankly I’ve heard great results on both sides of the fence. And for the additional cost, buyers should consider whether a phonostage with greater loading and gain flexibility would be the better choice. Or perhaps a higher-performance cartridge? My suggestion: Upgrade later.

In the end, it’s all about system synergy and proportionality—like they say, one person’s BIC is another’s Mount Blanc. For many, these are challenging times and it might seem like the height of excess to consider taking a reborn format like vinyl for a spin. But the irony is that used vinyl remains a relative bargain, and turntable and cartridge selection have never been as affordable as they are today. Add to this the scintillating performance and blue-plate price of the Musical Fidelity V-LPS, and any residual guilt should be quickly assuaged—it’s that good. As for the Clearaudio Basic Plus, it’s a phonostage that will easily challenge the performance of far more expensive phonostages, whether battery- or AC-powered. Both units will allow you to reap the vast rewards of vinyl without paying a king’s ransom. TAS

# Musical Surroundings SuperNova 2 Phono Preamplifier

Imaginative, Inventive, Accomplished

Paul Seydor

If we are living in the twilight of vinyl, it has to be the longest lasting twilight since mechanical watches and fountain pens. LPs and equipment to play them are undoubtedly a niche market, but there can be no question that this particular niche is lively, robust, and apparently profitable. Not to say also resourceful, imaginative, and inventive when it comes to better mousetraps, to judge by the proliferation of record-playing paraphernalia to hit the market these last ten years. And it's surely some kind of huge irony that the stand-alone phono preamplifier came into its own not during the decades when vinyl was king but long after it had been deposed as a popular medium by the compact disc.



Mike Yee is one of the most innovative phono preamplifier designers working today. Marketed by Musical Surroundings, his designs are distinguished by superb sonics, very low distortion, and unusually low noise even without battery operation, the widest range of loading and gain options of any phonostages now available (perhaps ever), and genuinely high value. The Nova Phenomena has been my reference phono preamp since I reviewed it (TAS 172), replacing the original Phenomena.

Yee's flagship, the SuperNova 2 under review here, may be a unique product—I don't know

of another like it—in that it can be connected to a line-level preamplifier as a conventional stand-alone phono preamp or it can itself serve as a passive linestage when connected directly to a power amplifier. There are two outputs, one fixed, the other variable and controlled by one of two front-panel knobs. The other knob selects among the three inputs, two for phono and one high-level labeled AUX (for CD player or other line-level component). The phono inputs, which will accept any moving magnet/iron/coil pickup, are independently adjustable for gain and loading, allowing you to run two record-playing setups or

two different tonearm/pickup combinations on one turntable, each optimally adjusted for gain and loading and accessible with the flip of a switch.

Well, not quite a switch. The original version of the SuperNova (\$2800), now retired, had no line-level input, only three phono inputs, which allowed Yee to employ a novel means of source selection. All three input stages were simultaneously hooked up to a single output stage, the “switching” done by only having a single current source assigned by the selector switch, thus eliminating switches in the audio path. This is how selection still works between the two phono inputs in the new version,

but when he changed the third phono input to high-level in order to allow for the connection of a CD player if the SuperNova 2 is used as the primary preamp, it was necessary to put a switch between the AUX input and the two phonostages.

Regulation of the variable output is likewise novel. With only twelve positions, it is misleading to think of it as a volume control. Yee prefers to call it a “limited attenuator.” Most attenuators operate over a 40dB range (10,000:1). This one is intended to operate over an 11dB range or so (the lowest, i.e., far left, position totally muting the output). Most systems, he believes, have far

## EQUIPMENT REVIEW - Musical Surroundings SuperNova 2 Phono Preamplifier

### GAIN, LEVELS, LOUDNESS

The one big drawback to going passive is that it limits the range of playback level. As noted, the twelve-position attenuator on the SuperNova 2's front panel has only an 11dB spread, which does not mean that it limits the dynamic range of your system or recordings to 11dB, merely that you have only an 11dB window in which you can vary the overall playback level from soft to loud. That range is more than adequate for serious listening sessions because they usually involve moderate or higher levels, but it may be not enough to let you enjoy anything like the flexibility available from an active variable-gain preamp when it comes to handling every kind of loudness requirement (e.g., a dance party in the rumpus room to late night listening when you don't want to disturb anyone else). In my own setup, for example, when I set the overall gain so that orchestral climaxes are satisfyingly loud, I cannot set an extremely soft overall level unless I readjust the phono and AUX gain settings. (This is true to some degree of all passive attenuators, not just the SuperNova's.) Moreover, even within its usable range a volume control with just twelve steps may not give you the resolution of level from step to step you might want, though I did not run into this potential problem. As I've said, Yee's is the best passive attenuator I've ever used, but good as it is, it doesn't work miracles or cover all contingencies.

One criticism I have of Yee's otherwise thorough manual is that there isn't enough

instruction about setting gain of the phono and AUX inputs when you want to use the limited attenuator in place of a linestage preamplifier. It's difficult to generalize about settings because they will depend on everything from the output of your phono pickup and CD player to the input sensitivities of your power amp and the efficiency of your loudspeakers. The best way to do it is to set the gain on the phono inputs until the loudest passages of some favorite recordings are slightly louder than you are ever likely to listen to them when the attenuator is set to its 0dB (far right) position. Then do the same with your CD player, using the gain settings for the AUX inputs. (All gain and loading settings are made via easily accessible DIP switches on the back panel.) If you can't achieve such levels using the methods I've just described, then the SuperNova 2 is probably not compatible with your system. The likelihood that this will happen in any modern system is quite remote but not impossible.

For what my experience is worth, it took me only about an hour using familiar CDs and LPs to get everything locked in. Meanwhile, Yee has assured me that by the time this appears in print, the manual will have been rewritten to provide a thorough explanation of how to set all gain levels to use the limited attenuator to best advantage. **PS**

too much gain; reducing the excess allows for the elimination of gain in the linestage, which results in greater fidelity. He also claims that its lower output-impedance makes the SuperNova's attenuator much less sensitive than typical passive attenuators to the effects of cables. "If set up properly," Yee told me, "as the output approaches 0dB, the output impedance of the limited attenuator is close to 50 ohms" (see sidebar for more about setup). I tried running nine feet of Kimber Select and heard no untoward effect upon very high frequencies, which is where it would be noticed first.

Inasmuch as the earlier SuperNova served as the basis for the Nova, the sound here is a known commodity that I need only summarize. That sound is, first of all, very neutral, so much so that some have found it "too neutral," a concept I have difficulty with when the goal is reproduction. It is also transparent, dynamic, and high in resolution. Thanks to its comprehensive loading and gain options I feel that it allows me to hear the essential character of every phono pickup I audition, review, or otherwise evaluate. But therein consists a potential problem: You really do have to attend to loading and gain or what you're hearing—or reporting on—is the sound of the pickup improperly loaded, not necessarily the sound of the preamp as such.

Let me provide an example. Regular readers of mine will know how highly I regard some Ortofon pickups, in particular the Kontrapunkt C and the Windfeld. In order to hear these pickups at their best, however, they must be correctly loaded. With respect to the Windfeld, the difference between loading at 40 ohms and either 30 or 60 is clearly audible with critical listening. Load it at 30 and the

sound is subtly less dynamic and lively and the top end sounds fractionally less extended. Load it at 60 (or even 50) and the sound becomes slightly more dynamic and lively, with a brighter top end. Only at 40 does it sound just right. If you have not set these values precisely, it would be very easy to attribute the characteristics I've described to the phono preamp rather than to the pickup itself or a combination of the two. This is why the Nova, with its 256 possible loading options and 16 possible gain settings, remains for me an indispensable reviewing tool and my long-standing reference.

I'm not necessarily suggesting that it's best the out there. If I had more discretionary income, I might buy the Aesthetics Rhea, which, all other things being equal, has slightly more resolution, dynamics, and life. But as the Rhea has far fewer loading options, any given pickup could easily tip the balance back in favor of the Nova or the SuperNova 2.

How does the SuperNova 2 sound when used as a system preamplifier? In a word, magnificent—

### SPECS & PRICING

#### Musical Surroundings SuperNova 2 Phono Preamplifier

**Inputs:** Two phono, one line-level

**Output:** Fixed and variable, both adjustable

**Operation:** AC and battery

**Price:** \$3200

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## EQUIPMENT REVIEW - Musical Surroundings SuperNova 2 Phono Preamplifier

pretty much what you would expect when an entire amplification circuit is eliminated: greater transparency, resolution, clarity, and purity. I also heard a rare stability in the soundstaging and unusually precise tracking of movement (e.g., the beginning of *The Christmas Revels*, side six of the Bernstein *Carmen*). Most of all, though, was a difficult-to-define but very real impression of a more natural-sounding presentation, especially from voices and acoustic instruments, handily demonstrated in a truly sublime new recording of Schubert's *Winterreise*—psychologically probing, dramatically shattering—with Mark Padmore and Paul Lewis, produced by Robina Young for Harmonia Mundi USA.

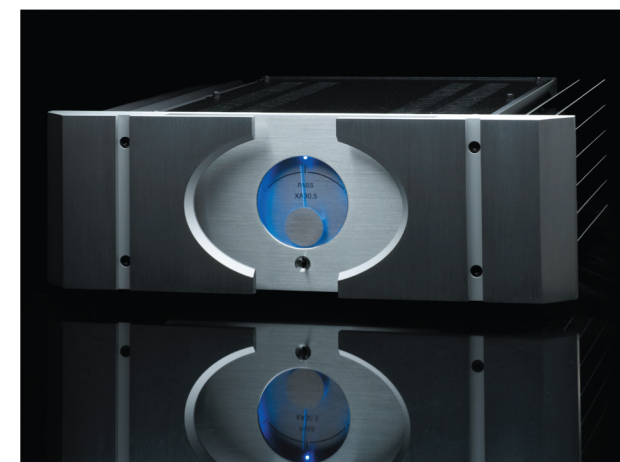
These impressions are by no means a knee-jerk reaction to the elimination of an active linestage—rather the contrary, in fact. I was if anything prejudiced against the SuperNova 2, having previously found all passive linestages to be mixed bags. In exchange for their greater purity of reproduction, they lacked dynamics and that elusive sense of life, vitality, and ultimate involvement. None of this is the case with SuperNova 2. So far as I can tell, for the first time in my experience the elimination of an active linestage is all—you should pardon the egregious pun—gain and no pain (or almost—see sidebar).

Does this mean I'm going to buy the review sample? Alas no. Most modern electronics of audiophile quality display a very high degree of transparency to the source. Removing them buys you something, yes, and Yee's limited attenuator is quite special in realizing the theoretical advantages of passive attenuation while minimizing its limitations. But while not

insignificant, the degree of improvement over the linestages I use regularly is quite small, nowhere near enough to make me give up the convenience of a active full-function preamplifier. In addition to vinyl and CD, I also regularly listen to SACD, DVDs, video, and FM, and I need at least another input or three for players and DACs, to say nothing of remote operation, balance, tone correction, mode selection, monitoring, and EP loops, all of which I consider essential.

But if your system is simpler or your priorities different, the SuperNova 2 is one product I seriously urge you to check out. The actual improvement its limited attenuator makes may be small, but I have no hesitation pronouncing it standard-setting in my experience. Meanwhile, as a phono preamp only, the SuperNova 2 is absolutely first-class and the last word in optimally matching phono pickups, along with its younger sibling the Nova. Speaking of which, understand that if you have no intention of bypassing your present linestage yet want the convenience of running more than one phono setup, you can buy two Novas for a lot less than the price of a single SuperNova 2. Which brings me back to where I started: This is a niche product of a niche product, but a uniquely imaginative, inventive, and accomplished one. **tas**

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# Fosgate Signature Phonostage Preamplifier and Fozgometer Azimuth Range Meter

**Fosgaterrific!**

Chris Martens

I first became aware of the Fosgate Signature Phonostage when I visited the Musical Surroundings room at CES 2010 and my eyes came to rest on the beautifully finished and sculpturally attractive all-tube phono preamp. If, at that moment, you had asked me to guess the preamp's price based on looks alone I would have said somewhere in the \$4k-\$5k range; thus, it came as a pleasant surprise to find that it costs "only" \$2500. The Signature Phono Preamp was designed by Jim Fosgate and is manufactured and distributed by Musical Surroundings (leveraging the firm's successful efforts at building its own Musical Surroundings-branded series of phonostages).

Still, \$2500 is a major sum to invest in any audio component where I come from, which raises a key question. Is the Fosgate significantly better than today's best phonostages in the \$1k price range (a product category I know well and deeply appreciate)? The short answer is that it is, and in ways that are satisfyingly self-evident from the moment your stylus first touches the record grooves. Before talking about the

Fosgate's sound, though, let me explain some of the technical highlights of the preamp.

In the Signature One's Owner's Manual, Fosgate says that, "all amplification is accomplished with the SRPP (push-pull) configuration for the best possible linearity, lowest noise, and distortion. No solid-state devices are placed in the signal path and a tube is used for the high voltage rectifier." The acronym SRPP stands for Shunt Regulated

Push-Pull—a circuit topology that, according to Garth Leerer of Musical Surroundings, "was first patented in 1940 by Henry Clough of Marconi," and has appeared in many forms and under many different names since.

Leerer says the SRPP configuration has at times been used for small power amplifiers and is known for its ability to deliver current "into heavy capacitive loads." One noteworthy

aspect of the SRPP configuration is its elegant symmetry, which Fosgate describes by saying that the circuit "uses two triodes, (where) each triode is biased the same. The lower triode acts as a common-cathode gain stage with an active load, and the upper triodes acts as a common-anode gain stage with an identical active load. This is about as close to a complementary transistor pair as valves get!"





## EQUIPMENT REVIEW - Fosgate Signature Phonostage Preamplifier and Fozgometer Azimuth Range Meter



The Fosgate Signature is a “dual-mono” design, with the preamplifier channels “located on opposite sides of the circuit board in near-mirror-images with dual triodes in a row down the center.” The preamplifier consists of three gain stages arranged as three complementary pairs of dual triodes. The first stage, says Fosgate, “has no NFB (negative feedback) to interact with the cartridge,” while “the second and third stages are enclosed in a single feedback loop incorporating both positive and negative feedback.” The preamp provides gain switches with settings that “provide a gain of 60dB or 42dB,” while a cartridge-loading knob

provides settings from 100 ohms to 100k ohms. Input capacitance is a very low 50pF.

Fosgate says that the preamplifier’s RIAA network “is divided into two sections, one passive and one active.” The high-frequency RIAA EQ (above 1kHz) “is accomplished with a passive network between stage one and two.” In turn, the lower-frequency RIAA EQ (below 1kHz) “is accomplished with an active network around stage two and three.”

The preamplifier’s power supply is very special, too, though it uses no regulated power supplies at all. Instead, Fosgate has designed the circuit so that “each tube stage is powered by a separate storage capacitor which acts like a battery.” By design the storage capacitors are very large—“10 to 20 times oversize,” says Fosgate—so that the preamp’s power supply “simply holds the voltage across the capacitors like a ‘trickle charger.’” According to Fosgate, “there is absolutely no way for signals to leak from one stage to another through the supply, and the supply voltage on the tubes is rock solid.”

While the technology embodied in the Signature Phonostage is interesting in its own right, what’s even more interesting is its sound.

Let’s begin by noting that the Fosgate offers plenty of gain (60dB) for use with most moving-coil cartridges, yet is also very quiet—exceptionally so for a tube-powered phonostage. Indeed, Fosgate thinks he may have set “the world record for lowest noise with an all tube front end”—a claim I couldn’t verify, of course, but that makes sense given the Signature’s very high apparent signal-to-noise ratio. Low noise buys you several things. First, you’ll note a general sense of, well, lower noise, and second,

you’ll enjoy concomitantly greater amounts of low-level sonic information. Thus, through the Fosgate, subtle textural and timbral details suddenly become more whole, complete, and well-integrated.

To appreciate what I mean by this, try listening to Pinchas Zukerman’s violin (and also viola) on Claude Bolling’s *Suite for Violin and Jazz Piano* [Columbia]. When played at moderate volume levels, Zukerman’s violin exhibits warm sonorities touched with sweetness, with the attack at the beginning of bowed notes sounding crisp and decisive, yet never edgy or “glassy,” as some phonostages tend to render it. And when notes end, you can easily hear the reverberant interplay of each note’s decay fading to silence within the relatively live-sounding recording space. But when Zukerman bears down for a moment of virtuosic flourish, you’ll hear his violin sound become the sonic equivalent of a shooting star—leaving behind a glorious, showering trail of high harmonics and evanescent overtones. In this and thousands of other ways, the Fosgate invites you to fall more deeply under the music’s spell, making complete those details that might have gotten lost with less revealing equipment.

Next, let me say a word or two about the Fosgate’s gain characteristics. Above, I’ve quoted Fosgate’s 60dB maximum gain specification, which is a figure many other phono preamps claim to meet or exceed. But what Fosgate’s number can’t tell you is how much more authoritative and dynamically unconstrained this phonostage sounds, so that it subjectively seems to play louder and with less apparent strain than some phonostages with higher gain specifications (e.g., the PS Audio GCPH).

### SPECS & PRICING

#### Fosgate Signature Phonostage Preamplifier

**Type:** Vacuum tube-powered phone preamplifier

**Tube complement:** Two 6DDJ8, two 12AX7, two 12AT7, and one 6X4 (also includes a spare 12AT7 tube that can be substituted for the 12AX7)

**Inputs and outputs:** One stereo phono signal in (RCA), one stereo analog out (RCA)

**Gain:** 42 or 60dB

**Loading options:** 100 ohms, 300 ohms, 500 ohms, 1k ohm, 47k ohm, and 100k ohm

**Capacitance:** 50pF

**Dimension:** 5.625" x 13.187" x 10.75"

**Weight:** 10 lbs.

**Price:** \$2500

#### Fozgometer Azimuth Range Meter

**Type:** Analog azimuth adjustment meter

**Inputs:** Stereo phono signal in (RCA)

**Indicators and controls:** On/off switch, analog meter (needle type), signal direction lights (left/center/right)

**Dimensions:** 3.25" x 6.5" x 2.375"

**Weight:** Not specified

**Price:** \$250

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## EQUIPMENT REVIEW - Fosgate Signature Phonostage Preamplifier and Fozgometer Azimuth Range Meter

### The Fozgometer Azimuth Range Meter—A Delightful Accessory for Vinyl Enthusiasts

As many of you will already have discovered, getting the azimuth (or axial tilt) adjustment of your phono cartridge just right is one of the keys to achieving spectacular 3-D soundstages. But how do you know when the settings are right? In the past, you had two basic options: You could check settings by eye and hope for the best, or you could buy a good test record and expensive test gear and go to work. Now, Fosgate's new Fozgometer provides an ingenious and not too expensive (\$250) solution, which is designed to be used in conjunction with *The Ultimate Analogue Test Disc* [Analogue Productions AAPT 1].

The Fozgometer is very simple to use. You first go through your normal cartridge set-up routines, making adjustment as needed for overhang and horizontal cartridge alignment, tracking force, vertical tracking angle, and anti-skating (if any). After giving the cartridge about 40 hours of initial run-in time, you are ready to bring the Fozgometer into play.

Begin by plugging your phono leads into the Fozgometer and turning the Fozgometer on,

and then play Track 2, Side 1 of *The Ultimate Analogue Test Disc*, which provides a 1kHz left-channel test tone, and observe results. The left (red) signal direction light should come on, and the meter needle should swing upwards on the scale (which is arbitrarily numbered from 0 to 40). Note the readout value. Now repeat the process playing Track 3, Side 1 of the test disk (which provides a 1 kHz right-channel test tone) and compare results. This time, the right (red) signal direction light should come on, and, ideally, the meter needle should provide the same readout value as the left channel did. If the readouts don't match, azimuth adjustment is required.

If the right channel reading is higher than the left, then gently rotate the cartridge clockwise as viewed from the front; or, rotate the cartridge counter-clockwise if the right channel reading is lower than the left. Make *very small* adjustments and retest until you get readings that are identical—or very nearly so. *Voilà*, your azimuth settings are now spot on.

Where some phonostages sound constricted or congested when dynamics become challenging, the Fosgate simply throws back its head and sings at full voice without skipping a beat. Indeed, one almost gets the sense that the Fosgate makes a generous, open-ended

offer with respect to high-powered dynamic passages, as if saying to phono cartridges, "If you can track it, I can amplify it, so let's give this a try..." And lo, the Fosgate makes good on this offer—a quality that may be attributable to the Fosgate's relative freedom from input overload

(with many phonostages, as gain goes up, so too does sensitivity to overload).

I don't think I fully appreciated the Fosgate's dynamic power and agility until I played the Frederick Fennell/Eastman Wind Ensemble recording of Hindemith's *Symphony in B Flat* (for concert band) [Mercury], where bold timbral contrasts and abrupt shifts in dynamic levels are the order of the day. In the symphony's opening movement, I found the Fosgate could wade into full-on trumpet and percussion swells at one moment, yet shift gears in an eye-blink to cover delicate woodwind and low brass passages. The beautiful part was that, even at full throttle, the Fosgate always managed to preserve the burnished golden sound of the trumpets, the sounds of sharp mallet strikes and skin sounds from the drums, and the initial "ping" and lingering shimmer of high percussion instruments. What came as a revelation was the Fosgate's remarkable ability to handle large-scale variations in dynamics and overall musical complexity, while maintaining consistently high levels of nuance and detail.

Let me expand on this point. With many components one has the sense of playing music within the constraints of a "zero-sum" game. In other words, detail levels can be terrific, provided that the demands of musical complexity and dynamic are low. Or, dynamics can be impressive, provided that the demands for sonic detail are modest and there are not too many musical voices at play at once. But with the Fosgate you finally have the opportunity to hear dynamics, details, and graceful handling of complex passages all optimized at once—just as when you hear live music. Together, these qualities give a wonderful

sense of freedom, letting you choose whatever music you wish, secure in the knowledge that the Fosgate will neither stumble nor become flustered no matter how complex or demanding the material might be.

Three other positive qualities worthy of mention are the Fosgate's purity of timbre, its effortless soundstaging, and its neutral (yet thoroughly musical) tonal balance. For a good example of all three in action, try Bill Frisell's *Good Dog, Happy Man* [Nonesuch, pressing from Pallas Diepholz, Germany], which offers a lovely marriage of traditional folk/bluegrass instrumentation and Frisell's acoustic and electric guitars, loops, and music boxes—all tilted in the direction of gentle, exploratory jazz. I'm particularly fond of the track "Shenandoah (for Jimmy Smith)," which features Frisell on acoustic guitar, guest artist Ry Cooder on electric guitar and Ripley guitar, Viktor Krauss on bass, and Jim Keltner on drums. This is, quite simply, one of those tracks so exquisitely beautiful and intricate you can get lost in it (in a good way), over and over again.

The Fosgate captures the, at times, very subtle voicing differences between Frisell's and Cooder's guitars (and playing styles), so that there's never a moment's doubt as to which player is which. More importantly, it effortlessly nails the ethereal and almost otherworldly lilt of Frisell's guitar lines, setting them free from loudspeakers to float within the boundaries of an enormous 3-D soundstage. At the same time, the Signature tracks Keltner's delicate and tastefully restrained percussion work, which gives the song its measured pulse. Down low, Krauss' acoustic bass lines put a solid yet organic-sounding low-frequency foundation beneath the song, with

## EQUIPMENT REVIEW - Fosgate Signature Phonostage Preamplifier and Fozgometer Azimuth Range Meter

notes that are appropriately dark, sonorous, and woody, yet taut when they need to be and that bloom in a deep and expansive way. On all of the instruments, you can hear inner details galore, so that the resulting ensemble sound is very accurately balanced, though in no way sterile, antiseptic, or “shrink-wrapped.” On the contrary, the Fosgate is vibrant and full of tonal colors—not because it has euphonic colorations, but because it sounds so utterly natural.

Like many of you, I’m intrigued by the idea—first put forward by our own Jonathan Valin—of using a “truth-to-beauty” continuum

to characterize the personalities of fine audio components. Where does the Fosgate Signature fall on this continuum? I’m tempted to say it comes tantalizingly close (much as does Shelter’s magnificent Harmony MC phono cartridge) to landing smack-dab in the middle of the scale. If you twisted my arm a bit, I suppose I would say that it shades (but only just barely so) toward the “beauty” end of the spectrum, which to my way of thinking is almost always the smart way to compromise. But audiophiles seeking that extra “nth degree” of treble resolution that makes “truth-oriented” components sound so

accurate should note that the Fosgate ships with an extra 12AT7 tube that can be used in place of the 12AX7 in position three (V3) to give a slightly more detailed top end. Personally, I found the Signature’s standard tube complement almost ideal for my taste, but I encourage you to try the alternate tube to see how its sound matches up with your own.

Is the Fosgate Signature the best phonostage ever? Probably not, given that there are many, many talented designers looking to push the envelope of what’s possible with analog sound, many of whom are developing phonostages

more than twice the Fosgate’s price. But is the Fosgate one of the strongest performers available at the \$2500 price point? It’s certainly the best one I’ve heard thus far, and by a not-subtle margin—meaning the Fosgate will offer all the performance some listeners will ever need or want. If you’ve wondered, as I sometimes have, if it is really worth the effort and cost to step up from a phonostage in the \$1000 range to one at this higher level, the Fosgate provides great sounding answers that add up to a resounding, “Yes.” **tas**



# Nagra BPS Battery-Powered Phonostage

## Pocket Edition

Wayne Garcia

In his excellent biography of the Swiss-born sculptor and painter Alberto Giacometti, James Lord relates a charming story from a difficult time. It was 1939, the Germans had just invaded Czechoslovakia, and the Swiss government decided to hold a National Exhibition to reaffirm “traditional values” (whatever those were). Giacometti, whose slender figurines were at the time becoming increasingly miniaturized, was invited to exhibit a major sculpture in the central courtyard of the textile pavilion. When greeted by the guy in charge of installing the artwork, who had a truck ready to haul it from the train station, Giacometti reportedly replied, “There’s no need for the truck. I have the statue with me.” At which point he pulled a large matchbox from his coat pocket and produced a tiny plaster statuette no more than two inches high. To say that those in charge of this patriotic event were not amused would be putting it mildly.

I had a similar—though not unpleasant—surprise recently, when my UPS driver delivered a somewhat different Swiss-made object to my doorstep. The carton I signed for was small and lightweight, and I assumed it contained a book I’d ordered online. Without even looking at the shipping label I grabbed a utility knife and sliced through the packing tape. Of course, I’ve already spoiled the punch line, because what I found inside was no book but Nagra’s latest phonostage, the battery-powered BPS.

While Nagra’s gear is typically modestly sized, at a miniscule 4.25” x 1” x 6.25”, and a featherweight 16.9 ounces, the BPS takes modest size to a Giacometti-esque level. Moreover, the company’s superbly engineered and built products usually

command very high prices. So it’s refreshing to report that the BPS is priced at a relatively affordable \$2399.

Interestingly, the BPS (which stands for Bipolar Phono Stage) is only the second standalone phono preamp from Nagra. It comes on the heels of the VPS (Valve Phono Stage, \$5995), which was released in 2008. Indeed, Nagra’s development report for the BPS says it was based on the circuit of the VPS—itsself derived from the firm’s \$12,795 PL-P preamp—but revised and adapted for transistorized circuitry. Nagra’s work with low-level signals in microphone preamps and digital recorders led the company’s engineers to focus on a unit that would be very compact in size, utilize the shortest possible signal paths with no internally

wired connections (resulting, Nagra says, in strong immunity to RFI), use highly efficient circuits that could operate from a simple very-low-noise power supply fed by a single 9V battery, have sufficient gain for low-output moving coils, and employ the modular impedance-loading circuit found in the VPS and PL-P.

Keeping with Nagra’s professional vibe, the top plate of the anodized, brushed aluminum chassis is decorated with screen prints of diagrams for the main circuit, power supply, phono load, and in/out connections. Given my lack of technical chops, I could only decipher the latter. Otherwise, these squiggly circuit renderings brought to mind another Swiss artist, Paul Klee, whose playful drawings I recently viewed at San Francisco’s Museum of

Modern Art.

The 9V battery nests inside its own tiny compartment, and accessing the BPS’s interior to insert that battery, change load values and gain, and so on reveals a splendidly built, miniature, double-sided, gold-plated circuit board, complete with a pair of tiny Nagra-made transformers for boosting the output of moving-coil cartridges. As mentioned, all connections are wired directly to the board; carefully sorted and matched bipolar transistors provide amplification. And should you encounter hum or RFI, as I did, living not far from our city’s main broadcast tower, you may switch the BPS from its standard unbalanced mode to balanced via internal jumpers, which works like a charm to eliminate noise.





## EQUIPMENT REVIEW - Nagra BPS Battery-Powered Phonostage

Aside from the RCA inputs and outputs and grounding lug round back, the only control on the BPS is a three-way toggle on the front plate, which serves as an On/Off switch and battery tester (a glowing bright red LED indicates a healthy battery).

Rather than your standard cardboard box or fancy Bordeaux-style wooden crate, the BPS comes packaged in a small plastic-anvil-like case, with protective foam inserts carved out for the phonostage, two Allen keys, a 9V battery, and a set of six mc load modules (three resistive, three capacitive).

Because battery life is estimated at 100 hours and also because, like most solid-state circuits, the BPS will sound its best when left continuously on, Nagra has also placed a socket on the unit's rear that accepts a 7–10V wall-wart-type power supply with a direct current of 10 milliamperes. While the power supply is not included, you can pick one up at your local Radio Shack. The twelve bucks or so spent will not only easily pay for itself in spared battery life (the battery engages or disengages when the supply is plugged in and out), it will also ensure that your BPS is always at its best, since it can sound a little bright and edgy before it is warmed up. If you operate the unit by battery only, switching it on and off, that's the sound you're likely to get all the time (unless you wish to burn through a pile of 9-volts). Using the wall-wart, leaving the BPS in the On position, and simply disconnecting the wall-wart's plug before a listening session to let the battery take over gives you a far cleaner, warmer, smoother, more dynamic, and much more musical sound.

Come to think of it, it's a winning combination of the pristine and the warm that defines the BPS's

sonic signature. Now, "pristine" and "warm" may sound at odds with each other, but they aren't, really, as I'll try to describe.

By pristine I mean that the BPS is accurate—transparent to the source. Record after record, track after track, the individual strengths, weaknesses, beauty marks, and (slightly airbrushed) flaws of each LP make their ways through the BPS in the most relaxed, straightforward ways. If the Nagra imposes any sonic signature of its own, and of course it does, it's that, while every record sounds wholly like itself, it also sounds exquisitely composed, beautiful, and ultimately musical—and that's what I mean by warm.

Pulling out an old chestnut, Ella Fitzgerald's *Clap Hands, Here Comes Charlie!* [Verve], and putting on the track "Good Morning Heartache" readily demonstrate my point. One of Fitzgerald's most beautiful and emotionally infused ballads, the tune begins with descending and then ascending piano, bass, and guitar lines, with a delicately tapped triangle as percussive accent. Through the BPS, the music hangs in the air with a rare sense of immediacy. All instruments are richly toned and textured, superbly focused without sounding artificially outlined. And when Fitzgerald begins to sing, she seems so present, in voice and spirit, that the heartbreak she sings about has the impact of listening to a friend in despair, not simply a distant voice on a 50-year-old slab of vinyl.

This transparency also beautifully serves a small-scale orchestral piece such as Luigi Nono's *Polifonica-Monodia-Ritmica* (1951), played by the English Chamber Orchestra under Bruno Maderna [Mainstream Records]. This work of subtly shifting rhythms and dynamics begins with a quiet dialog between various wind instruments, against a

gently shimmering cymbal. The BPS really brought instruments and ensemble to life—its low noise floor, pinpoint focus, and superb microdynamic resolution emphasizing the rhythmic and emotional tension Nono builds up between the players. And because the ensemble emerges from deep silence, the instruments sound remarkably "there," flickering in and out like stars in a country-clear night sky.

While the BPS's beauty, low-level dynamic precision, and transparency are exceptionally fine for smaller-scale stuff, the unit lacks the ultimate power and bottom-end heft many find desirable for, say, a Mahler symphony or other pull-out-the-stops orchestral pieces, or for power rock. Playing the Classic Records reissue of The Who's *Live at Leeds*, I was impressed by the BPS's ability to peer into the musical event, but missed the final degrees of bottom-end weight I like to hear from Keith Moon's pummeled double-kick-drum kit, the ox-like chug of John Entwistle's bass, and the windmilled chords of Townshend's electric guitar. These, and the sheer drive of the band, weren't exactly "polite," but they were perhaps a bit too refined.

In this regard the BPS is not alone. To various degrees this reticence has long been observed with battery-powered gear. And given that the BPS draws power from but a single 9-volt, a noticeable lack of sheer power was to be expected.

Whether this is a deal-breaker or not will depend entirely on where your musical preferences fall. If I lived on a steady diet of Nine Inch Nails, Neil Young with Crazy Horse, and *Ring* cycles, I might think twice. If, on the other hand, I spent most hours spinning jazz, vocals, moderately scaled rock and classical—solo violin and piano are likewise a knockout through the BPS—then I would heartily

recommend Nagra's BPS as one of the most satisfying phonostages I've heard. The fact that it's practically a pocket edition audio component, and also a most reasonably priced one, only sweetens the deal. **tss**

### SPECS & PRICING

#### Nagra BPS phonostage

**Gain:** 62dB (mc), 51dB (mm)

**Supplied load options:** 100 ohms, 220 ohms, 330 ohms, 100pF, 220pF, 470pF

**Battery type:** 9V

**Output:** 2V

**Inputs/outputs:** RCA

**Dimensions:** 4.25" x 1" x 6.25"

**Weight:** 16.9 ounces

**Price:** \$2399

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# Naim Audio SuperLine Reference Phonostage

## A World-Class Phonostage

Wayne Garcia

**I**t could be argued that high-end audio components have personality traits similar to those of their companies' founders. While specific examples abound, let's consider just a few from our most auteur-driven companies. Even if the founder wasn't always the actual or sole designer, who can think of the finest Audio Research gear without also thinking of William Z. Johnson; a massive Krell amp conjures Dan D'Agostino; Magico speakers certainly reflect Alon Wolf's perfectionist streak; while Dave Wilson's background as a recording engineer and quest for excellence is apparent in every Wilson Audio design.

And nearly a decade after his death from cancer, the gear built by Naim Audio continues to reflect the imprint of founder Julian Vereker. Although he had a forceful personality and a wide-ranging love of life that drew him to non-audio activities such as auto racing, sailing, and bicycling, Vereker's Naim electronics never seemed to draw attention to themselves, but instead always seemed to exist in order to serve the music. Indeed, with their ultra-minimalist black-box chassis, one could say they were designed to be the functional opposite of the proverbially perfect child—heard but not seen.

But looks can be deceiving. Nestled within these plain albeit handsome-looking boxes is

some serious engineering that extends across Naim's surprisingly vast product range. While most TAS readers are familiar with the hugely popular and terrific-sounding Nait integrated amp (the latest version, the 5i-2, sells for \$1450), Naim components hit many price levels before stopping at the relatively lesser-known Reference series, which can reach \$20k per component. That's a lot of jack under the best of times, let alone one in which that figure might equal the latest hole blown out of your 401(k). Of course, Naim's price points are complicated by the fact that, unlike most gear, Naim's can be upgraded by a choice of outboard power-supply options. And trust me, as you step up the level of power supply the sonic rewards are

not only easily audible, they spell the difference between good and frickin' wonderful.

If we apply this thinking to the company's \$2950 SuperLine Reference Phonostage, which, in order to isolate noise, contains no built-in *main* power supply, owners have four options for siphoning in electrical juice. One is by way of piggybacking the SuperLine to a Naim component of similar performance; either a preamplifier or the SuperNait integrated amp (\$4450) via Naim's SNAIC-5 connecting cable. The other is to mate the SuperLine with one of three standalone Naim power supplies: the FlatCap2x (\$1100), the HiCap2 (\$1900), or the SuperCap2 (\$5950).

For my evaluation, Naim USA, which recently

became part of the Audiophile Systems Group, supplied a HiCap2 and SuperCap2 for evaluation purposes. And while \$5950 for a power-supply upgrade may have you questioning its value, the SuperCap2 transforms the SuperLine from very good into one of today's finest phonostages, right up there with perennials like the Manley Steelhead and the battery-powered Sutherland PhD. But before we talk sound, let's take a peek inside.

In a chassis measuring 8" wide by 12" deep, and just over 3" tall, the SuperLine contains a key feature that Naim borrowed from its upper-end CD players and preamps, a weighted floating circuit board—or "high-Q spring suspension system"—that isolates the design from environmental



## EQUIPMENT REVIEW - Naim Audio SuperLine Reference Phonostage

vibrations. Naim says this is a first in a phono preamp. A pair of transit screws ensures stability during shipping; I suggest leaving them in place while connecting your cables, because it's much easier to plug things in and out when the rear panel isn't jiggling around.

The unit's RIAA phono equalization is semi-passive, while amplification is delivered via a two-stage, single-ended discrete Class A circuit coupled to what Naim's literature calls 25 "internally regulated" power supplies.

Impedance matching for different moving-coil cartridges is handled at the back of the chassis, by means of four resistive and three capacitive load plugs, which provide twenty total load combinations. In the unlikely case that these won't match your needs, custom configurations can be ordered through your Naim dealer.

Tonearm connections are provided for both RCA and BNC connectors, and, in an ultra-minimalist touch, there are no controls whatsoever on the SuperLine's front or backside, not even an on/off switch. That control, of course, is to be found on

whichever power supply you choose.

By the way, it should be noted that the SuperLine accepts only moving-coil cartridges, which for the majority of high-end turntable-users out there should not prove to be a limitation.

It should be further noted that the SuperLine takes an unusually long period of time to "break in." While it sounds nice enough from the get-go, it grows noticeably better over the first three-to-four weeks. And I don't think I'm exaggerating to say that the sound continues to bloom for several months before settling into its own. (For more details on the design, see my sidebar interview with Naim's chief engineer, Stephen Sells.)

One thing you will hear right away, whether it is fully "broken-in" or not, is the SuperLine's most immediately notable trait: a very low noise floor. Other reviews have touched on this deep sense of silence; this lack of electronic grunge and hash is a characteristic shared by most of today's top-tier components. I would go so far as to term the SuperLine's silence as "CD-like," in that dynamic shifts can literally be startling.

So for instance, when Claude Desurmont's birdsong-like clarinet announces the opening movement of Messiaen's *Quartet for the End of Time* [Deutsche Grammophon], weaving an otherworldly theme with Daniel Barenboim's piano, the sense of mystery, of sound almost being born anew out of thin air, is immediately riveting as well as slightly jarring. The dynamics here shift delicately, so when the piano crashes down at the start of the second movement it's enough to make you jump from your seat, even if you already know this beautiful composition.

Of course, all music benefits from being played against such almost spookily silent backgrounds, and with such a wide range of dynamic expression. Check out Classic Records' thrillingly realized reissue of The Who's *Tommy*. As the acoustic guitar-driven "Overture" unfolds, layering rich instrumental textures as it builds—horn, organ, piano, voices, bass, and Keith Moon's incomparable drumming—you may find yourself, as I did, pulled into the drama of this rock chestnut in a way you never imagined you would be ever

again. And as the ending flourish yields to Pete Townshend's intense acoustic guitar break, its presence is such that his blisteringly hammered instrument seems to be the only thing in the room, tightly focused and yet occupying a cavernous

### SPECS & PRICING

#### SuperLine phonostage

**Gain:** 64dB  
**Input load options:** 10k, 1k, 500, 220, 100 (resistive), 100pF (no plug), 1nF, 5.6nF, 10nF (capacitive)  
**Max output:** 7.5V rms  
**Inputs:** 1 pr. BNC, 1 pr. RCA  
**Outputs:** Naim SNAIC, Naim Burndy  
**Dimensions:** 3.4" x 8.1" x 12.3"  
**Weight:** 17.3 lbs.  
**Price:** \$2950

#### HiCap2 power supply

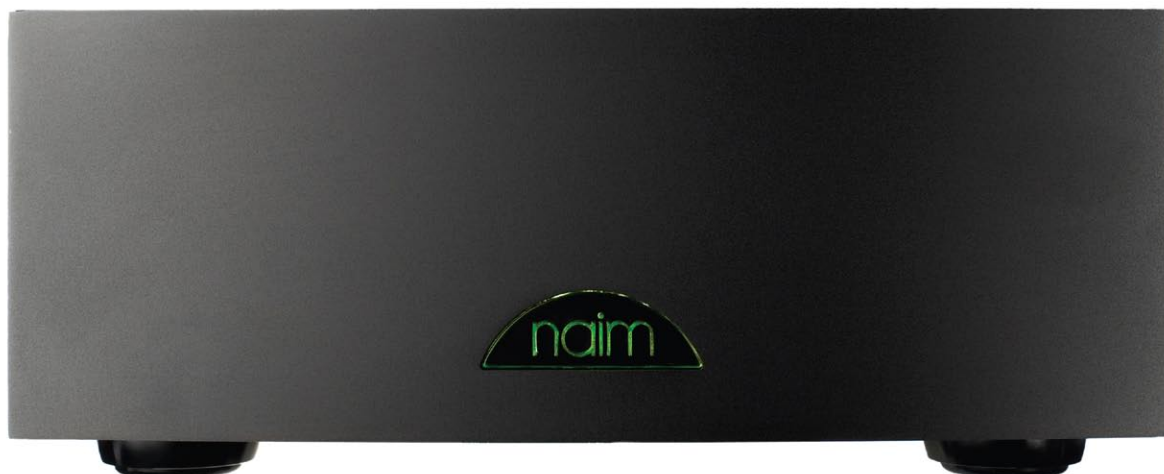
**Dimensions:** 3.4" x 8.1" x 12.3"  
**Weight:** 16.4 lbs.  
**Price:** \$1900

#### SuperCap2 power supply

**Dimensions:** 3.4" x 17" x 12.3"  
**Weight:** 26.1 lbs.  
**Price:** \$5950

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## EQUIPMENT REVIEW - Naim Audio SuperLine Reference Phonostage

stage to the right—until Roger Daltrey’s voice pops out of nowhere, hard stage left.

We audiophiles sometimes place too much importance on soundstaging, especially since what’s captured on records is largely an artifact of the recording/mastering process itself. Yet there’s no doubt that a large, open, and three-dimensional sense of an acoustic space occupied by a virtual band or orchestra can not only be a very exciting thing to hear, but can also make our stereo system’s magic trick that much more magical.

So be it something like *Tommy*, Roberto Gerhard’s astonishingly well recorded *Astrological Series* [Decca], an LP whose sense of layered space and instrumental “thereness” will cause your jaw to drop, or the intensely present-sounding recent ORG reissue of *Coltrane at the Village Vanguard*, the SuperLine does a most impressive job conjuring these events in your listening room.

In addition to its silence, transparency, and dynamic excellence, the SuperLine’s tonal balance sounds pretty spot-on—neutral in the best sense of the word. While it’s certainly not as lush or richly colored as, say, an MBL component, or as surgically precise as, say, Spectral’s best designs, the SuperLine’s presentation doesn’t leave one thinking of either warmly glowing tubes or coolly cooking transistors, but instead invites the listener to lose himself in whatever the music happens to be.

It’s time for me to clarify that the sound I’m describing is with the “Full Monty” SuperLine, meaning hooked up to the SuperCap power supply. That makes this an \$8500 rig—vs. \$4850 when outfitted with the HiCap or the base price of \$2950 if you tag-team it with another Naim

component. And while none of these is an inexpensive proposition, and the SuperLine is super enough to consider owning at any level, be warned that the final choice is an almost foregone inevitability—assuming, that is, that you have a chance to compare the SuperCap with the other power-supply options.

I’ll admit that for the first month of this audition I was perfectly happy with the SuperLine/HiCap combo. While it didn’t quite float my boat when compared to a few other top-end phono preamps, it came close. But the moment the SuperCap was inserted into the system—even cold, cold, cold—the difference was obvious, and not subtle. Heifetz playing Bach’s A minor Sonata No. 2 [RCA] showcased the dramatically lower noise floor I’ve raved about, along with a much greater feeling of transparency and immediacy, and a greater degree of dynamic nuance and phrasing. In an e-mail to a friend who already owned a SuperLine/SuperCap, and who was eager to hear my findings, I wrote: “The result made listening to records so much more like eavesdropping on a moment in time, on real music-making taking place, as opposed to listening from a much greater distance in time and space. Also more richly textured, tonally complex, and ‘meaty.’ And it’s only the first five minutes!”

In an age when iPod playlists and single-song downloads are the norm, here’s another reminder that LP playback, as “long playing” implies, is about sitting down and enjoying albums—in their entirety. With Naim’s SuperLine, you’d better carve out the time to do just that, because once the needle drops you’re going to have one hell of a time leaving that chair. **tas**

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# Aesthetix Rhea Signature Phonostage

A Classic Improved

Robert Harley

It has long been an article of faith among audio “objectivists” that passive components—wire, resistors, capacitors, and inductors—have no effect on the sound of the product in which those components are used. That is, two capacitors of the same value will perform identically in the circuit—so why not use the cheapest version possible? This thinking led to some audio products, including professional gear, that were loaded with cheap carbon resistors, internal “hook-up” wire, and electrolytic coupling capacitors. Anything more was deemed a waste of money.

The high-end takes a different view. The designer of a well-regarded D-A converter told me about how, before going into production with his latest product, out of curiosity he replaced a \$1 resistor with a \$10 resistor (in the current-to-voltage converter’s feedback loop). The difference in sound was so great that he couldn’t imagine shipping the unit with the \$1 resistor. The company absorbed the price difference.

So how much difference *do* exotic parts make in the sound of an audio product?

The Rhea Signature phonostage from Aesthetix provides a fascinating test bed. The Signature version uses the same circuit as the standard unit, but in the Signature that circuit is implemented with the higher-quality parts found in the \$15k Aesthetix Io phonostage, making

it possible to evaluate the sonic difference between very good and nearly-cost-no-object passive components. The price difference is substantial; the Rhea is \$4000 and the Rhea Signature \$7000. Rhea owners can upgrade to the Signature for the \$3000 difference.

I know the standard Rhea very well; it’s been my phonostage of choice since I reviewed it in Issue 151 (December, 2005). The new unit looks nearly identical on the front and back—only a subtle “Signature” legend is etched on the display’s glass. But one peek under the hood and you can see that this is a different product. For example, the Rhea uses very high-quality Rel-Caps at many points in the circuit, but the Signature replaces these with huge red polypropylene film-and-foil caps from Dynamicap. In addition



to such upgrades in parts quality, the Signature employs noise damping inside the chassis, as well as special vibration-absorbing feet under the transformers, choke, and the first gain stage (a point at which keeping noise low is critical). These feet are made by Harmonic Resolution Systems, the company that makes perhaps the most elaborate, best-engineered, and most beautiful equipment racks in the industry. The Signature’s tubes are selected to a higher standard—only 10% of the tested tubes pass muster. Finally, the Signature employs expensive variable capacitors in the RIAA equalization circuit to enable hand-tuning of the network for perfectly flat frequency response.

I had the Rhea and Rhea Signature side-by-side in my rack, driven by the outstanding Basis

2800 Signature turntable (fully loaded with Calibrator Base, Syncho-Wave power supply, vacuum hold-down, and Micro-Thin belt), Basis Vector 4 tonearm, and either a Dynavector XV-1s or Air Tight PC-1 Supreme cartridge. (Incidentally, the PC-1 Supreme was a complete revelation to me; I’d never heard a phono cartridge that was simultaneously so resolving yet so smooth and relaxed. The classic trade-off in cartridges between detail and musicality was rendered moot by the PC-1 Supreme.)

Being so familiar with the Rhea, it didn’t take long to appreciate the difference in the Signature. The biggest surprise was the bass, which exhibited far greater weight, extension in the lowermost octave, and dynamic impact. This wasn’t a subtle difference, but rather a



## EQUIPMENT REVIEW - Aesthetix Rhea Signature Phonostage

### INSIDE THE RHEA

The standard and Signature versions of the Rhea share the same features and circuit topology. Both are slightly simplified versions of Aesthetix's acclaimed Io phonostage. The unit features unbalanced inputs, with balanced inputs available for a small additional charge. The gain is adjustable in eight steps, with up to 75dB of gain at the maximum setting. Nine different cartridge loadings are provided. The gain and loading can be set independently for each channel. The way in which you adjust the gain and loading is very cool: Press the "Gain" button, for example, and the amount of gain in dB appears on the front-panel display. Simply push the right side of the display to increase the gain, or the left side to decrease it. The arrangement is the same for changing cartridge loading. In addition, you can adjust gain and loading from your listening seat via the supplied remote control.

The circuit is based on five tubes per channel, with two 12AX7LP tubes at the input operated in single-ended mode followed by

a single 12AX7WB that functions as a phase splitter to create a balanced signal. The output of the 12AX7WB is filtered by a passive RIAA network, and then amplified by another 12AX7WB. The output buffer is a 6DJ8. Unique to the Signature version are variable capacitors in the passive RIAA network that allow each unit to be hand-calibrated for flat RIAA response. The variable gain and loading are realized with two separate switched-resistor networks.

The power supply is huge, and features all-discrete regulation (except for the supplies of the control and display circuits). The power transformers are mounted on an isolated substrate and encased in shielding.

The metalwork, industrial design, interior layout, and build-quality are exemplary. Moreover, the feature set—three inputs, adjustable gain and loading via remote control, built-in cartridge demagnetizer, balanced outputs—makes the Rhea compatible with a wide range of systems. **RH**

wholesale transformation of the bottom end. Kick drum had more impact and solidity, and bass guitar was fuller in timbre and more fully fleshed out in body. The difference in the low end was fully equal to that of changing cartridges—or even loudspeakers. It was nearly on the level of moving from a stand-mount loudspeaker to a small floorstanding unit.

It wasn't just that the Signature had *more* bass;

it also had *better* bass. Small-scale dynamics, pitch articulation, and richness and density of tone colors were all in a different league. The Signature had a sense of tautness, precision, and detail that made the standard Rhea sound a bit soft, muddled, and smeared by comparison. Just listen to Jaco's fabulous ensemble playing (and solo) on the Wayne Shorter composition "Port of Entry" from Weather Report's *Night*

*Passage*—the Signature revealed a new level of intensity and virtuosity in Jaco's performance. After switching to the Signature, this live track was electrifying and thrilling in a way I hadn't experienced before. The Signature resolved the blinding speed, the precise articulation of each note (in both pitch and dynamics), and the sheer musical intensity of the performance. The standard Rhea sounded a bit "watered down" by comparison, with less of the vibrant energy that makes this track special.

Without making a conscious effort, I found myself focusing on and appreciating the rhythmic contribution of bass players. I've heard the wonderful Bill Evans album *Quintessence* countless times, but through the Signature discovered another level of artistry in Ray Brown's nuanced performance. Through his dynamic inflections, Brown creates his own varying rhythmic flow within the relatively stable time established by drummer Philly Jo Jones. Brown makes intriguing excursions that add a playful bounce to the sparse arrangements, notable on "Sweet Dulcinea." The Signature's greatly improved bass gave me a deeper involvement in, and appreciation for, this old favorite.

In the bass octaves audio components often make a trade-off between weight and precision. The leaner-sounding products tend to better reveal detail and dynamics; the warmer-sounding components are often a little smeared and slow. The Signature's central triumph is its combination of raw bass power and heft coupled with speed, precision, and articulation. It was a combination I found addictive—particularly with the spectacular bass qualities of the Air Tight PC-1 Supreme cartridge.

Another dramatic improvement of the Signature was its cleaner, sweeter, and more refined treble. The top end had much more detail and nuance. For example, the Signature resolved the fine inner detail of cymbals in a way that the standard Rhea couldn't match. The stick hitting the metal, the fine complex shimmer, and the way the decay of the instrument hung in the air were significantly better resolved by the Signature. Moreover, treble textures were smoother, purer, and less grainy through the Signature. Solo violin, the string sections of chamber ensembles, and massed orchestral strings all sounded more "organic" through the Signature thanks to its

### SPECS & PRICING

#### Aesthetix Rhea Signature Phonostage

**Tube complement:** Two AX127LP, two AX7WB, one 6DJ8 (per channel)

**Inputs:** Three RCA

**Outputs:** Three RCA, two XLR

**Features:** Front-panel-variable gain and loading (independent for each input); remote-control gain, loading, and cartridge demagnetizing

**Dimensions:** 18" x 4.4" x 17.6"

**Weight:** 40 lbs. (shipping)

**Price:** \$7000

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## EQUIPMENT REVIEW - Aesthetix Rhea Signature Phonostage

greater refinement, resolution, and reduction in grain. Although the standard Rhea is a great phonostage, the Signature makes it sound a bit coarse and grainy.

This combination of greater resolution and a more natural rendering of timbre extended to the midrange, but not to the same degree I heard in the treble. In the mids, instrumental texture was richer, denser in tone color, and more immediate. Despite the greater sense of palpability in the midrange, the overall perspective through the Signature was slightly more distant than through the standard Rhea. The Signature moved the soundstage back just a bit, and better resolved layers of depth. Having said this, however, I thought that the Signature made certain instruments seem to jump out of the soundstage with greater immediacy. Percussion and other instruments with steep transients seemed to suddenly appear right up front in the soundstage—the timbales on the terrific Mobile Fidelity reissue of Santana's *Abraxas*, for example. Not only were depth and presence markedly improved, so was the resolution of instrumental decay.

You should know that if you value a dead-silent background, the Rhea and Rhea Signature might not be for you. This phonostage has up to a whopping 75dB of all-tube gain, which makes for some background noise in some systems. Many tubed phonostages employ a low-noise solid-state gain stage at the input (usually an FET) to amplify the cartridge's output to a level that requires far less gain from the tubes. Others rely on a step-up transformer for the same reason. The Rhea is pure tube from input to output, with all the advantages and drawbacks

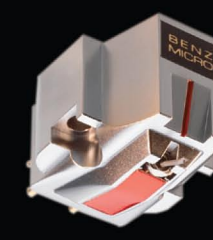
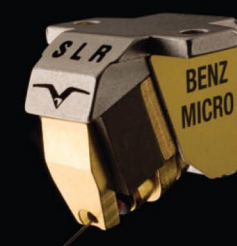
of that topology. In addition, the noise level is highly dependent on tube quality.

### CONCLUSION

I was really quite shocked by how much better the Rhea Signature sounded than the standard Rhea. In fact, I had planned on many long sessions of going back and forth between the two products to discern and describe the differences, but quickly realized that was unnecessary. Moreover, I enjoyed music so much through the Signature that it was hard to go back to the standard Rhea.

As great a phonostage as the Rhea is, the Signature version is on another level of performance. Yes, it's nearly twice the price (\$4000 vs. \$7000), but the Signature is that much better. If you already own the Rhea, upgrading to the Signature will give you a new perspective on your record collection and favorite music. It did for me. *tas*

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# Pass Labs XP-25 Phono Preamp

**Pushing the State of the Art to New Limits**

**Anthony H. Cordesman**

**T**here are times when I think this strange hobby of ours borders on the insane. I feel this way every time I read an ad that promises miracles from an accessory that clearly defies the laws of physics. I feel it every time I hear a system that costs more than a few thousand dollars that is so skewed in sound quality that virtually any home AV system sounds more realistic. I feel it every time I encounter a high-end system in the hands of someone who is all equipment and no music, and feel it when I see a mirror image of the pursuit of the absolute sound in a photographer who is obsessed with his equipment and does nothing meaningful with it.

And yet, there are occasion when it all seems worthwhile. At the low end of the high end, one of my friend's daughters is a young teenager who has put her system together out of her earnings and yard-sale shopping: A NAD amplifier, an old Thorens automatic turntable, a cheap Grado cartridge, and a pair of Electrovoice Two loudspeakers. Not only does the system sound alarmingly good for \$300 and change, she is a pianist who has not lost sight of music. She has learned to haunt yard sales in wealthier, older neighborhoods, and talk her way into buying the

sellers' collection of LPs for virtually nothing. She's networked with her friends to find parents who are getting rid of their LPs. Well over four hundred LPs of the music she likes. In fact, she may well be the "audiophile of the year" for well under \$1000.

And, at the other end of the spectrum, there are products like the new Pass XP-25 phono preamp. Every time I feel that analog electronics have reached the point of diminishing returns, and I should invest only in speakers or my front-end equipment, someone goes out and proves

## EQUIPMENT REVIEW - Pass Labs XP-25 Phono Preamp

me embarrassingly wrong. It may not be the sanest pursuit in the world, but there always is another advance out there that brings you closer to the music, and that takes you out of the realm of disposable new toys and almost compels you to listen.

The XP-25 does push the cost envelope. It sells for \$10,600, and most audiophiles may have to opt for Pass' less expensive XP-15 (\$3800), or something far cheaper than that. At the same time, it is the quietest, most musically realistic phono preamp I've yet heard, and it provides a series of front-panel gain and loading choices that make it remarkably easy to adjust to a given cartridge and a given system. It may push its price tag, but it also pushes the state of the art in ways that quickly become addictive.

### THE TECHNICAL DETAILS

As you should expect at these prices, the XP-25 is superbly built, both inside and out. It is a two-chassis design with an exceptionally large power supply. Unlike many competing units, it does not have a moving-magnet or moving-coil setting. It instead has three levels of gain: 53dB, 66dB, and 76dB. It also has switched front panel settings for cartridge resistive loads of 30 ohms, 50 ohms, 100 ohms, 160 ohms, 250 ohms, 320 ohms, 500 ohms, 1000 ohms, and 47,000 ohms. It also has impedance loads of 100pf, 200pf, 320pf, 430pf, 530pf, and 750pf. This covers virtually any mix of moving-magnet, moving-iron, and moving-coil cartridges, although a few cartridge collectors may have older cartridge designs (*really* older designs) that some audiophiles feel sound best with 68,000 and 100,000 ohm loads.

I'll get to the importance of these features in

a moment, but it is also important to point out that the XP-25 is a complete new phonostage design by Wayne Colburn and is not based on the previous Pass Ono or Xono phono preamps.

### SOUND QUALITY

I should begin with a couple of caveats—some important and some less so. This is an RIAA phono preamp. It does not have equalization settings for 78 rpm or really old LPs. I don't find this particularly important. I admire 78-rpm collectors, but I grew up changing cactus needles in my father's system and bid farewell to 78 rpm without a tear of regret. (I also have a functioning Edison cylinder player, so I still win over 78-rpm addicts on points). I lost virtually all my non-RIAA LPs during a few moments of unpleasantness in Iraq during the early 1970s, and there are very few audiophiles around with a meaningful collection of pre-1970 LPs that require special LP equalization curves. It is an important area for those who have historical collections, but irrelevant to at least 95% of high-end audiophiles in the US.

The XP-25 also has two sets of RCA inputs and no XLR inputs. Having experimented with XLR terminations of tonearms, I'm not impressed by this option. Readers may have had a different experience, but I find well-designed tonearms provide more predictable grounding, and lower risk of residual hum, with regular RCA cables. The main issues are not XLR vs. RCA; they are using as short an interconnect as possible, one that does not affect loading and is properly shielded, and working very carefully with grounding options and AC polarization to get the lowest possible noise, and avoiding using loading and gain settings that are noise-vulnerable or alter the signal-to-noise

ratio in ways that raise noise.

The first caveat that I do feel matters is the statement in the otherwise excellent instruction manual that, "moving-magnet and moving-iron cartridges typically work very well with a series loading of 47,000 ohms and 100pf of parallel capacitance." This is true up to a point, but there are a few moving-magnet and moving-iron cartridges out there that need different resistive loading, and a much larger number that need a close capacitance match to flatten their upper-frequency response. This may or may not be important to you. The amount of musical energy at the frequencies involved can be small, but some cartridges will peak around 10kHz, or you'll get a dip in frequency response. Given the number of cartridges out there, I can't give you any meaningful guidance. The manufacturer's recommended capacitive loading (including the interconnect) is a good start, however, and so is a Web search. A number of audiophiles provide Web sites with useful measurements of given cartridges.

The second caveat is that all the parts of a phono front end are remarkably interactive. I did not find any compatibility problems between the XP-25 and my cartridges or those in my friend's systems. I did not encounter any noise or hum problems with properly set-up cartridges, tonearms, turntables, and sanely designed interconnects (I don't like unshielded, high-impedance, trick "black-box" terminator, or floating-ground interconnect designs in any part of a system, and they are particularly bad in a phono interconnect.)

I also found the XP-25's variable gain, resistive loading, and capacitive loading to be of immense value in getting the best out of given cartridges

and preamps. Gain mismatch is a serious problem in phono sound quality. If the gain is too low, it kills life and dynamics and brings up noise. If it is too high, the midrange tends to harden and lower-level dynamics become too loud.

The 53dB, 66dB, and 76dB settings in the XP-25 can't cover every extreme, but they did cover my mix of moving-magnet, moving-iron, and moving-coil cartridges well enough that I was not about to try messing with internal gain, even if it were possible. Moreover, all three settings were dead quiet in a well-set-up system. Not only could I get a gain match, I could get it without even the kind of subconscious noise (and perhaps perception of distortion) I hear with some other top phonostages.

I should acknowledge, however, that the very

## SPECS & PRICING

### Pass Labs XP-25 Phono Preamp

Gain: 53, 66, 76dB

Maximum output: 22V RMS

Output impedance: 150 ohms

Loading: 100pF–750 pF, 30–47k ohms

Dimensions: 17" x 4" x 12" (each chassis)

Weight: 55 lbs.

Price: \$10,600

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## EQUIPMENT REVIEW - Pass Labs XP-25 Phono Preamp

best tube units do offer important trade-offs. They are not ones I favor, but they provide the same superb dynamics as the XP-25 with a somewhat softer, more forgiving form of transient and harmonic detail. I feel this is offset by the resulting loss of realistic definition and life, and by the fact that many such designs seem to slightly compress the overall musical signal and reduce low-level dynamic contrasts. It is, however, an area where many of my friends disagree. I also am particularly sensitive to even traces of tube noise, particularly when it is added to older LPs with tape hiss in their background. Many audiophiles with moving-coil cartridges don't care, or listen through such trace noise.

I'll take solid-state, particularly when I can't hear any sacrifice in sound quality and the end result is more musically realistic. The XP-25 could not somehow transform my LP collection to the point where it could make Gustav Mahler and 1000 of his closest friends sound natural in my living room. What it could do was give a much more natural musical match for a home listening room a touch more realism at every level.

I also am talking about the vast majority of good LPs—not just audiophile recordings. I have a large collection of Accent LPs, recorded in sites I know well from living in Belgium, and Blue Note jazz LPs in a wide range of reincarnations. Throw in several hundred other musically realistic jazz, chamber music, and solo instrument and voice recordings, and I have a collection where I can at least imagine a live performance that could actually occur in a real-world listening room. The XP-25 did not make any dramatic sonic differences over the XP-15, the Xono, a Krell phono preamp, or an older Conrad-Johnson tube design, but everything

at this level of performance is about musically realistic nuance—not simply hearing some minor difference in sound.

This is what got my attention. The Pass made slight, but consistent improvements in a system optimized to get a natural balance of timbre, soundstage, dynamic life, and detail from voice and acoustic instruments in “small music” at natural listening distances. Bass was better defined and had more natural power from deep to upper bass. This is the best bass from a variety of records in a variety of systems that I have yet heard from any phono preamp. Treble was as open, life-like, and dynamic as the rest of my system and the limits in most LPs permit.

What really captured my attention, however, was the combination of natural midrange timbre and energy and soundstage and low-level detail. Again, the changes were slight and much depended on record quality and the cartridge. Nevertheless, if you audition this unit, bring your best cello, flute, harpsichord, and piano recordings. Bring really demanding female voice, preferably in the context of the more complex Baroque era music so the mix of voice and instruments is both complex and natural. Throw in the usual jazz, but add some LA4 and MJQ just to be sure. I believe you will hear as realistic an illusion as the rest of the system and the recording permits.

I also don't want to slight Gustav and his 1000 friends, or the ability of the XP-25 to reproduce even the loudest, most complex, and most Mel Gibson-like passages of Wagner. The XP did superbly with these, with demanding organ music, and with dynamic nightmares like Saint-Saëns' Symphony No. 3. Moreover, while I am not a loud rock fan, the replacement-generation listeners in

my family assure me it is excellent in these areas as well.

Moreover, these are areas where variable resistance and impedance loads proved even more critical in getting a realistic illusion of music from a range of cartridges than the variable gain settings. It really, really does pay to experiment—far more than playing around with settings like cartridge VTA.

As I have mentioned earlier, you should both research and listen to the impact of different capacitor settings for moving-magnet and moving-iron cartridges. I am not going to tell you what to select because it is likely to be system specific, but it definitely matters with Shure cartridges and will help with Grados. As for moving coils, I really would follow the instructions in pages 7-9 of the instruction manual. I can assure you that a few days making sure you have the best setting for your preferred mix of illusions with a wide range of LPs will truly pay off, and may well convince you that cartridge loading is as important in many ways as the choice of cartridge.

The only caution I would give you is that many audiophiles raise the loading impedance too high to get what seems to be a wider soundstage and more “detail” and “life.” Cartridge loading is to some extent an equalizer that affects both timbre and dynamics, but it is important to understand the trade-offs involved. First, too high a resistance does not produce musically realistic detail or life, it emphasizes the highs and produces detail that seems more the result of distortion than anything you hear with natural acoustic music. Second, imaging becomes larger and/or less stable. Third, depth is more limited. Going too low dulls the music, affects

dynamics, over-softens the highs, and can affect signal-to-noise with really low-output cartridges. So go for musical realism and not for apparent detail. Also, go for the mean loading with a wide range of records to get the best out of your overall collection and do not concentrate on some favorite records. You may even find that the reason they are favorites is not their inherent quality but your previous system setup.

### SUMMARY JUDGMENT

A must audition, if you have the money or simply want to hear a great example of the state of the art. The XP-15 offers most of the same advantages at a much lower but still significant price. Do, however, remember the teenager that I began this review with. Great as this level of equipment is, the journey does not have to begin at the destination. *tas*

# Audio Research Reference Phono 2

## Standard-Setter

Jonathan Valin



I listen to music almost every day. Which is to say, I hardly ever listen to CDs.

Call me a Luddite but I'm married to the sound of vinyl. No, it's not because I enjoy the rituals and routines of analog playback. I don't thrill to the agonies of setting up a new tonearm or cartridge, I don't spend hours minutely dialing in VTA for each and every disc, I abhor disc-washing, and I'm not even wild about coaxing forty-to-fifty-year-old LPs out of plastic bags or paper sleeves, slipping them onto spindles, tightening down record clamps, and cueing up tonearms. Yeah, record jackets and liner notes are cooler than jewel-box booklets or metadata readouts, but if fetishism were all there were to LP playback I'd drop the whole enterprise in a heartbeat. I'm married to the sound of vinyl because, at its best, it comes closer to the sound of the real thing than any digital medium I've heard, high-res or low. Just lately it's come even closer, thanks in part to the little number I'm about to review.

In its long history the Audio Research Corporation has made many phono preamps.

Indeed, ARC built its sterling reputation on a succession of preamps primarily intended to equalize and boost the low-level signals of moving-magnet, moving-iron, and (eventually) moving-coil cartridges. Back in the day that was virtually *all* they were designed to do. The SP3, the SP3a, the SP3a-1, the SP6, the SP6b, the SP8, the SP10, the SP10 Mk II, the SP11, even the budget SP9 were primarily phonostages. Then the CD came along with its oily voice and its guinea charm—and finished what guys like John Curl and Mark Levinson had started. It broke the preamp in two. One of the first unintended consequences of Perfect Sound Forever was the ascendance of the linestage preamplifier. The lowly phonostage was exiled to its own box, and as time went by those boxes generally got smaller and smaller until some of them finally shed their chassis altogether and turned into plug-in cards or just...disappeared.

If you want to know why I've been an ARC

loyalist these many years, it is partly because William Zane Johnson *didn't* give up on the LP. Oh, he split his preamps in two, like everyone else. He had no choice if he wanted ARC to remain competitive in a CD world. But he kept designing new and better phonostages, even when the future of the LP looked grimmest. (Funny, isn't it, that, a few decades down the road, the LP is still holding its head well above water, while the SACD sleeps with the fishes—and Perfect Sound Forever may soon join it?) When ARC slapped the label "Reference" on its most advanced products at the turn of the last century, there was a bigod Reference phonostage—the Reference Phono 1—to go alongside the Reference 1 linestage. However, when the Reference Phono 1 was phased out in 2005, Johnson and Company gave us the marvelous (and wholly superior) PH7 as a replacement—but no Reference Phono 2. A

few of us wondered if that spelled the end for "Reference" ARC phonostages, especially since the PH7 was so good it was going to be hard to top. But, no, WZJ and the crew at ARC were merely playing possum.

Actually what they were doing was five years of intense R&D. The results of which should put to permanent rest the notion that ARC isn't still as serious about vinyl as it was on the day when the SP3 first saw light. The Reference Phono 2 may have been a long time coming, but it is unquestionably worth the wait. Quite simply, this is the most ambitious, the most versatile, and, at a cool \$12k, the most expensive phono preamp Audio Research has ever concocted. It is also, I am delighted to say, the most completely

EQUIPMENT REVIEW - Audio Research Reference Phono 2

successful—a fitting capstone to nearly a half-century of engineering excellence. Since its start, ARC has been trying to bridge the gap between the virtues of solid-state and the virtues of tubes. With the Reference Phono 2, that gap has been narrowed to an unprecedented extent. The things that tubes traditionally give away, wholly or in part, to solid-state (things that even the wonderful PH7 gave away, albeit far fewer of them than previous ARC phono preamps)—grip, definition, and rhythmic clarity and precision in the bottom octaves; grip, extension, and power in the top ones; transient speed, dynamic impact, and lower noise overall—the Reference Phono 2 does *not* give away. Here, for the very first time in my experience, is a tube (well, tube-hybrid, as you will see) phonostage that doesn't melt in the bass like a candle dripping wax or flicker

out into wisp-of-smoke softness in the treble, that doesn't lock up the brakes on starting transients, that doesn't flood the soundfield with soft plush grain. Here is a phono preamp that will not only reproduce the guitars of Peter and Paul—the sweet interplay of which almost exactly duplicates the gorgeous harmonies of their tenor and baritone voices—on “Don't Think Twice” from PPM's superbly recorded LP *In the Wind* [Warner], but that will also resolve Edgar deHass' buried-in-the-mix standup-bass lines with a clarity that not only reveals each note of his tasteful accompaniment but also reveals the way each note is being played. Here is a phonostage that can (and does) clearly resolve each word of the whispered refrain of Ricki Lee Jones' “Just Walk Away, Renee” (from *Girl At Her Volcano* [Warner]) or Leon Redbone's Foghorn Leghorn delivery of

“Sweet Mama, Papa's Getting Mad”—lyrics that were previously almost impossible to hear (although no small credit also has to be given to the utterly transparent Soulution 720 preamp and Soulution 710/700 amps, for which see p. 138)—and, at the same time, will literally make you jump out of your seat on a hard, quickly damped timp strike, like, oh, the fabulous one toward the close of Dorati's *Firebird* [Mercury], which it delivers without any of the initial lag and subsequent overhang-like blur of typical tube phonostages. Indeed, here is a great solid-state phonostage, albeit with sweeter more fully resolved timbres and textures, that I was at first nonplussed. Out of the box the Ref Phono 2 just didn't sound ARC-like. Indeed, it sounded *too* much like solid-state—darker in balance and flatter in aspect than the admittedly grainier, but also bloomier, airier, more color-neutral PH7. I had nothing to fear, of course. It only took several dozen hours of break-in to turn the Ref Phono 2's tonal balance from a shade dark to a dead-center neutral that made even the very neutral PH7 sound tipped a little toward the treble, and to add so much air and bloom and dimensionality that the soundfield became a virtual diorama (assuming, of course, that an LP permits such depth of stage and image). Wed these tube-like textures, timbres, air, bloom, and soundstaging to solid-state-like speed,

grip, impact, and extension and you've got what is, overall, the most lifelike and transparent-to-sources phonostage I've heard. The best of it is that this realism is no longer restricted primarily to the midband; the Reference Phono 2 is realistic

everywhere—bass, midband, and treble. Clearly things have changed in this circuit—noise has been lowered, transient speed has been accelerated (although not at the expense, as is sometimes the case



SPECS & PRICING

Audio Research Corporation Reference Phono 2

- Frequency response: +/-0.2dB of RIAA, 10Hz to 60kHz: 3dB points below 0.5Hz and above 300kHz
- Distortion: .002% at 1.0V RMS 1kHz BAL output
- Gain: Selectable 51dB (Low), 74dB (High) at 1kHz, BAL; 45dB (Low), 68dB (High) at 1kHz, SE (mc & mm compatible)
- Input impedance: 47k Ohms and 100pF, SE. Additional selectable loads: 1000, 500, 200, 100, 50 ohms, and Custom
- Phono equalization: (Selectable) RIAA, Columbia, Decca
- Polarity: Non-inverting
- Output impedance: 200 ohms SE, 400 ohms balanced Recommended load: 50K-100K Ohms and 100pF

- Maximum input: 250mV RMS at 1kHz (680mV RMS at 10kHz)
- Rated output: 0.5V RMS 10Hz to 20kHz, 100k Ohm load
- Noise: 0.22uV equivalent input noise (High Gain) (65dB below 0.1mV 1kHz input)
- Tube complement: (4) 6H30 dual triodes, plus (1 each) 6H30, 6550C in power supply
- Dimensions: 19" x 7" x 15.5"
- Weight: 27 lbs.
- Price: \$12,000

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## EQUIPMENT REVIEW - Audio Research Reference Phono 2

with solid-state, of the full utterance of the note, the scanting of steady-state tone and decay), resolution has been raised. ARC appears to have accomplished this via a literal mating of solid-state and glass devices. Although the Reference Phono 2, which is a *big* phonostage (twenty-seven pounds!), has the exact same tube complement as the new linestage Reference 5 (four 6H30s in the gain stage and a 6550C and another 6H30 in the power supply), it also uses “high-gain, extremely low-noise” FETs in the input stage (instead of a transformer). While there is nothing particularly new about this wedding of tubes and transistors *chez* ARC, the parts (ARC is using “proprietary” new capacitors and transformers throughout) and their implementation (the power supply in the Reference Phono 2 boasts eleven stages of regulation) must be markedly superior; there is no other way to account for the lower noise and obvious gains in transparency, resolution, and realism.

While the sound of the Reference Phono 2 as an RIAA phonostage is the lead story, there is another story. The Reference Phono 2 is the first ARC phonostage to offer alternative EQ curves. (It also has two phono inputs—for two separate tonearm/cartridges—and two phono outputs, one of which is balanced, as well as the usual panoply of ARC conveniences, such as remote-controllable cartridge-loading at a wide number of settings from 50 ohms to 47k Ohms, remote-controllable phonostage gain, remote-controllable everything.)

Alternative EQ curves (the Ref Phono 2 has an RIAA, a Columbia, and a Decca curve) are a bit of a hot-button topic, about which I’ve written on the Forum at our Web site [avguide.com](#). Optional EQ

curves made sense back in the early fifties before the RIAA curve (which is essentially the RCA New Orthophonic curve) was supposedly adopted as a standard around 1953. Before this, recording outfits EQ’d mono LPs to “house” curves that had different hinge points and different amounts of cut and boost in the bass and the treble than RIAA/RCA. While a great sounding blue-label Columbia—like the 1950 mono recording of Lou Harrison’s gorgeous Suite for Harp and Cello—still sounds great via RIAA equalization, it unquestionably sounds better via Columbia’s own curve. Ditto for the Decca curve with Decca group, DG, EMI, and Philips mono LPs from about 1950 to, maybe, about 1955. The trouble—if that’s the right word—comes at the dawn of the stereo era.

As far as I can see—and I’ve looked into this question—every major record company, here and overseas, used RIAA equalization for its stereo LPs, starting with the very first stereo releases in 1958. There is, admittedly, controversy about this, with certain folks claiming that Columbia was still using its own EQ right through the late sixties/early seventies and that Decca was doing the same thing. Unfortunately, there is no evidence to prove this outside of the evidence that your ears provide.

ARC has made an all-out effort to precisely duplicate the Columbia and Decca curves—and it is to be congratulated for providing mono-LP hounds with these resources. At the same time, to have made what is, IMO, far and away the highest fidelity RIAA phonostage in company history and then to leave certain users with the impression that they might be better off trying out alternative curves with their Columbia and Decca stereo LPs is, well, debatable. The problem with alternate EQ

is that some poorly engineered stereo LPs (the assumption that EQ was *correctly* applied in every instance is clearly and audibly false) may, indeed, benefit from different equalization—I have heard this myself, most recently with a stereo recording of the Miaskovsky String Quartets on Melodiya, which definitely sounded more like real music via the Decca curve than via the RIAA curve. My problem is this: Am I re-equalizing a poorly recorded record, acting as a virtual mastering engineer after the fact, and making a “poor” record sound “good,” or am I actually applying the correct equalization—the equalization that Melodiya itself used—and hearing the record the way it was supposed to sound? I’m afraid there is no clearcut answer to this question.

EQ can make vast differences in the listenability of *any* recording. The question becomes: Do you want to hear what you were intended to hear (even if those intentions were not well executed) or do you want to hear something different? You will have to decide for yourself, although I can tell you that I generally use the Columbia and Decca curves with early monos. (Which, BTW, confers no small advantage in playing them back.)

Does the Reference Phono 2 have any sonic “weaknesses.” Well, none I consider major. It is a little “forward,” as all ARC gear is. (By this I mean that it starts imaging a little more towards the plane of the speakers; this does not affect stage depth or width, which are phenomenal given the right disc.) It may not be as finely detailed in the heart of the heart of the midrange as something like the superb tube/transformer Audio Tekne TEA-2000, which, for example, resolves every quaver of Alison Krauss’ tremolo with a microscopic clarity that the Ref Phono 2 doesn’t quite match. (OTOH,



the Ref Phono 2 kills the Audio Tekne in the bass and the treble.) It doesn’t have the sheer heft and solidity of something like the Soulution 750 phonostage (nor is its noise level quite as low). It sounds better, IMO, with its top cover removed. And...well, that’s about it.

As you know, I’m a huge ARC fan—I like and strongly recommend virtually everything the company makes—but I can honestly say that if I were forced to choose a single product from the Audio Research line to keep in my system (and, thank God, I’m not) it would be the Reference Phono 2. Given my analog bias, this isn’t entirely surprising. But it is also a testament to the exceptional quality of this masterpiece, which is simply the most neutral, the most transparent, the (for the most part) highest resolution, and most persuasively lifelike tube phonostage I’ve heard. Now, go forth and audition one. *tas*

# Soulution 750 Phono Preamp

Absolutely Top-Notch

Jonathan Valin

As most of you know, I'm a tube guy at heart—particularly when it comes to preamps. But if I were in the market for the state of the art in analog, I'd make a big exception for the solid-state Soulution 750 phonostage. Yeah, at \$25k it costs a lot of dough and, yeah, it doesn't have all the bloominess and dimensionality of a great tube unit (although stay tuned for the good news on this subject). What it does have—what all of Soulution's products have—is the lowest noise and highest transparency to sources of any electronics I've yet reviewed. In spite of its neutrality and high resolution, it is also, like its companion pieces (the 700/710 amplifiers and the 720/721 lineage preamplifiers, reviewed by me in Issue 199), an extremely *gemütlich* component—not too lean and not too fat, not too dark and not too light, not too cool and not too hot. Like Baby's porridge (and all other Soulution electronics), in tonal balance and dynamic range and scale it is “just right.”

Designed by Christoph Schürmann (as every piece of Soulution gear has been), the 750 leverages the same core technologies that made the 720/721 preamps and the 700/710 amps such epiphanies. To refresh you on how these products (and the new 750 phonostage *par excellence*) achieve new standards of transparency to sources, let me reiterate some of what I said in my original Soulution review.

For designer Schürmann and Soulution's owners Cyril Hammer and Roland Manz, the key was to lower distortion to previously unachievable levels—and with it the usual

signature colorations (the darkness, the graininess, the edginess, the harshness, the flatness of aspect and thinness of timbre and texture) of solid-state components. To bring this trick off, Schürmann turned to what is probably the most widely discredited of all distortion-lowering strategies—negative feedback.

The trouble with applying a massive amount of negative feedback, as some of the Japanese majors proved to everyone's dismay back in the 60s and 70s, is that while it does lower harmonic distortion it also drastically increases transient intermodulation distortion (and other time-domain

distortions). Indeed, the very things that we most disliked about 60s and 70s solid-state (the piercing brightness and harshness and sandpaper-like grittiness) could be laid at feedback's door. Ever since then, the received wisdom about solid-state has been that negative feedback is a bad thing—only to be applied sparingly and locally. Shorter signal paths and fewer parts, on the other hand, are good things.

Schürmann and Soulution turned this conventional thinking on its ear. Together they decided that it wasn't feedback itself, but the *speed* at which the feedback loop operated that

was the problem. To eliminate the time-related distortion, the graininess and edginess that feedback engenders, those feedback loops had to be made to correct errors instantaneously. This meant that circuits and power supplies had to operate at incredibly high speeds and with incredible precision.

Forgetting about shorter signal paths and fewer parts, Schürmann found ways to do these very things, reducing propagation delay times (the amount of elapsed time it takes to correct a signal via feedback) to 5–10 *nanoseconds* (billionths of a second), where big solid-state amps and



## EQUIPMENT REVIEW - Soulution 750 Phono Preamp

### SOULUTION 750 SETUP

As I've already noted, when I first got the Soulution 750, it did not come with its own power supply. In order to power it up you had to attach it via a supplied LINK cable to one of Soulution's two preamps. Though the external power supply for non-Soulution owners, the 750PSU, raises the price of the preamp substantially for users who don't already own the Soulution 720 or 721 linestage, it is likely to be worth the expense given the 750's superb sonics and the net savings over buying one of the Soulution linestages. (I'll report on the sound of the 750 with PSU at a later date.)

Like all Soulution gear, the 750 is a highly configurable component. Not only does it have three inputs (any or all of which can be used for moving-coil or moving-magnet cartridges), but those inputs can be individually adjusted for gain, high-pass filtering, bandwidth-limiting, mono/stereo, and loading. Loading is set via

a set of three massive plug-in cards supplied with the unit (Soulution can custom-make these cards in any value you want) that slide into slots above each input. The unit I tested came with low, medium, and high resistance cards plugged into the three inputs. The Soulution 750 also has two outputs—one balanced XLR and one unbalanced RCA. If you so choose, you can plug one or both into your linestage and simply use the linestage to switch between balanced and unbalanced.

Be aware that, at 37.5 pounds, the 750 is a hefty piece. You will need a sturdy stand that allows some headroom above the phonostage, which runs warm. Also be aware that, unlike the Reference Phono 2 and several other current phonostages, the 750 does not make provisions for changing equalization curves. It is RIAA-only. Personally, I don't see this as a demerit, but you might. **JV**

preamps typically have propagation delay times of 1–5 *microseconds* (millionths of a second). This thousand-fold increase in speed allowed for an increase in negative feedback (and a drastic lowering of THD levels), without the usual price paid in time-domain errors.

One result of Schürmann's new thinking was greater complexity—Schürmann is reported to have proudly proclaimed that the 710 amplifier all by itself used over 3000 parts. While this may not seem like a thing to brag about from a simpler-is-better vantage, as I said in my original

Soulution review, there is no question that his design achieved its goal. Measured results were phenomenal. In the 710 stereo amp, for example, THD was well below 0.006%, the signal-to-noise ratio well above 108dB, channel separation an astounding 86dB, damping factor above 10,000, and slew rate 330V/ns, while power bandwidth extended from DC to 1MHz. The sonic effect: You heard more of *everything*.

Through the Soulution 750—which may be the crown jewel of the entire Soulution line—you hear all of that and then some. Here is a *phono preamp*

with a power bandwidth of DC to 1MHz, distortion under 0.006%, a slew rate of 400V/ns, and a signal-to-noise ratio greater than 100dB!

You won't have to be a golden ear to judge the results. Critical little performance details that are hard or (occasionally) impossible to hear through even the finest competing phono preamps—such as the faint touch of tremolo, here a literal expression of vulnerability, that Alison Krauss adds to select lyrics in her sad song of busted romance, “Ghost in the House”—are as clear as day through the 750. Ditto for staging details—such as the way the extra battery of trumpet players (all nine of them) and other augmenting brass instruments have been situated on tiers of risers at the far right of the stage in the Denon recording of Janáček's Sinfonietta. And double-ditto for mastering details, such as the dubbing in of Joni Mitchell's voice as she sings multiple backup to her own lead on “Carey” from *Blue*.

The constant thumping of the *una corda* pedal on Diana Krall's thoughtfully expressive version of “A Case of You” (for more on which, see my Oracle Delphi review), the traffic noises outside Walthamstow Hall on Dorati and the LSO's bang-up performance of Schoenberg's Five Pieces, the way Sinatra adds a surge of extra energy to the lyric “What's new?” at the close of his great rendition of the song of the same name, using this added volume and vigor to project a false confidence (like a guy trying not to reveal his heartbreak and helplessness), before his voice finally collapses into a revelatory whisper of despair on “I still love you so” and the bravado is given up...the Soulution 750 brings you all of these things, and does it from top to bottom (its grip, pace, and body in the bass are truly exemplary), on every track you

listen to. Best of all, it does this magic trick without the usual sacrifices that electronics designers make to increase transparency. Here there is no desaturation of tone color (no overripening of it, either), no lower-midrange suckout, no added zip in the upper midrange. It's extraordinary to come across products that manage to be this detailed and transparent without giving up some natural density of timbre at some place in the frequency spectrum.

It's also extraordinary—perhaps unparalleled in my experience—to come across a solid-state phonostage that has this much bloom. By this I mean the three-dimensional projection of

### SPECS & PRICING

#### Soulution 750 Phono Preamp

**Type:** Solid-state phono preamp (powered by Soulution 720/721 linestage preamp)

**Inputs:** Three moving magnet or moving coil with adjustable impedance

**Outputs:** Two (one unbalanced, one balanced)

**Gain:** 54/60dB

**Dimensions:** 480 x 450 x 417mm

**Weight:** 17kg

**Price:** \$25,000, 750; \$7500, 750PSU

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## EQUIPMENT REVIEW - Soulution 750 Phono Preamp

instrumental images. Where most solid-state gear flattens out instruments and tightens up their outlines, reducing their size and sharply defining their edges so that they sound the way a contact print of a large-format negative looks, the Soulution does neither of these things. Images aren't miniaturized; instead, they retain their natural size and soft-edged outlines (except on sharp transients, of course), and, because it is populated by these more life-sized images, the stage itself is wider, deeper, taller, more naturally sized (depending, of course, on the engineering of the recording). Better still, the Soulution 750 doesn't flatten the bodies of instruments. While I wouldn't say it has all the three-dimensionality of a tube unit like the ARC Reference Phono 2, it has more of it than any other solid-state phonostage I've yet heard. As a result, you can listen "around" voices—hear them blooming front-to-back and side-to-side into their own 3-D space and, at the same time, hear the studio/concert-hall space behind and between them. While the Soulution 750's bloom may be closer to a bas-relief than to ARC's full-blown statuary, the very fact that it has bloom is a wonderment.

Nitpicks? Well, the Soulution 750 (and Soulution gear, in general) isn't as inherently beautiful sounding as BALabo gear, but it is more dead-center neutral and standard-settingly transparent to sources; it isn't quite as high in resolution as Technical Brain (nothing is), but it is fuller and what some listeners may consider more natural in tonal balance; as noted, it isn't as bloomy and airy as ARC, but it has more bloom and air than other solid-state; its bass is bigger and fuller than that of some of its competition, but it still manages exceptional grip, pace, and detail in the low end.

Perhaps, the 750's one and only indisputable drawback—at least for non-Soulution owners—was that, as it was originally released, you had to power the 750 from a Soulution 720 or 721 lineage preamp via a supplied LINK connection. In other words, the 750 was not a stand-alone product. Starting in October, however, the company will begin marketing an outboard power supply, the \$7500 750PSU, eliminating the greater expense of having to replace your lineage preamplifier with one of Soulution's own to reap the considerable sonic benefits of the 750.

My conclusion? The Soulution 750 is the most neutral, detailed, transparent-to-sources, lifelike solid-state phonostage I've yet heard. It will appeal to absolute sound listeners and fidelity-to-mastertape listeners equally. It is, in fact, what I would buy if I wanted the best, had the money, and weren't buying a tube phonostage. **tas**



# Our Top Picks in Tonearms

## Rega RB301

**\$495**

[soundorg.com](#)

Turntable manufacturers who don't build their own arms frequently package their models with Rega's terrific-sounding and affordable RB300. Musically compelling, with excellent balance and good detail, if not the final word in any one category. Reviewed by DM, Issue 127

## Kuzma Stogi S

**\$1225**

[eliteavdist.com](#)

The Stogi S is a hydraulically-damped unipivot with a simple string-and-weight anti-skating mechanism, dual underslung counterweights, and provisions for making both coarse and fine azimuth adjustments. In our reviewer's system, this arm enabled a Shelter 90X cartridge to produce almost shockingly three-dimensional sound with rock-solid bass. Reviewed by CM, Issue 159

## Origin Live Encounter Mk III

**\$1400**

[sotaturntables.com](#)

In the Encounter, PS's reference Ortofon Windfeld displayed its peerless neutrality and near-peerless tracking, with outstanding bass and a rich and involving midrange. Highs, though smooth and extended, evinced a very subtle lack of detail or focus. The



Encounter also allowed the Dynavector Karat Mk III to strut its stuff with virtually no cramping of its high-kicking style. It says volumes for the excellence of this arm that it could put two such different pickups through their paces so even-handedly. Reviewed by PS, Issue 210

## VPI JMW-9 Signature

**\$1400**

[vpiindustries.com](#)

Compared to the standard JMW-9, the Signature version offers worthwhile upgrades such as a stainless-steel bearing assembly, Nordost Valhalla wiring, variable fluid-damping, mechanical anti-skate control, and higher effective-mass design. HP praised the Super Scoutmaster Signature package for its "considerable dynamic 'jump'" and "musical authenticity." Reviewed by HP, Issue 159

## \$2000 and above

### SME 309

**\$2195**

[sumikoaudio.net](#)

A black, tapered, titanium beauty, the 309 is a rarity in today's high-performance models—an arm with a removable head shell for easier cartridge swapping. Reviewed by PS, Issue 129

### VPI JMW-10.5/JMW-12.5

**\$2300/\$2600**

[vpiindustries.com](#)

Available in 10" and 12" versions, this beautifully made unipivot may be trickier to set up than some, but its sound rewards the effort. It's highly revealing without being cold, with deep, powerful bass. VTA adjustment during playback allows for exceptional fine-tuning. Reviewed by AHC, Issue 129



## EQUIPMENT REVIEW - Our Top Picks in Tonearms

### Basis Audio Vector Model 4

**\$3800**

[basisaudio.com](http://basisaudio.com)

Basis Audio's A.J. Conti has solved a fundamental problem with unipivot tonearms—dynamic azimuth error. Rather than allowing the arm to “roll” when the cartridge encounters record warp, the Vector maintains perfect azimuth alignment via Conti's simple yet ingenious design. The result is an extremely neutral-sounding arm that RH has yet to hear mistrack on any LP. Reviewed by RH, Issue 172

### Graham Phantom B-44 Mk II

**\$4700**

[graham-engineering.com](http://graham-engineering.com)

The culmination of all that Bob Graham has learned about tonearm design over the past few decades, the Phantom utilizes Graham's trademarked “Magneclipse” stabilization system to eliminate the “rolling” effect that plagues unipivot arms. The Phantom's tracking is exceptional, creating a sound that is extremely smooth and detailed, with a large soundstage, extended highs, and a deep, nuanced bottom end. Reviewed by WG, Issue 173

### Tri-Planar Ultimate VII

**\$4700**

[triplanar.com](http://triplanar.com)

This classic example of great arm design is now in an “Ultimate VII” version. If earlier models were characterized by tremendous solidity, focus, dynamic agility, bottom-end reach, overall neutrality, and transparency to the source, then the beautifully built Ultimate is quite simply all that multiplied. Reviewed by WG, Issue 191

### Helius Designs Omega Silver Ruby

**\$4750**

[musicalsurroundings.com](http://musicalsurroundings.com)

Designer Geoffrey Owen has significantly advanced his tetrahedral design to produce a captured-ruby-bearing arm with extremely low absolute friction and single-point contact on all surfaces. This

dynamically balanced arm with non-coincident bearings provides a very stable mechanical platform for a wide range of cartridges without adding its own coloration. While not the last word in ease of setup, the Omega Silver-Ruby rivals the openness of some of the best linear-trackers. Reviewed by JH, Issue 204

### SME Series V

**\$5300**

[sumikoaudio.net](http://sumikoaudio.net)

Robust and dynamic-sounding, the now-and-forever classic SME V is rich with features that include a cast-magnesium one-piece wand, ABEC 7 bearings, and fluid-controlled lateral damping. The V projects a ripe, soothing character with unsurpassed bass resolution, excellent inner detail, and great tracking ability. NG

### Da Vinci Grand Reference Grandezza

**\$9700**

[silentsourceaudiocables.com](http://silentsourceaudiocables.com)

This 12” transcription tonearm is a genuine work of audio art. A gorgeous concoction of tone wood, wolfram, platinum- or gold-plated bronze and stainless-steel, it is a thing of utter loveliness, and sounds as wonderful as it looks. As neutral and as nearly invisible as air, it is a truly transparent tonearm, capable of revealing tremendous detail with tremendous energy, within a very large, beautifully laid-out soundstage. One of the best pivoted arms JV has heard or used. Reviewed by JV, Issue 191





## EQUIPMENT REVIEWS

# Vinyl Accessories



# The 16 Essential LP Accessories



## AcousTech Electronics Stylus Brush

**\$9.99**

The most basic tool for the analog enthusiast, this little stylus brush will help keep your stylus clean.

## AcousTech Stylus Force Gauge

**\$129**

Maintaining correct tracking force is crucial not only to audio reproduction but also to the longevity of your stylus and record collection. AcousTech has distilled the essential elements of a great gauge into a clean, compact, and easy-to-read digital package that's accurate to within .002-gram increments.

## Aesthetix ABCD-1 MC Cartridge Demagnetizer

**\$199**

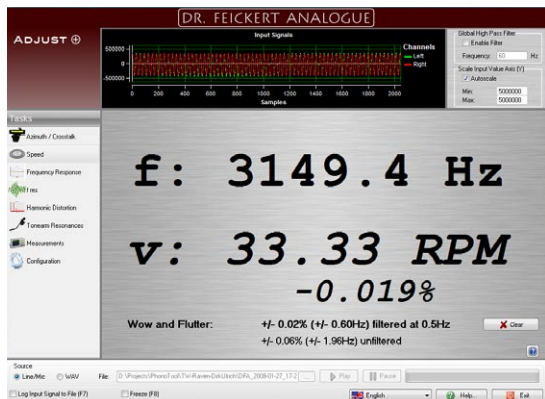
This battery-operated device sends a special signal through your moving coil cartridge, removing stray magnetism in the coils. Used every two weeks or so, the ABCD-1 will restore tone colors and soundstage clarity.

## AVID Level 45 45RPM Adapter and Level

**\$99**

This two-piece kit combines a precision machined steel 45-rpm adaptor and a bubble level, which together weigh 180 grams—exactly the same as a high-quality LP for accurate leveling.

## THE 16 ESSENTIAL LP ACCESSORIES



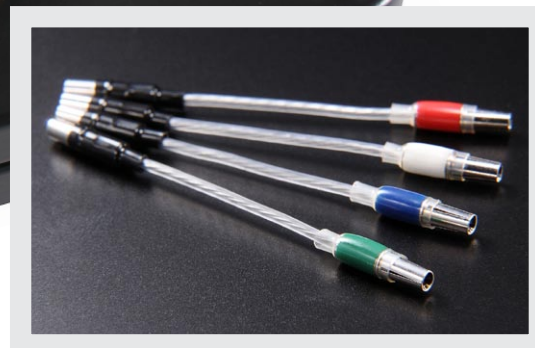
### Feickert Adjust+ \$350

If you've ever wondered whether you've gotten your cartridge's azimuth just right and, thereby, maximized channel separation, here's a solution that doesn't entail an oscilloscope or guesses by mirror. Dr. Feickert—he who makes that fabulous cartridge-alignment protractor—has come up with a nifty bit of software (PC-only) that will tell you when azimuth is dead on (and all sorts of other useful things about your cartridge, turntable, and phonostage).



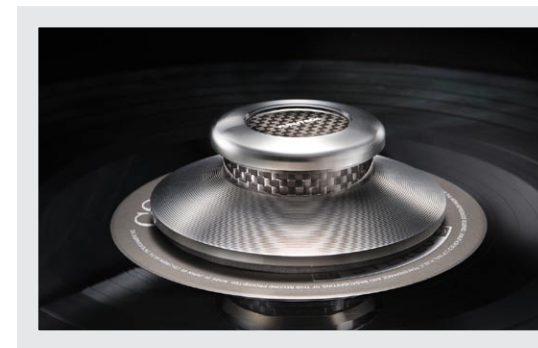
### Feickert Universal Protractor \$249

The standard cartridge-alignment tool, this precision aluminum device allows you to maximize tonearm and cartridge geometry, thereby reducing distortions caused by tangency errors. A snap to use and built to last.



### Furutech La Source Headshell Leads \$280 (long)/\$250 (short)

Everyone knows how well pure silver conducts a signal, so when you've already gone the extra mile to find the optimal tonearm and cartridge matchup, don't cheat by scrimping on the headshell leads. Available in two lengths.



### Furutech Monza LP Stabilizer \$480

Piezoelectric effects are the key to the performance of the exotic Monza LP Stabilizer. Using a combination of nano-level materials, including piezoelectric resonance materials, bonded to a stainless-steel and carbon-fiber body, the Stabilizer damps both mechanically and electrically, eliminating resonant colorations. Your treasured vinyl plays back cleaner, micro-dynamics and transients are more persuasive, and backgrounds are quieter.



## THE 16 ESSENTIAL LP ACCESSORIES



### Lyra SPT Stylus Performance Treatment

**\$30**

A non-alcohol-based stylus cleaner (with applicator) that will loosen and remove the debris and residue that a brush like the Acoustech can't get to.

### Mobile Fidelity Geo-Disc

**\$50**

This classic cartridge-alignment tool is as useful today as it was in the 1970s upon its introduction. Now in a newly re-issued form by Mobile Fidelity, the Geo-Disc is a simple and effective template for setting a cartridge's overhanging and offset.



## It's good to have a friend in the record business.

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## THE 16 ESSENTIAL LP ACCESSORIES



### Mobile Fidelity Rice Inner Sleeves (50 pack)

**\$20**

A precious collection of LPs is only as good as its scratch-free surfaces. Offered for decades, Mobile Fidelity's familiar rice-paper inner sleeves are renowned for their anti-static properties, which help prevent dust and grit from being drawn into the delicate grooves. They remain the sleeves to beat.



### Shelter Carbon-Fiber Cartridge Screws

**\$190 (8mm x 2mm in sets of two); \$200 (10mm)**

Precision is the name of the game when it comes to cartridge setup. These carbon-fiber cartridge screws from Shelter are not only low in resonance but their rigid, precision threading means they are less likely to strip a headshell or cartridge. Cheap insurance for that extra-special rig. Includes two polycarbonate nuts.



### Sutherland Timeline Strobe

**\$400**

When placed on your turntable (over an LP) this ingenious device, which also acts as a record clamp, projects a moving segmented line of lights on the wall behind your 'table. When the turntable's speed control is properly adjusted, the lighted line stops drifting to the right or the left—and you have just set rotational speed to a precise 33 (or 45) rpm. Like all of Ron's work, the damn thing is brilliant, fool-proof, and accurate. (It is also a lot simpler than using a strobe disc.)



### VPI 16.5 Record Cleaner Bundle w/Fluids/Brushes/Sleeves

**\$550**

All vinyl lovers need a record-cleaning machine, and there's no greater "bang for the buck" in cleaners than VPI's classic 16.5. Simple to use and highly effective, the 16.5 produces quieter surfaces from even heavily soiled LPs. The Bundle adds two bottles of Mobile Fidelity cleaning fluid, a Mobile Fidelity Record Brush, and 100 inner sleeves for just \$10 more than the 16.5.



## THE 16 ESSENTIAL LP ACCESSORIES



### Walker Audio Prelude Deluxe Record Cleaning System (includes brushes)

**\$145**

Applied manually in a four-step cleaning process, Walker's Prelude RCS enzymatic cleansers and ultra-pure water do a better job of cleaning records than any machine-applied fluids. A bit time-consuming but worth it to the LP ultra-enthusiast.



### Zerodust Stylus Cleaner

**\$69**

Not a fluid- or brush-based stylus cleaner, the Zerodust uses a polymer bubble that gathers stylus dust and debris onto its ultra-soft surface. A winning alternative for those concerned with overusing liquid cleaners that can leave residues which build up over time. Zerodust can be cleaned with tap water and a magnifier is included.

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# Spin Clean Record Washing System

## A Record Cleaner for the Rest of Us

Neil Gader

I suppose I'm a lot like a great many vinyl fanciers. I don't have an archival collection, but it's a darn good mix of personal faves, nostalgia, and a few killer super discs. I'm not neurotically fastidious but I want to keep the discs clean, not just for the sake of the vinyl but for the preservation of the stylus. And with new 180/200-gram releases and reissues clocking in at twenty, even thirty bucks a pop, it'd be great to keep the cleaning costs in line.

Does this sound familiar? Well, then, meet my new best friend, the Spin Clean Record Washing System. Developed back in 1968 it's a pure manual design—nothing to plug in, no automatic washing and drying. A little elbow grease and fresh air does all the work.

Operationally, a Spin Clean session is a breeze. First adjust the removable rollers for the appropriate diameter records—12", 10", or 7". Fill the taxicab-yellow basin with distilled water up to the indicated fill line and add a capful of the cleaning solution, Finally slide the record between the brushes and begin, er... spinning! A couple of spins over the surface, remove from the tub, and let the air of your room and a couple of swirls of the supplied lint-free cotton cloths do the rest. The process worked best for me using two hands to gently rotate the LP

through the fluid, placing the pads of my fingers on the edge of the disc at opposite sides. The result is a disc that is suddenly as shiny black as the day you brought it home. There is an encapsulating mechanism built into the cleaning solution that will actually sink the dirt to the bottom of the unit so it does not get re-deposited on the record. In fact that's the main reason the tub is bright yellow—so you can see the dirt collecting at the bottom.

The results speak for themselves—less noise means more clearly resolved music. On a prized direct-to-disc like the Atlanta Brass Ensemble's *Sonic Fireworks* [Crystal Clear], which I'm ashamed to admit hadn't been cleaned in years, the difference was marked by an overall reduction in background noise—removal of most tiny snaps and crackles from the lead-in groove right through

to the end. Cleaner surfaces means a gain in perceived dynamic range; girt and grime raises the noise floor essentially reducing dynamics and adding edges to transients that aren't really part of the recording.

A single bath is good for up to fifty records, so you'll need to organize an assembly line. Use a table that's well lighted and level; lay out the cloths for easy access. However, if you want to wash just a handful of records, it is possible to remove the brushes after washing a few LPs, rinse them off, and let them air dry on top of the lid until you're ready to clean more.

Is Spin Clean as slick as the fully robotic vacuum machines? Well, if you're in the habit of haunting flea markets and bringing home box-loads of records—probably not. But for lighter duty it's pretty tough



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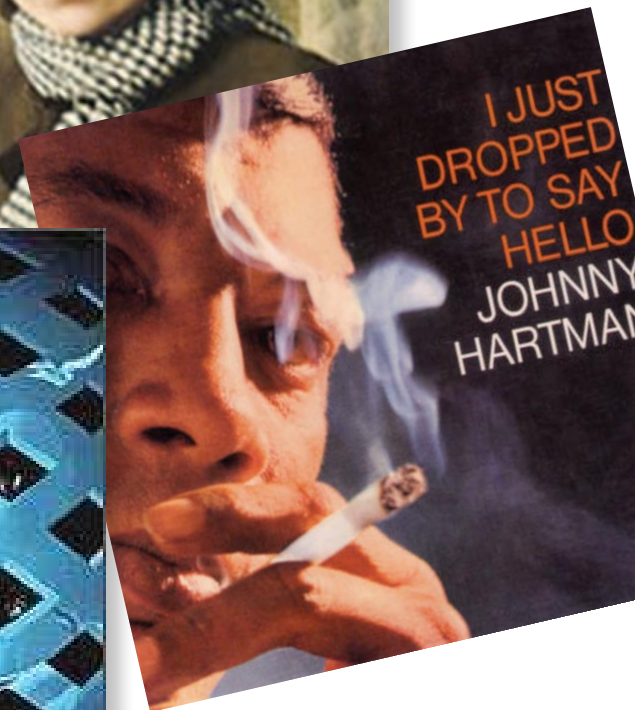
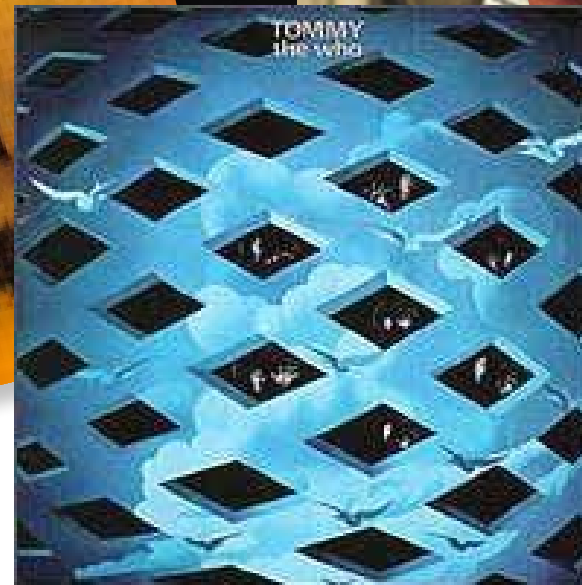
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to beat. Not to mention avoiding the hidden costs like worn styli and the further degradation of the surfaces of your prized LPs. Finally for the eco-conscious Spin Clean is a truly green product; all the energy expended is your own—totally off the grid. Perhaps best of all, the dough you save can be spent on what truly matters—more records!

Note: Shortly before going to press, Spin Clean announced an improved Mk II version. It offers improved UV grade resin for a more rigid and fade-resistant washer basin. Re-designed rollers reportedly deliver a smoother and quieter "ride." Finally, an improved washer fluid formula and new foam and brush material round out the improvements. No doubt a great device made even better. **tas**

# Music Features



# Vinyl Rules!

## The Resurgence of a Supposedly Defunct Format

Jeff Wilson

Typically when new technology comes along the product replaced dies a permanent death. People may develop a nostalgia for whatever was phased out, but that doesn't mean they're lining up around the block to buy videotape players, rotary phones, eight-track players or typewriters (or if they do buy them, to use them as anything other than decorations). So it is, and so it has always been—and therefore everyone was caught off guard when, after disappearing off the radar for over fifteen years, something that continually appeared in media obituaries came back to life.

That something was new vinyl records, which were produced in such limited quantities for so many years that you could have visited countless “record” stores without seeing any evidence that any were being made at all. I remember clearly, during the 1990s, entering a music superstore in New York City where I had purchased many albums, searching every shelf for vinyl, and finally checking with an employee who confirmed that there wasn't a single record in the store. One of the ironies of the re-emergence of vinyl is that the technology that replaced vinyl is a key reason that store is no longer there. Now record companies and record stores embrace vinyl because it provides a better business model than the digital media that supposedly rendered it obsolete. Free digital downloading, the most un-vinyl means of procuring and playing music, helped make new vinyl much more attractive to record companies, artists, and record stores. You can't steal an LP—or if you do, you better have a large shopping bag

and quick hands.

And the fact is that increasingly people are happy to buy new vinyl. During a prolonged recession new vinyl is experiencing huge growth spurts other industries would love to duplicate—and this has all happened very recently. In 2007 Nielsen soundscan reported 990,000 LPs sold; that number rose to 1.88 million in 2008, and in 2009 sales exceeded 2.5 million. And that's just for LPs; everyone agrees that the 7-inch market, though harder to quantify, is also growing. While writing this article I talked to many people who in one way or another are connected to the music industry, and none of them saw it coming. That's one of the best things about the vinyl renaissance: it wasn't the result of corporate groupthink and media hype. Rather, it was spearheaded and supported by people who care deeply about music and vinyl. So now record collectors have a lot to process, as what recently seemed like an anachronism is now popular and readily available.

The scope of both classic and obscure re-issues is staggering, and the number of new recordings is increasing at such a fast pace that new plants are opening just to press it all. Finally, it seems, after a long, long drought, vinyl is getting the respect it deserves.

### ELITE STATUS

Never mind that CDs and digital downloads still dwarf vinyl when it comes to overall sales; for those in the know, vinyl recently achieved an elite status. In recent years we've seen important records such as Bruce Springsteen's *Magic* and Elvis Costello's *Momofuku* released on vinyl first. And some releases are vinyl-only, such as Sunn's double live set *Domkirke* on the vinyl-friendly Southern Lord label. Actually small independent labels—in other words, the ones that kept vinyl alive through lean times—have a long tradition of vinyl-only releases, and on Record Store Day vinyl is king.

Remember when all the extra tracks were on the CD? Partly that was because compact discs could hold more music than a single LP, which was originally the norm; it also had to do with the effort to convert people to CDs. Now LPs tend to use two discs in order to accommodate the length of a CD, which makes for short sides. Recent releases making use of this extra space include The Fall's *Your Future Our Clutter* and Drive-By Truckers' *The Big To-Do*.

And it's not just the record companies that are giving vinyl preferred status; the fans are too. Jerry Dirr, the owner of a small underground rock label called Phratry Records ([phratryrecords.com](http://phratryrecords.com)), recently told me that the preference for vinyl is so strong that bands on his label now only bring vinyl for their tours. This was prompted by a tour where “We ran out of vinyl but had more than enough CDs. People were still willing to pay at the merch table and give me their address if we would just mail the LP to them. They wanted



## MUSIC - Vinyl Rules!

it that bad, versus the CD, which we would have given them for half the price.” On a larger scale, Sundazed Records, a label whose classic, rare, and previously unissued recordings focus on the late sixties and early seventies, has seen a clear shift in its customers. “Ten years ago we sold 70 to 75 percent CDs over vinyl, and five years ago it was 50-50,” project manager Tim Livingston said. “Now it’s 70 to 75 percent vinyl over CD.”

### QUALITY

If the early days of the LP are looked upon fondly, we should also admit that after a certain point the quality began to decline. Remember those flimsy lightweight pressings that started to appear in the early seventies, that you could flex? By the mid-eighties I held in my hand albums with vinyl so thin and lightweight I had to double check to confirm that there was anything inside the cover. And even during the glory days of Blue Note and Living Stereo there were plenty of labels making bad recordings pressed on cheap vinyl.

One of the pleasant surprises with new vinyl is that, as far as quality is concerned, the bar has been set high. Frequently record companies make a point of pressing virgin vinyl; 140-gram and 180-gram vinyl is more common than ever, and so are 45rpm LPs. And I don’t recall, when I was shopping for new vinyl at record stores in the 1970s and 1980s, seeing stickers boasting that an LP was pressed at an elite plant, but I see them often now.

As you might expect, new jazz and classical vinyl is often of audiophile quality, but increasingly we see the same attention to detail with rock. And it’s not just the small record companies that are giving vinyl the care it deserves. In fact Warner

Brothers, one of the “big four” music groups, was ahead of the curve when it came to vinyl, and as general manager Tom Biery is quick to point out, quality has been essential to its vinyl campaign.

“We started getting into vinyl in earnest around five years ago,” he told me. “We really wanted to brand ourselves, we wanted to brand our acts, we wanted to brand our company as people who still cared about art and sound. In the age of the MP3 and compressed audio we wanted to let people know that there are guys around at big companies that still really care about the idea of dynamics and sound, and we had a lot of acts that really cared.”

“If we’re reissuing a record, we will dig deep to find the original master,” Tom continued. “Our last choice would always be to use a digital copy. If analog exists, we’ll use analog. We painstakingly listen to every test pressing, and you might say, ‘Doesn’t everybody?’ No they don’t. They’ll drop a needle here and drop a needle there and they’ll say that it’s approved. I will record music from a test pressing in high resolution 96/24 at home and then listen back with headphones to make sure that the vinyl test pressing sounds proper.”

The quality Warner aims for includes packaging.

“For Neil Young’s *Harvest* we wanted to find the exact paper that he used, but the paper is no longer produced, so we had to go and pay someone to make it,” Tom said.

Apparently that wasn’t cheap, and in retrospect Tom wished he had passed that information along to record buyers. “We made one mistake with that—we didn’t tell the consumers why it cost ten bucks more than the other ones,” he said. “We should have let people know; we should have put

a sticker on there.”

Warner’s enthusiasm for records is readily apparent on its all-vinyl Web site, [because sound matters.com](#), that along with selling records available in stores runs exclusive promotions. “We’ve given away test pressings on the site,” Tom said. “The Neil Young 180-gram box set was exclusive to the site. We did white label copies of Metallica and we sold them only on the site. Metallica didn’t even have them. And those went in like five minutes.” Apparently these efforts paid off; Warner now commands about 40 percent of the vinyl market.

### THE VIRTUES (AND FRUSTRATIONS) OF LIMITED RUNS

In the new era of vinyl there’s no such things as a blockbuster. The highest selling band in 2009 was Radiohead with 45,700 total copies, whereas in previous decades a popular new LP would sell millions of copies in a year. In 2008 nearly 400 LPs sold at least 1,000 or more copies, but that means that over 12,000 LPs sold 1,000 or fewer. Smaller runs are now the norm, and if a record goes out of print there’s no guarantee another pressing will come along to replace it, as Linford Detweiler from the band Over the Rhine learned the hard way.

“Once Over the Rhine realized that *Ohio* was going to be a double album, that raised the issue of gatefold vinyl, and we thought, wouldn’t that be amazing, and so we went for it,” Linford said. “It was 180 gram vinyl, and we had a really nice slipcase for it and some of Michael Wilson’s beautiful photographs with it. It was so nice to see Michael’s photographs on that scale.”

Nice, yes, but when Linford and his wife, Over

the Rhine’s lead singer Karin Bergquist, returned from a tour they discovered there was one detail they had overlooked. “Somehow in all of that I realized that we had sold all of these and I had forgotten to set myself aside a personal copy,” Linford said. “So now I’m left with the prospect of paying a hundred dollars or more for a copy.” Later this year Over the Rhine will release a record produced by Joe Henry, and there will be a vinyl version. When asked if he would set aside a copy this time, Linford laughed and said, “Definitely.”

To some extent limited runs have to do with supply and demand, but not completely, as I was reminded when I spoke to Michael Kurtz, who along with promoting Record Store Day was involved with a recent Beatles reissue. “We released last week through EMI The Beatles’ first reissues of the remastered recordings on vinyl with the 7-inch single of ‘Paperback Writer’ and ‘Rain,’” Michael said. “We had orders of 12,000 come in for that, but we only had 4,000 pressed because we don’t want these things to become so ubiquitous that it’s like who cares. We really want to keep them special.”

With the smaller scale comes a payoff for the music lover. “It’s not all about bean counting,” Tom Livingston explained about Sundazed Records. “We don’t have focus groups.” An alternative is spelled out in the company’s slogan, “Kinda like a record company, except fun and run by music lovers.” Fortunately that spirit seems much more prevalent in the vinyl world than it used to be. There’s more of a personal touch, and the fact that no one expects vinyl to dominate or even match other formats works in its favor.

## MUSIC - Vinyl Rules!

### NEW VINYL AND THE INDEPENDENT RECORD STORES

In 1999 an independent record store opened to little fanfare in a neighborhood of Cincinnati called Northside, in a business district with lots of empty storefronts. At first Shake It Records ([shakeitrecords.com](http://shakeitrecords.com)) squeezed into about 700 square feet. Eventually it had a huge impact on Northside's business district and for that matter the entire neighborhood, especially after moving across the street to a building with 5,200 square feet. The bars, coffee houses, restaurants, and retail stores that have since opened on the same strip are thriving because of the foot traffic Shake It created.

And vinyl played a huge role in that. In fact, the entire basement of Shake It is now devoted to new and used vinyl, and every day it draws a crowd. Total vinyl sales, including new and used, is about 40 percent of overall sales, whereas ten years ago it was closer to 10 percent. The owner of the store, Darren Blase, is amazed at how much new vinyl is being created and how popular it has become. "Ten years ago new vinyl was ten percent of total sales," he said. "We started seeing it increase about five to six years ago. We still sell twice as much used vinyl, but we love new vinyl because the amount we make is close to the same." Blase also noted how strong the preference for vinyl is in cases where a choice exists. "Eighty percent of our jazz sales are new vinyl as opposed to CD," he said. "In fact, the *Blue Trane* LP outsells the CD ten to one."

Independent stores like Shake It are essential to the new vinyl renaissance. According to Nielsen soundscan, two out of every three new vinyl LPs are sold in independent record stores, but

Blase guesses the real figure is probably closer to 85 percent. As other retail outlets expand to the point where visiting their stores feels like entering an airplane terminal, the appeal of buying something in a store run by individuals as opposed to corporations only intensifies.

It's no wonder, then, that after only three years Record Store Day has become a huge success. On April 17th of this year Record Store Day was celebrated in more than 800 stores across America, many of which broke sales records. And as Michael Kurtz, a founder of the event, made clear, vinyl played a pivotal role in that. "The first year, we made about ten or fifteen pieces of vinyl," Michael said. "Here we are three years later at 2010 and we created almost 200 unique pieces for Record Store Day and it was probably close to 70 percent vinyl. Most of it was 45s, but we're going to try to have more ten inches and twelve inches in 2011, to take it in a totally different direction."

When asked about the vinyl market overall, Kurtz said, "It's exploding. You're talking about humongous growth. And the margin for artists, what they get paid for their art, is much higher for vinyl than it is for a digital track. So it's a win for everybody. It's one of the most positive things to come out of the music business in some time. It's a revolution. It's a *counter-revolution*."

Those are big words, but they ring true. With new vinyl the culture is such an improvement over business as usual that even if the people behind it were selling snow cones I'd still support it. As it turns out, it's something I like more—and apparently a lot of other people do as well. **tas**

## WHERE TO BUY VINYL ON-LINE

### • [acousticsounds.com](http://acousticsounds.com)

Acoustic Sounds has a staggering quantity of both new and reissued vinyl; in fact, its catalogue of sealed vinyl, CDs, and SACDs is over 100 pages. Its house audiophile label, Analogue Productions, puts out both new and reissued recordings on vinyl.

### • [amazon.com](http://amazon.com)

Since launching its online vinyl store in September 2007, Amazon has played a substantial role in new vinyl sales.

### • [backtoblackvinyl.com](http://backtoblackvinyl.com)

This Web site represents the vinyl campaign of Universal Music Group (one of the "big four" music groups).

### • [becauseofsoundmatters.com](http://becauseofsoundmatters.com)

The online music branch of Warner Brothers features high-quality vinyl and special promotions.

### • [better-records.com](http://better-records.com)

This company specializes in finding vinyl with exceptional sound quality. They play, clean, and evaluate the used records they sell and highlight the best-sounding of them (Hot Stampers). There's a huge amount of commentary on the site to help guide you, and they also offer accessories and some equipment.

### • [ebay.com](http://ebay.com)

Along with selling everything else under the sun, ebay sells lots of new and used vinyl.

### • [elusivedisc.com](http://elusivedisc.com)

Established in 1989, Elusive Disc sells both new vinyl and "out of print, hard to find (elusive) vinyl," with an emphasis on audiophile pressings.

### • [losthighway.com](http://losthighway.com)

This small and impressive label deserves special mention because every new release comes out on both CD and vinyl.

### • [musicdirect.com](http://musicdirect.com)

In their own words, "Music Direct sells audiophile hardware, audiophile music and analog gear"—as well as producing audiophile vinyl reissues on its own Mobile Fidelity label.

### • [redsparkmusic.com](http://redsparkmusic.com)

This UK website sells high quality vinyl.

### • [soundstagedirect.com](http://soundstagedirect.com)

Online store with more than 10,000 titles in stock.

### • [sundazed.com](http://sundazed.com)

Classic, rare, and previously unissued recordings focus on the late sixties and early seventies.

### • [ttvjaudio.com](http://ttvjaudio.com)

While Todd the Vinyl Junkie is best known for their array of headphones and accessories, they also offer high quality vinyl from Mobile Fidelity Sound Lab, Box Star, Classic Records and many others, as well as turntables and electronics.

### • [vinyl-records.biz](http://vinyl-records.biz)

Good source of (mostly) used vinyl.

# Jazzing it Up

## A Survey of Recent 45rpm Jazz LP Reissues

Wayne Garcia

**Y**es, they keep on coming: more and more 45rpm LP reissues to tempt the jazz-loving audiophile. Although that's not a bad thing—unless your wife happens to be the one who opens your credit card statements (at fifty bucks a throw these ultra-deluxe vinyl bonbons do add up). Without pretending to be exhaustive, what follows are among the tastiest of recent offerings.

### Analogue Productions

#### NAT "KING" COLE: *LOVE IS THE THING*

I recall, as a kid, hearing my parents play *Love is the Thing* over their Admiral console stereo system. While the record's dreamy romanticism came through well enough, I suspect few of us could imagine what this record can sound like over a fine modern system—especially now that Acoustech's Steve Hoffman and Kevin Gray have applied their considerable handiwork to this, and six other Nat "King" Cole Capitol LPs.

More than your typical reissue, Acoustech's efforts with these 3-channel work tapes might almost be described as a restoration project. As detailed in the excellent notes provided by *Stereophile's* Michael Fremer, Hoffman and Gray not only had to customize their mastering rig—from the playback head to the mixing board, monitor speakers, amplification, and vinyl cutter—they also had to build their own

analog echo chamber (no digital here!) in order to recreate (but gently so) the sound in the old Capitol studios. The results are stunning.

Recorded in 1956, *Love is the Thing* was Cole's first stereo recording, and a huge stylistic departure from the jazzy *After Midnight*, which preceded it (and which is also in this series). Awash in the sweeping strings of Gordon Jenkins' orchestra, the ballads herein—"Stardust," "Stay as Sweet as You Are," the title track, "When Sunny Gets Blue"—were a perfect vehicle for Coles' effortless, malted baritone, which has never sounded finer than it does on this LP.

Cole's voice is spotlighted, but not overtly so—rather, in a way that simply places him front and center in the proceedings. In my experience, it has never sounded more beautifully immediate, pure, and stripped of artifice. The orchestra is laid out behind him, with plenty of sweet, warm air, as enveloping as a dip in a hot springs bath. And





## MUSIC - Jazzing it Up

while the recording does not have a particularly wide dynamic range, it shifts with the marvelous agility that Cole, finally, deserves.

### JOHN COLTRANE: A LOVE SUPREME

Recorded on a single December day in 1964, *A Love Supreme* might be considered as Coltrane's *Guernica*. Meaning, that, as with Picasso's masterwork, one could argue that *A Love Supreme* is the culmination of all Coltrane had learned up to that point, and that no matter how excellent the music that followed, none of it would

achieve the musical peaks attained in this deeply spiritual work. The music combines African and Middle-Eastern influences with hard bop and free jazz, and the interlocked intensity with which the group performs, particularly on the two middle sections, "Resolution" and "Pursuance," could almost set your speakers on fire.

As good as the original Impulse pressing sounds, Analogue Productions' release will leave lovers of this record pinned to their seats. The music is simply and stunningly "there." The air in Van Gelder's studio will occupy and charge your room, and the instruments are all very life-like in size, body, tone, and dynamics. And

balance is near perfect among them: Jimmy Garrison's big, warm bass, a key player when it comes to stating themes as well as during intros and outros; Elvin Jones' muscular yet always tasteful drum work; McCoy Tyner's incisive but supple piano (how he maintains the pace of "Pursuance" is a thing of wonder); and 'Trane's full-throated, go-for-broke, yet always melodic tenor playing.

### MILES DAVIS SEXTET: SOMEDAY MY PRINCE WILL COME

Following on the heels of *Kind of Blue* and *Sketches of Spain*, Miles Davis' *Someday My Prince Will Come* is not a great album. In 1961 Davis' working ensemble was in flux. After Coltrane's departure, Davis recruited Hank Mobley—an otherwise fine (and underrated) player as one can hear on

his Blue Note work—for what turned out to be a brief stint. But Mobley's earthy style didn't really fit with Davis, and he sounds uncomfortable here. And the "sextet" part is misleading, as the LP was recorded with Davis' veteran rhythm section—Jimmy Cobb (drums), Paul Chambers (bass), and Wynton Kelly (piano)—and Coltrane sitting in on just two tracks. If Mobley sounds tentative here, so does Davis himself, who seems bored much of the time. And on the title track Mobley is figuratively blown out of the water by Coltrane, whose fiery solo breathes life into an otherwise tepid performance. The ballads ("Old Folks," "Drad-Dog") are also disappointing. Only "Teo," a nine-minute tribute to Davis' Columbia producer, truly smokes, and Coltrane's superb extended solo is the highlight of the record.

While the sound easily bests my Columbia "6-Eyes," the recording is variable, with Davis' trumpet and Cobb's brushwork sounding sometimes "spitty," and the rest of the group a bit distant. "Teo" aside, this is an enjoyable album but a "must-have" for Davis completists only.

### Music Matters

#### CLIFFORD BROWN: MEMORIAL ALBUM

The jazz world lost its finest emerging trumpet talent when Clifford Brown crashed his car on the way to a gig in 1956. He was 25 years old. If you haven't listened to Brown in a while, or at all, the scale of that loss will hit hard as you play *Memorial Album*.

Disc one presents Brown in a setting with Gigi Gryce (alto), Charlie Rouse (tenor), John Lewis (piano), Percy Heath (bass), and Art Blakey (drums). Although Blue Note is often considered the quintessential hard-bop label, the playing

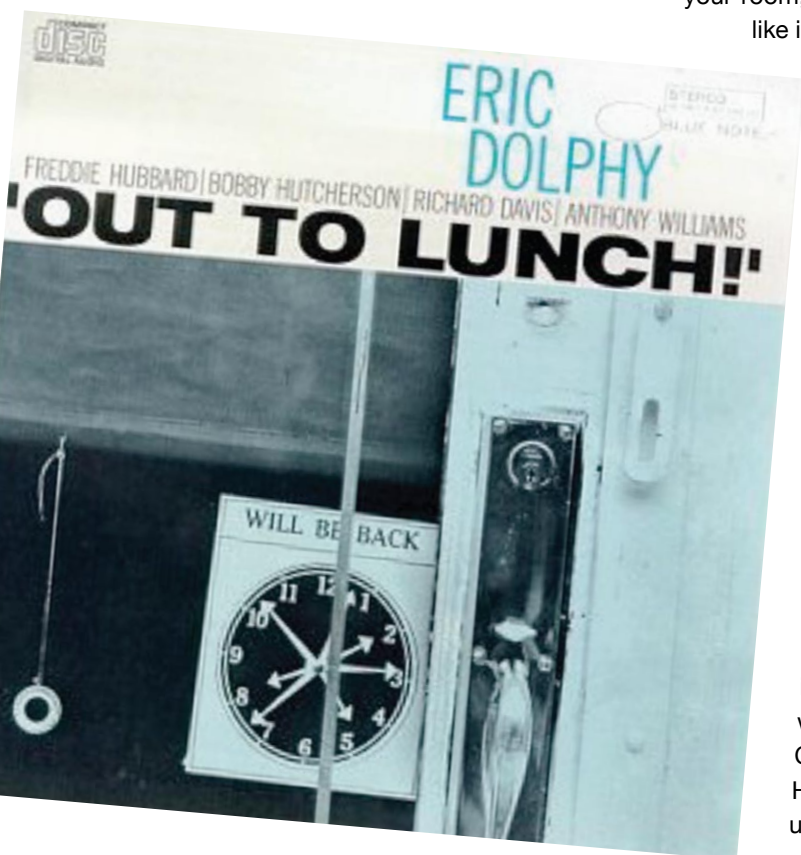
of the day was in a more straight-ahead bop style. The interplay between this group still astonishes—totally uninhibited, yet in army-like lockstep. Each of the five tunes is a wonder, and Brown's playing on the ballad "Easy Living" will make you cry. Not because it is at all sentimental, but so very beautiful. The sound is remarkably pure, and not as upfront as later Blue Notes.

Disc Two, which was actually recorded first, features Lou Donaldson on alto, with Elmo Hope (piano), "Philly" Joe Jones (drums), and again Percy Heath. The music is equally first-rate, and Brown's exchanges with Donaldson will (almost) leave you asking, "Diz and Bird who?" The sound here is also uncluttered and free, but a bit brighter and leaner than on the first LP.

### ERIC DOLPHY: OUT TO LUNCH

You either love Eric Dolphy or you don't. I do—passionately. Whether he was playing alto sax, flute, or (my favorite) the bass clarinet, his was surely one of the most distinctive, harmonically and rhythmically complex, and inventive voices jazz has ever heard. He was a hell of a composer, too, as this 1964 date shows. Though be forewarned: The "free" jazz on these platters remains avant-garde nearly 50 years on.

"Hat And Beard" is a Monk-inspired bit of hurky-jerky quirkiness, with Richard Davis (bass) providing a droning foundation for Dolphy, Freddie Hubbard (trumpet), and Bobby Hutcherson to work against, while Tony Williams lays in brilliant drum accents. "Something Sweet, Something Tender" begins as a duet between Dolphy and Williams before the group's amazing ensemble work kicks in—these musicians were clearly inspired throughout. "Gazzelloni" is Dolphy's



## MUSIC - Jazzing it Up

tribute to the great Italian flautist. The title track shows his love for 20th Century classical music, while “Straight Up And Down,” which Dolphy described as “a drunk walking,” is brilliantly, and quite comically, right on. The sound here is clean, expansive, big as life, very dynamic, and very “in your room.”

### LEE MORGAN, VOL. 3

This beautiful 1957 set highlights the simpatico ensemble playing of Morgan’s spontaneous trumpet, the funky alto of Gigi Gryce, the wooly-toned tenor of Benny Golson (who also penned each of these tunes), and the rhythm section of Charlie Persnip (drums), Paul Chambers, and Wynton Kelly.

It’s as much Golson’s record as Morgan’s, and the composer shows himself to be an original and witty stylist on tunes such as “Hassan’s Dream,” a swinging, sassy “Arabian”-themed number, the rapid-fire “Domingo,” in which Morgan delivers a leaping solo, and “I Remember Clifford,” a gorgeous ballad in loving tribute to his friend, the late, great Clifford Brown.

The mono sound is some of the most natural, tonally pure, and transparent I’ve heard from Blue Note, with excellent instrumental balance, and nicely freewheeling dynamics.

### LARRY YOUNG: UNITY

Larry Young was an organist of uncommon restraint and endowed with a pianist’s sensitivity of touch. 1966’s *Unity* is a splendid set, musically and sonically. With Woody Shaw on trumpet, Joe Henderson on tenor sax, and Elvin Jones on the throne, the quartet gives its all to tunes as diverse as “Zoltan,” which opens with a quote from the

*Hary Janos Suite* by Hungarian composer Zoltan Kodaly, “Monk’s Dream,” a duet with Jones that displays Young’s playful side, Henderson’s “If,” a marvelous vehicle for this great player, and “Softly As A Morning Sunrise,” bringing a sass and sizzle to this number I never would have imagined. I don’t know how, but somehow this fantastic title passed me by until now. Don’t make the same mistake.

### ORG (Original Recordings Group)

#### JOHN COLTRANE AND JOHNNY HARTMAN

If proof were required that Coltrane was not only a highly lyrical player but also a most sensitive accompanist, then here it is. His only recording as a leader with a vocalist, this set was recorded on a single day in March 1963, and it’s one of the loveliest things he ever did.

Running through tunes such as “They Say It’s Wonderful,” “Dedicated To You,” “Lush Life,” and “Autumn Serenade,” Hartman is a thoroughly charming and warm-throated crooner with a gift for phrasing. He’s not as lounge-chair plush as Nat “King” Cole—more like a favorite uncle with a dash of dark, slightly dangerous sexuality.

#### JOHN COLTRANE: BALLADS

Not that it requires much commentary, but in the same spirit, *sans* vocalist, is Coltrane’s *Ballads*, which, while not as sonically compelling as his collaboration with Hartman, is another excellent reissue from ORG, and one of ’Trane’s most serenely beautiful outings. His quartet, which was so fiery in live sets of the same period, lowers everything to a slow simmer here. Songs such as “You Don’t Know What Love Is,” “All Or Nothing At All,” “What’s New,” and “I Wish I Knew” highlight

a supremely melodic quality often overshadowed by the power and sheer intensity Coltrane so frequently displayed.

### JOHNNY HARTMAN: I JUST DROPPED BY TO SAY HELLO

This is a terrific set, with a looser-jointed and overall funkier feel—if not the elegance—of Hartman’s date with Coltrane. With Hank Jones on piano, brother Elvin on drums, the dream guitar team of Kenny Burrell and Jim Hall, Milt Hinton on bass, and the wonderfully primordial tenor sax of Illinois Jacquet, Hartman is in fine form on numbers ranging from “In The Wee Small Hours,” “Charade,” “If I’m Lucky,” and the title tune. Sonics are excellent, rather “live” sounding, and with an easy spontaneity that makes you feel like you’re eavesdropping on the session as it unfolds. **tas**



# One Serious Boys' Club

## A Visit to Mobile Fidelity Sound Lab

Wayne Garcia

If you've got to work for a living—and most of us do—it's hard to imagine a sweeter gig for a music-loving audio geek than the ones landed by Shawn Britton and Rob LoVerde, mastering engineers for Mobile Fidelity Sound Lab. These guys spend their days working with master tapes of some of the world's great music, played back on some of the world's finest gear. Their only mandate is to transfer the music from master tape to LP and digital discs as faithfully as possible; their only real deadline is dictated not by time or monetary constraints but instead by when the job meets their company's own exceptionally high standards.

I recently visited Britton, LoVerde, and Executive Vice President John Wood at MoFi's headquarters in Sebastopol, CA, a small rural community about fifty miles north of San Francisco. The small suite of rooms they occupy with Michael Grantham (Managing Director of Business Affairs and A&R for the label), who was away the day of my visit, is one serious Boys' Club. The main



area is an eclectic clutter of retired audio relics (a Beogram 1700 turntable, Phase Linear 1000 Auto Correlator, Carver C-9 Sonic Hologram Generator), campy LP jackets, a six-inch-high *Saturday Night Live* Mr. Bill figurine, and, among plenty of other treasures, the obligatory shot of a bare-breasted babe.

This is clearly a place where boys just wanna

have fun. "We take the work seriously, but not ourselves," says LoVerde.

Indeed, over the next six hours my conversation with LoVerde and Britton bounces between some very serious technical talk and some seriously goofy banter—a sort of audiophile version of *Car Talk*'s Click and Clack.

### GUARDIANS OF TAPE

My tour began at the fireproof vault. Here is where the original master tapes Mobile Fidelity licenses and is responsible for live while in-house. Britton explains that the vault's contents are specified to be safe for up to 90 minutes in a fire, then dryly quips, "So after the fire department leaves we can say, 'Well, boys, the building burnt to the



## MUSIC - A Visit to Mobile Fidelity Sound Lab

### AN INTERVIEW WITH MOFI CHIEF JIM DAVIS

#### What drove you to resurrect MoFi?

Jim Davis: Mofi is the best-known, most collectible audiophile record label in the world. Its quality is second to none. It would have been a shame to let such a legacy die.

#### What shape was the company in when you bought it?

The company declared bankruptcy in late 1999. Its assets were purchased by a former employee, who decided to start a different media business. I was the lucky guy who bought it from him.

#### What were the challenges you faced putting it back together?

The mastering studios and equipment were largely intact and former employees still lived in the Santa Rosa area, so getting back into production was not extremely difficult. The hardest technical challenge was putting together a world-class vinyl cutting system. The original MoFi cutting lathe had been sold several years before. Another challenge was repairing relationships damaged by the original bankruptcy. In order to license high-quality

content record labels had to be convinced Mobile Fidelity would be a reliable business partner.

#### It seems you're back to something of a Golden Age with the titles you're releasing. What makes this possible?

A combination. We have carefully nurtured relationships at the major record labels that have resulted in access to top-level titles. Also, the seismic changes in the record industry in the past decade have made licensing a more attractive revenue stream for record labels.

#### How many titles are planning to release of the course of the year?

We have a fairly aggressive schedule planned for 2010. We expect to release at least two vinyl and two digital titles per month.

#### What are your future goals for MoFi?

Keeping up with cutting edge technology is a constant goal for MoFi. Who knows? There may even be a future for MoFi in high resolution digital downloads. **WG**

foundation but the tapes are fine!”

As important as MoFi's mastering work is, it quickly becomes evident that, ultimately, it is all about the tapes. It's a big responsibility to not only work with but to be the temporary guardians of the original master recording of, say, Sinatra's

Only *The Lonely*, Beck's *Sea Change*, or Pink Floyd's *The Dark Side of the Moon*. Britton uses the reference to Pink Floyd's classic—one of Mobile Fidelity's earliest coups—to dispel an old rumor claiming that Mobile Fidelity had accidentally recorded over a section of the

master tape. “But,” explains Shawn in his low-key drawl, “that would be impossible, because our tape machines are *playback* only—they don't even have a record head.”

While most masters arrive in good condition, there have been occasions when a tape arrives in a less than ideal state. “Our goal,” says LoVerde, “is to ensure that the tape leaves our facility in the same or better condition than it arrived in.”

#### AZIMUTH OBSESSION

While Britton and LoVerde are more than versed in the arcana of tape oxide formulations, or the benefits of natural whale oil v. synthetic lubricants, their passion becomes obsession when it comes to achieving correct azimuth alignment during the mastering process.

As it goes, their Tim de Paravicini-modified Studer A80 tape transport is one of the few to even possess a micrometer, which allows for on-the-fly azimuth adjustment of the playback head to the tape's recorded tracks. As a consumer I never before considered that optimum azimuth varies within the same tape; as an audiophile I was shocked to learn that most decks don't allow for dynamic azimuth alignment. But azimuth can and does change, often quite dramatically, as the guys demonstrated with The Cars' “Dance All Night,” from 1981's *Shake It Up*. That track alone has five tape splices—some of which last only 10 seconds. You'll hear incorrect azimuth in the high frequencies as a sort of “splattering” effect, and you can also see it on an oscilloscope, where the readout wavered crazily between tight and loopy as LoVerde tweaked the control.

As LoVerde ticked off a lengthy “pre-flight” [mastering] checklist, Shawn half whispered,

“Rob is fanatical about that stuff. I mean, I thought I had issues...”

#### NO COMPRESSION ZONE

Shunning any form of dynamic compression is another Mobile Fidelity hallmark, which is why the company's discs typically sound less loud than the original releases. “What a lot of people don't understand,” Rob said, “is that compression is a way of knocking things down—taking the louder parts down and the lower parts up, so that they're all more or less in the same range.”

A track-by-track computer printout of the dynamic range on Beck's *Sea Change*—the original CD next to MoFi's uncompressed gold disc—graphically illustrated this. Listening to the two discs makes it obvious that the music on the commercial release is relatively static and lifeless. There's no sense of air, and subtle details sound smashed together in a way that makes them seem without purpose, like so much noise. On Mobile Fidelity's version, the music has a natural flow, it breathes, and the smallest details add to the whole experience.

But mastering the gold CD of *Sea Change* was easy compared to cutting the lacquer from which the LP edition was pressed. That project took an astonishing five weeks to complete, largely because, as LoVerde recounts with some horror, he actually blew a cutter head during the transfer process, and had to figure out how to deal with all the ultrasonic high-frequency information on the original tape.

#### TRAIN WHISTLES AND HALF-SPEED MASTERING

Though Brad Miller and Herb Belkin co-founded

## MUSIC - A Visit to Mobile Fidelity Sound Lab

# MOFI'S GREATEST HITS

A brief list of some of Mobile Fidelity's most popular releases, past and present.



### THEN

*The Beatles Collection* (box set)  
 John Klemer: *Touch*  
 The Mystic Moods Orchestra: *One Stormy Night*  
 Pink Floyd: *The Dark Side of The Moon*  
*The Power and the Majesty*  
*The Rolling Stones* (box set)  
*Sinatra* (box set)  
 Frank Sinatra: *Nice 'n' Easy*  
 Steely Dan: *Katy Lied*  
 Supertramp: *Crime of the Century*

### NOW(ISH)

The Band: *Music From Big Pink*  
 Beck: *Sea Change*  
 The Byrds: *Mr. Tambourine Man*  
 John Lennon: *Imagine*  
 Milt Jackson Sextet: *Invitation*  
 Alison Krauss + Union Station: *Live*  
 Pixies: *Doolittle*  
 Ravel: *Daphnis et Chloe*, etc.  
 Linda Ronstadt: *Prisoner in Disguise*  
 Santana: *Abraxas*  
 Frank Sinatra: *Only The Lonely*

the MFSL label familiar to all audiophiles in 1977, what people may not know is that Mobile Fidelity had a previous life as a sound effects label.

As a teenager in the mid-1950s Miller would borrow his father's tape recorder to capture the sounds of locomotives. In 1958 he released a collection of these train tunes on the Mobile Fidelity label. He eventually recorded in stereo, and would release sound effects records for some years: *Steam Railroading Under Thundering Skies* (no doubt, one of the great "date" records

of its time), and one of the earliest known MoFis, *The Power and the Majesty*.

At some point Miller approached Stan Ricker, who was then cutting half-speed-mastered quadraphonic LPs for JVC. As Britton tells it, "Brad Miller asked, 'Hey, what would happen if we cut two-channel at half speed?' So Stan shut off the other channels to find out. The result is a much more finely etched groove."

Once Ricker was onboard, Miller decided to release music titles instead of just sound

effects records. "They approached Herb Belkin," continued Britton, "who was working for ABC/Dunhill. He wasn't really a golden-eared audiophile type but he was incredibly shrewd and had amazing connections." Once Belkin heard the results of half-speed-mastering he became a quick convert and a co-founder of MoFi, and helped license Steely Dan's *Katy Lied* and John Klemer's *Touch*. Shawn added, "Without him, how else would we have gotten Pink Floyd and the Beatles box set?"

### SUCCESS, DEATH, REBIRTH

While reissue labels are now commonplace, Mobile Fidelity was a pioneer, and for years one of the most successful and respected names in the business. It weathered and eventually embraced the changes the compact disc and its successors brought to the industry, as well as the rise of new competitors such as Analogue Productions and Classic Records.

But by late-1999 Mobile Fidelity was in trouble. The sudden closure of M.S. Distributing's music division left MoFi with essentially no inventory to sell, as well as with massive uncollectible receivables. Mobile Fidelity went bankrupt.

After its assets were purchased by Music Direct's Jim Davis (see sidebar interview), Mobile Fidelity slowly began to reemerge, and is now in something of a second Golden Age.

The original team—Grantham, Wood, and Britton—was reassembled to run the day-to-day operations; Ricker is still involved as a consultant, Tim de Paravicini was brought in to hot-rod all the company's gear, from the Studer deck to the cutting lathe, and the 33-year-old LoVerde joined the MoFi team in September

2007 after a four-year mastering stint at Sony Studios in New York.

Britton me told how the teenage LoVerde used to call him up—"He was so annoying," Britton recalls with a brotherly smile, before Rob cuts him off, "When I was a teenager and would hear a copy of a MoFi release versus the original, I wanted to know why it was better. And that made me want to understand mastering and get into this field. To be frank, this is my dream job." **tas**

# The 100 Best—and Best Sounding—LPs

The TAS Staff

## ROCK, POP, AND FOLK

Allman Brothers Band, *At Fillmore East*. Classic (two 180g LPs).

Duane, Greg, Dickey, et al. positively smoke on “Statesboro Blues,” “In Memory of Elizabeth Reed,” and “Whipping Post.” Recorded live at the Fillmore East in 1971.

Joan Baez, *In Concert*. Vanguard-Cisco (180g LP).

Now-iconic performances, recorded live at college concerts throughout 1961-62.

Joan Baez, *Joan Baez*. Vanguard-Pure Pleasure (mono 180g LP).

The album that carried the folk music craze of the late Fifties to a peerless peak. Joanie’s first and best, with gorgeous renditions of “Silver Dagger,” “Fare Thee Well,” “All My Trials,” etc.

Johnny Cash, *American IV: The Man Comes Round*. Lost Highway (two LPs).

The fourth of Cash’s elegiac, Rick Rubin-produced albums, with haunted and haunting versions of “Wichita Lineman,” “Tear-Stained Letter,” and the heartbreaking closer “We’ll Meet Again.”

Johnny Cash, *Johnny Cash At San Quentin*. Columbia-Speakers Corner (180g LP).

40-year-old live recording captures Cash at his rawest in front of a crowd of inmates.

Marc Cohn, *Marc Cohn*. Mobile Fidelity (180g LP).

Witty, urban-folksy, tuneful pop-rock by a gifted singer/songwriter.

Holly Cole, *Temptation*. Blue Note-Metro Blue (LP).

The distinctive Canadian songstress and her loyal combo in smoky, jazz-fired takes on the songs of Tom Waits.

Sam Cooke, *One Night Stand! Live At The Harlem Square Club*. Legacy-RCA (180g LP). What more could you want? The great Sam Cooke in a staggering live set with great sound.

Creedence Clearwater Revival, *Green River*. Analogue Productions (180g LP).

One of five classic Creedence LPs issued in a 2-1/2 year period that spawned almost twenty hit singles. These LPs capture that magic beautifully.

Crosby, Stills, Nash & Young, *Déjà Vu*. Atlantic-Classic (200g LP).

A classic: Great songs, great performances, great sound.

Bob Dylan, *Blonde on Blonde*. Columbia-Sundazed (180g mono LP).

One of Dylan’s finest, beautifully realized in the original and terrific-sounding mono mix.

Marvin Gaye, *What’s Goin’ On*. Mobile Fidelity (180g LP).

The passionate soul singer’s Motown classic, as relevant today as it was 38 years ago.

Jimi Hendrix, *Axis: Bold as Love*. Track-Classic (200g mono LP).

JH’s marvelous, trippy, and jazzy second LP reissued in the rare monophonic mix never sounded better.

Jimi Hendrix, *Band of Gypsys*. Capitol-Classic (200g LP).

Mature Hendrix in one of his most original sets, live at the Fillmore; the music and sound will astonish.

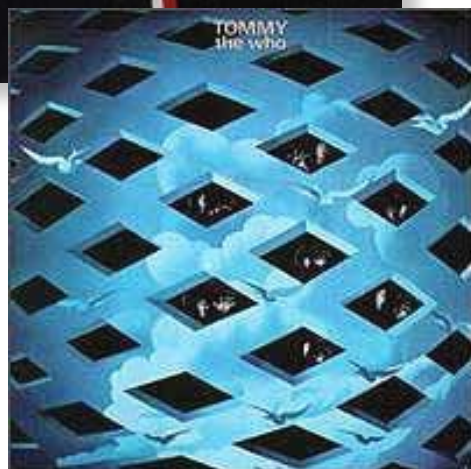
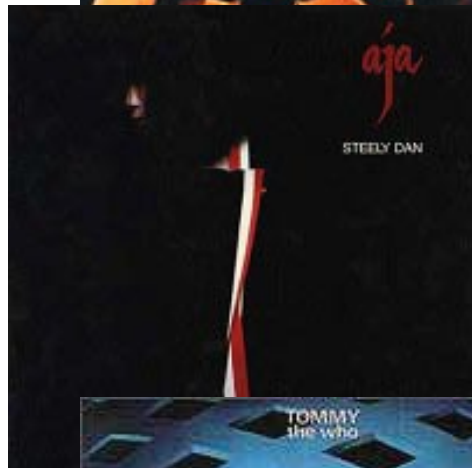
Lightnin’ Hopkins, *Lightnin’*. Prestige-Analogue Productions (two 45rpm LPs).

The great blues singer and guitarist in a terrific acoustic set, featuring lively covers of “Back to New Orleans,” “Mean Old Frisco,” and “You Better Watch Yourself.”





## THE 100 BEST-AND BEST SOUNDING-LPS



Mississippi John Hurt, *Today*. Vanguard-Pure Pleasure (180g LP).

The sweet-natured, soft-voiced old Mississippi bluesman does himself proud with “Candy Man,” “Make Me a Pallet on the Floor,” “Corrina, Corrina,” etc.

Ian and Sylvia, *Four Strong Winds*. Vanguard-Cisco (180g LP).

This great Canadian duo’s high-lonesome harmonies convey unvarnished emotion in “Katy Dear,” “Long Lonesome Road,” and “Royal Canal.”

Rickie Lee Jones, *Pop Pop*. Geffen-ORG (LP). From one of music’s most unpredictable artists, an offbeat 1991 collection of blues, jazz, and rock standards.

Alison Krauss and Union Station, *Live*. Mobile Fidelity (three 180g LPs).

The finest bluegrass singer in the world, backed up by her great band, mixes traditional and pop in a three-disc live set. Standouts include “Ghost in the House,” “Forget About It,” and “Down to the River to Pray.”

Led Zeppelin, *I, II, III, IV*. Atlantic-Classic (200g LPs).

Yo—here it is, the first four Zeppelin albums reissued with sound that will raise the hairs on the back of your neck!

John Mayall and the Bluesbreakers with Eric Clapton, *Blues Breakers*. Decca-Speakers Corner (180g LP).

The album that gave Clapton, coming off The

Yardbirds and heading for Cream, the showcase he needed. Terrific Brit-blues, with great covers of “All Your Love,” “Little Girl,” “Parchman Farm,” etc.

Joni Mitchell, *Blue*. Rhino-Warner (180g LP). Maybe Joni’s greatest. “Carey,” “Blue,” “California,” and “The Last Time I Saw Richard” are among the highest of the highlights.

Keb’ Mo’, *Keb’ Mo’*. Okey-Epic-Pure Pleasure (180g LP). His distinctive mix of traditional blues and pop make Keb’ Mo’s debut album special. Standouts include two Robert Johnson covers, “Come On In My Kitchen” and “Kind-Hearted Woman Blues.”

Van Morrison, *Astral Weeks*. Rhino-Warner (180g LP). The definitive version of Van the Man’s first solo record. Timeless, one-of-a-kind jazz-flavored performances, near mystical singing, amazing sound quality.

Roy Orbison, *The All Time Greatest Hits Of Roy Orbison*. Monument-Mobile Fidelity (two 180g LPs). The honey-toned tenor’s finest work, neatly packaged in this great sounding Mo-Fi reissue.

Pink Floyd, *The Dark Side of the Moon*. EMI (180g LP). Reissued for its 30th anniversary, Pink Floyd’s masterpiece in mind-bendingly superior sound.

Jimmy Reed, *Jimmy Reed at Carnegie Hall*. Vee Jay-Analogue Productions (two 180g 45rpm LPs). The title may be bogus (this was actually cut in a studio), but the music and sound are as authentic as the blues gets.

Santana, *Abraxas*. Columbia-Mobile Fidelity (180g LP and CD). Santana’s great and great sounding sophomore record reissued and better than ever, with left/right channels restored to original placement.

Steely Dan, *Aja*. Cisco (180g LP). Approved by Donald Fagan and Walter Becker, this is one of the best-sounding LP reissues in memory. The disc features no compression (unlike previous masterings), tremendous sense of air, and precise soundstage focus.

Stevie Ray Vaughan, *Texas Flood*. Pure Pleasure-Sony (two 180g LPs). The monster Texas guitarist knocked the Top 40 on its ear with this rampageous debut of blues covers and originals.

Jennifer Warnes, *Famous Blue Raincoat*. Shout-Cisco (three 200g 45rpm LPs). The 20th Anniversary reissue of Warnes’ stunning renditions from the songbook of Leonard Cohen. The Cisco 45 rpm LPs define the state of the art in vinyl playback.

Jennifer Warnes, *The Hunter*. Private-Cisco (200g LP). Warnes’ post-*Famous Blue Raincoat* release that also showcases her own vivid songwriting talents in an exquisite performance and recording.

## THE 100 BEST-AND BEST SOUNDING-LPS

Doc Watson, *Home Again*. Vanguard-Cisco (180g LP).

The best country guitar-picker of his day plays folk ballads, bluegrass, and gospel classics.

Muddy Waters, *Folk Singer*. Chess-Classic (200g LP).

“Good Morning School Girl,” “You Gonna Need My Help,” “Big Leg Woman,” and “Country Boy” highlight this famous blues album by Chicago’s most famous bluesman.

The Who, *Tommy*. Track-Classic (two 180g LPs). Classic’s reissue of *Tommy* must be heard to be believed—it brings this still amazing rock “opera” to astonishing life.

The Who, *Who’s Next*. Classic (200g LP). Arguably The Who’s best LP with arguably The Who’s best song—the bitter, timeless, and, alas, time-and-again-tested anthem “Won’t Get Fooled Again.”

Wilco, *Yankee Hotel Foxtrot*. Sundazed-Nonesuch (two 180g LPs).

A modern masterpiece, in glorious analog sound.

Wilco, *a ghost is born*. Rhino-Nonesuch (two 180g LPs).

The follow-up to YHF, *a ghost is born* conjures Wilco from deep in the vinyl grooves right into your listening room.

Sonny Boy Williamson, *Keep It To Ourselves*. Analogue Productions (180g LP).

The legendary Mississippi bluesman sings “Keep It To Ourselves” and “The Sky Is Falling.”

Neil Young, *Live at Massey Hall 1971*. Rhino-Classic (two 200g LPs).

This awesome sounding 1971 concert album from Neil’s vault features a solo Young with just a guitar, a piano, and a microphone, debuting some of his now-famous new songs of the time.

### CLASSICAL

Bach, Cello Suites. Starker. Mercury-Speakers Corner (three 180g LPs).

Starker’s incisive performances of these intimate, introspective works for solo cello are famously wonderful. So is the sound.

Bartók, Concerto for Orchestra. Reiner, CSO. RCA-Classic Records (200g LP).

Arguably the finest concertante work of the past century. Reiner’s and Chicago Symphony’s performance—in some of RCA’s finest sound—generates tremendous excitement.

Bartók, Divertimento for Strings. Barshai, Moscow Chamber Orchestra. King Super Analogue (180g LP).

Written just before the Second World War, this isn’t merely light and diverting; in the nightmarish second movement Bartók utters a riveting scream of horror at the coming catastrophe. The performance by Barshai and the MCO is perhaps the most powerful on disc.

Beethoven, *Kreutzer* Sonata. Heifetz, Smith. RCA-Cisco (180g LP).

While Heifetz’s quick tempi and flawless technique sometimes seem like mere showing off, they rise to the level of poetry in Beethoven’s



## It's good to have a friend in the record business.

We can understand why some audiophiles give up on vinyl. With so many bad sounding pressings out there, it gets frustrating wasting time and money on copies that disappoint once they hit your table. Since we evaluate dozens of records each day, we're able to find unique pressings of your favorite albums with the kind of sound you were hoping for. Try one of our guaranteed Hot Stamper LPs for a sonic experience that will remind you why vinyl is still king.

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## THE 100 BEST-AND BEST SOUNDING-LPS

astonishingly original, rhythmically innovative sonata. Great sound, too.

Beethoven, Violin Sonatas Nos. 5 and 9. Oborin, Oistrakh. Philips-Speakers Corner (180g LP).

Another superb *Kreutzer*, coupled with a wonderful Fifth, from two more passionate but no less accomplished players.

Brahms, Cello Sonatas. Starker, Sebok. Mercury-Speakers Corner (180g LP).

Starker plays with his usual intelligence and strength, and Sebok matches him note for note in these magisterial sonatas.

Brahms, Violin Concerto. Heifetz, Reiner, CSO. RCA-Classic Records (180g LP).

When this 1955 recording session was finished, Reiner and his orchestra agreed that they had never heard a better performance of Brahms' concerto. Neither have we. Though the violin is spotlighted, Heifetz's playing makes it worthy of the spotlight. One of the great RCAs.

Brahms, Violin Sonata No. 1. Abel, Steinberg. Wilson Audio (180g LP).

One of the best-sounding chamber music recordings ever. The two players are palpably present in your room, their instruments sized exactly right. Solid and direct performances of the Brahms G Major Sonata, plus works of Debussy and Bartók.

Cantaloube, *Songs of the Auvergne*. Davrath. Vanguard-Classic (two 200g LPs).

By consensus, this 1960s recording of Cantaloube's uncannily beautiful folk song

arrangements is definitive. One of those rare instances when the finest performance of a work just so happens to be—by a wide margin—the best-sounding.

*Danses Anciennes de Hongrie et Transylvanie*. HM-Speakers Corner (180g LP).

Unusual baroque-period instruments—the bombarde, or bagpipe, for instance—make this collection of Eastern European dances especially treasurable.

Debussy, Three Nocturnes. Paray. Mercury-Speakers Corner (180g LP).

Three lovely, languorous impressions of clouds, festivals, and the seductive song of the sirens. Paray's idiomatic performances are given some of Mercury's most exquisite sound.

Hindemith, Violin Concerto. Fuchs, Goossens, LSO. Everest-Classic Records (180g LP).

A big, tuneful concerto beautifully played, and captured in clear, spacious, detailed, dynamic sound.

Holst, *The Planets*. Mehta, LA Philharmonic. Decca-Speakers Corner (180g LP).

Famously well-recorded rendition of the colorful Holst warhorse, with superb timbre, dynamics, and low end.

Mussorgsky, et al., *Witches' Brew*. Gibson, NSOL. RCA-Classic Records (200g LP).

Orchestral showpieces by Mussorgsky, Saint-Saëns, et al. The sound is as spectacular as Golden Age stereo gets.



Rachmaninoff, Piano Concerto No. 3. Janis, Dorati, LSO. Mercury-Speakers Corner (180g LP).

Gorgeously tuneful, ferociously challenging, unabashedly Romantic, the Rach 3 has been assayed by most of the greats. None plays it better than Byron Janis does here. And none gets superior sound.

Rachmaninoff, *Symphonic Dances*. Johanos, Dallas. Turnabout-Analogue Productions (180g LP).

This, the last and best of Rachmaninoff's orchestral works, has an almost Prokofiev-like feel to harmonies, dynamics, and rhythms. Johanos' performance may not be the very best recorded to disc, but it is one of the best sounding.

Ravel, *Daphnis and Chloe* Suite No. 2. Paray/Munch. Mercury-Speakers Corner (180g LP).

This relatively little-known Paray LP is one of the finest Mercurys. The suites, extracted by Ravel from his ballet for Diaghilev, are diaphanously beautiful, and so are the sonics.

Rimsky-Korsakov, et al., *Espana!* Argenta, LSO. Decca-Speakers Corner (180g LP).

Colorful and exciting "Spanish" music, played with genuine exuberance by Argenta and the LSO and recorded in some of Decca's most vivacious sound.

Schoenberg, Five Pieces for Orchestra. Dorati, LSO. Mercury-Speakers Corner SR (180g LP).

A landmark of early twentieth-century music, these five highly chromatic, intensely evocative



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pieces for orchestra are a headfirst plunge into the realms of dissonance, dream, and the unconscious. Dorati's performance is superb, as are Mercury's sonics.

Shostakovich, String Quartet No. 8. Borodin Quartet. Decca-Speakers Corner. (180g LP). Shostakovich's most celebrated quartet is intensely sad and elegiac; the Borodin Quartet plays with somber beauty.

Sibelius, Symphony No. 2. Royal Philharmonic, Barbirolli. Chesky (LP). Perhaps the greatest performance on record of the glorious Finnish masterpiece, captured by sonic wizards Wilkinson and Gerhardt at fabled Walthamstow Hall.

Stravinsky, *Firebird* Suite. Dorati, LSO. Mercury-Classic Records (200g LP). Arguably Mercury's single most beautiful recording. The sound is stunning, and the music, taken from Stravinsky's ballet score, exquisite and exquisitely well played.

### JAZZ

Cannonball Adderley, *Somethin' Else*. Blue Note-Analogue Productions (two 180g 45rpm LPs). Though the personnel is mostly different, Adderley teams again with Miles Davis for something of a modal follow-up to *Kind of Blue*.

Louis Armstrong, *Satchmo Plays King Oliver*. Audio Fidelity-Classic (180g LP). Classic New Orleans jazz in stunningly lively sound.



Art Blakey And The Jazz Messenger's, *The Big Beat*. Blue Note-Music Matters (two 180g 45rpm LPs).

The Messengers soar with Lee Morgan and Wayne Shorter. The sound of this reissue will floor you.

Tina Brooks, *Back To The Tracks*. Blue Note-Music Matters (two 180g 45rpm LPs). In a short career, Brooks proved to be an imaginative composer, leader, and sideman. He's worth knowing.

The Ray Brown Trio, *Soular Energy*. Concord-Pure Audiophile (two 180g 45rpm LPs). A gorgeous set led by one of the great bassists, in legendarily terrific sound.

Kenny Burrell, *Midnight Blue*. Blue Note-Analogue Productions (two 180g 45rpm LPs). Famously wonderful sounding, *Midnight Blue* is a classic, and as moody as the title suggests.

Donald Byrd, *The Cat Walk*. Blue Note-Music Matters (two 180g 45rpm LPs). Lyrical and inventive, trumpeter Byrd is joined by a superb lineup, in lifelike sound.

The Sonny Clark Memorial Quartet, *Voodoo*. Black Saint (LP). Led by John Zorn, this terrific quartet tears through seven Sonny Clark compositions, captured in a vivid, dynamic recording.

John Coltrane, *Blue Train*. Blue Note-Analogue Productions (two 180g 45rpm LPs). The music speaks for itself, and these top even other fine reissues.

John Coltrane and Johnny Hartman. Original Recordings Group (two 180g 45rpm LPs). From a relatively new player in the reissue game, this superb pairing of like-minded musicians finds Coltrane at his most lyrical.

The Bill Cunliffe Trio, *Live at Bernie's*. Groove Note (LP). Ex-Sinatra sideman and friends play jazz standards. Knockout sonics available on direct-disc LP or silver discs.

Miles Davis, *Kind of Blue*. Columbia-Classic (200g LP). For many this is the desert island jazz record.

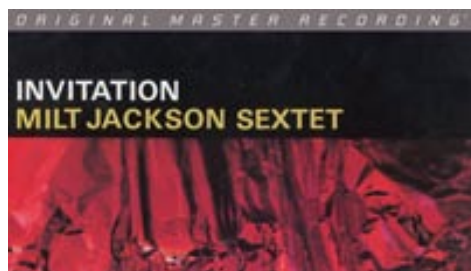
Miles Davis, *Sketches of Spain*. Columbia-Classic (200g LP). Miles and Gil Evans team for another great set, with more multiple-choice editions, including an upcoming Classic 4-LP 45rpm version.

Eric Dolphy, *Out To Lunch!* Blue Note-Music Matters (two 180g 45rpm LPs). The great multi-instrumentalist shines in his own compositions, beautifully recorded months before his death.

Duke Ellington, *Ellington Jazz Party in Stereo*. Columbia-Classic (180g LP). The title says it all: superbly detailed sound, playful big band jazz, great soloists, and Ellington.



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Duke Ellington and Ray Brown, *This One's for Blanton*. Analogue Productions (two 180g 45rpm LPs).

A remarkable duet presented in “you-are-there” sound.

Bill Evans, *Sunday at the Village Vanguard*. Riverside-Analogue Productions (180g LP).

The classic jazz piano trio disc, captured in a superb live recording.

Gil Evans, *Out of the Cool*. Impulse-Analogue Productions (two 180-gram 45rpm LPs).

Showcasing Gil Evans’ brilliance as a writer

and arranger, a set of lovely, cerebral jazz meditations in excellent sound.

Ella Fitzgerald, *Sings Songs From Let No Man Write My Epitaph*. Verve-Classic (200g LP).

This intimate and excellent recording pairs the great singer with only a piano accompanist. “Black Coffee,” “Angel Eyes,” and more never sounded so good.

Ella Fitzgerald and Louis Armstrong, *Ella and Louis*. Verve-Speakers Corner (180g vinyl).

Ella and Louis live again in vivid sound—’nuff said!

Dexter Gordon, *Dexter Calling*. Blue Note-Analogue Productions (two 180g 45rpm LPs).

One of this great tenor’s finest sessions, the sound really pops on this modal-themed outing.

Dexter Gordon, *One Flight Up*. Blue Note-Cisco (180g LP).

With Donald Bryd on trumpet, a gorgeous session in sumptuous sound.

Billie Holiday, *Songs for Distingué Lovers*. Verve-Classic (200g LP).

A rare stereo Holiday album, this late recording finds her in great form with a small group and superb sound.

Milt Jackson Sextet, *Invitation*. Riverside-Mobile Fidelity (180g LP).

Surrounded by a small group of exceptional players, Jackson and his vibes spin pure beauty.





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Jackie McLean, *Jackie's Bag*. Blue Note-Analogue Productions (two 180g 45rpm LPs). McLean shows great talents as composer, arranger, and soloist in a series of rhythmically complex tunes that leave you just a little off guard.

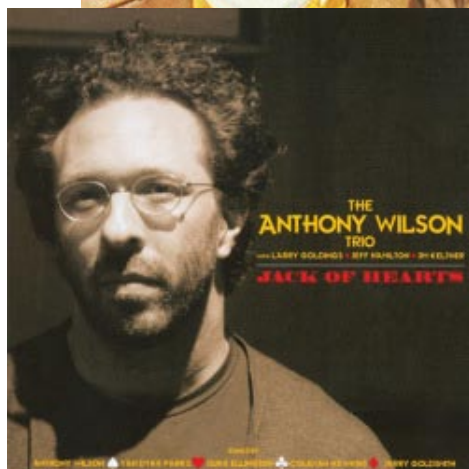
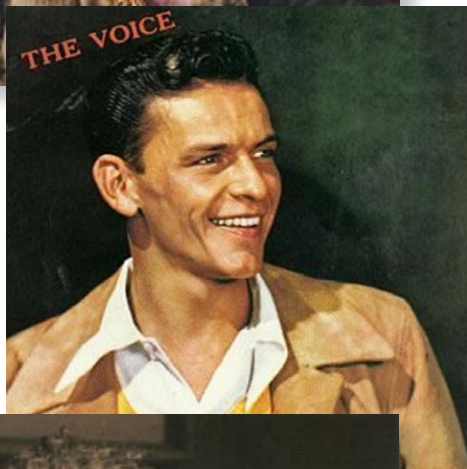
Gil Melle, *Patterns in Jazz*. Blue Note-Music Matters (two 180-gram 45rpm mono LPs). The first 12-inch platter Rudy Van Gelder recorded for Blue Note is a musically delightful and little-known gem. The mono sound is focused, warm, and beautiful.

Charles Mingus, *Ah Um*. Columbia (180g rpm LP). Columbia did a terrific job with this recent edition of one of Mingus' finest and funkiest albums.

Charles Mingus, *Mingus Mingus Mingus Mingus Mingus*. Impulse-Analogue Productions (two 180g 45rpm LPs). Mingus gathers a 10-piece group to revisit some of his very best compositions—featuring the great Eric Dolphy.

Thelonious Monk Septet, *Monk's Music*. Riverside-Analogue Productions (two 180g 45rpm LPs). Yo! Monk, Coltrane, and Coleman Hawkins, in a superb set with astonishing sound.

Thelonious Monk Quartet with Johnny Griffin, *Thelonious in Action*. Riverside-Analogue Productions (two 180g 45rpm LPs). Recorded at the Five Spot, one of the funkiest, fieriest, and most alive sounding of all jazz records.



The Wes Montgomery Trio, *A Dynamic New Sound*. Riverside-Analogue Productions (two 180g 45rpm LPs). A terrific set with organ and drums, this legendary jazz guitarist captured in a rich sonic brew.

Lee Morgan, *Candy*. Blue Note-Music Matters (two 180g 45rpm LPs). One of the great classic Blue Note LPs, Music Matters' mono reissue sounds absolutely fabulous.

Oliver Nelson, *The Blues and the Abstract Truth*. Impulse-Speakers Corner (180g LP). A gorgeous record—wonderful playing, great tunes, luscious and detailed sonics. Soon to be issued by Analogue Productions on 45rpm LP.

Horace Parlan, *Speakin' My Piece*. Blue Note-Music Matters (two 180-gram 45rpm LPs). This truly beautiful record displays this funky and soulful pianist's bluesy side.

Art Pepper, *Meets The Rhythm Section*. Contemporary-Analogue Productions (180g LP). From Miles Davis' classic quintet (Jones, Chambers, Garland), one of the greatest sounding of all jazz reissues.

Sonny Rollins, *Our Man in Jazz*. RCA-Classic (180g LP). Rollins at his best, improvising in concert with Don Cherry and a fine rhythm section in lifelike sound.

Sonny Rollins, *Way Out West*. Blue Note-Analogue Productions (180g LP). Rollins dons his chaps for this classic jazz makeover of cowboy tunes. Awesome sound.

The Horace Silver Quintet Plus J.J. Johnson, *The Cape Verdean Blues*. Blue Note-Music Matters (two 180g 45rpm LPs). Arguably Silver's crowning achievement, this hard-bop brew of Cape Verdean/Portuguese folk music and blues never sounded better.

Frank Sinatra, *Only the Lonely*. Mobile Fidelity (180g LP). This glorious sounding mono reissue unveils Sinatra's unmatched phrasing, impeccable timing, and emotional expressiveness.

Frank Sinatra, *The Voice*. Columbia-Classic (180g LP). Originally released in 1955, this mono recording captured Sinatra's voice at its most lovely and lyrical. This reissue is exceptionally intimate and natural sounding.

Gabor Szabo, *Spellbinder*. Euphoria-Sundazed (LP). In more than good enough sound, Budapest-born Szabo's gypsy-style standards made a huge impression on Carlos Santana.

Anthony Wilson Trio, *Jack of Hearts*. Groove Note (two 180g 45rpm LPs). With Wilson on guitar, accompanied by drums and a Hammond B-3, Groove Note has a stunningly real sounding and funky in-the-studio success.