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Contents

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Features

- [From the Editor](#)
- [On The Horizon](#)
- [The 10 Most Significant Turntables of All Time](#)



Turntables and Record Players



- [Clearaudio Concept/Pro-Ject RM9/Thorens TD160](#)
- [Clearaudio Ovation](#)
- [VPI Classic 3](#)
- [JR Transrotor Darkstar](#)
- [Clearaudio Innovation Wood](#)
- [SME 20/3](#)
- [Acoustic Signature Ascona](#)
- [Basis Inspiration](#)
- [AAS Gabriel Mk.II](#)
- [Walker Audio Proscenium Black Diamond MK III](#)

Phono Cartridges



- [Audio-Technica survey](#)
- [Denon/Lyra/Ortofon/Benz](#)
- [Sumiko Palo Santos](#)
- [Airtight PC-3](#)
- [Benz LP S-MR, H&S Ice Blue, Clearaudio Goldfinger Statement](#)
- [Benz and Clearaudio factory tours](#)

Phonostages



- [Musical Fidelity V-LPS/Clearaudio Basic Plus](#)
- [Musical Surroundings SuperNova](#)
- [Parasound JC 3](#)
- [Zesto Andros PS1](#)
- [Sutherland 20/20](#)
- [Pass XP-25](#)
- [Soullution 750](#)

Vinyl Accessories



- [Spin Clean Record Cleaning Machine](#)
- [Okki-Nokki Record Cleaning Machine](#)
- [Clearaudio Double Matrix Professional Record Cleaning Machine](#)

Music Features



- [Behind the Scenes at Mobile Fidelity](#)
- [The 100 Best Sounding Vinyl Records](#)

Our Top Picks



- [Top Turntables](#)
- [Top Cartridges](#)
- [Top Phonostages](#)

Click on one of the links above to jump to that section, feature or review.

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FROM THE Editor

Eating My Words

“Superlative turntables won’t be around forever. With LPs continuing to decline in availability, fewer and fewer manufacturers will offer high-end turntables. If you buy a turntable good enough to keep you going for a few years with the idea of upgrading later, your upgrade options may be severely limited. By buying an excellent system now, you can probably keep it for the rest of your life. The turntable you buy now may be the last one you ever need. Make it a good one. . . Today’s turntables, tonearms, and cartridges are at the pinnacle of technical and musical achievement . . . It’s ironic that LP playback hardware’s great progress has coincided with the LP’s demise.”

I wrote those words in 2004 for the Third Edition of *The Complete Guide to High-End Audio*. Happily, I couldn’t have been more wrong. Back in 2004, who would have thought that in 2012 LP sales would be *doubling* every year, that dozens of companies would offer an extensive range of high-performance turntables priced from \$299 to more than \$100,000, that much of your favorite music would be newly available on vinyl, and that the products to play back a record would have improved so dramatically?

Given the explosion of vinyl playback in the past five years, I think that it’s finally time to drop the phrase “the resurgence of analog.” The boom in LPs and the products to play them has long since passed the “resurgence” phase and is now a full-fledged integral component of the high-end landscape. Further evidence that LP playback has become just another widely accepted path toward musical pleasure—and an important business segment—was on display at this last CES, where I saw and heard a flood of exciting new analog products. Neil Gader previews many of these new products in this issue’s On The Horizon.

Another sign of analog’s transformation over the past few years hit me over the head as I was preparing to update and revise the Third Edition of *The Complete Guide to High-End Audio* for a Fourth Edition release. I thought that the chapter on turntables, cartridges, tonearms, and analog accessories, last updated in 2004, wouldn’t need much work. After all, how much could have changed in this 100-year-old technology? A cursory skim of the chapter made me realize just how radically different today’s analog world was compared with that of 2004. Today’s music lover has never had so many choices in turntables, cartridges, accessories, and music on vinyl. What’s more, the fierce competition for the audiophile’s turntable budget has motivated manufacturers to pour significant effort into making their products outperform those of their competitors. What else explains the availability of a turntable (the Pro-Ject Debut Carbon—see p. 9) with a carbon-fiber tonearm, Sorbothane isolation feet, heavy platter, a suspended motor system, and a high-quality phono cartridge—all for \$399? Oh, and it comes in seven high-gloss colors at no extra charge.

At the other end of the scale, today’s state-of-the-art turntables, cartridges, and phonostages are capable of delivering a staggeringly great musical experience. Even compared with just ten years ago, today’s vinyl playback systems extract far more information from an LP’s grooves than anyone thought possible. And it just keeps getting better and better. It’s mind-blowing to think that this ancient technology, in which a sliver of polished diamond is dragged through a squiggle in a piece of plastic, could undergo such a renaissance in the 21st century. Or that this relatively primitive mechanical system would deliver better sound quality than today’s sophisticated digital technology.

One thing’s for certain: It’s never been a better time to buy your first turntable or upgrade your existing system, go on a record-buying spree, and enjoy your favorite music on vinyl as never before.

Robert Harley

Click here to turn the page.

ON THE HORIZON

New Products Coming Your Way

Neil Gader



Rega RP6 Turntable

The RP6 debuted at CES and replaces the popular P5. It features a two-piece glass flywheel platter, aluminum subplatter assembly, double-brace technology, 24V low-noise motor, and TT-PSU power supply with push-button speed control. Completing the package is the newly redesigned RB303 tonearm with upgraded counterbalance weight and a newly designed tube for increased rigidity to the bearing housing, arm carrier, and head shell. The intelligent redistribution of mass ensures an arm that will exhibit fewer points of possible resonance. Available in four high-gloss colors—red, white, black, and green, and other colors available on special order basis.

Price: \$1495 w/out cartridge, \$1990 w/Exact cartridge pre-mounted. soundorg.com

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ON THE HORIZON



Transparent MusicLink Phono Cables

Transparent Audio offers phonograph cables for every type of music system from the most basic to the most sophisticated. Starting at \$195 for a one-meter pair, every Transparent MusicLink Phono Cable has custom-calibrated filter networks that reduce ultra-high frequency noise. Expect greater dynamics and more low-level music and spatial information with Transparent's noise-reducing filter technology. RCA or XLR terminations are available on all MusicLink Phono Cables. Transparent also provides a premium DIN-to-RCA tonearm harness. Transparent's upgrade program allows Transparent Phono Cable owners to step up to the next performance level easily and affordably.

Price (depends on length and termination): MusicLink Ultra Phono Cable, \$1250; MusicLink Super Phono Cable, \$695; MusicLink Plus Phono Cable, \$360 Coming soon—the all-new MusicLink Phono, \$195. transparentcable.com



The Funk Firm F-XR II Tonearm

The Funk Firm's new pickup arm, the F-XR II is a patented design that incorporates an X-beam inside the arm that reduces resonances by as much as 25dB over conventional designs. It's been rewired internally with aerospace-rated PTFE cabling. Additionally the F-XR II has upgraded the pivot bearings to rigorous ABEC 7, which further reduces friction and the load on the stylus. The F-XR II uses a Rega-style mounting system with VTA adjustment and an included cartridge shell. An all-new easy-mount cartridge system encourages frequent cartridge swaps. The tonearm is also available with straight-through wiring from cartridge-to-phono plug or alternatively, with a five-pin connector and a separate detachable lead of your choice.

Price: \$1995. thefunkfirm.co.uk



AMG Viella 12 Turntable

Precision engineering and classic design are embodied in the Viella 12, the first turntable from AMG (Analog Manufaktur Germany). All machining is done at a bespoke multi-story factory located north of Munich, where parts for some of the world's most highly regarded turntables have been manufactured for over a decade. From bearings to platter to plinth, the table is blueprinted with the latest computer-aided-design techniques and built with CNC machines along with such classic tools as custom lathes and drill presses. Design highlights include a solid aluminum plinth, two-piece 24-pound aluminum platter with decoupled spindle and integral vinyl record mat, belt drive with decoupled Lorenzi DC motor, and an outboard power supply. The AMG 12" tonearm features a patented dual-pivot bearing, magnetic anti-skating, adjustable VTA and azimuth. Optional hardwood trim skirts complete this high-performance package.

Price: \$16,500 with tonearm. musicalsurroundings.com

ON THE HORIZON



Acoustic Signature Tango Ultimate Phono Preamp

The Acoustic Signature Tango Ultimate phonostage features components that are hand-selected and measured for a deviation of less than 1%. In addition, matched-pair transistors are used where applicable to ensure identical performance per channel. The German manufacturer, known for their turntables, goes to these lengths to extract the most linear output signal possible from the Tango Ultimate. Specially designed transistors are installed on the printed circuit board by using the latest CAD technology and star-shaped mass technology. A power-supply circuit supplies the sensitive amplifier circuit with filtered direct current. The output stage is an extremely fast single-ended Class A MOSFET type with very low output impedance to drive any cable on the market. Gain is rated at 41dB for mm, 57dB for mc, and 69dB for low-output mc's—all selectable from the front panel. Chassis construction is a rock-solid housing that is milled from pure aluminum.

Price: \$2990. acoustic-signature.com

Audience Au24e Phono Cable

Audience has conducted considerable research into the electrical characteristics of phono cables and has concluded that given the different internal electrical characteristics of phono cartridges a single cable cannot serve as an optimal tonearm-to-phonostage interface. To that end, Audience offers vinyl lovers a choice of three impedance-matched phono cables. Each model is designed to carefully optimize the electrical characteristics of the cartridge to the cable and to preserve signal flow to the phonostage without detrimental influences. There's Low Z for moving-coil cartridges with internal resistance up to 30 ohms, High Z for moving-coil cartridges with internal resistance between 30 and 100 ohms, and MM for all cartridges with internal resistance above 100 ohms, which includes high-output moving-coil cartridges rated at 47k ohms and most moving-magnet or moving-iron models. All Audience phono cables are constructed using the highest-purity oxygen-free continuous-cast copper.

Price: MM, \$479-\$729; High/Low Z, \$1090-\$1295 depending on termination. audience-av.com



Bergmann Audio Magne Turntable

Bergmann Audio of Denmark has just introduced the Magne, a high-end entry-level turntable powered by air-bearing technology—just like its more expensive stablemate, the Sindre. The Magne's platter is supported by a thin film of dry, smoothly flowing air, creating silent, friction-free movement and minimizing bearing noise and yielding exceptional stability. The Magne also includes a linear-tracking air-bearing tonearm, which is carbon-damped internally and features a silent air supply, an external power supply, and a heavy clamp to stabilize records. Its plinth is a solid block of high-density composite topped by an 18.5-pound aluminum platter, a 3.7-pound aluminum subplatter, and a polycarbonate mat, all resting on three sturdy adjustable feet. A powerful belt-driven DC motor regulates record speeds, including finely tunable settings for 33 and 45 rpm.

Price: \$12,000. aaudioimports.com

DaVinci Master's Reference Tonearm Virtu

The vaunted Swiss precision of the Master's Reference Tonearm Virtu is exemplified in its exotic four-point gimbaled magnetic-sapphire bearing and the stunning original design of the hybrid arm tube—a structure composed of sections of ebony wood, steel, and aluminum, which terminates into a classic SME adapter. Other features include improved VTA and azimuth adjustments. Later this year additional optional accessories will be made available including exchangeable tonearm tubes that have been designed to best match the user's cartridge selection.

Price: \$12,000. da-vinci-audio.com



ON THE HORIZON

B.M.C. MCCI Phono Preamp

B.M.C.'s Phono MCCI is a truly balanced, global feedback-free, passively equalized moving-coil phono preamplifier with the exceptional Current Injection input and LEF single-ended Class A output stages. It features Neumann corrected RIAA, or traditional RIAA plus three selectable gain options and a subsonic filter. There are also RIAA options to tailor low-end extension and warmth. The MCCI features ultra-low noise transistors. The power supply capacitors feature an unusual "Balanced Current" configuration. Premium selected parts abound including polystyrene capacitors, metal-thin-film resistors with 0.5% tolerance, and a core module that is built on a fully gold-plated 4-layer PCB that has its own copper-plated-iron shielding box. The end result is precision analog performance throughout the musical spectrum.

Price: \$3890. bmc-audio.com



Pro-Ject Debut Carbon Turntable

The original Debut set new standards for quality and cost-friendliness when it was introduced in the early 90s. Its successor, the Debut Carbon, raises the bar with improvements that include a carbon tube for the tonearm for increased stiffness and an increase in platter size and weight to realize even smoother rotation. The motor suspension is a completely new design conceived to reduce the transmission of motor vibration to the plinth. Pro-Ject has incorporated an addition to the traditional 4-point "O"-ring suspension by adding two isolation feet made of Sorbothane—a material commonly used only in very sophisticated turntables. It's also fitted with high-quality RCA connection terminals, which allow the user to experiment with and upgrade to better cables. The Debut Carbon is offered in high-gloss black or shiny red, green, blue, yellow, silver, or white as no added-cost option. The Ortofon 2M Red cartridge is included as standard. Additionally, there will be a version with phonostage and USB D/A converter on-board for customers who have either no phono input on their hi-fi system or want to upload their LPs to a computer.

Price: \$399; USB version, \$TBD. sumikoaudio.net



Ortofon MC Anna Phono Cartridge

Ortofon has a long tradition of paying tribute to persons who have been highly influential within the high-end audio and music cultures. Continuing this custom Ortofon dedicates its new flagship cartridge, the MC Anna, to the virtuoso opera singer Anna Netrebko. The MC Anna also introduces a newly-improved wide-range armature-damping system that offers more consistent movement. System resonances are also damped by the use of TPE (Thermo Plastic Elastomer) compound which comprises the bottom cover assembly. As in the former MC A90 and Windfeld cartridges, the MC Anna uses Ortofon's Replicant 100 diamond, known for its thin, light profile and extraordinarily large contact surface. The cartridge housing is titanium, using Ortofon's SLM (Selective Laser Melting) manufacturing technique—a process that allows for precise control of the density of the body material and extremely high internal damping. Output impedance of 6 ohms and a low-to-medium output voltage of 0.2 mV make MC Anna a perfect partner for most moving-coil phono preamps and step-up transformers.

Price: \$8499. ortofon.us



Lyra Atlas Phono Cartridge

The Atlas, Lyra's new flagship cartridge, is a medium-weight and medium-compliance, low-impedance moving coil with diamond-coated solid-boron-rod cantilever. It's also the world's first asymmetric design, whereby different shaped structures on the left and right side portions of the cartridge suppress the formation of standing waves and thus reduce resonance-induced colorations. It also offsets the front magnet

so that vibrations from the cantilever can be drained away once they've been converted into electrical signals—control over spurious resonances is the primary goal. Rigidity of the cantilever structure has been increased over the Titan and the signal coil is new. Finally the output voltage has been increased, yet coil windings have been reduced, lessening mass. Like the Titan and Olympios, the body hand-made from a solid billet of titanium. Weight 11.6gm.

Price: \$10,000. audioquest.com



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The 10 Most Significant Turntables of All Time

For our special analog-focus issue, I asked our staff and senior writers to name and rank the ten turntables that have had the greatest impact on high-end audio. This isn't a list of the best-sounding turntables, but those that introduced new techniques, influenced other designs, achieved wide commercial success, or represented a performance breakthrough at the time. I then tallied the votes from each writer to arrive at the final list and ranking of the Ten Most Significant Turntables of All Time. Each contributor's own list appears at the end of this article. Let the controversy begin! -Robert Harley



Walker Black Diamond Mk III (1991-2012)

Like its three predecessors, the latest and greatest version of the Walker 'table, the Black Diamond III, is in many ways the summation of a lot of brilliant thinking on the part of previous turntable and tonearm designers. Its air-bearing, viscous-damped, diamond-hard, straight-line-tracking ceramic tonearm, its massive air-bearing platter (which effectively isolates the platter from airborne and structure-borne resonance), and its air-bearing feet borrow bits and pieces from the 'tables and arms of SLT pioneers like MapleknoII, ET, and Forsell. But the Walker isn't a mere grab bag of other people's great ideas; it is a beautifully engineered playback system in which each element has been rigorously tested to work superlatively well as *part of* that system. The apotheosis of the long line of tangential-tracking record players that preceded it -Jonathan Valin

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The 10 Most Significant Turntables of All Time

09 WELL-TEMPERED TURNTABLE (1979)

Photo Courtesy of Audiocircle.com

William Firebaugh's stroke of genius wasn't so much the ingenious "four-point" bearing used in this belt-driven turntable as it was the extraordinary arm that came with it. Firebaugh's Well-Tempered Tonearm managed to solve the universal problem of bearings "chattering" in their races (and thereby feeding vibration back down the armtube to the stylus) by simply eliminating the bearings. The arm (an aluminum or carbon-fiber tube filled with sand and suspended, via monofilament rigging, on a mount whose disc-like foot was submerged in a cup of viscous silicone) is one of the truly original ideas in latter-day high-end design. Half swingset, half trapeze, the Well-Tempered worked purely by means of torsion and damping. There had been nothing like it before, and, frankly, there has been nothing like it since. A *sui generis* masterpiece. —Jonathan Valin



07 PANASONIC SP-10 (1970)

Photo Courtesy of audioklassiks.com

Newbies may not know this but there was once a battle between proponents of turntables with belt-driven platters and proponents of turntables with directly-driven platters. For the most part, belt-drive 'tables won out (although there are to this day notable exceptions), but when the issue was still very much in doubt, this massive, beautifully made turntable from Panasonic (one or two of which could be found in just about every radio station and recording studio in the country) was the very model of direct-drive excellence. Its durability, imperturbability, precise speed accuracy, deep bass response, and low wow and flutter put many of the flimsier belt-drives to shame—and it came with a tunable arm that was itself novel and not-bad-sounding. The best of the many other direct-drives that preceded and followed it and the great-grandfather of some of today's remaining handful of direct-drive 'tables (like the Grand Prix Audio Monaco). —Jonathan Valin



08 ORACLE DELPHI (1979)

"As I saw it," said the Oracle's designer Marcel Riendeau back in 1979, "the key [to vinyl playback] was not for the stylus to play the record; it was for the stylus to play the groove!" To accomplish this, Riendeau had to find a way to keep the stylus *in* the groove. Thus, anything that might disturb its composure as it traveled down that long and winding road to end-of-side silence was engineered (beautifully) out of the Delphi. While a few items have been improved on the latest Mk VI version of this still-in-production classic, Riendeau's core philosophy of "groove isolation" and the core mechanisms he used to implement this philosophy remain the same. These include the use of three, tunable, bell-shaped springs to suspend the subchassis, platter, and arm, and an acrylic platter and plinth that are still eye-catchers (as well as resonance-stoppers). —Jonathan Valin



The 10 Most Significant Turntables of All Time

GARRARD 301 (1954)



Dating back to 1721 when appointed jewelers charged with care and maintenance of the crown jewels, including the royal crown itself, Garrard and Company manufactured precision range-finders for the British army in the First World War. Changing its name to Garrard Engineering and Manufacturing Limited, it developed a spring motor widely used by major gramophone companies. In 1954 Garrard introduced the 301 turntable for the serious high-fidelity market, the first British turntable to support all three commercial LP formats (78, 45, and 33). It used a rim drive and came with plinth, platter, and motor only, the consumer supplying base, arm, and pickup. The 301 eventually became a classic, commanding very high prices on the used market, where Loricraft has made a cottage industry out of restoring it to a cadre of extremely happy owners. —Paul Seydor

GOLDMUND STUDIO (1985)



In its reign, from circa 1985 through the next decade, this no-holds-barred design showed what could be done in the way of a 'table that had none of the audible flaws of various preceding products. Indeed, it was clean in its sound, in its freedom from audible artifacts (and, lest we forget, it was a direct-drive unit, perhaps the only one ever to have the sonic advantages of a belt and none of the colorations of virtually every other direct drive). Ironically, it reached deeper into the bottom octave, and with more definition, purity, and "slam" than its competitors, even with the direct drive. With this 'table, and its superior freedom from sonic anomalies, you could (and we did) hear more deeply into what was going on in an LP, and thus in the recording. In many respects, its performance was not surpassed until the advent of magnetic-drive designs in the past five-or-so years. It was a revelation. —Harry Pearson

THORENS TD-124/TD-160 (1957)



Introduced just three years after Garrard's 301, the TD 124—"TD" from "*tourney-disque*," French for turntable—was regarded by most serious audiophiles and reviewers as the best turntable in the world during its decade-long run, especially when paired with an SME 3009 arm. It trumped the Garrard in specifications, features (adding 16 rpm to the then standard three), and design sophistication (a novel touch: the belt that isolated motor vibrations from the idler wheel and thus the platter). Like the 301, the 124 required the end user supply base, arm, and pickup (though Thorens offered drilled boards for some popular arms), and it is also highly prized on the second-hand market. For many, Thorens' popularly priced TD-160 replaced the AR XA as an upscale alternative for an integrated (owing to its superior arm). —Paul Seydor

The 10 Most Significant Turntables of All Time

SOTA STAR SAPPHIRE (1981)

David Fletcher's design used a combination of traditional methods and some important innovations to reframe and address the core problems of vinyl replay better than anyone else. Like AR and Linn, the SOTA employed a tuned suspension, only it was an inherently more stable hanging suspension from four points rather than the usual three, and it incorporated some damping of the springs (in all this it heavily influenced the SME turntables). Fletcher also devised a novel method that made it possible for the home user to install any tonearm without altering the very low tuning frequency (2.55Hz). Fletcher is also the first designer to address the crucial issue of warps by making vacuum hold-down a safe, viable, and reliable way to play records (in the view of many of us, the preferred way, all else being equal). Despite two changes of ownership since its inception in 1981, SOTA remains a strong presence in the turntable market, the original designer, Fletcher himself, still a consultant to the company. —Paul Seydor



LINN SONDEK LP12 (1972)

More than any other turntable on this list, the LP12 established the importance of the turntable in music playback—and of sources in general. At its introduction in 1972, turntables were largely considered to have no influence on the sound—a misperception that the LP12's creator, Ivor Tiefenbrun, fought long and zealously to correct. As a young man working in his father's machine shop in Linn, Scotland, Tiefenbrun took inspiration from the AR's three-point tuned suspension and belt drive to create a much better engineered and executed 'table. Its single-point bearing, vibration isolation, and speed stability were state-of-the-art in the day. The Linn Sondek LP12 was an enormous commercial success, inspiring an almost cult-like devotion among many of its owners. Despite the abundance of high-end turntables in the market created by the LP12, Linn chose to offer a series of upgrades to the basic platform rather than offer a complete re-design. It is possible to buy a new LP12 today that isn't fundamentally different from 1972's groundbreaking model. It's impossible to imagine the high-end industry without the LP12. —Robert Harley



ACOUSTIC RESEARCH XA (1961)

Photo Courtesy of vinylnirvana.com

The headwaters of the Nile of turntables that flooded the high end in the 70s and 80s, the modest AR XA—with its two-part aluminum platter, tripedal spring-suspended subchassis, belt drive, and low-vibration AC synchronous motor—set the stage for the Linn Sondek, the Oracle Delphi, and just about every other “new and improved” suspended-subchassis, belt-driven turntable that came to market. While its afterthought of a tonearm was never anything to write home about (and was often replaced with Rabco's SL-8E, albeit with a great deal of effort and wildly varying degrees of success, by those seeking the highest-fidelity playback), this solid, foolproof design was not only the benchmark against which new contenders we're judged, it was also (like the Dyna Stereo 70) an epitome of value-for-dollar engineering in an audiophile component. A genuine high-end classic whose numerous progeny are still very much with us. —Jonathan Valin

Individual Writer's Choices

NEIL GADER

- 10 Versa Dynamics 2.0
- 9 Rockport Sirius
- 8 Thorens TD125
- 7 Oracle Delphi
- 6 Panasonic SP-10
- 5 Garrard 301
- 4 Linn Sondek LP12
- 3 Goldmund Reference/Studio
- 2 SOTA Star Sapphire
- 1 Acoustic Research XA

WAYNE GARCIA

- 10 Walker Proscenium
- 9 Clearaudio Solution
- 8 Well Tempered
- 7 Rega Planar 3
- 6 SOTA Star Sapphire
- 5 Goldmund Studio
- 4 Panasonic SP-10
- 3 Thorens TD-160
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

ROBERT E. GREENE

- 10 Bang & Olufsen 4000
- 9 La Platine Verdier
- 8 Dual 1229
- 7 Townshend Rock Reference
- 6 Nakamichi TX1000
- 5 Garrard 301
- 4 Thorens TD-124
- 3 SOTA Star Sapphire
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

JIM HANNON

- 10 Rega Planar 3
- 9 Micro-Seiki RX-1500
- 8 Versa Dynamics 2.0
- 7 Coloney AB-1/Mapleknoll
- 6 Panasonic SP-10
- 5 SOTA Star Sapphire
- 4 Garrard 301
- 3 Goldmund Studio
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

ROBERT HARLEY

- 10 Basis Debut
- 9 Rega Planar 3
- 8 Rockport Sirius
- 7 Well-Tempered Turntable
- 6 Thorens TD-124
- 5 Goldmund Studio
- 4 Oracle Delphi
- 3 SOTA Star Sapphire
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

CHRIS MARTENS

- 10 Walker Black Diamond
- 9 SME 30/12
- 8 Panasonic SP-10
- 7 Well-Tempered Turntable
- 6 VPI TNT/HR-X
- 5 Transcriptors Hydraulic Reference
- 4 Goldmund Studio
- 3 SOTA Star Sapphire
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

DICK OLSHER

- 10 Bang & Olufsen 8000
- 9 Micro Seiki 1500/3000
- 8 Well Tempered Turntable
- 7 Kuzma Reference
- 6 Townshend Rock
- 5 Thorens TD-124 MK2
- 4 Garrard 301
- 3 ELP Laser turntable
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

PAUL SEYDOR

- 10 Goldmund Reference
- 9 Thorens TD-124
- 8 Garrard 301
- 7 Townshend Rock Reference
- 6 Nakamichi TX-1000
- 5 SOTA Star Sapphire
- 4 Panasonic SP-10
- 3 Dual 1229 (and others)
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

STEVEN STONE

- 10 VPI TNT
- 9 SOTA Star Sapphire
- 8 VPI HW-17
- 7 Goldmund Studio
- 6 Marantz SLT-12
- 5 Thorens TD-124
- 4 Oracle Delphi
- 3 Rabco SL-8
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

JONATHAN VALIN

- 10 Walker Black Diamond III
- 9 Versa Dynamics 2.0
- 8 Goldmund Reference
- 7 La Platine Verdier/AAS Gabriel-Da Vinci
- 6 Marantz SLT-12
- 5 Panasonic SP-10
- 4 SOTA Star Sapphire
- 3 Oracle Delphi
- 2 Linn Sondek LP12
- 1 Acoustic Research XA

The 10 Most Significant Turntables of All Time

A Bonus Pick

Though it only got two votes on our writers' lists—one from me and one from Robert E. Greene (reflecting, I believe, its relatively low profile among analog-o-philes)—La Platine Verdier developed by French audio-designer J.C. Verdier in the early 1980s (and the AAS Gabriel turntable—now the Da Vinci—from Hans-Peter Gabriel, which followed not too long thereafter) deserves attention paid. In fact, it could be argued that the Verdier is one of the most influential turntables since the AR XA, as it was the first, to my knowledge, to float the platter more or less frictionlessly in a magnetic field. Today, magnetic suspension of turntable platters (and lately of tonearms) is much more common. It was the Platine Verdier that first showed how it could be done. —Jonathan Valin



EQUIPMENT REVIEWS

Turntables and Record Players

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

Three Affordable Turntables

Wayne Garcia

For 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



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

cartridge combo offers a hugely rewarding analog experience at a very attractive price. The 'table alone sells 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



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

MUSICAL SURROUNDINGS
5662 Shattuck Avenue
Oakland, California 94609
(510) 547.5006
musicalsurroundings.com

SUMIKO
2431 Fifth Street
Berkeley, California 94710
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EQUIPMENT REVIEW - Clearaudio Concept, Pro-Ject RM-9.2, and Thorens TD 160

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 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





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

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 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 rosiny 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 shoooooooooes/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 unparalleled 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

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

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

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 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).

I find the choice of the SME M2 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**



A m a d i s

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Clearaudio Ovation Turntable

Bridging the Gap Between High-End Sound And Real-World Convenience

Wayne Garcia

High-end audio, especially it seems to me here in the U.S., has forever struggled and, sadly, largely failed to connect with what we might call “normal” people. Which is a pity because most people, normal and not, love music and always have. Without trotting out the many reasons why fine audio in this country remains mostly in the realm of hobbyists, let’s just say that we audiophiles frequently get caught up in minutiae that hold little interest for non-initiates. And the gear itself is often, and necessarily, too complicated for civilians to set up, optimize, and operate. Though we may shudder at a world wherein younger—and some not-so-younger—folks listen to their music via terribly compromised MP3 files, the iPod is, one must admit, a brilliantly easy thing to use.

The smartest specialty manufacturers have long recognized that making things as easy to use and as unintimidating as possible is a good thing for this industry (hence the crazy success of a certain wave-shaped item). Yet when it comes to something as multifaceted as a turntable, arm, and cartridge being caught up in minutiae is the *only* way to make the darn thing perform the way it ought to.

I well remember back in my retail days, when the Linn Sondek LP12 was the absolute cat’s meow of turntables, how the owner of the store I worked at was considered *the* Linn guru in Northern California. Now, compared to something like a Lloyd Walker design, which is so intricate it includes a visit from the

manufacturer for in-home setup as part of the sticker price, the original LP12 was not a very complex device. But it most certainly was a fickle one. Sure, if you got lucky you might land an LP12 whose suspension system could actually be tweaked per the manufacturer’s instructions. I would estimate one in ten qualified. Otherwise, it took a guy like my former boss, who had both experience and the right instinctual touch, to work his magic in order to get the platter and arm board to bounce on the LP 12’s three-spring suspension system. Although this may sound like an easy thing, many a Linn setup, and admittedly, the few I attempted, would in actuality gyrate in a slightly wobbly fashion—like a drunk working a hula-hoop—rather than bounce effortlessly, evenly, and harmoniously, platter and arm board together, up and down. Few Linn dealers were able to get it just right. And I used to wonder how many LP12 owners of the era got the most from their Scottish rigs.

Current Linns, of course, and all other designs have come a long way since then. But there are also increasingly fewer retailers out there with the experience and set-up chops to truly wring the best from a sophisticated turntable. Which helps, in part, to explain why more manufacturers are packaging their designs with pre-mounted cartridges in an attempt to make them as simple, dare I say “plug-n-play,” as possible, while retaining high quality.

In Issue 206 I had a chance to review just such a package from the German turntable specialist, Clearaudio. The Concept model, bundled with arm and cartridge for a very reasonable \$2000, won me over with its combined small footprint, sleekly attractive appearance, ease of setup, and terrific sound.



SPECS & PRICING

Type: Belt-drive, unsuspended turntable
Speeds: 33.3, 45, and 78rpm
Dimensions: 16.5” x 5” x 13.8”
Weight: 30 lbs.
Price: \$5500

MUSICAL SURROUNDINGS

5662 Shattuck Avenue
 Oakland, California 94609
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ASSOCIATED EQUIPMENT

TW-Acoustic Raven One turntable; Tri-Planar Ultimate VII arm; Transfiguration

Phoenix moving-coil cartridge; Sutherland 20/20 and Simaudio Moon 310LP phonostages; Cary Audio SLP-05 preamp; Edge NL 10.2 power amplifier; Magnepan MG 1.7 loudspeakers; Tara Labs Zero interconnects, Omega speaker cables, The One power cords, and BP-10B Power Screen; Finite Elemente Spider equipment racks; AcousTech electronic stylus force gauge; Musical Surroundings/Fosgate Fozzometer azimuth adjust meter; Analogue Productions and Clearaudio Test LPs.

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EQUIPMENT REVIEW - Clearaudio Ovation Turntable

What's more, it was evident that Clearaudio hadn't dumbed things down to seek a wider audience, but had instead put much thought and effort into creating something very appealing, while still making a "serious" turntable.

Now, in an effort to up the ante—in other words, to bring an even higher level of performance to a more upscale consumer—Clearaudio had released the Ovation, a \$5500 model complete with arm that aims to bridge the gap between the company's Innovation series (check out Jim Hannon's review of the \$11,000 Innovation Wood in Issue 204) and the "lifestyle" orientation of the Concept.

One of the things I liked right away about the Ovation was that it retains the Concept's remarkably small footprint (roughly 16.5" x 14"), a smart move when aiming for a larger audience that isn't into having the equipment dominate a room. But what's equally cool is that, even if the owner of the Ovation doesn't know about—or see—much of this model's technical sophistication, he or she will benefit from it when it comes time to spin his or her favorite records.

Like the Innovation, the Ovation builds on Clearaudio's use of a sandwich plinth fabricated from aluminum and Panzerholz—a lightweight yet extraordinarily dense wood-laminate material that's said to be bulletproof. (Being cautious of firearms I was unable to test this claim, but in retrospect I've encountered at least a few contrary turntables I would like to have shot.) In order to add mass and further reduce vibrational energy, the plinth is fitted with special rubber damping tiles that have been embedded with stainless steel shot.

Another sweet and audibly effective touch

imported from the Innovation Series is a decoupled DC motor that uses optical speed control to maximize pitch stability. Clearaudio manages this by embedding a small optical sensor in the top of the plinth (just in front of the ceramic-magnetic bearing) that reads a strobe ring located on the belly of the belt-driven sub-platter. Electronic speed selection allows for 33.3, 45, and 78rpm discs—the latter also remained untested by me—and 'round back are three speed-calibration pots, which, in conjunction with Clearaudio's Stroboscopic Record and Speed Light set (not included but an invaluable tool), allow the user to nail down accurate rotation. (Although each speed is correctly adjusted at the factory, some drift may occur as a result of shipping. As with all settings it's best to double-check for accuracy once the 'table is in house.)

As Jim Hannon so well stated in his Innovation review, once you hear this level of pitch stability, something I also know from my reference TW Acoustic Raven One, you become sensitized to 'tables that lack it. Over the Ovation, instruments such as solo violin, I'm thinking of the slow unfolding of the famous Chaconne from Bach's Partita No. 2 as played by Milstein [DG], or vocals, say the way Sinatra draws out—practically coos—the words "'Scuse me, while I disappear" at the conclusion of "Angel Eyes" (MoFi's pressing of *Only The Lonely*), are so precisely reproduced, so stable, so nuanced, that it makes listening to LPs that much more of a compelling experience.

As its designs evolve, Clearaudio is moving away from the acrylic platters it was once so well known for—a positive change, in my experience and opinion—and the Ovation's platter is made

of 40mm-thick (roughly 1.5") Delrin incorporating a weighted rim that creates a flywheel effect. The main Delrin platter sits atop a machined-aluminum sub-platter that connects via a belt to the mechanically isolated DC motor.

To complement the 'table Clearaudio created the new Clarify arm. Lightweight and rigid, the wand is fabricated from carbon fiber, and the headshell is made of machined aluminum. Clearaudio's friction-free magnetic bearing was designed to not only offer excellent performance, but also to allow the cartridge to be shipped pre-mounted.

The supplied cartridge for this review was Clearaudio's popular Talisman v2 Gold, which at \$1750 list is the least expensive of the v2 series of moving-coil designs. Purchasers of the Ovation are entitled to a 10% discount on any Clearaudio cartridge at the time of purchase, making the Talisman v2 Gold \$1575. Housed inside the Talisman's ebony wood body is the identical generator and stylus/cantilever assembly found in the considerably more expensive Concerto v2 (\$2750). Optimal tracking is 2.7 to 2.9 grams; loading is typically 500 ohms or higher, and ideal gain is somewhere in the 54 to 62dB range.

Setting up the package is a breeze that requires but a few steps, especially given that even tracking force and anti-skate are set at the factory. The simple process requires mounting the Ovation's adjustable aluminum feet; applying a few drops of the supplied synthetic machine oil to the ceramic shaft; placing the sub-platter over the bearing, followed by the belt and main platter; connecting the power-supply cord; leveling the feet; double-checking the arm adjustments and, finally, the speed. Now, these are things

that a properly trained monkey—and even a few audio reviewers—can manage. But the final two steps are still beyond the scope of the average consumer, who in any event isn't going to own the tools to complete the job. But then, ladies and gents, that's what qualified retailers are for; and as ready to go as this baby is straight from the box, those two critical tweaks will ultimately spell the difference between good and excellent performance.

And based on my many enjoyable listening sessions, excellence is precisely what you should expect from the Ovation.

I've written before about Neil Young's outstanding *Live at Massey Hall 1971* [Reprise]. This magically intimate and natural-sounding recorded performance took place in a relatively large concert venue in which Young played what are now some of his most famous, but back then his newest, songs. With the Ovation, the large hall's acoustic, the crowd within it, and this 24-year old musician in a peak creative phase, yet obviously still stage-shy, are notably energetic, lively, and thoroughly riveting. From the jaunty opening chords of "On The Way Home," one immediately senses the Ovation's impressive clarity of definition, transparency to the source, and excellent overall tonal balance; to me, the sound strikes a near ideal balance between weight and delicacy. The latter is evident in Young's fingerpicking and subtle vocal inflections—be they sung or spoken—and the former in the way the Ovation conveys the body of Young's Martin acoustic and the on-stage piano. This recording practically places you next to Young, and the Ovation delivers him life-sized and with striking immediacy, while the enthusiastic crowd unfolds

EQUIPMENT REVIEW - Clearaudio Ovation Turntable

behind the speakers in a large and encompassing sonic panorama.

At the record's conclusion I was inspired to listen to more from Young's archives, but this time from the flip-side of his career, as a hard-rocker with Crazy Horse. *At The Fillmore East 1970* [Warner] may not be as well recorded as *Massey Hall*—the mix is a bit murky—but it nonetheless offers another snapshot of Young's early years as a solo artist. I was again struck by the Ovation's ability to present a record with what seems to me to be very little sonic detritus. This recording was delivered in a very straightforward, almost matter-of-fact way, with a rambling sort of drive and dynamic ease. The band was presented with lots of power (though there isn't any real deep bass here), and the atmospherics were so immediate one could almost smell the pot smoke.

With a jazzy number such as Stravinsky's Octet For Wind Instruments (with the Boston Symphony Players on DG), the Ovation again revealed a fine ability to focus on the heart of the music, weaving complex instrumental lines, while always remaining dynamically nimble and rhythmically precise. The upper end was sweet, extended, and airy. I love this Stravinsky piece, and one realizes when hearing them so cleanly yet playfully reproduced how much fun Stravinsky must have had composing it.

Moving to larger-scale compositions, I was again pulled deeply into the performance while listening to the test pressings I received for the San Francisco Symphony's 22-LP Mahler Project [SFS Media], my review of which you will find elsewhere in this issue. The Ovation's extremely low noise floor allowed the near-silent opening of Symphony No. 1 to awaken with the

appropriate sense of innocent wonder, while its inherent clarity and rhythmic pulse made the increasingly complex passages to come deeply involving listening experiences. Strings were lush and naturally textured; winds and brass airy, extended, and surrounded by the ambience of Davies Hall; and percussion and bowed basses had the sort of tuneful definition you might guess the Ovation to be capable of.

As I listened to additional symphonies in the set, the only times I felt the Ovation did not quite deliver fully were during Mahler's most hammer-blow-like climaxes. As pure and coherent as things remained, there was a small, nagging sense that a tad more bottom-end *huevos* wouldn't be such a bad thing. This, I am speculating here, is one of the minor tradeoffs for the Ovation's tight, lightweight profile. In retrospect I think that Clearaudio's smart design and materials choices in fact bring a lot more weight and body to the sound than the company's previous designs have managed. Also please note that my time with the review sample was unusually short, which did not allow me to try anything but the Talisman cartridge with this rig. (Also note that neither the Sutherland 20/20 nor the Simaudio Moon 310LP phonostages used in these sessions delivers superior low-frequency heft, so I do not consider my one and only small complaint a definitive finding.)

All things considered, I view the Ovation as a major success. Clearaudio has easily met its goal of bridging the gap between high-end sound and real-world convenience. This easy to set up, maintain, and operate package will bring its owners years of musical satisfaction. And that counts for us audiophiles as well as "normal" people. **tas**

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VPI Classic 3 Turntable

Three's A Charm

Neil Gader

I know I'm going to be chided for what I'm about to say but I love a turntable that looks like a turntable in the classic sense. By that I mean, a single chassis design (with a piano-black base while I'm at it) and parts enclosed and internalized, rather than externals popping up on outboard pods, pillars, and modules. Many turntables today resemble an icy edifice reminiscent of Superman's Fortress of Solitude; still others have a gimmicky comic-book sense of the surreal, as if some designer had channeled his inner Salvador Dali. To each his own. By my admittedly curmudgeonly standards, the \$6000 VPI Classic 3 is well named—classic all the way. An old school, Lucite-free spinner.

Fittingly, the VPI Classic 3 takes the proven platform of Harry Weisfeld's original Classic and Classic 2 efforts and essentially upgrades and hot rods the living hell out of them. The fixed



(unsuspended) plinth is 1/2"-thick machined aluminum bonded to a 1/8" steel subplate. The subplate is in turn bonded to two inches of MDF. The result is not merely damping via mass but a sandwich of dissimilar materials, helping to eliminate resonances. The hefty footers have been redesigned for better balance and isolation. The platter is 18 pounds of machined 6061-T aluminum on an inverted bearing and stainless-steel damping plate. The base is a scrumptious piano-black.

The tonearm is the Classic 3—a unipivot design that's been rigorously updated with a new stainless-steel arm tube, bearing assembly, mounting base, and Nordost Valhalla wiring straight through from the headshell to the Swiss-made LEMOs that plug into the terminal block. The arm offers turn-knob VTA adjustment. Overhang and rake are manually set by shifting the cartridge in the headshell. While there is no built-in tracking-force gauge, any number of aftermarket devices can do this trick. (VPI includes the Shure gauge for good measure.) The floating unipivot design also makes the tonearm a dream for users who are inclined to make cartridge-swapping a way of life. Just pull the cable plug from the socket, slip off the anti-skating thread, and the entire tonearm/counterweight lifts off. The only thing faster would be

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EQUIPMENT REVIEW - VPI CLassic 3 Turntable

a removable armwand, which VPI makes optionally available for all of its tonearms.

The Classic 3 isn't just a 'table/arm combo but arrives as a bundle complete with VPI's Periphery Ring Clamp (PRC) and HR-X Center Weight. The former is, as the name implies, a beautifully machined halo of non-magnetic stainless steel whose only contact point with the record is the outer lip that just kisses the vinyl's edge before the lead-in groove. When it is used in conjunction with the HR-X Center Weight, edges and warps are effectively flattened, resonances dampened, and overall coupling of the vinyl to the turntable surface improved. Operationally, it's a bit awkward to use, but its benefits are undeniable. And this tandem makes life easier for cartridges, all of which rely on seeing the flattest possible surface within the groove—all the more so for a unipivot tonearm, which, unlike its fixed-bearing pivoted cousins, can tend to roll laterally with a record's undulations. Short of a full-on vacuum system, the PRC is the way to go.

VPI maintains that thanks to the length and resultant geometry of the 10.5" tonearm

SOUNDSMITH COUNTER INTUITIVE AND E-Z MOUNT SCREWS

As if intuiting my problems with setting azimuth, Harry Weisfeld referred me to Peter Ledermann, president of SoundSmith, a cooperative of designers, mod-experts, and other resident electronics wizards. They've created the Counter Intuitive (CI)—a polymer damping ring that fits around the VPI's existing counterweight and allows fine independent adjustments for both tracking force and azimuth settings. It comes with a self-adhesive scale that can be marked with a Sharpie to note settings for specific cartridges or armwands. Merely press the scale onto the counterweight, slip the Counter Intuitive around the scale, and you're good to go. Ledermann recommends performing both tracking force and azimuth adjustments in the normal manner with the VPI counterweight. Only when those adjustments are as close to ideal as possible, should you begin moving the Counter Intuitive. Like I said it's a fine-tuner. For azimuth, lightly rotate the ring to the right or left around

the counterweight.

The other gizmo I can't speak more highly about is the EZ-Mount cartridge screw set. Delivered in a set of four pairs (nylon, aluminum, stainless, and brass, plus nylon washers and stainless nuts), they have an easy to tighten knurled knob on top eliminating the need for tiny hand tools. Since they range in weight from 1.04 gram a pair for nylon to 6.24 gram a pair for brass, you can use them to add or remove mass to the headshell, depending on the cartridge and tonearm. All you need are your hands to install the EZ-Mounts, particularly on pre-threaded cartridge bodies, and they make cartridge alignment easy since they're a breeze to untighten, move, and retighten. Genius. **NG**



little if any anti-skating is ever required. And, cleverly, the specific twist of the tonearm cable and its insertion angle into the adjacent five-pin plug actually compensates adequately for skating under most circumstances, says Weisfeld. However if more anti-skate is needed a mechanical system is also included. Finally, the Classic 3 arrives complete with set-up tools that include an alignment protractor for overhang, a narrow rod for assisting in azimuth adjustment, plus an extra belt.

Usability is superb. I liked the heft and substance of the 3's component parts and the sure feel of its controls from the side-mount on/off toggle to the headshell lift and cue control. Changing speeds from 33 rpm to 45 rpm is a simple matter of slipping the belt down to the wider diameter portion of the pulley. In practice, the only set-up area that made me feel a bit ham-handed was azimuth. Setting it can be accomplished in two ways. The first option is to swivel an azimuth adjustment ring towards the side of the cartridge that appears lower; alternatively, you can pivot the counterweight ring slightly to

the right or left. However, if you're not careful that can alter tracking force as well. Check out the accompanying sidebar for a cool solution to this quandary.

The first step I take in evaluating a turntable is to listen for, hopefully, no evidence of start-up chatter, motor rumble, or resonance from the chassis. The Classic 3 was, in a word, excellent in all these regards. The only rap I have is a bit of feedback I created tapping along the side of the base. It wasn't perceptible during listening, but as always turntable placement is paramount in order to limit the nefarious effects of airborne or floorborne feedback.

Sonically the character of the Classic 3, to the extent that one can be isolated from the stylus/phono preamp interface, is fast, lucid, and responsive. Rhythmically the VPI has a charismatically upbeat, forward-leaning personality that will take a heavy groove like Yes' "Owner of a Lonely Heart" [Atco] and lock onto it like a vise. In combination with the superb Parasound Halo JC 3 phonostage this playback system was almost chameleon-like in the way it discerned the finest gradations and differences



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between cartridges—from the rich slightly romantic Sumiko Palo Santos Celebration to the more sinuous, speed-addicted Ortofon 2M Black (not to mention the three Audio Technica models I review in this issue's "Start Me Up"). This in and of itself demonstrated to me how little coloration the VPI adds to the sonic picture.

During Copland's *Fanfare* from Atlanta Brass Ensemble's *Sonic Fireworks* [Crystal Clear], I felt the Classic 3 revealed a special talent for pitch clarity and timbral detail in the lower frequencies as the tympani and bass drum began their bombing runs. There were no traces of mistracking in these wide grooves, just thunderously well-resolved impact. While my own SOTA/SME rig edges out the VPI in sheer hellacious impact and extension, the VPI played a very close second fiddle.

However, the highest praise I can give a turntable is the way it imparts unwavering tracking stability to a recording. With the Classic 3, music simply locks in and asks you to enjoy the ride. Whether it's a flotilla of orchestral and choral images from the Bernstein conducted *Carmen* or a solitary *arpeggio* from Michael Newman's classical guitar on the Sheffield direct-to-disc, notes appear cleanly struck, fully retrieved, and devoid of ambiguity. I noted this same effect when I listened to the SME 30/12 with the twelve-inch

version of the SME V tonearm a couple years ago. It conveys the sense that the stylus has moved beyond merely riding the groove, transcending the mechanics and becoming an integral part of the record itself. A great piano recording like *Nojima Plays Liszt* [Reference Recordings] is an exemplary demonstration disc in this regard. Any turntable will allow you to hear the basic sound of the concert grand, but what the Classic 3 will do is let you hear the piano in its full and awesome power. It will impart the weight and breadth of the instrument on stage, the micro-dynamic delicacy and intense power of Nojima's touch on the keys. Or the way the soundscape lightens or darkens as harmonics gather and disperse. On a track like Dire Straits' "Private Investigations," a song that emerges with all the twists and turns of a le Carré novel, the VPI doesn't flinch in the face of weird ambient cues, vertiginous panning, and found-sound minutiae. Sonic complexities like these leave it utterly unruffled. Every detail is there, rock-solid, immovable, and alive within the soundstage.

The VPI Classic 3 is an exceptional effort by a company that knows the analog landscape like few others. With each spin it invites you to become reacquainted with every record in your collection. A class-leading product by any yardstick, and, simply put, a class act. **tas**

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JR Transrotor Dark Star Turntable

Light, Quick, and Worthy

Neil Gader

JR Transrotor of Germany produces a vast array of analog playback components, running the gamut from turntables—modest to immodest—to motors, tonearms, and various and sundry accessories. For example, there’s the Tourbillon 07 turntable, a majestic, acrylic-and-aluminum construction with magnetic drive and three-motor/triple-tonearm capability. For those with epic aspirations and deep pocketbooks there is also the Artus, an intimidating \$160k, five-hundred-plus-pound masterpiece that in sheer outlandish bravado calls to mind the similarly priced Clearaudio Statement. But in spite of these reality-bending designs, JR Transrotor does not look askance at those of us who still have to work. The \$5700 Dark Star turntable featured in this review is prime evidence.

The Dark Star may be more approachably down-to-earth but it doesn’t convey much of a sense of compromise. It’s an open-air, suspensionless design that’s belt-driven via an outboard fully decoupled AC-synchronous motor. The all-matte-black surfaces give it a quintessentially stealthy look. The thick heavy platter rises above the plinth, which, in turn, is stabilized at three points by adjustable towers rising at the two front corners and by a center-rear footer. At first glance the plinth appears mounted like a traditional four-poster but that’s a clever illusion. The motor tower and the tonearm mounting tower may appear to be supporting the table, but they aren’t weight-bearing. The former is attached to the plinth and *elevated* slightly to permit a tonearm cable to exit its base, but the motor is actually free-standing. Power and speed stability are controlled via the Transrotor Konstant Studio. This outboard box is equipped with a robust power supply and is selectable for 33/45-rpm speeds. It uses a six-pin connector to drive and regulate the Dark Star’s motor-pulley assembly. Speeds are adjustable up to ±5% via a pair of slotted screws in the front panel. A chunky record clamp is also included.

With no suspension—spring, oil, or air—to dampen footfalls or dissipate resonances the Dark Star (actually the entire Transrotor turntable lineup) relies on mass and materials-technology to address those issues. The chassis and the platter are constructed of POM—that’s polyoxymethylene for all the non-chemists out there. Most of us will be more familiar with its Dupont registered trademark name, Delrin. Known as “the world’s first acetal resin,” this substance combines many of the desirable properties of metal and plastics, including strength, rigidity, and resistance to impact, moisture, and temperature. Its damping abilities, notes Transrotor, are similar to acrylic. In addition, Transrotor applies its own anti-resonant tweaks to the underside of a platter that boasts a unique series of clefts and channels. The Dark Star’s bearing is a “classic” bronze-sleeve design with a steel shaft and a ceramic ball-bearing.

Setup is simplicity itself. Position the plinth, then level using the adjustable front towers. The motor rests near, but not in

contact with, the plinth—in the curvature of the back left corner. The platter then slides onto the main bearing shaft, while the drive belt, as thin as a whip of black licorice, slips around the edge of the platter and around the pulley of the motor. The Dark Star has mounting rings to accept Transrotor tonearms, as well as Jelco and SME arms. With many turntables setup is an intimidating task, but with the Dark Star it really couldn’t be easier.

Reduced to its bare essentials a turntable serves a dual purpose—it’s a staging area to accurately spin the record, while it also provides a small island of real estate for a tonearm to track a record’s grooves. Of course, the turntable is required to do these things without spurious airborne and mechanical resonances that keep the cartridge/tonearm from achieving its fullest expression. In the rejection of physical vibrations—such as taps or footfalls—the Dark Star scored high marks. Even with the preamp volume ramped up, there was little-to-no noise or rumble making its way from the chassis to the loudspeakers. And stylus tracking was relatively unaffected by all but the clumsiest movements in the ’table’s proximity.

Axiss Audio, JR Transrotor’s US distributor, outfits the Dark Star as a complete, ready-to-play package. This includes the Jelco SA-750D tonearm and a Shelter 201 moving-magnet cartridge. The Jelco uses an S-shaped armtube with oil damping; it’s highly adjustable and comes with a detachable headshell. If the arm looks a little familiar, that’s because Jelco is well known for the arms it produced for Pro-ject, Linn, Koetsu, Audioquest, and others. Most famous of these was the Sumiko MMT/FT Series, which the SA-750D most resembles.

The Dark Star bundle is a sensible package for a couple reasons. First the Jelco is an easy-to-set-up tonearm. With a detachable headshell, it is

SPECS & PRICING

JR Transrotor Dark Star Turntable

Type: Belt-drive, unsuspended

Speeds: 33.3 and 45 rpm

Dimensions: 18" x 13.3" x 8.5"

Weight: 35 lbs.

Price: \$5700 with tonearm and cartridge

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EQUIPMENT REVIEW - JR Transrotor Dark Star Turntable

especially so for the novice. Purists may bristle because the arm lacks the superior rigidity of a one-piece tube; however, the Jelco's quick-release headshell not only offers the advantage of easy cartridge-installation, but makes it possible to buy a second headshell with another cartridge installed and always at the ready—a mono perhaps. My one gripe with the Jelco is that it lacks damped cueing, meaning extra care is necessary when lowering the needle into the groove.

The other advantage of this bundle is that the Shelter 201 is a high-output design (4mV), which means the buyer will not be forced to buy a high-gain phono preamp. However, Arturo Manzano, who heads Axiss Audio, understands there are many avenues of upgrades available, and since I was already in possession of the JR Transrotor Phono II phono preamp (Issue 172) he supplied an Air Tight PC-3, a .55mV low-output (low, but not *that* low) moving coil that emulates much of the innovation and performance of Air Tight's superb PC-1 (Issue 173).

As I put the Dark Star through its paces I found its sonics ran humorously counter to the heavy, ominous look it projects. There's nothing sluggish about the Dark Star. It picks up transient cues instantly, as if it is anticipating the record groove before the stylus begins tracking. And its low-level focus is resolute. In a word, this 'table loves pace. I heard it immediately from the distinctive drone of the dulcimer during Joni Mitchell's "A Case of You" [*Blue*: Reprise/Rhino]. The sound of the plectrum sweeping across the strings and the slightly percussive, rattling attack were beautifully portrayed. The Dark Star captured the sense of scale from the small-bodied instrument—its

containment. Timbral distinctions were wide-ranging. The drums during "Far More Drums" on *Time Further Out* with the Dave Brubeck Quartet [Columbia/Impex] were not just heard as beats or pulses; they were more accurately conveyed as musical instruments each with its own voice and pitch and colorful personality.

"The Dark Star makes an elegant package and is an operational and sonic delight."

Well-executed turntables share an overriding and recognizable sonic trait—one that instantly reminds me of why analog, for all its knotty inconveniences, simply hasn't been surpassed. It begins with the finer micro-dynamic gradations that yield up discrete details of space and time. It's as if the sonic picture snaps into a listenable form sooner, the music's contours and boundaries captured by the ear earlier in the event. And thus a sort of domino effect ensues. Images assemble and stake out a more coherent place on the soundstage rather than sloppily overlapping one another. It becomes apparent that one player is standing slightly in front of another and perhaps even slightly to one side. Analog seems to establish this continuing line of interlocking activity where one thing leads to another. I could hear this even on the most prosaic pop recordings. Kenny Loggins' "Keep The Fire" from the eponymous album uses an early voice synthesizer called a Vocoder, which produces a robotic emulation of Loggins' voice

and was used to double his performance during the tune's chorus. I've heard this "duet" sound congealed and defocused in some settings, but the Dark Star rig restored a strict division between the vocals—the voices blending smoothly, but neither overpowering or obscuring the other.

It also provides a world of insight into the studio machinations of the prog-rock band Yes and its blockbuster *90125* [Atco]. The sound is saturated with a bazillion tracks. I can imagine that whoever was manning the faders while mixing this disc must've had a steely set of nerves each time the tape rolled. Guitar cues, voice echoes, strange ambient shifts come whipping in and out of the deep, galactic blackness during a song like "It Can Happen" with the speed and sharpness of light momentarily glinting off the facets of a diamond.

Recorded piano makes demands on a playback system like no other single instrument, ruthlessly exposing limitations and strengths. Its range of dynamic and harmonic expression is huge and its ability to play single-note lines and dovetail those with complex chordal passages is evidence enough why the piano is known as the orchestra of instruments. In the hands of a talented player there's little it cannot express. On the stellar Reference Recording of *Nojima Plays Liszt*, the Dark Star conveys the artist's warp-speed arpeggios and left-handed dynamics with equanimity. Background noise is minimal, and there's hardly a moment when even the quietest individually struck notes sound less than pristine and harmonically enriched and sustained. If I have any criticism, it's that the soft bloom beneath the initial expression of the note seems slightly subsumed by the quick, prominent attack. The

Dark Star adds a stark coolness and more arid dimension to the piano's character—an element that I find less convincing.

In comparison to my own reference, an SME V-equipped Sota Cosmos, a suspended 'table equipped with vacuum hold-down, the differences were quite interesting. On balance, the Dark Star was a bit lighter and quicker in character, yet slightly less succinct and dynamic in the bass. The Sota is known for its ability to preserve the rich, resonant information of the lower octaves, and in this comparison its reputation was deserved. As I listened to the trombone/doublebass "Duetto" from Stravinsky's *Pulcinella* [Argo], these instruments communicated greater weight and bloom through my reference.

The Dark Star makes an elegant package and is an operational and sonic delight. I have no trouble recommending it without reservation. At the same time it's also worth noting that options abound in the current analog renaissance, many of which compete head-to-head with the Dark Star. They represent differing philosophies and features but plainly illustrate the wide array of choices that put the discriminating audiophile in the driver's seat like never before. In the market for LP playback? Don't miss taking the Dark Star out for a spin. **tas**



Clearaudio Innovation Wood Turntable

Living Up to its Name

Jim Hannon

Clearaudio'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

Clearaudio Innovation Wood Turntable

Bearing: Clearaudio CMB bearing
Drive: Belt
Motor: High-torque DC-motor with electronic optical speed control ("OSC")
Speeds: 33-1/3, 45, and 78 rpm
Speed accuracy (measured): +/-0.2%
Signal-to-noise ratio: 84dB
Dimensions: 18.86
Price: \$10,000 (Options as tested: Clearaudio Outer Limit peripheral ring, \$1250; Clearaudio Statement clamp, \$900)

Helius Omega Silver-Ruby Tonearm
Type: Fixed-pivot captured bearing
Effective length: 10" (9" and 12" versions are also available)
Price: \$4750

Benz Micro Ebony H Cartridge

Type: Moving coil
Output: 2.5mV
Weight: 10.7 grams
Recommended Tracking Force: 1.8 to 2.2 grams
Price: \$3500

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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."

SME Model 20/3 Turntable and Series IV.Vi Arm

A Classic Improved

Paul Seydor

There are a few companies in the history of audio who have built such solid reputations for design excellence, engineering expertise, and precision manufacturing that we can take for granted their products will work as claimed, be competitive with anything else, and last a long time. SME certainly belongs in this elite group: Its tonearms have been a known commodity for almost fifty years now, its turntables nearly twenty. Every SME product I've owned, used, or evaluated—a list that includes at least four arms and four turntables—has been outstanding. What's more, owners of SME products tend to keep them for a very long time, often decades, occasionally lifetimes. Thus from a certain point of view, you might almost say this review wasn't really necessary—which isn't to say that I wasn't thrilled to get the assignment or didn't enjoy doing it. On the contrary, it's long been one of audio's high pleasures to have a record-playing setup by SME. Some SME component or other has usually been in my system for over thirty years now, and during the past ten I've been privileged to review the entry-level Model 10A (Issue 129)—“entry level” being a relative term, as the 10A eclipses many manufacturers' best efforts—the flagship Model 30/2 (Issue 172), and the 20/3's predecessor, the 20/2, of which I wrote a long, detailed, and laudatory review in Issue 141 (to which I refer readers for a thorough description of its design and operation, the basics of which remain unchanged).



At the time (2003) I found the Model 20 so good I wondered how it could be improved without taking it all the way to the 30. The main difference between them is the greater size, weight, and mass of the 30, plus the inclusion of viscous damping in each of the four stanchions that suspend the plinth from the rubber O-rings, whereas the 20 employs damping only in the central bearing. One of the few ways I could fault the 20 is that its isolation from external disturbance, while of a very high order, was less effective than the 30's or such fully suspended designs as several Basis and SOTA models. In most home environments, however, where the 'table would presumably be securely mounted, this limitation would likely go unnoticed, its effects minimal, and would in any case still be considerably less than that provided by most turntables lacking any suspension.

But the engineers at SME evidently felt improvements could be made. A glance suggests almost nothing was done, save for the all-black platter mat replacing the familiar greenish gold of past models (the aesthetics of which, truth to tell, I rather miss). But looks, we know, can deceive. To start with, the outboard power supply, containing speed

selection and adjustment, is now the improved version that has been stock for the 30/3 these last few years; and the new 20 is slightly larger in all dimensions and heavier, with thicker plinth and base, resulting in an overall weight of 63 pounds, up 23 from the 20/2. The number of O-rings that suspend the plinth has also been increased from 30 to 40. The damping in the main bearing has been improved, bringing it closer to the 30's, the platter is also larger and heavier (at 14 pounds almost a third over the previous one's), and the new mat (non-removable, as on all SMEs) is claimed to make for a superior interface with vinyl.

Although the handsome styling remains severely industrial, the late Alastair Robertson-Aikman, never an advocate of the oil-rig-in-your-living-room approach to turntable design, always judiciously applied the brawn with his brains, and his son Cameron continues in his father's footsteps. Not that SME turntables are insubstantial—far from it—merely remarkably compact, dense, and concentrated. AR-A always maintained that everything else being equal, a smaller footprint of intelligently applied mass and controlled damping is preferable to a larger one for sonic as well as aesthetic reasons. Fit and finish are, as

EQUIPMENT REVIEW - SME Model 20/3 Turntable and Series IV.Vi Arm

always with this company, to the highest standards.

Like all SME turntables, the Model 20/3 is available as a turntable only, \$14,000 with a blank board for use with arm of choice, or outfitted with one of SME's arms. Sumiko, the domestic importer, offers it as a specially priced "performance package," with the Series IV.Vi arm, a proprietary version of the Series IV that retains the damping trough of the V, dispenses with the dynamic-balance mechanism in favor of static only, and is wired with a very thin phosphor-bronze internal harness (made by Magnan) to reduce the mechanical impedance of the arm. Under review here is this package, with which Sumiko also supplied its premier pickup, the Palo Santos Presentation (\$3995), enthusiastically reviewed by Neil Gader (Issue 206), who used it in his own Series V arm. Exclusive of pickup, the package costs \$17,000, identical to 20/2 with the same arm.

Most purchasers will probably elect to have their dealer do the setup, but thanks to SME's excellent instructions, anybody with some prior experience can do the job if he is willing to work slowly and patiently. I found it both instructive *and* pleasurable, something by no means true of many setups. One of the things I've always especially liked about SME's arms, with their fixed-bearing gimbal configuration, is that stylus overhang is not determined by sliding the pickup back and forth in slots in the headshell. Instead, since SME arms have correct geometry and the armboards are likewise correctly placed, the pickup is fixed at the headshell (i.e., holes, not slots, for the mounting bolts), and the entire base of the arm moved back and forth to achieve proper overhang (with another easy-to-use gauge).

To my way of thinking, this is far preferable because slots allow enough play that the act of

tightening the bolts often causes the position of the pickup to shift slightly, thus requiring a second or third attempt to get it spot on. Not a major annoyance, perhaps, but no problem at all with SME arms, which helps make swapping pickups relatively quick and easy (see sidebar). Nor do SME's top arms allow for azimuth adjustment, which is also fine by me: As I've argued several times in these pages, any pickup costing hundreds, let alone thousands of dollars, with faulty azimuth should be returned.

Although it's been eight years since I reviewed the 20 and about half that since the 30, it does seem to me that the distance—as already noted, not large to begin with—between it and the top model has been not just shortened but shortened by a helluva lot. Stability, control, and neutrality triangulate the virtues of this and every other SME turntable I've used. There is an extraordinary impression of what for want of a better word I would call *foundation* to the presentation: things are rooted, solid, and grounded, and they stay put unless they're meant to move, in which case they do so without ambiguity, vagary, or uncertainty, rather with purpose, point, and direction. There is no better test for this than my longstanding reference, the Bernstein *Carmen*, where in Act IV the stage outside the bullring in old Seville is as if anchored in granite, while the comings and goings of the principals, the children's chorus, and the crowd spring to life across it in a three-dimensional space that suggests a real opera house.

On the other hand, maybe there *is* a better test, like, say, a problematic recording. As I am writing this, I am listening to Handel's *Messiah* as performed by Bernstein in the first studio, also stereo, recording he made with the New York

Philharmonic, dating from 1956. The performance, controversial owing to Bernstein's rearrangement of the text to make it a two- instead of a three-part work, is a fascinating example of a conscientious mainstream conductor attempting to apply what was then known of period-music practices to the performance of Baroque music. The recording *qua* recording is of no particular distinction, multimiked yet also very reverberant—a seeming contradiction Columbia's engineers managed with some regularity—with violins far left, cellos and basses far right, tonal balance a bit bright (again, typical Columbia). One of the unusual things Bernstein did for the concert performances that preceded this recording was to vary the size of both the orchestra and the chorus, as well as the complement of instruments, to suit the expressive and dramatic needs of the individual numbers.

The engineers followed suit by varying the miking, the consequence being that while the acoustic character of the space does not change, perspectives do shift, as if either the groups or the mikes have been moved back when larger forces are used, forward with smaller ones. Yet such is the control exerted by the 20/3, together with its ability to get out of the way, that I am completely involved in the performance and almost oblivious to the sonic oddities, unless I care to concentrate on them. Indeed, singing "I know that my redeemer liveth," Adele Addison almost sounds as if she is in the room, with uncommonly beautiful string playing despite the bogus brilliance and violins off a little too far to the left. When the perspective shifts for, say, the "Hallelujah Chorus," the 20/3 reveals the change loud and clear but my ear soon adjusts and I am again gripped by the performance.

In other words, whether the recording bodes

fair weather or foul, you may rest assured the 20/3 will navigate you through it with supreme ease, confidence, and comfort.

When I reviewed the Model 30/2 its background quietness struck me as the best I had ever experienced from vinyl playback in my home up to that time, putting me in mind of Melville's famous phrase about Hawthorne's fiction: "blackness ten times black." To the extent that I can rely on memory and notes, I'd say that the 20/3's blackness is comparable, with similar improvements upon the 20/2's already impressive ease and authority, likewise its dynamic window and ability to project that elusive character of life and lifelikeness. The improvements in mass, damping, and suspension certainly seem to have resulted in an equivalent increase in isolation, the one (relatively) weak point of the previous model. The 20/3 now comes so nose-thumbingly close to the flagship in all respects that with most records and through the highest-resolution systems, the differences will more than likely require a strict A/B before they can be reliably identified, and even then I'd not want to

SPECS & PRICING

Speeds: 33, 45, 78 rpm

Dimensions: 17-5/16" x 13-3/4" x 8"

Weight: 63 lbs.

Warranty: One year parts and labor

Price: \$17,000 (with tonearm)

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EQUIPMENT REVIEW - SME Model 20/3 Turntable and Series IV.Vi Arm

bet I could tell which was which after a brief hiatus (say, a trip to the loo).

I have elsewhere addressed the issue voiced by some of the so-called “dark” sonic character of SME products, and I’ve made no secret of my belief that this a complaint typically made by the naïve against components with superior damping and control of spurious and unwanted resonances and the kind of isolation that only suspensions can achieve. The ear responds to and even up to a point “likes” information, even if it’s information that’s not part of the source, which is precisely what resonances and other noises that originate in the equipment or its relationship to its setting are. And since such resonances can be subtle enough to seem part of the signal, when they’re gone, something seems to be missing—as it is, but it’s something that shouldn’t have been there in the first place.

More insidious is that some of these resonances can even be appealing. I prefer not to name names here because I’d rather avoid disputes that might obscure my general point, but some popular turntables that lack suspensions have a “drummy” coloration that derives from the way their plinths respond to external vibrations, which gives them a kind of extra rhythmic “kick”; other turntables have an excessively articulate character that emphasizes resolution to the exclusion of all else (“listen to the tune”); still others have the “warmth” of slightly loose or excessively full bass or a bogus “airiness” due to inadequate damping of the record by the platter (ringing metal platters with thin mats or no mats usually evince this dubious “virtue”). These sonic signatures can have many other causes as well, not just from turntables but from arms and pickups. In every instance, however, the root

CARTRIDGE MATCHING

I have twice used SME arms and/or turntables to do phono pickup surveys. As with recordings, so with cartridges: SME components are among the most judicious and even-handed of hosts, so impeccably accommodating as to allow any pickup to emerge in the fullness of its personality without augmentation or diminution, provided of course mass (medium to high) and compliance (medium to low) are suitable. The Palo Santos Presentation sounded to me essentially as Neil Gader described it in his review: a bit on the sweet, laid-back side, very comfortable, perhaps fractionally recessed throughout the presence region. Sumiko designed this pickup to yield an ever-so-slightly forgiving sound, and so it does, in a pleasing and validly musical way.

cause has to do with how well the setup controls, damps, suppresses, or otherwise drains away the many resonances that disfigure vinyl playback, plus, of course, how effectively the design isolates the setup from external disturbances. SMEs are exemplary in this regard.

Imaging and soundstaging are limited by the source, as was demonstrated by a couple of famous jazz recordings. In the typical early-stereo, left-right-center-miked *Crescent* [Acoustic Sounds], Coltrane’s sax is plastered smack up against my left-channel Quad 2805, the same for the drum kit on the far right, the piano in between (and sounding a bit hooded). Any setup that gives much “depth”

But I really wanted to put the 20/3 through its paces with Ortofon’s magnificent Windfeld, my reference these past few years, and I wasn’t disappointed: here was a greater sense of vitality and transparency. Strings were paradoxically sweeter yet more naturally brilliant, and thanks to the Windfeld’s peerless neutrality, the midrange/presence region is naturally forward, that is, in proper relationship to the rest of the spectrum. I also felt the Windfeld allowed the whole presentation to open out more expansively with respect to dynamic range and the rendering of the characteristics of recording venues. It tracked better, too, not by a lot (Palo Santos is a very good tracker), but such as you’d notice on very demanding discs.

Even though I am writing this in June, I couldn’t resist listening to one of my all-time favorite LPs, *Sing We Noel* [Nonesuch],

is doing something wrong, however much it may please. Switch to the famous *Soular Energy* [Pure Audiophile] and you have a jazz group spread before you in a space integrated and continuous, the instruments set back slightly from the plane of the speakers and sounding in their dimensionality and physical relationship to each other like the real thing (not for nothing is this a highly esteemed recording).

Obviously in a vintage mood, I turned to one of the really great recordings from Stokowski’s Indian summer, his RCA outing with the Chicago Symphony in stupendous performances of four nineteenth century showpieces. Just listen to the

Joel Cohen’s wonderful program of early American and British Christmas music. Ensembles and groups of various sizes are used throughout and the vividness of singers and instrumentalists almost defies belief. In the fuguing tunes, you easily place where each soloist or group of singers is standing. The recording also abounds in antiphonal and other spatial effects, all set forth with rare precision and exactitude. In the closing *Gloucester Wassail*, where the group recedes as it finishes the carol, you clearly hear the choir increasingly enveloped in the resonant acoustics as it gets closer to the rear wall. The SME 20/3/Windfeld combination reproduced all this flawlessly with a sense of involvement and life that silences all critical voices. **PS**

ferocious attack and impact of the doublebasses at the beginning of Liszt’s Hungarian Rhapsody No. 2, Stokowski inspiring the Chicago players to heights of style and sheer panache they rarely displayed under Reiner, sonics up there with the famous RCA recordings, certainly for dynamic range, bass extension, and a realistic impression of a symphony orchestra playing in a great hall. Stokowski’s *Moldau* was a huge favorite with critics and listeners alike back in the day and you can certainly hear why as the famous Czech river surges with the kind of sumptuous tonal opulence—the sonorous Chicago brass simply glorious—he alone seemed able to conjure.

EQUIPMENT REVIEW - SME Model 20/3 Turntable and Series IV.Vi Arm

Another old favorite—literally from the dawn of my years as an audiophile—of quite different music is the old Connoisseur Society recording of Ali Akbar Kahn's *Morning and Evening Ragas*. The morning raga is one of those occasions in a studio where everything came together in a performance of real live-music vitality and excitement. I can always tell a truly great setup by the degree to which I am unable to remain still as Kahn and his colleagues reach a true fever pitch of rhythmic energy as the piece rushes toward its climax. By the end I was pounding the ottoman along with Mahapurush Misra on his tablas. Those for whom timing and rhythm are the be all and end all will love this setup, and it doesn't come with the liabilities of artificially hyped articulation, an etched, aggressive top end, or diminished bass.

I could go on about rummaging, if not rampaging, through my record collection, but time in this

instance is not so much money as time away from doing exactly that with this splendid setup before the importer reclaims it. Instead, I take your leave with this thought: It's ridiculous to suggest that a record-playing system that sets you back over twenty grand once you factor in a suitable pickup represents "good value." It doesn't. But once this is said, it must also be said that in no way is what you get should you buy this magnificent product disproportionate to the asking price. Very few turntable/arm combinations, including most of those I've seen and heard costing a whole lot more, can boast anything like this level of design, engineering, and manufacturing excellence or bring you much closer to how pleasurable, moving, even inspiring recorded music in the home can be. The value in this, to be sure, is somewhat subjective and difficult to measure, but that does not make it any the less real. **tas**

ABOUT THAT DUST COVER

The soft, cheesy dust "cover" that SME provides for its turntables has stuck in my craw for a long time now. The justification is that a hard dust-cover adversely affects the sound. True enough, as it tends to create a kind of resonant chamber that clouds the reproduction. But Acoustic Research solved this a long ago by making its sturdy dust covers unusable during play, but serve perfectly well to keep dust out when the setup is not in use. SME's covers, in my opinion, are worse than useless because they are relatively tight-fitting, which means that it would be all too easy to catch the stylus when removing the cover, something SME, in fact, even warns against in the manual!

Gentlemen, this is both a disgrace and an embarrassment in products that otherwise have helped set industry standards for manufacturing, attention to detail, and fit and finish. When a consumer invests in a turntable of this expense and quality, he has every right to expect a dust cover of comparable design and utility, if only as optional extra. If SME isn't willing to do something about this, maybe Sumiko can? **PS**

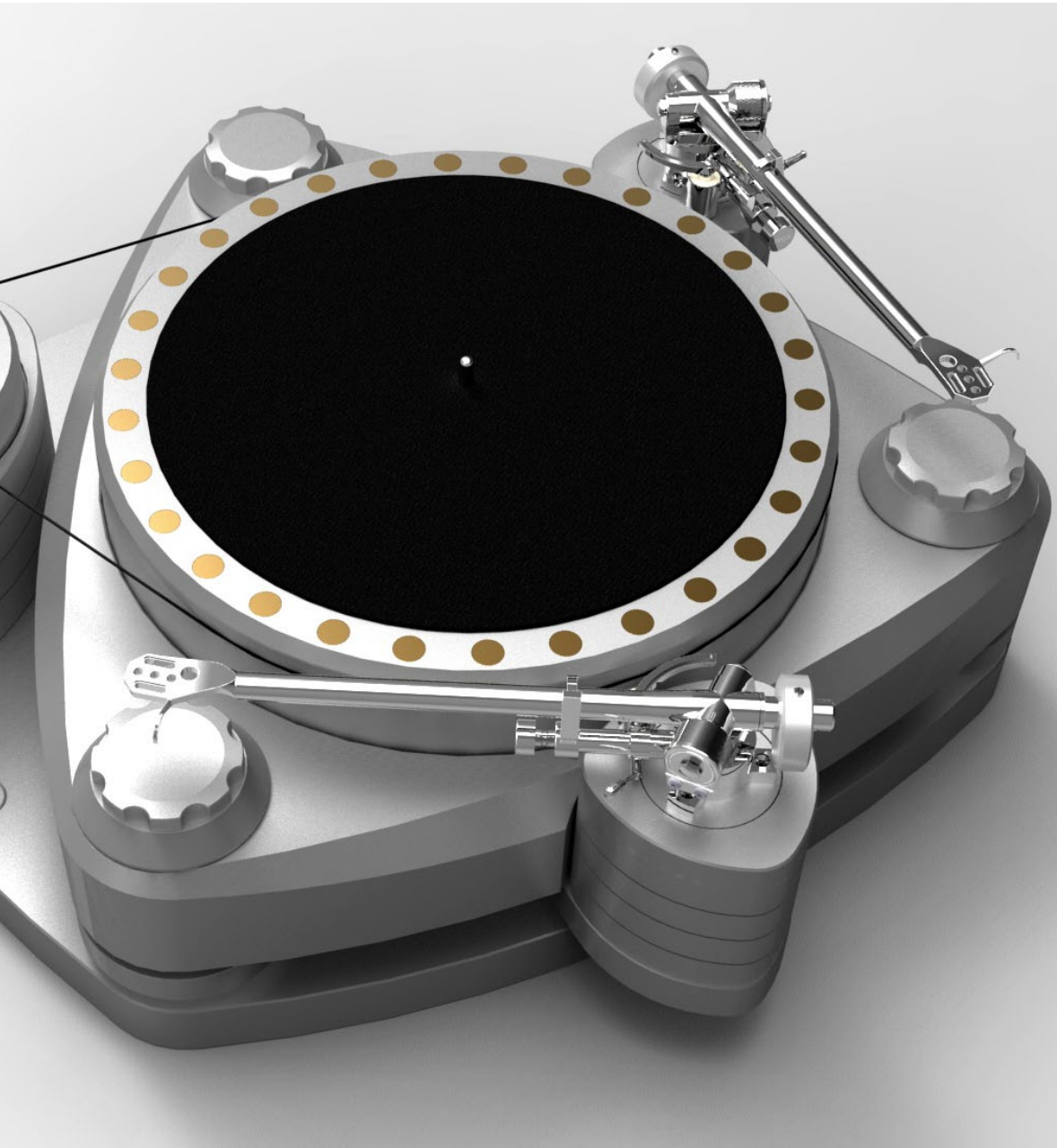
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Acoustic Signature Ascona Turntable

Heads Up! A New Contender

Jonathan Valin

Like me (up until a few months ago), most of you have probably never heard of the German turntable manufacturing firm Acoustic Signature, its brilliant chief engineer and CEO Gunther Frohnhöfer, or its beautiful, massive (176+ pound), \$34k flagship turntable, the Ascona. In Europe and Great Britain, I'm told, it's quite a different story. AS 'tables have been highly praised for their superb engineering (this is a German hi-fi product, after all), their unbelievably precise and solid build-quality (ditto), and, of course, their sound.

Before I talk about that sound, a few design highlights, starting with the Ascona's platter (called by AS the SilencerPlatter3). Frohnhöfer, who is an electrical engineer, set a very high goal for his top-of-the-line 'table: eliminating the impact of structure-borne vibration, airborne vibration, and bearing noise by removing resonance at all frequencies, and increasing the rotating mass of the platter "to aid stability."

To achieve these goals, Frohnhöfer starts with a 50mm (2-inch) thick solid-aluminum platter with a diameter of nearly 350mm (13.78 inches). This massive platter is CNC-milled in-house (AS, which does a good deal of industrial manufacturing, owns many expensive CNC machines) from a very soft alloy "to optimize its periodic resonance; [in addition] a resonance-reducing material is applied to the bottom face." Solid brass "Silencer" inserts are then

fitted into the aluminum to eliminate resonance via constrained-layer damping. (The Ascona uses thirty small Silencers on the outer diameter of the platter, and 24 larger Silencers within the body of the platter.) The holes for the Silencers are drilled and line-bored into the aluminum with a clearance of less than 0.01mm in a pattern that is absolutely true about the center of the turntable (to maintain ideal balance). The fit is so perfect that the Silencers effectively become an integral part of the platter, "absorbing all vibrational energy [so that] the platter remains resonance-free."

To achieve his goal of eliminating bearing noise, Frohnhöfer invented a platter bearing "with the ideal performance characteristics of exact fit, extremely low noise, very low friction, and long-term stability." Manufactured from special hardened and polished steel, with an extremely hard tungsten-carbide ball at its base, "the bearing housing uses perfectly

EQUIPMENT REVIEW - Acoustic Signature Ascona Turntable

matched and ‘aged’ sintered-bronze inserts which are self-lubricating; and therefore maintenance-free.” The thrust plate is made of a specially developed high-tech material called TIDORFOLON (a unique combination of ferrite, vanadium, Teflon, and titanium).

The platter-drive mechanism, which sits in a separate CNC-milled aluminum housing at the rear of the CNC-machined solid-aluminum plinth, comprises three small motors triangulated about the spindle of a subplatter, upon which a massive aluminum flywheel (with its own set of brass Silencer inserts) sits. The three motors drive the subplatter (and the flywheel atop it) via three separate belts. (The flywheel then drives the platter via its own belt.) The motors are powered by an electronic controller (called the AlphaDIG) that uses digital output stages and quartz-lock-loop technology “to [generate] a perfect sine wave at 24V AC.” The motors are thus “totally impervious to the negative effects of AC voltage fluctuations,” i.e., they should maintain perfect speed stability regardless of house current.

The Ascona’s CNC-milled aluminum tonearm-mounting plates are “the most rigid versions [Acoustic Signature] has ever designed.” Adjustable to suit tonearms of lengths from 9 to 12 inches, two can be fitted on the Ascona, allowing for the use of two different arms and/or cartridges.

Outside of its highly damped mass, the Ascona has no suspension. Three adjustable feet allow precise leveling of the ‘table, which comes with a machined record weight (a clamp is also available) and a newly developed platter mat.

Once set up (with the sterling Kuzma 4P arm), the Ascona is quite a sight to behold. It wowed my friend (and analog guru) Andre Jennings, who has seen just about every other ‘table and arm out there, with its sheer beauty, solidity, and breathtaking build-quality. (The thing is built like a brick *scheisshaus*.) Nothing about the Ascona smacks of garage tinkering or home brew; on the contrary, it looks like a scientific instrument designed by a talented industrial artist—a veritable Magico of analog playback.

As I said in my review of the excellent Oracle Delphi ‘table, turntables tend to sound the way they look. The lighter ones,

such as the Delphi, tend to sound lighter (i.e., slightly canted in balance toward the upper midrange and treble), quicker and more nimble, and more toe-tappingly pacey. The more massive ones, such as the TW Acoustic Raven AC-3, tend to sound darker (i.e., slightly canted in balance toward the lower midrange and bass), more authoritative, and richer in timbre and duration. The Ascona rather goes against type.

Not that it sounds “light”—or dark, for that matter. It sounds, well, neutral, by which I mean extremely low in coloration of any kind. As a result, it seems to blend the virtues of lighter and more massive ‘tables almost equally, giving it extraordinary transparency to sources and, depending on the quality of the LP, a high degree of realism.

Understand that I’m just beginning to learn the “ins” and “outs” of the Ascona, and have only tried it (thus far) with one arm (the Kuzma 4P) and one cartridge (the Ortofon MC A90). Until I can do an apples-to-apples comparison using the same cartridge on all three ‘tables, I’m not able to confidently judge how the Ascona compares to my two references, the Walker Black Diamond Mk III and the AAS Gabriel/Da Vinci Mk II, although I am prepared to say that it belongs in the same exalted ballpark as these two great turntables.

Here’s why. While it is true that you hear “new” things you haven’t heard before with any worthy new component, simply because of differences in timbral balance, pitch resolution, dynamic accent, and the handling of durations, the Ascona has revealed an entirely new “class” of very-low-level “things” that have previously gone unheard. Let’s call it, for the time being, locational cues, although it actually has to do with the way miking in combination with instrumental radiation patterns and performance styles affects the imaging (the perceived size, shape, and locus) of an instrument.

For example, I’ve listened to the Hungaroton recording of composer/performer Attila Bozay’s sonically amazing (musically zany) “Improvisations for Zither” many times—and have read the LP liner notes many times, as well. On the back of the jacket, there is a photo of Bozay seated at a table, his Hungarian “harp

zither” sitting on the tabletop in front of him. Until I heard the record through the Ascona, I hadn’t realized what an important clue that photograph was giving me about the way the instrument is played and how that affected the way it was recorded. Like a pedal-steel or Hawaiian guitar, the zither isn’t typically held in the hands when strummed; it sits on a stand or, horizontally, in the performer’s lap, as the zitherist plucks the strings with plectrum or fingers. In this case, those strings have been tuned to a twelve-tone row of Bozay’s invention and they are not just plucked and strummed, but played glissando, pizzicato, above



SPECS & PRICING

Acoustic Signature Ascona

Bearing: Tungsten-carbide with

TIDORFOLON thrust plate

Drive: Belt

Motor: Digital, quartz-locked-loop

Speeds: 33-1/3, 45 rpm

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EQUIPMENT REVIEW - Acoustic Signature Ascona Turntable

the bridge (or, rather, near the tuning pegs, since the zither has no bridge)...you name it. Indeed, at various points, Bozay doesn't just play the strings; he raps his knuckles against and scrapes his fingernails, in a queasy chalkboard squeak, along the instrument's resonant wooden body. It all goes towards making a sonic tour-de-force.

Other arms and 'tables have told me, with great precision, how (and with what speed and pressure) Bozay was sliding his fingers and nails and plectra along the strings (and also rapping and scratching the instrument's body) to produce the phenomenal panoply of tone colors and transient effects that is "Improvisations." And the Ascona tells me these things, too, with equal clarity. But what other 'tables/arms/cartridges haven't told me was that Bozay was seated when he played "Improvisations" and that the instrument was lying horizontally on his lap (or sitting on a stand) as he performed, with the microphones very close by the strings and sounding box. With other 'tables it sounds as if the zither is being cradled in Bozay's arms like an autoharp. In other words, the instrument makes a strictly vertical image, as if the zither were standing on its end with strings and sounding box facing the microphones (or the microphones were looking directly and exclusively down its length from above). With the Ascona/Kuzma/Ortofon, the zither makes more of a horizontal image (although there are vertical components, too, as the zither timbre "blooms" into the space above and around it), as if it is being played, as it was, by a man seated behind it as it sat in his lap (or on a stand) with different microphones perpendicular and parallel to the zither.

While this might not be a musically important bit of information, it is still an astounding one. To hear—for the first time—that the microphones

picked up enough of this very-low-level "locational" information to realistically alter the way the instrument images in acoustic space is kind of amazing. And the Bozay is scarcely the only recording that the Ascona does this nifty little "locational" trick with. (Note that it is not just "locating" the instrument; it's locating the mikes.)

What this suggests to me is that the 'table may be so low in noise (so resonance-free) and so stable in rotation that it is allowing the tonearm/cartridge to pick up unbelievably low-level information that is simply buried beneath the noise floors of other 'tables.

Now, I don't know this for a fact, as I haven't yet been able to make apple-to-apple comparisons with my references. And I also don't know how large a role the Kuzma 4P is playing in this incredible feat of resolution, although it is clearly playing one. (Andre measured, via Dr. Feickert's wonderful Adjust+ software, fully 4dB better channel separation than we've gotten from the MC A90 in any other 'arm—and 4dB better than Ortofon's own specs!)

I guess I should also note that the Ascona/Kuzma/Ortofon combo does not make the warmest and cuddliest sound I've heard. Indeed, it is the kind of neutral that verges slightly on the analytical. But then the Ortofon MC A90 has been a bit on the ruthlessly revealing side with every 'table/arm I've tried it in. The Ascona/Kuzma appear to be allowing this incredibly detailed cartridge to achieve its fullest resolution (and the fullest resolution of its "character").

Until my complete review of the Acoustic Signature Ascona is printed in TAS, consider this a strong heads-up: There is a new contender in the ultra-high-end analog market, and it is beautifully engineered, impeccably well made, and priced oh-so-right. **tas**

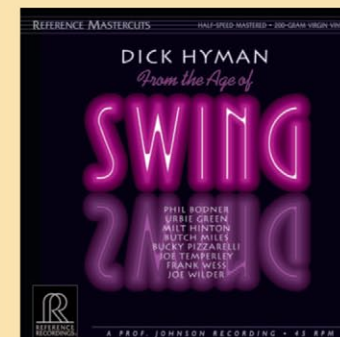
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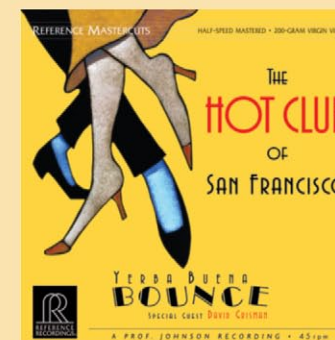
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Basis Inspiration Turntable and Vector 4 Tonearm

Inspired Performance

Robert Harley

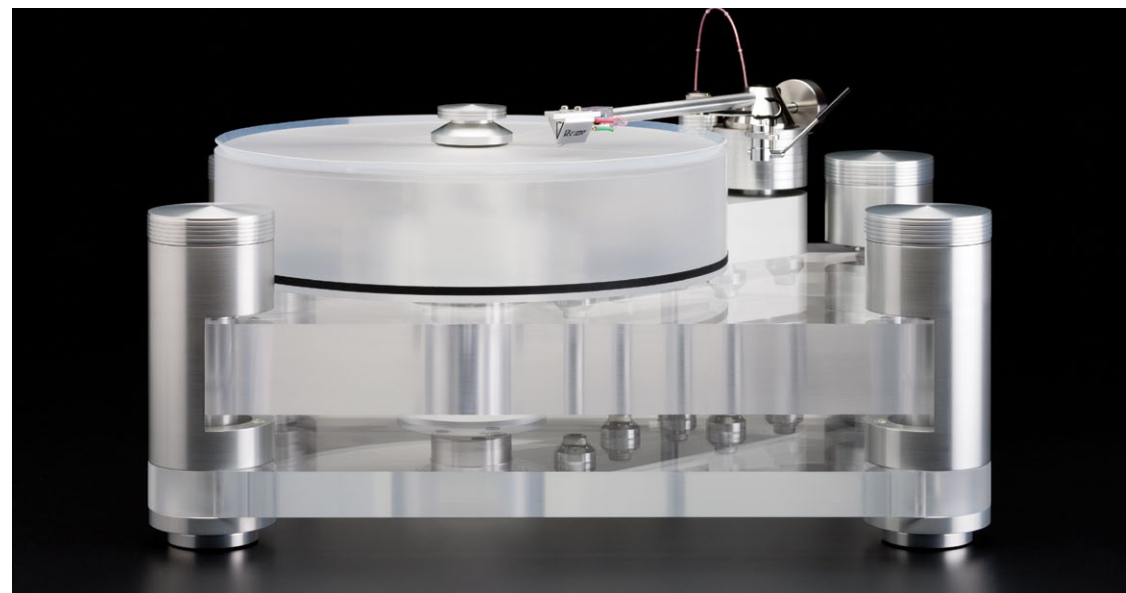
I like the concept of a designer creating a cost-no-object realization of his highest aspirations, and then later trying to bring as much of that product's performance to a more practical and affordable product. The consumer often gets much of the reference product's performance for significantly less money. Although these trickle-down products aren't inexpensive, they nonetheless often offer high value compared to the product designed with absolutely no cost or practicality constraints.

Such is the case with the Inspiration turntable from Basis Audio. This 'table's name comes from designer A.J. Conti's "inspiration" to bring as much of his \$170,000 Work of Art turntable's performance to a significantly lower-priced and more commercially viable product. It might seem odd to call the \$54,000 Inspiration "lower-priced," but it's less than one-third the cost of the Work of Art.

I've long admired and enjoyed Basis turntables. They are passionately designed and meticulously built, and epitomize insightful engineering in the

pursuit of sound quality. I lived with the 2800 Signature for several years (see my review in Issue 172) and found it superb. Could the Inspiration be that much better, never mind approaching the performance of a mega-buck turntable?

The Inspiration is a five-component affair, comprising the turntable itself (including the integral Basis Vector 4 tonearm), a freestanding motor that sits on the turntable's lower platform, the Synchro-Wave power supply, a vacuum control-unit, and the vacuum pump. The turntable is a massive acrylic structure that will look familiar to anyone who has seen a Basis turntable. Although designed to the same principles as all Basis 'tables, the Inspiration boasts several cosmetic and engineering departures. One of these is in the acrylic platter and subchassis, which are made from the special acrylic formulation selected for the Work of Art. This new acrylic is designed for maximum energy transfer between the record and platter so that the platter acts as a sink for record vibration. Keep in mind that any relative motion between the record and stylus that isn't created by groove modulation is noise and distortion. That motion is converted into an electrical signal and amplified. Even the tiniest vibration ends up coloring the music. How



well an interface of two dissimilar materials (in this case, the record and platter) transfers mechanical energy is determined purely by the mechanical impedance match of the two materials. The more similar the product of stiffness times density, the greater the energy transfer. The new acrylic's stiffness and density are more like that of an LP, resulting in less spurious vibration of the record. It's also slightly lower in hardness and has better self-damping properties.

This superior self-damping makes it a better choice for the subchassis as well. The difficulty in polishing this softer acrylic to a transparent finish resulted in a bit of serendipity. Basis experimented with other finish techniques, and hit on a frosted-edge look that is a departure from previous Basis 'tables. The edges, grained in-house to impart the frosted appearance, tend to hide what's behind the turntable, as well as to look more elegant. The

frosted edges complement the metal parts' matte finish to give the Inspiration a unified appearance.

The 2"-thick rectangular subchassis is suspended at each of its four corners with fluid-damped "Resonance Annihilators." These devices employ a series of internal springs and dampers that isolate the subchassis from external vibration. The Resonance Annihilators are contained within the cornerposts, which themselves are mounted on a platform below the subchassis. This vibration-isolation and damping system is so effective that if you apply a stethoscope to the subchassis and pound on the equipment rack you will hear no sound through the stethoscope. The platter spins on the same cost-no-object bearing developed for the Work of Art.

The vacuum hold-down is identical to that of the 2800 Signature, but the small control unit now sports a much finer finish. The control unit allows you to finely adjust the amount of vacuum,

EQUIPMENT REVIEW - Basis Inspiration Turntable and Vector 4 Tonearm

indicated by a precision dial. An ideal setting is a gentle 0.5 PSI of negative pressure, which is just enough to create intimate contact between the record and platter but not enough to embed any dust on the LP or the platter in the record's underside. This intimate contact between platter and record reduces spurious vibration in the LP, resulting in better sound. You can hear for yourself the effect of vacuum hold-down simply by comparing the sound of a record with the vacuum turned on and off. The vacuum pump itself is so quiet that I positioned it on the floor next to the turntable and never heard it in operation.

As with all Basis 'tables, the Inspiration benefits from the Revolution drive belt, a belt so thin it is translucent. Conti discovered that uniform drive-belt thickness was a crucial factor in speed stability, and when he couldn't get his vendors to make a belt to his standards, he designed and had a machinist build belt-grinding machinery and began producing them in-house. The Revolution belt's thickness variations (along its length) is just +/-0.1 microns, about one one-thousandth (1/1000) the diameter of a human hair. (Incidentally, the CD specification for track pitch is 1.6 microns, +/-0.1 microns.) When I had the Basis 2800 I compared the sound of that 'table with Basis' original drive belt and the Revolution belt, and found the super-thin high-precision belt to

have greater image stability, a larger and better defined soundstage, and greater resolution of low-level detail. Conti personally measures the thickness, the thickness variation, width variation, and surface finish (at 4x magnification) of each side of each belt before it is packed with a turntable.

The Synchro-Wave power supply drives the AC synchronous motor with dual sinewaves 90 degrees apart, one for each motor coil. Operation is so smooth that while holding the motor in your hand, you can't tell if it's running. Selection between 33-1/3 and 45 rpm is done via a switch on the Synchro-Wave's front panel. Just as the vacuum controller's front panel has been refined, the Synchro-Wave benefits from upgraded cosmetics and metalwork to match the finish quality of the turntable's metal parts.

The same goes for the motor itself. Once housed in a black box, it is now encased in lavish metalwork. A.J. Conti personally sands and blends the ridges, all corners, and every surface in the motor assembly after machining. To assure the finish quality, Conti accompanies the metal parts to the anodizing shop and stands behind the technician as the parts are anodized, inspecting each one as it comes out of the bath. This attention to detail shows in the finished product; the metal parts have an elegant matte finish that is beyond reproach. Looking at the Inspiration as a whole,

it exudes a sense of refinement and quality. This feeling is amplified as you look more closely at individual parts. Some high-end products that appear well-made from a distance don't hold up under close scrutiny. But with the Inspiration, the closer I looked the more impressed I was.

The integral Vector 4 dual-bearing tonearm features a novel technical solution to a fundamental problem of LP playback that occurs in unipivot arms: dynamic azimuth error, or the tendency of the arm to rotate around the armtube's axis when the stylus encounters record warp. This phenomenon causes the azimuth (the perpendicularity between the stylus and record) to constantly change from the ideal 90 degrees. The solution in the Vector 4 is to asymmetrically weight the tonearm (via a cutout in the counterweight) so that it "leans" onto a second "stabilizer" bearing. The main bearing is similar to a conventional unipivot, and bears virtually all the arm's weight. The secondary bearing simply stabilizes the arm to prevent the arm from "rolling" in response to record warp, and also to eliminate bearing chatter. This design reportedly also reduces tracking error, a claim that I can verify; in nearly five years of listening to a Vector I've never heard it mistrack. Moreover, most tonearms produce a "chattering" sound when playing as they vibrate in response to stylus movement, but the Vector is

SPECS & PRICING

Inspiration Turntable

Type: Belt-drive turntable with vacuum hold-down

Dimensions: 17.7" x 12" x 16.75"

System weight: 100 lbs.

Vacuum Hold-Down Control Unit and Pump

Dimensions: 6" x 3" x 10.5" (control unit)

Dimensions: 8" x 5" x 8" (pump)

Weight: 6 lbs. (control unit)

Weight: 15 lbs. (pump)

Basis Vector 4 Tonearm

Effective mass: 11-15 grams

Synchro-Wave Power Supply

Speeds: 33 1/3, 45

Dimensions: 13" x 3" x 10.5"

Weight: 12 lbs.

Warranty: Ten years parts and labor

System price: \$54,000

BASIS AUDIO

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ASSOCIATED EQUIPMENT

BAlabo BC-1 Mk-II preamplifier and BP-1 Mk-II amplifier, Constellation Altair preamplifier and Hercules power amplifiers, Mark Levinson No.53 amplifiers; Vandersteen Model 7, Rockport Altair, B&W 800 Diamond, Sonus faber "The Sonus faber", TAD Reference One, and Focal Stella Utopia EM loudspeakers; Meridian 808.3 and Meridian Sooloos system (Ethernet connected), dCS Puccini/U-Clock, and Berkeley Audio Design Alpha DAC, custom fanless and driveless PC server with Lynx AES16 card; iMac server with Berkeley Alpha USB interface; Air Tight PC-1 Supreme cartridge; Aesthetix Rhea Signature phonostage; Shunyata V-Ray V2, Audience aR6tS, Shunyata Talos and Triton power conditioners; Shunyata CX-series and Audience Au24 AC cords; Transparent XL Reference interconnects; Transparent XL Reference loudspeaker cables; WEL Signature interconnects; AudioQuest WBY cables; Shunyata Anaconda interconnects and loudspeaker cable

EQUIPMENT REVIEW - Basis Inspiration Turntable and Vector 4 Tonearm

completely silent. Adding the stabilizer bearing sounds like a simple and obvious solution, but before the Vector, no one had thought of it.

The Inspiration incorporates Basis' cable-support system, a small block of acrylic mounted to the base behind the tonearm that isolates the turntable and tonearm from vibration entering through the cables. The heroic measures to isolate the turntable from vibration could be compromised by this vibration path, but the cable-support system effectively maintains isolation.

Basis makes a dedicated stand for the Inspiration that holds the turntable, Synchro-Wave Power Supply, vacuum controller, and vacuum pump. The \$18,000 stand is made from acrylic to visually match the turntable. It doesn't employ any isolation technology, but is rigid and non-resonant.

The Inspiration is a beautiful piece of mechanical engineering that represents the culmination of A.J. Conti's more than 27 years of turntable-design experience. The way it feels in daily operation, the sense of precision and perfection, and the stunning finish quality make it a joy to use.

Listening

The Inspiration builds on the manifold sonic virtues of the 2800 Signature to a degree that results in a qualitative change rather than just a quantitative one. That is, the differences aren't just matters of degree or distinction in a few sonic criteria; rather the Inspiration so exceeds the 2800's performance that it transforms the listening experience.

The traditional Basis qualities—a dead-

quiet background, flawless pitch stability, wide dynamics, crisp transients—are in abundance. This new 'table delivers a highly precise-sounding presentation, with great clarity, high resolution, lack of added warmth, great transient speed with no overhang, and a seemingly colorless rendering of timbre. Some electronics, sources, and loudspeakers that fit this description can sound impressive sonically, yet fail to connect musically. These products sound highly “technical” and precise in the same way that legal documents are technical and precise. In legal documents everything is spelled out flawlessly in a technical sense, but that precision of language impedes the communication of meaning—not to mention that the prose is utterly joyless. Similarly, highly analytical components overlay the music with a cold, mechanical patina that erects a barrier between listener and music. The resolution is exaggerated artifice, not reality. It's the antithesis of a warm and forgiving classic tubed amplifier, or a loudspeaker that renders a soft focus in the name of musical beauty.

The Inspiration's great triumph is that it nails every single technical aspect of reproduced sound by any sonic criteria, but does so in a musically communicative and engaging way. The Inspiration doesn't detract from musical expression with its high-precision rendering; in fact, that precision is exactly why the Inspiration is the most musically rewarding source component I've had in my home in more than 22 years of reviewing. The Inspiration's clarity, transparency, resolution, vividness, and life are not artifacts but rather characteristics of the music. With the Inspiration there's no hint of hype or etch to transient detail, and no thinning of tone color

that causes timbres to become “skeletal” in the pursuit of “resolution.” Yet the Inspiration isn't warm, forgiving, relaxed, or easygoing. It doesn't soften transient leading edges, adds no richness to timbres, and never warms up the upper bass and lower midrange with a bit of overhang. What it does do is act as a transparent window on the LP, faithfully conveying exactly what's in the grooves with no editorial interpretation. The Inspiration can be vivid, immediate, and lively, yet simultaneously rich, full, warm, and full-bodied because music can have all those qualities simultaneously. The Inspiration's defining quality is that it doesn't walk the fine line between analytical sterility and romantic warmth; it simply rejects the dichotomy by being so colorless and transparent to the source.

Moving to the specific performance attributes, the Inspiration's rock-solid pitch stability pays musical dividends in many areas. As I learned when comparing belts of varying precision and thickness for my review of the 2800 Signature, pitch stability is a fundamental performance criterion. This quality confers many sonic rewards, some of which you wouldn't naturally associate with micro-speed variations. The first of these is the sense of timbral realism. The Inspiration renders instrumental timbre with a lifelike immediacy, vividness, and palpability that are simply sensational. Turntables without this precision seem to dilute the sense of life, making LPs sound a bit more like CD's “flatter” rendering. (I don't mean “flatter” spatially, but lacking the depth and complexity of tone color, and the resolution of the very finest components of an instrument's timbre and microdynamics that infuse the sound with a sense of life.)

Timbres are simply believable, and with that believability comes the sense of a human being playing the instrument. The Inspiration is stunning in its ability to bring instrumental images to life, courtesy of this vividness of timbre and richness of tone colors. This quality, I believe, is the primary reason the Inspiration transcends the experience of hearing reproduced sound and instead fosters a feeling of being in the presence of contemporaneous music-making.

This ultra-precise pitch stability is key to the soundstage solidity and stability. The Inspiration's spatial presentation is phenomenal in every respect, but particularly in the clarity of image outlines and the sense of each instrument occupying a specific location separate from other instruments. “Crisp” is a word that comes to mind in describing the soundstage. The stage is richly portrayed, exhibiting palpable immediacy on instruments toward the front of the stage, with layer upon layer of depth in fine gradations all the way to the back of the hall. The Inspiration is particularly adept at precisely conveying the distance between the musician and microphones, a performance characteristic that allows a dense and richly textured musical panorama to unfold before you.

A fundamental quality of Basis 'tables has been a lack of noise, a characteristic that is extended in the Inspiration. It isn't just that the Inspiration lacks low-frequency rumble or has an utterly silent, jet-black background, but it also seems to make LP surfaces quieter. When listening to good pressings—try the spectacular new Reference Recordings releases *From the Age of Swing* and Stravinsky's *Firebird* and *Song of the Nightingale*—there is no indication you are

EQUIPMENT REVIEW - Basis Inspiration Turntable and Vector 4 Tonearm

listening to LPs. The residual background you often hear from LP playback is simply nonexistent. *The Firebird* has long passages of extremely low signal levels, but the combination of the fabulous pressing quality and the Inspiration's vanishingly low noise produce an eerie quiet that you don't normally associate with LPs. At the other end of the dynamic scale, the Inspiration is immune to congestion or hardening of timbre on orchestral climaxes even at high levels through large loudspeakers with prodigious bass output—no doubt because of its heroic vibration-isolation design and execution.

Transient reproduction and dynamic rendering are simply phenomenal. Through the Inspiration transients start very quickly with steep leading edges and no overhang. I had the impression that none of the transients' energy were smeared on the leading edge, or stored and released later on the trailing edges. Consequently, percussion practically leaps from the soundstage with stunning vividness. The entire presentation has a dynamic agility that powerfully conveys music's rhythmic power. This is true whether the dynamics are small in scale, as with low-level percussion, or massive, as with orchestral climaxes. Moreover, the Inspiration beautifully conveys the sense of swing, and of intricate rhythmic nuance, in great acoustic bass-playing on jazz LPs.

The Inspiration is unique in my experience in the way it resolves very fine detail, particularly instrumental decays. We've recently started using the term "self-noise" to describe a phenomenon in loudspeakers in which very fine detail is smeared or obscured by cabinet vibration. Self-noise is most easily heard, at least by me, on the decay of piano transients. I

can hear the harmonic structure change as the note decays, just as it does in life, but then, below some threshold, the decay is corrupted by micro-vibrations in the loudspeaker cabinet. This phenomenon dilutes the sense of realism, even if you're not aware of the specific mechanism causing the dilution. Heroic cabinet construction in loudspeakers is required to reduce self-noise to inaudible levels. Similarly, the Inspiration seems to have no self-noise; it beautifully resolves instrumental and reverberation decays smoothly down to inaudibility with no reduction in resolution or change in timbre. This quality also contributes to the Inspiration's jaw-dropping impression of instruments hanging in space. I know of no better example than Shelly Manne's ride cymbal on Sonny Rollins' *Way Out West* (the Analogue Productions reissue). When played on the Inspiration, the cymbal is right there, vivid, alive, present, and "now," not merely an acoustic representation of a mechanical representation of a magnetic representation of an acoustic waveform produced 54 years ago. That's the essential magic of high-performance hi-fi—the ability to erase time and space and make you feel like you're experiencing the music spontaneously as it's being created. This magic is the cumulative result of a product's specific performance attributes. A non-audiophile will experience the magic without a clue as to why the music sounds so lifelike. But in the Inspiration's case, I can clearly identify why it produces such magic—the utter lack of noise, stunning transient fidelity, richly textured tone colors, massive resolution without the slightest bit of analytical etch, spectacular three-dimensional soundstaging, and the unprecedented ability to resolve decays to below audibility.

Finally, I'd like to comment on a common thread among reader letters regarding LP playback. Many letter writers suggest that some of us at *The Absolute Sound* suffer from a "knee-jerk" prejudice that LPs are superior to digital. These readers are convinced of digital's superiority purely on theoretical grounds—how can the archaic technology of dragging a tiny chunk of polished diamond through wiggles in a piece of plastic produce better sound than the mathematical precision of today's digital perfection? My analog-loving colleagues and I don't base our belief in the superiority of analog on assumptions or prejudice, but on extensive first-hand listening to the finest examples of both media. When visiting listeners, from non-audiophile friends to some of the world's most experienced industry veterans, hear the Inspiration after first having heard CD, the reaction is universal, predictable, and almost comical—shock and amazement that such a huge jump in sound quality is possible from a system that already sounds terrific. I can also tell you that once visitors hear music played on the Inspiration, the rest of the listening session is via LPs.

Conclusion

The Basis Inspiration elevates LP playback to an entirely new level of musical expressiveness and listener involvement in my experience. The Inspiration seems to cross a threshold that is not just "better" on a sonic checklist (although it is phenomenal by every specific audiophile criteria), but that fosters a transformative musical connection that instantly makes me forget that checklist. It manages to produce a sound with tremendous clarity, resolution, and vividness, yet it never suggests even a hint of mechanical

sterility. This ability to convey a massive amount of musical information in a totally unforced, natural, and relaxed way is the Inspiration's core achievement.

In addition to this remarkable sound quality, the Inspiration is the result of meticulous, dedicated, and even obsessive design. Some of this perfectionism, such as the extreme mechanical precision, you can't see. But much of it you can appreciate just by looking at the execution. Every aspect of the design performs a technical function. The Inspiration is all it needs to be—and no more. There is no superfluous gesture, no added bling. This 'table's beauty emerges from its core values; it is not a garnish. It's also backed by a 27-year-old American company that can repair or update any turntable it has ever made.

How close does the Inspiration's sound quality come to that of the cost-no-object Work of Art, the \$170,000 turntable that "inspired" the Inspiration? I have no way of knowing, but when enjoying music through the Inspiration, it never occurred to me that I could possibly be missing anything more. *tas*

AAS Gabriel/Da Vinci Audio Reference Turntable Mk II

Simply Terrific

Jonathan Valin

Almost every time we do an Analog Buyer's Guide we feature a picture of the AAS Gabriel/Da Vinci Reference turntable on the "cover." The reason should be obvious to anyone with eyes: It's among the most beautiful hi-fi components in the world. Happily, in the Da Vinci's case beauty is more than skin-deep, for the latest iteration of this design gem is also one of the highest-fidelity turntables and tonearms in the world.

A good deal has changed between the "original" and Mk II versions of the AAS Gabriel/Da Vinci turntable, and, judging from the sonic results, every change has been for the better. Among other things, I'm told (by its designer Peter Brem) that the center of gravity of the massive cylindrical base, into which the equally massive platter fits like a nested Russian *matryoshka* doll, has been recalculated; the constrained-layer materials of which the base is made are new and joined together more precisely; and the spindle of the magnetic bearing, fixed to the inside bottom of the base and on top of which the platter floats, is completely new. Likewise, the magnetic ring

embedded in the bottom of the platter has been redesigned; the platter itself now uses specially fabricated copper cylinders inlaid into dense aluminum alloy; and the whole she-bang has been optimized for a superior flywheel effect. Additionally, Da Vinci's massive, expensive, constrained-layer feet use new bronze vertical bearings.

Those of you who've read my review of the "original" Gabriel/Da Vinci (reprinted in our 2011 *Guide to Vinyl Playback*, p. 50, downloadable for free at http://media.avguide.com/vinyl_buyers_guide_2011.pdf) will recall that I thought the Swiss 'table and arm set new standards of neutrality, transparency, and low-level resolution in vinyl playback, extending dynamic range on the *p-to-pppp* side in the same way that the great Walker Black Diamond record player extended dynamic range on the *f-to-ffff* side of the dynamic spectrum. Indeed, I compared the Da Vinci to the MartinLogan CLXes—those models of delicacy and detail at low levels—and the Walker to MBL X-Tremes—those dynamic dynamos at loud levels.

Since then both turntables, the Walker and the Da Vinci, have been improved mightily and,



ironically, both have extended their dynamic reach into the other's "territory." The Walker Black Diamond Mk II (there is a Mk III, which I've just begun to audition) now has much of the delicacy and resolution at low levels of the Da Vinci, while the Da Vinci now has much of the clout of the Walker at higher volumes. In other words, both record players now encompass more of the dynamic range of real music, greatly reducing the differences between them (although there are still differences, for which see my sidebar on the Da Vinci tonearms) and greatly lowering the "character" (which is to say, the characteristic colorations) of each.

As you will have gathered from what I just wrote, the big news about the Gabriel Mk II is

dynamics. And, brother, is this news good! As has been the case with speakers and electronics I've recently reviewed, noise, which was already very low in this magnetic-suspension, belt-driven 'table, is now audibly lower. As a result, details, both musical and engineering-related, are clearer than ever. (This honey is a sonic vacuum cleaner when it comes to transparency to sources.) But where before the original Da Vinci couldn't bring quite the same energy to timbres at loud levels than it did at softer ones, the Da Vinci Mk II has phenomenal transient speed and dynamic range, bespeaking overall cleaner, clearer, faster, less colored, wider-ranging, higher-fidelity response. Provided that you have speakers capable of reproducing transients clearly (such

EQUIPMENT REVIEW - AAS Gabriel/Da Vinci Audio Reference Mk II

as the Magico Q5s or the Magnepan 3.7s) and electronics that are equally transparent (such as those from Technical Brain, Soullution, Conrad-Johnson, or ARC), you will be amazed by the incredibly lifelike way the Da Vinci front end sorts out violinist Gidon Kremer's different types of off-the-string bowstrokes and pizzicatos or hangs onto the pitches and harmonics of pianist Andrei Gavrilov's thunderous *sforzandos* throughout the Schnittke Second Sonata [EMI]. If, like me, you used to think that digital owned dynamic range, once you hear plucked strings or sharply struck tamps through the Da Vinci Mk II you will think differently. The thing isn't just faster and more clearly focused than analog usually sounds; it's also more complete. For instance, with percussion instruments such as tamps the Da Vinci Mk II doesn't just give you the thwack of the mallet on the drumhead followed by a phasey blur of tone color; it gives you the trampoline-like rebound of the calfskin, along with the resonant tone of the copper bowl. And it gives you these things with a clarity that lets you better understand how the instrument itself works and how it is being played.

As I tried to say in my Technical Brain review, when a source, a speaker, or a piece of electronics gets timing right—the sequence of events, fine and coarse, that go into the sounding of a note—it also gets spatiality right. You not only hear what's happening more clearly; you “see” each instrument and performer imaged more clearly. For fidelity-to-mastertapes and absolute sound listeners, this is a huge advantage, like having not just a window on the orchestra but also a window on the individual performers, their instruments, and the score. The music is easier

to take in, the performance easier to appreciate, the orchestration or instrumentation easier to “decode.” When such transparency is joined, as it is in the Da Vinci Mk II, to unstinting energy at very low levels and very loud ones, you get (with the best sources) a leap in fidelity and realism.

As I noted earlier, like the original Da Vinci, this is a very high-resolution turntable. How high? Well, I can hear the differences in the engineering and mastering of LPs more clearly than I can with other 'tables, including the original Da Vinci. I can, for instance, now hear that different takes from different occasions are being stitched together in several of the Talking Heads' songs from *Stop Making Sense*—not altogether surprising in the soundtrack of a documentary pieced together from concerts filmed on three different December nights at the Pantages Theater in Hollywood. Then there is the sheer, staggering amount of musical information that the Da Vinci reproduces. When you can hear details that are obscured or simply not reproduced at all through other sources—such as the tiny fluctuations of vibrato in Melody Gardot's voice throughout “If The Stars Were Mine” from *My One & Only Thrill*, or the way she trills her “r's,” or the exact words the child is shouting in the charming potted-in-at-the-rear-of-the-stage epilogue to that tune—you know you're getting great resolution. Of course, with the Da Vinci's expanded dynamic range, this same increase in resolution can turn recordings of much larger-scale music into sonic wonders. Take the RCA blockbuster *Venice*. Although this Decca-engineered disc ranks high on just about everyone else's “Best RCA” list, I've always found it overrated, in part because the music is malarkey, but in equal part because I never

thought the sound was all that great. The bass, in particular, seemed overblown, due in part to the “alto rise” built into Kingsway Hall and in part to mic-preamp clipping on certain *fortississimo* passages. Well, the Da Vinci II (with the H&S Ice Blue cartridge) taught me a little lesson in the differences turntables, tonearms, and cartridges can make, sailing through what I thought were unplayable (because overmodulated) crescendos with ease, lucidity, and wall-and-floor-shaking dynamic impact, and not only preserving the famous gorgeousness of string and wind tone but augmenting it by clarifying the sheer number of string players and the loveliness of their ensemble.

But there is another key to the Da Vinci's ultra-high clarity (and brook-clear neutrality)—and that is the near absence of distracting and

confusing noise. A lot of distortion in hi-fi gear is clearly audible in the color and texture of the spaces behind and between musicians and the silences between notes. Although harder to separate out, this same noise mixes into the foreground as well, slightly blurring the outlines of instruments and vocalists, making them tougher to hear distinctly when they're playing or singing in groups or doubling one another at the same pitches, as well as coloring their timbres. The effect is analogous to the way MPEG distortion pops up in the background of some highly compressed high-def TV pictures, adding a kind of crawly speckled parti-colored texture to out-of-focus elements of the scene and to the edges of in-focus foreground images. The Da Vinci II has next to none of this kind of noise. Its backgrounds and silences are grainless

SPECS & PRICING

Type: Belt-driven, magnetic-suspension turntable with outboard motor and double-gimbaled, ruby-bearing 12" tonearm

Price: AAS Gabriel/Da Vinci Reference Turntable Mk II, \$76,190 (with motor, motor base, and one arm stand); Grand Reference Grandezza tonearm, \$12,500

DA VINCI AUDIO LABS GMBH

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JV'S REFERENCE SYSTEM

Loudspeakers: Magico Q5, TAD CR-1, MartinLogan CLX, Magnepan 1.7, Magnepan 3.7

Linestage preamps: Conrad-Johnson GAT, Audio Research Corporation Reference 40

Phonostage preamps: Audio Research Reference 2

Power amplifiers: Conrad-Johnson ART, Lamm ML2.2

Analog source: Walker Audio Proscenium Black Diamond Mk III record player, Da Vinci AAS Gabriel Mk II turntable

Phono cartridges: Clearaudio Goldfinger Statement, Ortofon MC A90, Benz LP S-MR, H&S Ice Blue

Cable and interconnect: Synergistic Research Galileo

Power Cords: Synergistic Research Tesla, Shunyata King Cobra

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EQUIPMENT REVIEW - AAS Gabriel/Da Vinci Audio Reference Mk II

and neither dark nor light, as clear of color or texture as the proverbial open window. As a result, individual instruments—even within groups, even when doubling other instruments at the same pitches and intensities—are far easier to make out and far more realistic.

A further result of this lower noise may be the greater (and clearer) breadth and depth of the Da Vinci's soundstage, which is right up there with the Walker for panorama, given the right recording. The sheer size of the stage on the *Venice* disc—and the clarity and disposition of the large number of players—was something else the Da Vinci taught me about this LP and

many others in my collection. I don't mean to suggest that the Da Vinci (or the Walker) makes every soundstage sound bigger. Everything depends on the engineering and mastering of the LP.

Let's face it: A turntable only has two jobs—to hold the record in place beneath the tonearm without feeding any sound of its own (or any sound reflected from the LP or the room) back through the vinyl and into the playback loop, and to keep that LP moving at precisely 33.3 rpm. The AAS Gabriel/Da Vinci Reference Mk II does this better than virtually anything else I've yet had in house. In combination

with the superb 12" Da Vinci Grand Reference Grandezza tonearm (for which see the sidebar on the following page), it is one of the two highest-fidelity source components I've heard. (The other is the new Walker Black Diamond Mk III.) Though the Da Vinci costs a lot of money (\$76,190 for the 'table, motor, and one tonearm base in Aston-Martin Black Onyx finish, plus another \$12,500 for the tonearm), if you have a lot of money, an eye for beauty, a passion for the lifelike reproduction of music, and a large record collection, you owe it to yourself to audition this gorgeous Swiss masterpiece. Highest recommendation. **tas**



DA VINCI SETUP

The Da Vinci Mk II comes in three cylindrical parts: One cylinder houses the motor and motor controller, one the magnetically suspended platter, and one the tonearm. Three sets of Da Vinci's massive constrained-layer feet (one for each cylinder), several turntable belts, dedicated Feickert tonearm and cartridge alignment tools, numerous Allen-head screwdrivers, and assorted other goodies are included in the bundle—all of them beautifully made and packaged.

You will need some help to assemble this tri-partite record player. You will also need a large and very well-damped stand. (Da Vinci recommends—and I am using—Critical Mass Systems' highly engineered, beautifully constructed and finished MAXXUM stand, which, alas, will set you back another \$40k. Of course, if you have this kind of mad money—or you're me—who's counting?)

After attaching its feet to the bottom of the big cylinder and depositing a few drops of the supplied oil on the tip of its inverted bearing, you will seat the massive platter atop the bearing spindle. This is definitely a two-person job. However, once it is accomplished

you will be surprised by the results, especially if you have no previous experience with magnetic-suspension turntables. Built into the bottom of the platter's base cylinder is a high-powered ring magnet that circles the bearing spindle. A similar ring magnet of the same charge is set into the bottom of the platter, circling the well into which the spindle fits. Since magnetic "likes" repel, you will find that the platter, as large and heavy as it is, "floats" above the bearing on a gap of air produced by the magnetic field. (The platter doesn't contact the bearing tip; it merely rotates around the spindle.

This air gap—which is functionally the same as the air gap in the Walker air-bearing turntable—is, IMO, a large part of the reason for the low noise (and consequent higher resolution) of the Da Vinci 'table. As with those who pooh-pooh twelve-inch arms, there are some who claim that air bearings have a resonance of their own. This may be the case, but it then becomes hard to explain why delicate instruments that require the ultimate in isolation from airborne and floorborne resonance, like electron microscopes and LP and CD cutting lathes, traditionally sit on air-bearing stands.

After situating your Da Vinci turntable on your \$40k CMS stand, you will set the motor/motor controller (with its feet attached) at

the proper distance from the 'table. The "proper distance" depends on which belt you use (there is a long one and a short one). In either case, Brem recommends that the belt sees very low tension, so when you loop it around the platter make sure the motor base is not too far away. When you hook a finger through it, the belt should feel loose, not taut.

The location of the tonearm stand, to which the Grandezza is attached via a beautifully constructed Da Vinci arm mount, will depend on the distance from the spindle to the center of the tonearm bearing. Using the supplied dedicated Feickert protractor, determining this distance is a snap. Just fit the hole in the protractor around the turntable spindle and drop the pointer that fits into the protractor into the dimple at the exact center of the tonearm's bearing housing. You will have to move the arm stand to achieve the proper distance, but once you've done this, your work of setting up the Da Vinci is done. (Save, of course, for mounting the cartridge in the headshell and using the supplied plastic template to properly align it for minimum tracking error.) **JV**

EQUIPMENT REVIEW - AAS Gabriel/Da Vinci Audio Reference Mk II

DA VINCI TONEARMS, OLD AND NEW

Just prior to our press date, I learned that Peter Brem of Da Vinci has put a new tonearm into production, the Master's Reference Virtu, which I hope to review in the near future. The Virtu was designed by Brem and Sandro Figi to address some of the perceived shortcomings of the Grandezza, particularly in the way of adjustability.

The Grand Reference Grandezza tonearm (sometimes I think Peter Brem learned to name products at the School for Would-Be Royals), with which the Da Vinci II that I'm reviewing is equipped, is a 12", double-gimballed, medium-mass, ruby-bearing tonearm of striking beauty. As I noted in my original Da Vinci review, the arm's bearing is made by the highest-end clockmaker in Switzerland, with an armtube constructed of ebony and copper/wolfram (tungsten) and a bearing block and arm-mount of bronze and stainless-steel, finished in platinum. The arm has a VTA adjustment: A long stainless-steel set-screw, housed snugly on the righthand side of the bearing block, is lowered via a (supplied) Allen-head screwdriver to the stainless-steel arm base; the arm itself is then loosened via two (supplied) Allen-head screwdrivers, raised or lowered by turning the set-screw, then retightened in its base, after which the set-screw is raised back into the bearing block. The Grandezza also has a magnetic damping adjustment: A simple knurled screw with a magnetic tip on the lefthand side of the bearing mount is rotated closer to or farther from the bearing assembly to regulate the amount of damping. But these adjustments are rudimentary: There are no gauges associated with either screw, so the final setting must necessarily be done by ear. Likewise, VTF is set via manual adjustment of two platinum-finished damped bronze counterweights that are loosened and tightened via the supplied Allen-head screwdriver.

The relative simplicity (or crudeness) of the Grandezza's adjustable parts—and the lack of antiskating and azimuth controls—has met with some complaint. Despite what one of my dear friends and colleagues, Mr. Seydor, has said about immediately returning any cartridge whose azimuth isn't perfectly correct from the factory, I have yet to review a moving coil in which channel balance and separation were maximal without some fiddling with azimuth. Of course, there is nothing to prevent you from adjusting azimuth on an arm like the Grandezza the "old-fashioned" way, via shims, although this is an admittedly laborious means of going about it.

In part to answer these criticisms—and in larger part to sonically outdo the Grandezza—Brem designed the Virtu, which not only includes precision VTA and azimuth adjustments but has an entirely new four-point, fixed-gimbal, magnetic/ruby bearing, as well as exchangeable ebony and/or carbon tonearm tubes (twelve-inchers, 'natch) for precise cartridge-compliance matching!

I must say that, on paper at least, it appears as if Peter and Sandro really went the "other direction" with the new arm. To my mind and ear, the thing that made and makes the Grandezza the best pivoted arm I've yet heard is the very thing that some people complained about: its simplicity. Outside of that retractable set screw and the magnetic damping screw (both of which can be physically removed without sonic penalty) and the bearing itself, there are no movable parts on the Grandezza. It is essentially a virtually resonance-free armtube, a very-low-chatter bearing, and a damped counterweight, with no viscous fluid tanks, paddles, secondary bearings, spring-loaded antiskate or VTA devices, rack-and-pinion gears, removable armtubes, and

the extra joints and hardware necessitated by same, hanging off it to add resonances.

It is also a twelve-inch (so-called "transcription") arm, with lower tracking error than conventional ten- and nine-inch arms. There are those who claim that the greater amount of tracking error in standard-length pivoted arms makes next to no difference in the fidelity with which LPs are reproduced. I'm hear to tell you that has not been my experience, and if you don't believe me let me refer you again to Mr. Seydor and his eye-opening review of the straight-line-tracking (e.g., zero tracking error) Bergmann Sindre record player.

Now it is true that twelve-inch arms present engineering challenges with the distribution of mass and the damping of resonances that shorter arms do not. All I can say is that, judging by ear and experience, the Grandezza has successfully solved these problems. It is quite clearly as high in resolution and low in noise, as neutral and resonance-free as the superb 'table it is paired with, and comes as close as a pivoted arm can to the track-to-track sonic consistency of an SLT arm.

It remains to be seen (or heard) whether the far greater adjustability (and far greater complexity) of the Virtu will result in unmitigated sonic improvements over the elegantly simple Grandezza. Peter Brem, who is not given to overstatement, says that the new arm is considerably better than the Grandezza. Which means that it is superior to the most neutral and transparent pivoted arm I've heard (and I've heard a few).

I'll say this: If it is "considerably better," then the Virtu is really going to be something special. I will report my findings as soon as the Master's Reference Virtu has arrived and been played in.

JV

Walker Proscenium Black Diamond Mk II Record Player

Long-Time Companion

PLUS A Note on the Mk III Upgrade

Jonathan Valin



For almost ten years, every time I've listened to LPs I've listen 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 WallyTractor to rotational-speed-setting strobe and test record to spare belts and assorted other tools and parts, comes with every Walker); 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

EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player

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.

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 am, in fact, a huge fan of several, particularly the twelve-inch Da Vinci Grandezza and the eleven-inch Kuzma 4P—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 kisses 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 undulations 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 just let the record “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 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

SPECS & PRICING

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: \$89,995 (including installation)

WALKER AUDIO

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Audubon, PA 19403

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walkeraudio.com

JV's Reference System

Loudspeakers: Magico M5, MartinLogan CLX, Raidho C1.1, Magnepan 1.7, Magnepan 3.7, Magnepan 20.7

Linestage preamps: Constellation Audio Virgo

Phonostage preamps: Audio Research Reference Phono 2SE, Constellation Audio Perseus

Power amplifiers: Constellation Audio Centaur, c-j ART, Lamm ML-2

Analog source: Walker Audio Proscenium Black Diamond record player, AAS Gabriel/Da Vinci turntable with DaVinci Grandezza tonearm

Phono cartridges: Clearaudio Goldfinger Statement, Benz LP S-MR, Ortofon MC A90

Cable and interconnect: Tara Labs “Zero” Gold interconnect, Tara Labs “Omega” Gold speaker cable, Tara Labs “The One” Cobalt power cords, MIT Oracle MA-X interconnect, MIT Oracle MA speaker cable, Synergistic Research Absolute Reference speakers cables and interconnects, Audio Tekne Litz wire cable and interconnect

Accessories: Shakti Hallographs (6), A/V Room Services Metu acoustic panels and corner traps, ASC Tube Traps, Critical Mass MAXXUM equipment stands (2), Symposium Isis equipment stand, Symposium Ultra equipment platforms, Symposium Rollerblocks, Symposium Fat Padz, Walker Prologue Reference equipment stand, Walker Prologue amp stands, Shunyata Research Hydra V-Ray power distributor and Anaconda Helix Alpha/VX power cables, Tara Labs PM 2 AC Power Screens, Shunyata Research Dark Field Cable Elevators, Walker Valid Points and Resonance Control discs, Winds Arm Load meter, Clearaudio Double Matrix record cleaner, HiFi-Tuning silver/gold fuses

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EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player

warps (roughly somewhere below 15Hz and above 7Hz). With bearings, the best that can be hoped for is to make one that freely permits the requisite amount of up/down and side-to-side movement without twisting and without “chattering in its 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 dual-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). 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

THE WALKER PROSCENIUM BLACK DIAMOND MK III

Late in the winter of 2012, Lloyd Walker and his partner Fred Law visited me to install several remarkable improvements to the Black Diamond Mk II: a new set of air-bearing feet (with a separate, metered, fully adjustable air supply), a new clamp that replaces the Teflon insert of the old one with a bronze constrained-layer-damped number, and a new fluid to viscously damp the Black Diamond tonearm.

All of these improvements to the Black Diamond Mk II (now called the Mk III because of these substantial changes) are audible in precisely the same way: Higher resolution, lower noise. The new air-bearing feet, in particular, make a remarkable difference in the recovery of low-level detail, in richness of tone color, and in dynamic range (presumably because they are markedly lowering acoustic feedback and allowing the ‘table/arm/cartridge atop them to function more optimally). Frankly, the original Walker air-bearing feet were sometimes a pain-in-the-butt. They worked, of course, but they could go out of whack on occasions (which necessitated re-balancing the turntable), were slow to inflate at startup (particularly the critical front right foot), and never fully isolated the ‘table from really heavy footfalls (i.e., stomps). The new feet solve all of these problems; moreover, since they are adjustable (a separate analog gauge tells you exactly what PSI you’re using), you can “tune” the suspension like an air “spring” to best suit the compliance of your cartridge (and come back to exactly where you started from if you’re not happy with the adjustment).

Frankly, I wouldn’t have believed that an improvement of this magnitude was possible in a turntable that was already as high in resolution,

transparency, and sheer realism as the Walker Mk II. But...hearing is believing, and, folks, these new feet make a good deal more than a little difference.

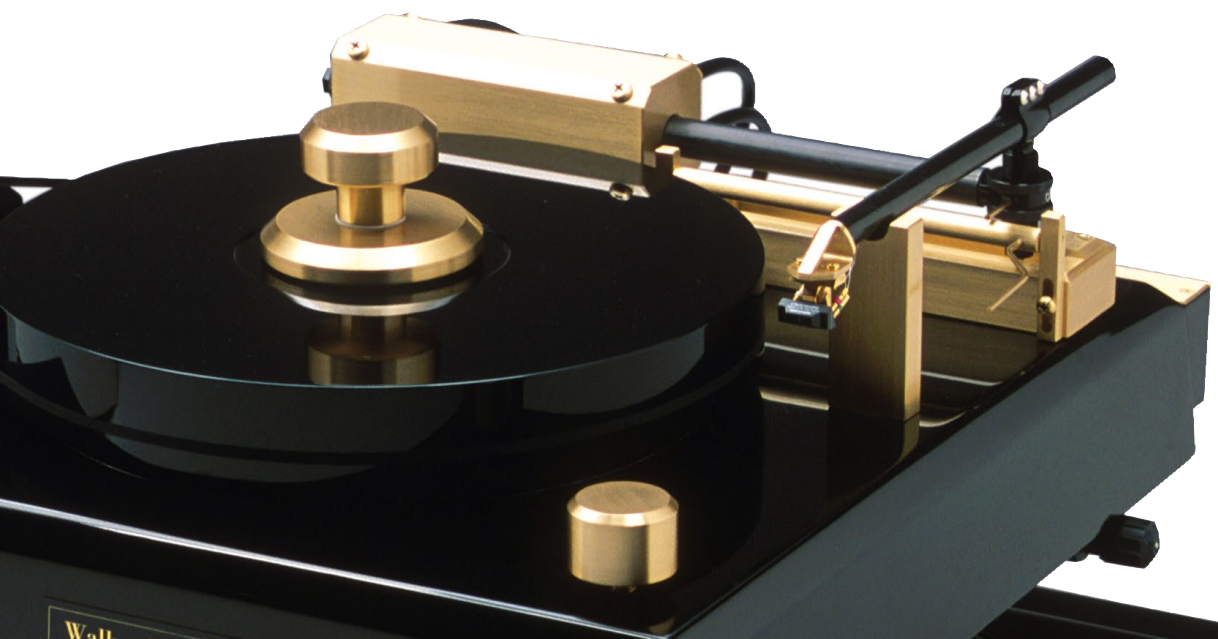
The new constrained-layer-damped clamp also improves resolution, eking out just a smidgeon more detail than the old one (in analog playback, smidgeons count), although the improvement isn’t as dramatic as that wrought by the feet.

To be honest, I don’t hear a big difference between the new damping fluid and the old one, though it does seem as if the new fluid takes effect more quickly and dramatically. As a result, you may not need to damp as much as you previously did, and when you do damp you will hear the improvement that “more” or “less” damping makes more clearly.

It sometimes amazes me that folks like Lloyd and Fred have the patience and the ingenuity to keep tinkering with virtual perfection. But in the high end, that tinkering—that relentless drive to come closer and closer to the absolute sound—is what separates the men from the boys. With the Acoustic Signature Ascona and the AAS Gabriel/Da Vinci Mk II breathing down their necks, Walker and Law have nothing more or less than improve the margin between their ‘table and the competition. The Ascona and the Da Vinci are truly great (and I’ve yet to hear the Da Vinci with the Virtu tonearm), but the new Walker Black Diamond Mk III is, as of this writing, better.

In sum, the highest-fidelity analog source component I’ve heard is now even higher in fidelity. (Those of you who own earlier versions of the Walker can upgrade to the Mk III version for \$5999. Trust me: You won’t regret spending the money.) **JV**

EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player



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 frictionless 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 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, your understanding of the structure of the composition, and 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 is a thing of mouth-clapping wonder. Any advantages that the AAS Gabriel/

EQUIPMENT REVIEW - Walker Proscenium Black Diamond Mk II Record Player

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 naturally or 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 voice 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. 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 \$89k (including delivery and installation), more expensive than ever, though not as expensive as the highest-priced 'tables on the market. It is large, heavy, 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 'tables 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 one-to-two 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 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 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 ever 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

Three Affordable Cartridges from Audio-Technica

Great Sound on a Budget

Neil Gader



Against all odds, in the year 2011 the LP playback celebration continues and even appears to be intensifying. From the most outlandish turntable exotica to the humble budget-priced spinner, the analog selection is expansive and growing. But what about cartridges? Moving-coil models are the acknowledged sonic elite—the haute couture of analog that commands the steadiest nerves and the deepest pockets. However, in a TAS interview in Issue 215, Harry Weisfeld of VPI made a statement that struck a chord with me. When asked what was the biggest innovation he’s seen in LP playback in the last 10 years he replied: “The rebirth of moving-iron and moving-magnet cartridges...when done right, they can be wonderful and young people can afford them and enjoy music. If it’s just us old farts buying \$4000 mc’s, this business is doomed.” Well put and, like they say, timing is everything as, coincidentally, I’d just taken delivery of three off-the-rack and under-\$500 moving-magnet models from Audio-Technica—ideally priced to suit a variety of budgets.

The AT120E/T and AT440MLa bear a close resemblance to one another, sporting dual-magnet motors wrapped within identical plastic bodies. They weigh a feather-light 6.5 ounces apiece and are light trackers. However, only the AT440 uses Ohno copper wire in its coil and lead wires. They also diverge significantly in stylus profile. The AT120E/T uses the more common nude elliptical, while the AT440MLa opts for the sophistication of a Nude MicroLine—a stylus optimized to engage a record’s grooves more completely.

At a mere \$119, the AT120E/T was a solid performer and a good tracker, but a bit uneven tonally. It had a softer, more

laid-back perspective, and a warmish low end. There was good transient speed up top but also a general dryness in that region. During Vaughan Williams’ *The Wasps* Overture, string sections struck me as a bit glazed and lean during peaks. The harp situated to the right downstage was nicely defined with good individual string definition, but in the lower register of bass viols and contrabassoon I thought that timbre could be a bit of a muddle and at moments just a little short on speed and specifics. At the other octave extreme, percussion transients were swift but cymbals lacked delicacy of decay. Like a match being struck, they had an initial

flare-like effect but grew a bit vague as they trailed off.

During Billy Joel’s “Rosalinda’s Eyes” from the terrific Kevin Gray remastering of *52nd Street* [Impex], the low-level resolution of the nylon string guitar and penny whistle were cleanly conveyed, but the AT120E/T just didn’t move enough upper-frequency air and finished up sounding a bit hollow. Its performance would have been respectable in this price range were it not for the Ortofon 2M Red (\$99) that I reviewed awhile back. That cartridge also manifested a leaner, slightly treble-weighted character, but it met other performance challenges that usually

EQUIPMENT REVIEW - Three Affordable Cartridges from Audio-Technica

defeat all comers in this range. Overall I felt that the basic character of the AT120E/T was just a bit more ho-hum than hummable.

The \$239 AT440MLa was a whole, new, high-octane ball game compared to the AT120E/T.

SPECS & PRICING

AT120E/T

Output: 5.0mV

Load impedance: 47k ohms

Tracking Force: 1.0–1.8 grams (1.4 optimal)

Weight: 6.5 grams

Price: \$119

AT440MLa

Output: 4.0mV

Load impedance: 47k ohms

Tracking force: 1.0–1.8 grams

Weight: 6.5 grams

Price: \$239

AT150MLX

Output: 4.0mV

Load impedance: 47k ohms

Load capacitance: 100–200pF

Tracking force: 0.75–1.75grams

Weight: 8.3 grams

Price: \$485

AUDIO-TECHNICA U.S., INC.

1221 Commerce Drive

Stow, Ohio 44224

(330) 686-2600

audio-technica.com

It ignited sonics with dynamic force, enhanced harmonic structure, and sharpened image focus. Tonally the cartridge was more balanced. Compared with the AT120E/T, the heavy establishing beat and rhythm section that opens Billy Joel's "Stiletto" ripened with pace and jump. The kick drum not only tightened up considerably in the transient sense, but beyond the initial attack, timbral information became more opulent and tuneful, capturing the authentic sound of a padded mallet striking a drumhead. And in air and dimensionality the track seemed to open its arms wide. During *The Wasps*, natural timbres held fast, the bloom and glow of the horns was reinstated, and dynamic perspectives and low-level inter-orchestral relationships seemed to re-establish themselves among the individual sections. Winds, percussion, and low strings evinced an excellent transient character that could only be described as lively but not nerve-wracking. Only the top octaves of violins seemed to have a little too much upper-frequency tightness in their voicing. Imaging was very good, while depth was sufficient to intimate a sense of reflected energy off the backwall of the venue. Where the AT120E/T seemed a bit flat-footed, the AT440MLa was some kind of dancer—and an irrepressible bargain, to boot.

The \$485 AT150MLX was another animal altogether. It's outfitted with Audio Technica's Vector-Aligned magnets, which are positioned, in A-T's words, to "precisely match the positions of the left and right channels in the stereo record groove." The AT150MLX also adds a gold-plated boron cantilever for rigidity, lightness, and resonance damping, a nude-mounted MicroLine stylus, pure Ohno cast copper for the windings, leads, and terminals, plus an anti-resonant ceramic mounting base. And *adíos* to the all-plastic body. Weapons-grade all the way.

If the character of the AT120E/T was bit on the submissive side, the AT150MLX was pure alpha male, dominant and refined in its tonal forthrightness and dynamism. As it tracked the grooves it had a composure and liquid elegance that called to mind far pricier competition. It smoothly tracked the deceptively detailed low-level moments and quick transients of Ricki Lee Jones' "I'll Be Seeing You" from *Pop Pop* [ORG] and did an excellent job covering the tricky dimensional aspects of the moody, conspiratorial ambience of Dire Straits' "Private Investigations" [Warner]. My only minor quibble would be a whitish characteristic to Elton John's vocal during "Indian Sunset" from *Madman Across The Water* [DCC].

Compared to a fine moving coil like the Air Tight PC-3, the 150MLX has more midrange weight, a lower center of gravity in tonal terms. Where the PC-3 seemed to float images with an almost ethereal delicacy and provide the speed and air for which moving coils are renowned, the AT150MLX seemed more of this earth. It faltered slightly trying to hold onto low-level detail and the decay of isolated notes, like the final piano chord struck at the end of Diana Krall's "A Case Of You" on *Live in Paris* [ORG] or the cymbal riding high just behind the piano during "Fly Me To The Moon." Details such as these were a little glossed over. Then again the moving magnet's low-key expressiveness and midrange solidity remained very compelling, simply because of its distinct aversion to hype. I wish that it would have reproduced a better sense of the dimensional space in and around a performer, however. If a cartridge could be compared to a style of runner, I'd say it was not as whip-quick off the line as a sprinter, but to its credit it had the relaxed, centered, easy stride of a long distance runner, which brings with it its own authenticity and rewards over the longer haul.

It's not always a foregone conclusion that the results of a survey will conform to price but such was the case here. If the AT120E/T was the entry-level wallflower, the AT440MLa came out with both fists swinging. With performance and temperament that rivaled but did not match the twice-the-price AT150MLX, it was an obvious bargain. On the other hand the AT150MLX is without doubt a superior cartridge, lending further credence to the Weisfield quote that moving magnets have never been so good. Which is just another way of saying that fans of analog have never had it better. **tas**



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.

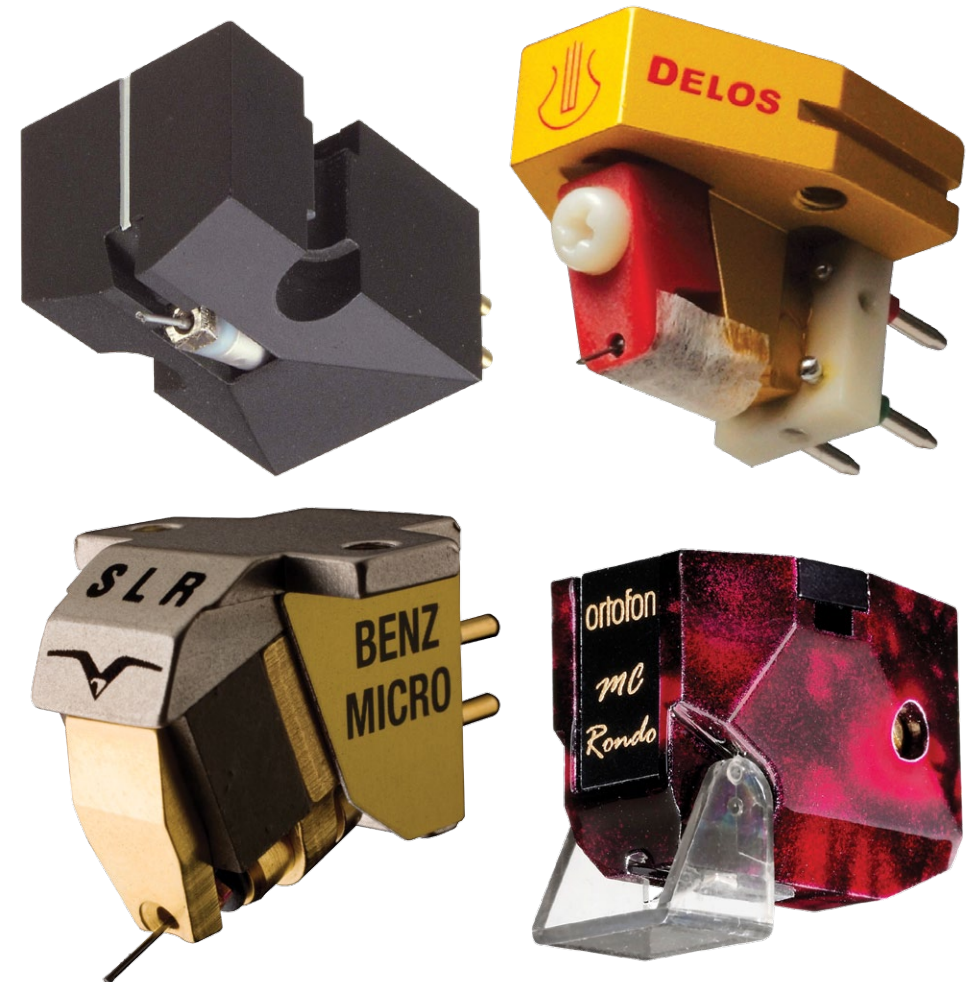
What follows does not pretend to be either an exhaustive survey or a definitive account. Instead, it's a snapshot of what four well-respected models covering a wide range of prices sounded like in my current system, and my impressions of how each performs, with an attempt to explain what you, the potential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

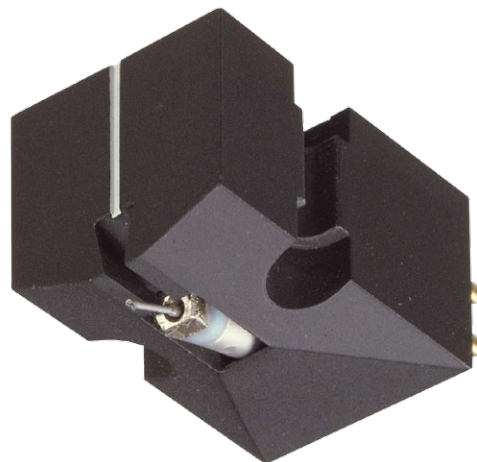
For this round-up I was initially to have received the slightly upscale version of Denon's venerable DL-103 (the "R" version)—favored by none another than Dave Wilson, regardless of price, for its tonal accuracy and overall balance—but instead, perhaps due to a communication mix-up, I ended up with the 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

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

body and strings was impressively realistic. Pace 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 quite 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,

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

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. 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

SPECS & PRICING

Denon DL-103 Output voltage: 0.3mV Recommended tracking force: 2.5 grams Weight: 8.5g Price: \$229	DENON ELECTRONICS 100 Corporate Drive Mahwah, New Jersey 07430 (201) 762-6500 usa.denon.com
Lyra Delos Output voltage: 0.6mV Recommended tracking force: 1.7-1.8 grams Weight: 7.3g Price: \$1650	AUDIOQUEST 2621 White Road Irvine, CA 92614 (949) 585-0111 audioquest.com
Ortofon MC Rondo Red Output voltage: 0.5mV Recommended tracking force: 2.3 grams Weight: 10.5g Price: \$599	ORTOFON INC. 500 Executive Blvd., Suite 102 Ossing, New York 10562 (914) 762-8646 ortofon.us
Benz-Micro Gullwing SLR Output voltage: 0.35mV Recommended tracking force: 1.8-2.0 grams Weight: 7.8g Price: \$3000	MUSICAL SURROUNDINGS 5662 Shattuck Avenue Oakland, California 94609 (510) 547.5006 musicalsurrroundings.com

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

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.

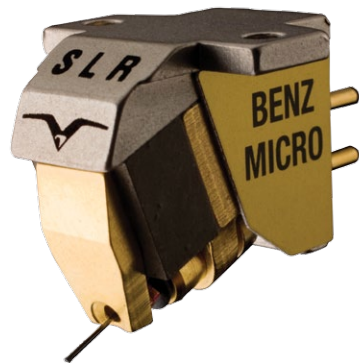
On *Petrushka*, the Gullwing delivered a remarkable facsimile of the orchestra itself, which seemingly occupied a larger, wider, and more three-dimensional soundstage than I’d previously heard. Once again, the sensation of the room’s ambience, and also of the air surrounding and separating the instruments, 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 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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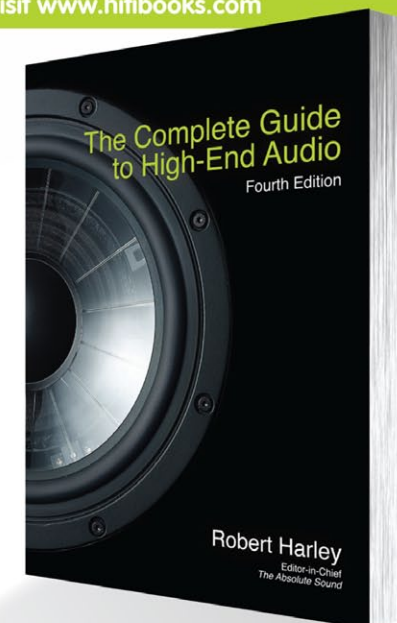
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Sumiko Palo Santos Presentation Cartridge

Perfect Balance

Neil Gader

With 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. While



EQUIPMENT REVIEW - Sumiko Palo Santos Presentation Cartridge

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: \$3999

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Air Tight PC-3 Phono Cartridge

Family Ties

Neil Gader

When I read Jonathan Valin's review of the Air Tight PC-1 Supreme ("World's Best?", Issue 190), I felt a mixture of envy and, well...more envy. JV wrote about cartridge technology and performance at or near its zenith, and all I could do was grumble to myself, "Yet another cartridge so far beyond my means that I'll be more likely to summit Mt. Everest than ever afford one." That is until Air Tight's distributor Arturo Manzano (sensing my plight?) offered me an opportunity to listen to the PC-1's little brother.



Even at a fraction of the price of the \$9k PC-1 Supreme, the \$3500 PC-3 is anything but blue plate. The basic extruded aluminum body style of the flagship is retained and although the motor design doesn't use Air Tight's proprietary ultra-high- μ core material, dubbed SH- μ X, the PC-3 motor has been tuned through the midrange to be a near sonic match. Some of the tale is told by comparing critical specs. The PC-1 Supreme is built for speed and transparency with an astonishingly low internal impedance of 1 ohm and fewer coil windings for a lower moving mass and a lower output voltage of 0.4mV. The PC-3 is no slouch in either department with an internal impedance of a still very low 9 ohms and a bit more output at 0.55mV. Overall weight of the PC-3 is 13.5 grams as compared to the 12 grams of the Supreme.

The PC-3's packaging—no small consideration for analog enthusiasts who tend to covet cartridges like vintage watches—includes a silver-lined box, fitted in decorative paper, and further protected in a small wooden padded box with the brass Air Tight faceplate.

First things first. The PC-3 sets the stage as a good tracker and a darn quiet one. Surface noise simply vanishes as if into monastic seclusion. In tracking force the difference between 1.8 and 2.0 grams was significant. Images assume a greater stability and, to my ears, are more grounded at 2 grams or so. Note: Since cartridges do not operate in isolation I'd be remiss for not crediting the excellence of the PC-3's analog teammates—the VPI Classic 3 table and JMW-9 tonearm and Parasound JC-3 phono preamp—all of which will be reviewed in a forthcoming issue.

Sonically this is not a showy cartridge. At least not in the fashion of some early moving coils, which hyped-up the upper octaves. And that's all to the good. The PC-3 veers to the mellower side of neutral, and is very dense tonally and harmonically. Its presence range is smooth and even—neither lifted upward nor tilted downward. It conveys a oneness, a single voice, that doesn't highlight audiophile criteria—such as attack, speed, punch, and so forth—like items in a deli case. In fact it grabbed my attention in ways that I wish more audio products would. There's

its darker character, like warm rain on wet pavement—a mood that I noted during Vaughan Williams' *The Wasps* Overture [RCA]. The bass viols and low strings send a rich ripple of energy through the hall that's appropriately defined but not overly controlled or textured to the edge of dryness.

The PC-3 is fast but not jittery. It's not a cartridge that seems to be working hard—it just seems to glide through the grooves with easy-going nonchalance. As a result, low-level resolution and ambience retrieval just blossom. In my mind, this trait punctuates the divide between digital and analog. With the former, silences often collapse into an arid vacuum, whereas with a fine cartridge in an analog playback system those same silences are filled with low-level information—whether it's breath on the ribbon of a microphone or the acoustic of a concert hall at the instant before the conductor lifts his baton.

Perhaps my favorite aspect of the PC-3 is the way it creates intimacy with a recording like Ricki Lee Jones' "I'll Be Seeing You" on *Pop Pop* [ORG]. It's more than just capturing her vocal;

it's the soft breathing beneath the beat. And the fact that at moments I could swear that the decaying reflections of her voice were lightly tracing the fleshy outlines and bone structure of her face. The Air Tight reproduces timbre beautifully and makes every individually played note seem fully reinforced by the weight and resonance and dimension of the instrument. A nylon-stringed guitar has the mixture of muted attack and wispy harmonics that separates it from the aggressiveness of a big-bodied steel-string acoustic. A clarinet enters as if on wings, ripe with air and bloom and reedy mouthpiece cues.

When I listened to the title track from Jennifer Warnes' *The Well* [Cisco] and, later, the duet with Arlo Guthrie of "Patriot's Dream," I was startled at the "oneness" and stability of the performances. The individuation of instruments and the voices of the backing choir were well articulated, as was the peal of the bagpipes, the accordion (the player Michael Omartian will be familiar to many as the keyboardist and mega-producer of Christopher Cross' hit album), the crisp attack

EQUIPMENT REVIEW - Air Tight PC-3 Phono Cartridge

of the field drum, and the “just-so” weight and distance of the piano at mid-stage.

Since I had on hand a prime competitor of the PC-3, the Sumiko Palo Santos Presentation, I uncovered some interesting contrasts. Although they share more similarities than differences, the PC-3 had the more vivid, lower-level inner detail, while the PS was the more outward, explosive performer—brass and winds, for example, had a more penetrating attack. The Air Tight was the more Yin-like pickup—just a little darker compared to the more well-lighted soundstage of the Palo Santos. Once more I return to this element of intimacy, for each of these cartridges has its own take on this issue. The Palo Santos brings a vocal closer to the listeners for examination, exhibiting greater threads of inner detail and brilliance and control. The Air Tight, on the other hand, has a shade more dimensional and harmonic complexity and asks the listener to lean in slightly, portraying the singer as a single flesh-and-blood creation. In imaging the Palo Santos leads the listener a bit, while the Air Tight bids the listener to follow.

Could the PC-3 rival the PC-1 in overall performance? A fair question. The short answer is no, but then again it’s all about context. I’ve only enjoyed the Supreme under trade show conditions (gorgeous) and then as a part of an ultra-premium analog playback system, so drawing conclusions about its specific sonic attributes would be problematical. Still the Supreme has that little extra air and grace at the octave extremes that is truly seductive. However, I think it is fair to conclude that cartridges designed at the very limits of the state of the art *demand*

a suitably high-resolution environment where their superlatives can come to full flower. This is just a long-winded way of saying appropriate system-matching is always a must.

The PC-3 is one of the most natural and consistently musical pickups that I’ve heard in this range. From day one I looked forward to listening to music via the PC-3 and missed it when it wasn’t in the system. Supreme? Not quite. Superb? You bet. *tas*

SPECS & PRICING

Type: Low impedance moving-coil cartridge with boron and aluminum cantilever	Tracking force range: 2.0g to 2.2g
Frequency response: 10Hz-50kHz	Weight: 13.5 grams
Output voltage: 0.55mV	Price: \$4000
Internal impedance: 9 ohms	AXISS AUDIO (U.S. DISTRIBUTOR)
Channel balance: 0.8dB	17800 South Main Street Suite 109
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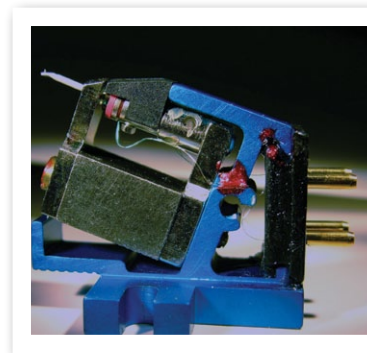
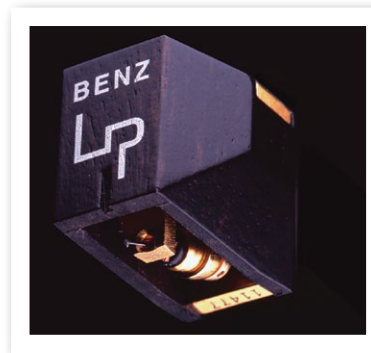
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High-End Analog Roundup: Three Cartridges and an LP Cleaning Machine

Benz LP S-MR, H&S Ice Blue, Goldfinger Statement, Cleaudio Double Matrix Professional

Jonathan Valin



I have some genuine goodies to report on in this issue—three world-class cartridges and a record-cleaning machine that is certainly the most convenient that money can buy.

First the cartridges.

Although our Mr. Pearson has already reported most favorably on the Benz Micro LP S-MR, I want to add my highest recommendation to his. As Harry has said, this is a cartridge that does the sort of thing that truly outstanding electronics and loudspeakers do—raises resolution by lowering electromechanical noise. Part of the reason for this lower noise may be the cartridge's micro-ridge stylus, which sees the groove wall at relatively unworn spots deeper in the grooves

for cleaner tracing, and part may be the damping of its cantilever's suspension, which, Albert Lukaszek claims, effectively reduces the high-frequency resonances that make other mc's sound like, well, mc's. Whatever the reasons, the LP S-MR is unusually smooth in the very area where many moving coils tend to be brash and aggressive—the upper midrange and treble. Indeed, the LP S-MR has a moving-magnet-like naturalness through the upper frequencies, and yet this smoothness does not come at a price in transparency and resolution, as it usually does with mm's.

Indeed, in a suitable medium-mass tonearm such as the ceramic air-bearing arm on the Walker Black Diamond Mk III (yes, boys and

girls, there is now a Black Diamond Mk III) or the Da Vinci Grandezza 12" double-gimbaled ruby-bearing arm (for further comment on which, see my review of the AAS Gabriel/Da Vinci Mk II on p. 77), the LP S-MR is capable of extraordinary transparency, nearly on a par with that paragon of transparency, the Ortofon MC A90—the difference being that where the Ortofon sounds a tad cool and clinical in overall balance and is definitely a little elevated in the upper mids, the Benz is smooth and *gemütlich* top to bottom. While the Ortofon may hold the slightest edge in transient speed and very low-level resolution over the Benz (and over almost *any* other cartridge), the LP S-MR is still capable of retrieving details from vinyl discs that you never knew were there,

even in records you've owned for dozens of years. And since the Benz does this trick without any leanness of timbre in the midrange or added zip in the upper midrange and treble, on really good recordings it can make instruments sound so much more like themselves that you occasionally get the "fool ya" sense of realism that generally only comes with sound effects like doorbells or ringtones. Through the Benz, I've heard an instrument with quite distinctive starting and stopping transients and complex timbre like a contrabassoon sound so much like an actual contrabassoon that it literally startled me (and the other listeners sitting beside me).

In addition to being unusually true-to-life in tone color, the Benz is also capable of a helluva

EQUIPMENT REVIEW - High-End Analog Roundup: Three Cartridges and an LP Cleaning Machine

unraveling act. For instance, string, wind, and brass instruments, especially when they're playing in an ensemble or doubling one another at the same pitches and intensities, are particularly difficult for stereo systems to parse. The Benz is better at telling you what's playing what at any given moment—no matter how many instruments are in the ensemble—than any other cartridges I've heard (save for the Ortofon and the Clearaudio Statement). It's rather like a getting a score along with incredibly natural playback. The thing is magical at sussing out the bowing and fingering of string instruments (including different kinds of pizzicatos), and it is equally marvelous with human voices, wherein you will hear the minutiae of tremolo, breath control, head tone, and chest tone that define not just a performance but a performer. As with great electronics and speakers, the Benz lets you better see as well as hear whom you are listening to.

Though the LP S-MR won't give you quite the same blueprint of the recording studio and mastering suite as the A90, it comes mighty close, revealing details of engineering and mastering that have previously gone unnoticed. You will hear miking changes, overdubs, gain-riding, the editing in of different takes with utter clarity. As with midrange timbre, you will also hear slightly fuller, more *gemütlich* bass with the Benz than you will with the ultra-tight Ortofon and a somewhat more expansive soundstage. I think this sense of expansiveness has something to do with the relaxed quality of the Benz, which, though it doesn't lack for focus or dynamism, doesn't image with the razor-sharp definition of an ultra-fast cartridge like the A90.

Indeed, a more relaxed, less aggressive

presentation, with no loss of detail or transparency, is precisely what the Benz has on offer. On top of this the Benz LP S-MR is not a demanding cartridge to set up. Moderately high in output at 0.35mV so that it presents no problems to mc phonostages, happy to be loaded at 47k which is what Albert Lukaschek recommends (although I rather like it at 500-1000 ohms, too), tracking contentedly at anywhere from 1.8 to 2 grams, with rake angle set to 90.5°–91° (i.e., so that the arm is slightly elevated at the bearing end), it is a non-fussy pleasure to use. Best of all, at \$5k it is the least expensive cartridge in this mini-survey and, along with the (harder-to-find) Ortofon A90, the least expensive option for those of you who won't settle for anything less than the best LP playback. In sum, a world-class cartridge at a relatively reasonable price—and one of my references.

Next on the agenda is a cartridge I'll bet you never heard of—I know that I hadn't—from a tiny German company called H&S. It is the Ice Blue, and it is really something. Designed by Eugene Stoeckl, for ten years the Technical Director of Ortofon, Germany, it bears more than a passing resemblance to the Ortofon A90, both visually and sonically. Indeed, it looks a bit like an A90 with its cowl removed (to further lower resonant mass). Where the A90 has a Replicant 100 stylus on a boron cantilever, the Ice Blue has an ultra-fine line-contact stylus on a tapered aluminum cantilever with what H&S calls "a three-dimensional cantilever suspension." (Your guess is as good as mine.) Like the A90, the H&S uses a platinum disc sandwiched between two rubber absorbers to damp the cantilever/stylus assembly and improve trackability. Unlike the

SPECS & PRICING

Benz Micro LP S-MR

Mass: 16 grams
Stylus shape: Micro-ridge
Compliance: 15
Recommended tracking force: 1.8-2 grams
Output voltage: 0.35mV
Loading: >400 ohms
Price: \$5000

H&S Ice Blue

Mass: 7.2 grams
Stylus shape: Line contact
Compliance: 15
Recommended tracking force: 2.3 grams
Channel separation: 30dB
Output voltage: 0.2mV
Loading: 100 ohms
Price: \$9000

Clearaudio Goldfinger Statement

Mass: 17 grams
Stylus shape: Micro HD
Cantilever: Boron
Compliance: 15
Recommended tracking force: 2.8 grams (+/-0.2 grams)
Channel separation: >30dB
Output voltage: 0.9mV at 5cm/s
Loading: 47k ohms
Price: \$15,000

Clearaudio Double Matrix

Professional Record-Cleaning Machine
Dimensions: 16" x 7" x 15"
Weight: 36.4 lbs
Noise level: 60-65db
Warranty: 3 years
Price: \$4000

MUSICAL SURROUNDINGS

5662 Shattuck Ave.
Oakland, CA 94609
(510) 547-5006
musicalsurrroundings.com

BERTRAND AUDIO IMPORTS

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JV'S REFERENCE SYSTEM

Loudspeakers: Magico Q5, TAD CR-1, MartinLogan CLX, Magnepan 1.7, Magnepan 3.7
Linestage preamps: Conrad-johnson GAT, Audio Research Corporation Reference 40
Phonostage preamps: Audio Research Reference 2
Power amplifiers: Conrad-johnson ART Lamm ML2.2
Analog source: Walker Audio Proscenium Black Diamond Mk III

record player, Da Vinci AAS Gabriel Mk II turntable with DaVinci Grand Reference Grandezza Mk II tonearm
Phono cartridges: Clearaudio Goldfinger Statement, Ortofon MC A90, Benz LP S-MR, H&S Ice Blue
Digital source: Mac Mini/Wavelength Audio WaveLink HS 24/192 USB-to-S/PDIF converter/Berkeley Audio DAC
Cable and interconnect: Synergistic Research Galileo
Power Cords: Synergistic Research Tesla
Accessories: Synergistic ART system, Shakti Hallographs (6), A/V Room Services Metu panels and traps, ASC Tube Traps, Critical Mass MAXXUM equipment and amp stands, Symposium Isis and Ultra equipment platforms, Symposium Rollerblocks and Fat Padz, Walker Prologue Reference equipment and amp stands, Synergistic Research Tesla power conditioner, Walker Valid Points and Resonance Control discs, Clearaudio Double Matrix SE record cleaner, HiFi-Tuning silver/gold fuses

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EQUIPMENT REVIEW - High-End Analog Roundup: Three Cartridges and an LP Cleaning Machine

A90 (which uses 6N copper wire), the Ice Blue uses 4N silver wire for its coils.

It's actually rather easy to describe the sound of the H&S Ice Blue: It is, almost exactly, a cross between the *gemütlich* Benz LP S-MR and the more austere Ortofon MC A90, which is to say that it is slight leaner and cooler in tone color than the Benz and slightly fuller and fleshier than the Ortofon. Like the Benz and the Ortofon, it is very transparent to sources—very low in coloration and high in transient speed and resolution, though not quite as high in resolution as the Ortofon and the Benz.

Although it takes a bit of break-in for the Ice Blue to show its best (it will sound a bit too warm and thick at first), it comes into its own after twenty or thirty hours of play. After that you will get many of the virtues of the Benz (though not all of its more relaxed upper midrange) with almost all of the stunning speed and clarity of the Ortofon. This will actually be a very nice compromise for many listeners.

Like all the cartridges in this survey the Ice Blue is capable of extraordinary resolution of low-level detail, like the whispery tremolo Melody Gardot adds to certain lyrics throughout *My One and Only Thrill* (and the duration that she sustains those *pianissimos*). It will also supply much of the electrifying transient response of the A90, so that the crisp pop and va-room-like rebound of sharply-struck drumheads or the startling snap of violin strings against the fingerboard on so-called “Bartók pizzicatos” will come across with lifelike speed and impact. The Ice Blue also has exceptionally tight, discerning bass with a bit more of the precise pitch definition of the A90 added to slightly fuller timbres. As with the

examples I've already cited, this makes for the exceptionally realistic (and exciting) reproduction of low-pitched instrumental passages such as Tina's deep, powerful electric bass ostinato at the start of “Take Me To The River” (from *Stop Making Sense*) or the big block bass chords (and the middle- and top-octave ones, for that matter) that Martha Argerich whirls through on her Steinway in her famously fiery rendition of the Prokofiev Third Piano Concerto [DG/Clearaudio]. (Here, BTW, is an example of multimiking in service to an artist's performance, for though the piano's timbres are a bit drier than life because of the close-miking, the precision with which Argerich points dynamic contrasts—the very soul of her performance of this most original piece—is fully retained, as is clarity of the piano lines even in the fleetest of runs amid the densest orchestral accompaniment.)

The Ice Blue is an exceptional soundstager, on a par with the Benz and the A90, though, as you will soon discover, not quite the equal of the best soundstaging cartridge in this remarkable group. As with the A90, it has a little tighter focus than the Benz, making for sharp definition (and high clarity) on large ensembles spread out on the stage, side to side, foreground and back. It is also among the best trackers in this bunch, sailing through an overmodulated passage on the RCA disc *Venice* that caused several of the other cartridges in my little reference collection to stumble.

The Ice Blue is not quite as much of a snap to set up as the Benz, however. Its low output of 0.2mV may try the patience (and the gain limits) of your phonostage. It didn't faze the ARC Reference Phono 2, but be aware that this is a

very-low-output moving coil. The Ice Blue also likes to be loaded down to 100 ohms, where its frequency balance comes closest to flat, colorless neutrality. (You don't seem to pay the same penalty in dynamic range and transient speed by loading the Ice Blue down that you sometimes do with other moving-coil cartridges.) It is happiest tracking at the recommended 2.3 grams with the tonearm parallel to the record surface. At \$9k, it is nearly twice the money of the Benz and Ortofon, but it does something that neither of these others do—it combines their virtues almost equally and completely, making for an option that you can't get by simply choosing one or the other. Another world-class cartridge—and another reference.

We come now to the most intriguing cartridge in this exceptional bunch and, frankly, the one I've spent the least listening time with. I picked it up last month (as of this writing) in Erlangen, Germany, and have only had a scant few weeks with it in my system. But I'm reporting on it now because I want TAS readers to know that it is undoubtedly extraordinary—and available (at least, to those of you with deep pockets).

The mystery cartridge is Clearaudio's new, top-of-the-line Goldfinger Statement. And it is...well, I'm not sure yet of all that it is, although I am sure that it is the best Clearaudio cartridge I've heard (and I've heard most of them) and, perhaps, the best cartridge (a lot of) money can currently buy.

I'm going to be honest: I've had a long love/hate relationship with Clearaudio cartridges. They've always been extraordinary soundstagers with exceptional resolution, transient speed, and dynamic impact. But, until the last decade or so they've also had a rather caustic tonal

balance. Just take a look at that little printout that comes with every Clearaudio and note the inevitable rise in frequency response between 10kHz and 20kHz. While the peak adds energy and excitement to transients, air and space to the stage, and more detail (or the impression of more detail) to the presentation, it also adds audible brightness to timbres.

This characteristic overly bright, lean, analytical tonal balance began to change over a decade ago, with the Clearaudio Discovery. Though it was still way too bright, the Discovery began to add a little more density of tone color to the mid-to-upper bass and midband—and to subtract a little energy from the overly emphasized upper midrange and treble. Each subsequent Clearaudio cartridge has veered farther away from “lean, bright, and mechanical” toward “neutral, natural, and organic.”

With the Statement, Clearaudio has done a one-eighty. I'm not entirely sure of what all has changed here—I do know from my visit to Clearaudio in Germany (see p. 60) that designer Peter Suchy has tripled the number of magnets in his patented “Magnetic Ring” configuration to twelve (the v2 cartridges doubled them to eight), creating a magnetic field that is strong enough to allow him to use 30% thinner 24k gold wire in the coils, thus reducing moving mass and creating a magnetic engine of very high efficiency. The Statement is also the first Clearaudio cartridge to have EMF shielding integrated into its 14k gold body (Suchy says it is the first cartridge from any manufacturer to do this).

Clearaudio is claiming that these (and other) improvements result in higher output, improved channel separation, increased dynamic range,

EQUIPMENT REVIEW - High-End Analog Roundup: Three Cartridges and an LP Cleaning Machine

and “ultra-high” resolution. And, folks, I’d have to say that all of these claims are true.

Some of them are verifiable by measurement. My friend Andre Jennings (than whom no one else is better at cartridge setup) measured nearly 35dB channel separation (an astoundingly good figure) with the Statement’s azimuth optimized in the Walker Black Diamond Mk III’s air-bearing tonearm. He also measured harmonic distortion of 0.20% (another astounding figure), using the Audio Research Corporation Reference Phono 2 (at the low gain setting). These are standard-setting numbers in my setup, but they don’t tell you how the Statement sounds.

You’re going to find this hard to fathom—I certainly did—but in tonal balance the cartridge that the Statement most resembles isn’t the Goldfinger v2 or the Ortofon A90, which is what you might expect; it is the Koetsu Blue Lace! Yep, this is a voluptuous-sounding transducer—the polar opposite of the older Clearaudio sound.

Now, I don’t know if this gorgeous tonal palette will change with further break-in. But at the moment this is one ravishingly beautiful cartridge to listen to. Let me be more precise here, lest you get the impression that the Statement is a highly colored cartridge. It is not. But it *is* warmer and sweeter and fuller (i.e., closer to lifelike with a touch of romance) than any Clearaudio I’ve heard—ever. It is also, and here’s where the Clearaudio heritage comes in, the most phenomenal soundstaging cartridge I’ve heard—ever. With the best, which is to say the deepest reaching, most powerful, most highly resolved, most completely natural bass I’ve heard—ever—from an analog source.

To hear this thing on a really great, really

dynamic recording—such as Clearaudio’s own sensational showpiece *The Percussion Record*—is a jaw-dropping experience. Honestly, this cartridge simply blows the walls out, delivering an almost surround-like soundfield of unparalleled width and depth, with the added bonus of the most thunderous, floor-and-wall-shaking bass (and this record *has* some bass, folks) I’ve heard in my room from the Magico Q5s (or any speaker).



When you add A90-level transient response and resolution of inner detail to this package, you come closer to achieving the unachievable—a transducer that will *fully* satisfy “fidelity to mastertapes” listeners, “absolute sound” listeners, and “as you like it” listeners—than any cartridge I’ve heard. Unless its sonics go to hell in a handbasket over the next few weeks, this has to count as a break-through for Clearaudio—and a standard-setter for analog fanatics.

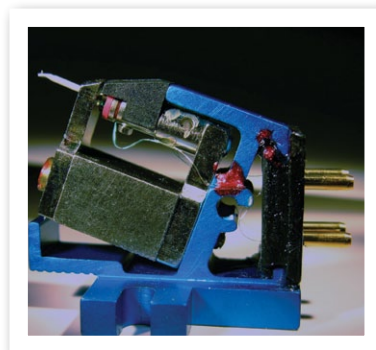
I have some more good news and one piece of bad. The good is that the Statement is a snap to set up. Its very high output of 0.9mV makes it an easy match to any phonostage. It prefers a 47k loading, tracks wonderfully well in a medium-mass arm like the Walker or the Da Vinci at around 2.8 grams (with the rake angle at about 90°–90.5°), and for those of you with arms like an SME or a Graham doesn’t really need a lot (or any) help from viscous damping. Now the bad news: The Goldfinger Statement costs \$15k. So...another world-class cartridge (maybe, even, the class of world-class) and most certainly a reference, but simply unaffordable for most of us.

Finally, let me turn to a new record cleaner, also

from Clearaudio, the Double-Matrix Professional. Here the news is entirely good. This is a product that improves upon its predecessor, the Double Matrix, in every way *for substantially less money*. Twelve hundred dollars less, as a matter of cold, hard cash.

Like the Double Matrix, which I reviewed in Issue 180, the Professional will clean both sides of an LP simultaneously, which results in a genuine savings of time, labor, and boredom. Unlike the Double Matrix, which proved to be quirky in its operation (among other things its motor would cog and the turntable would simply freeze if the record being cleaned wasn’t clamped down just so), the Professional appears to be foolproof. Its motor never cogs; it disperses fluid evenly over both sides of the record being cleaned (provided that the machine is properly leveled); it scrubs and vacuums in two directions; and the speed of the platter is variable from very slow to quite fast via a control knob.

I’m not going to claim that the Double Matrix Professional does the “best” job of cleaning vinyl of any of the many record-cleaning machines on the market. (As far as I can tell, the finest of them do almost exactly the same things equally well.) What I am going to say is that the Double Matrix Professional is the most convenient option on the market. It is also handsome looking in its (now) aluminum chassis, and smaller, more compact, and easier to position than the original Double Matrix. At \$4k it isn’t cheap, but if you have a lot of (dirty) records, it is the cleaner I would recommend. **tas**



A *Tale of Two* CITIES

Inside the Benz Micro and Clearaudio Factories

Jonathan Valin

When I traveled to Germany to attend the Munich High-End Show this past May, I also got the chance to visit two storied players in the analog world: Benz Micro in Schaffhausen, Switzerland, and Clearaudio in Erlangen, Germany. Given that Benz and Clearaudio are famous for the quality and sophistication of their moving-coil cartridges (two of which I reviewed in the previous article), it came as no surprise to see how much highly skilled handcraftsmanship goes into the construction of these miniature transducers. What was a little surprising was how fundamentally different the Swiss and German approaches are—and, in two key respects, how fundamentally alike.

I'll begin my mini-tour with Micro Benz.

The Swiss firm's little "factory" takes up the second floor of a townhouse in Schaffhausen—a small hillside village near the beautiful Rhine Falls, just across the Swiss border from Germany. Inside, the employees—most of them women and most of the most them very old hands at this kind of work—form a small L-shaped production line along the outer walls (1). Hunched over microscopes, they do their painstaking job of cartridge assembly, while mild and retiring Albert Lukaschek, Benz's owner and greatly gifted chief designer, hovers around them like the director of a small high-end Swiss watch shop.

Ernst Benz, whom I got to meet at the factory, founded Benz Micro in the 1970s. Still lean and dashing at the age of 80, Benz was and is a physicist, inventor, and industrial entrepreneur with a taste for airplanes, adventure, and, oddly enough, music and hi-fi. A specialist in delicate instrumentation and industrial jewels (he currently operates a renowned watchmaking company), Benz developed the ruby plate generator that's still used in the top-line Benz cartridges.

In 1994, Benz's friend and colleague Albert Lukaschek acquired Benz Micro. A brilliant engineer in his own right, Lukaschek continued Benz's technical advancements, developing a number of stellar pick-ups of his own, including the Glider, the Gullwing, and Benz's current top-line LP S-MR—which is, alongside Clearaudio's new Goldfinger Statement, one of the truly great cartridges in the world today.

In Schaffhausen I got to see the step-by-step construction of Benz cartridges, beginning with the assembly of the coils, which are wound and spaced by hand on a machine that Ernst Benz built and Albert Lukaschek further perfected (2).

In one of Benz Micro's signature technologies, the coils' bobbins are machined from pieces of synthetic ruby jewel rather than from iron because, Lukaschek explained, iron makes for eddy currents



- 1 Part of the assembly line in Benz's Schaffhausen facility
- 2 A coil being wound on Ernst Benz's handmade winding machine
- 3 Magnetic assembly being attached to the cartridge
- 4 Aerospace surround material

that cause time and phase delays. The ruby bobbins trade off a bit of output for a reduction in these eddy currents but also allow more windings to boost output (to real-world levels of .35mV and .7mV) and the use of the strongest neodymium magnets, which would make iron-core coils saturate and become nonlinear.

As noted, Benz also uses synthetic ruby for the square plate to which the cantilever assembly is attached, once again to reduce eddy currents (and also to reduce moving mass). In photo (3), one of the technicians is putting the magnetic assembly into the cartridge body. This kind of work requires long experience, intense concentration, and incredible hand-eye coordination.

In another signature bit of Benz Micro technology, the cartridge's suspension—essential to a Benz's non-peaky treble response—uses a special, doughnut-shaped damping surround made for Benz by a U.S. aerospace concern (4).

These rubbery doughnuts are precisely located in a countersunk groove in the rear pole piece of Benz's cartridges, allowing for superior compliance (5). Notches in the pole piece further control eddy currents in the magnetic circuit. In addition, a special locking mechanism was developed by Lukaschek to permit calibration of the tension of the suspension and optimization of azimuth.

More expensive Benz cartridges have bodies made from brass, the less expensive from aluminum (6). (These cartridge bodies are the only things that aren't made by Benz.)

In photo (7) a technician fits the terminal block into the cartridge body. The leads from the magnetic assembly are then micro-soldered to the pins.

Every Benz cartridge is checked for proper rake angle and tested in all of its electrical parameters (8). Then they are auditioned with actual music by Albert himself for final adjustment prior to shipping.

As you can see from these photos, virtually everything at the Benz Micro factory is done by hand, often on handmade machinery. The whole enterprise is greatly reminiscent of Swiss watchmaking. However, if Micro Benz reminded me of a small Swiss watch manufacturer, Clearaudio's digs were an entirely different story. Traveling the 200 or so miles from Benz's facilities in Schaffhausen to Clearaudio's factory in the picture-book pretty town of Erlangen in German Franconia was a little like traveling from the late nineteenth-century world of handcraftsmanship to the twenty-first-century world of computer-assisted design.

Befitting a company that currently builds everything from cartridges to turntables to tonearms to electronics to record cleaning machines to analog accessories to LPs themselves (Clearaudio has re-released many DG recordings, as well as several new works, on its own label, pressed at Pallas), Clearaudio's factory was much larger than Benz's little shop in Switzerland—a huge facility owned by the electronics manufacturer Siemens and spacious enough to serve as offices, show rooms (9), CAD work stations (10), production plant, and shipping hub for all of Clearaudio's many products. (Clearaudio is even now taking over more space in the Siemens building for a dedicated production area.)

Here everything was compartmentalized, with separate rooms for each type of product and numerous work stations within each room, stocked with the in-house-fabricated parts needed for assembly. In the room devoted to record-cleaning machines, there was a production line of Double Matrix Professionals, awaiting completion (11). In another room was a turntable production line (12). In yet another, tonearm production lines that produce an amazing variety of extraordinarily high-quality pickup arms (13).

This was computer-assisted "assembly line" manufacturing, but assembly-line manufacturing with certain



crucial differences. For one thing, all of the precision parts that Clearaudio uses in its products are made in its factory to tolerances so high that the company is the only one in Europe that supplies coils for the Swiss super-accelerator. Clearaudio also has multiple four-axis CNC machines for the CAD-assisted milling and machining of select items to a precision of 0.0001mm (14). Clearaudio even has a special department for finishing, with turning, molding, and polishing machines that use 10,000 grit silicone-oxide sandpaper to ensure that every turntable shaft fits perfectly into its bearing. In other words, this is the kind of assembly line you'd find at BMW or Mercedes.

The complexity and technological sophistication of the Clearaudio plant was a bit overwhelming, and yet, when it came down to it, all this technology was being put to *exactly* the same use as the painstaking handcraft I saw in Schaffhausen. Indeed, though technology facilitates this process at Clearaudio and makes the ultimate in precision possible, the actual work of assembly was still being done by hand by workers—many of them women, all of them longtime employees—with precisely the same patience and skill that Benz's crew showed (15).

Just as alike was the spirit of both places. Like Ernst Benz and Albert Lukaschek, Clearaudio's founder Peter Suchy is a highly educated, highly successful man—a physicist with an illustrious career outside of audio, filled with numerous inventions and patents.

He and Benz and Lukaschek could have flourished in any endeavor (and did before they found their separate ways to audio). That they chose to perfect the means of reproducing music from little squiggles pressed into vinyl pucks suggests that, ultimately, they chose with their hearts as well as their heads. That they created successful businesses that are as much families, actual ones (Peter's sons Robert and Patrick and his daughter Veronika are Clearaudio's chief officers) and extended (at both Benz and Clearaudio, the employees were treated as "family"), as they are factories says much the same thing. And that, in the process, both Benz Micro and Clearaudio manage to create the incredible products they do tells you that passion in the pursuit of excellence, even in something as small and by-the-way as phono cartridges are in today's digital world, is still a winning formula. **tas**

- 5 Countersunk pole piece
- 6 Bronze and aluminum cartridge bodies
- 7 Final assembly of cartridge
- 8 Checking stylus rake angle via a projector
- 9 Clearaudio's large beautiful showroom, a tiny part of which you see here, is filled on all four walls with the amazing panoply of analog products the company makes
- 10 A CAD workstation in the Clearaudio plant
- 11 Double Matrix record cleaner assembly line
- 12 Turntable production line
- 13 Some of Clearaudio's tonearms
- 14 One of Clearaudio's CNC machines
- 15 Hand-assembly of a tonearm
- 16 Papa Bear Peter Suchy, founder and guiding light of Clearaudio



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Musical Fidelity V-LPS and Clearaudio Basic Plus Phonostages

Vinyl Playback On a Budget

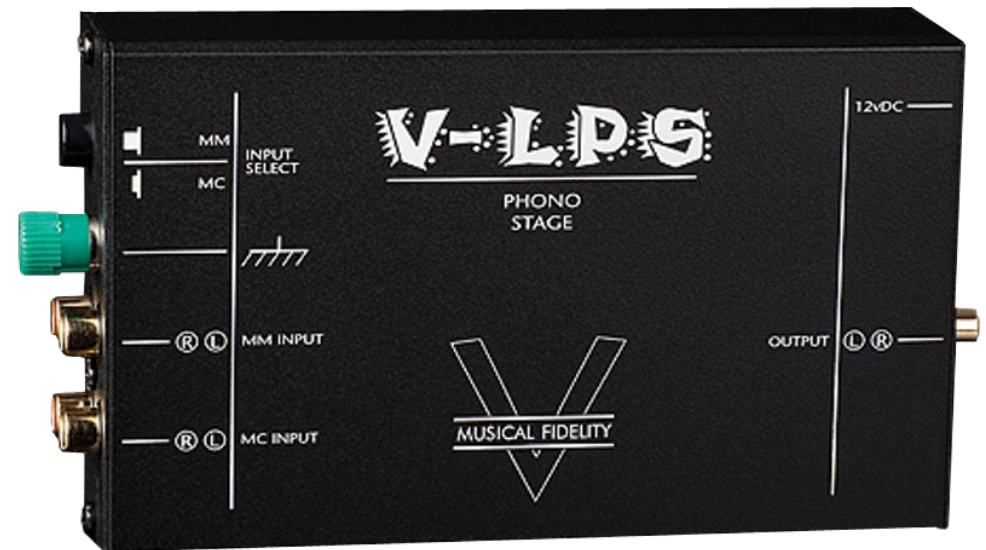
Neil Gader

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

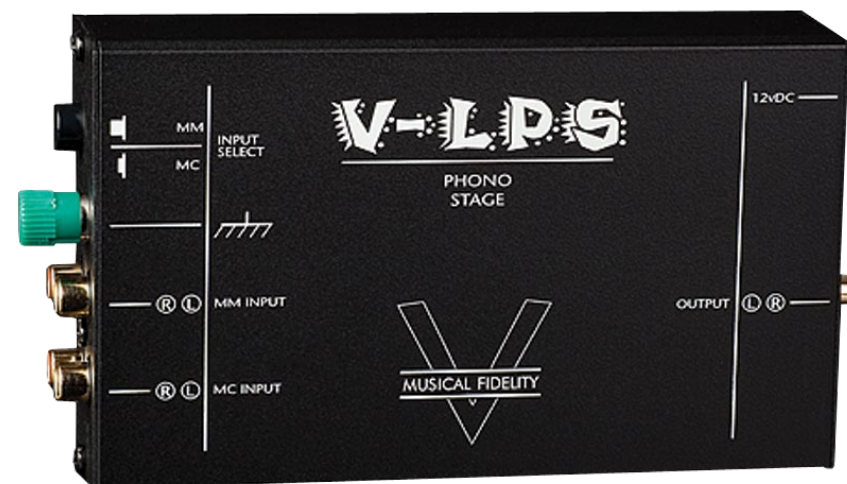
These images are firmly positioned and seem to project their own individual atmospheres—literal “breathing room” if you will. Such traits were never more in evidence than during Sheffield Lab’s classic direct-to-disc of *Growing Up In Hollywood Town*. Here, the Basic Plus had an almost buttery sound. 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 Phonostage

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



EQUIPMENT REVIEW - Musical Surroundings SuperNova 2 Phonostage

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**

the output). Most systems, he believes, have far 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

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 Phonostage

as a system preamplifier? In a word, magnificent—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 SuperNova2 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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Parasound Halo JC 3 Phonostage

Falling In Love Again

Neil Gader

Believe it or not, I tend to run hot and cold on LP playback. The technical side of me asks, “Is this the best we can do in 2011...*really?*” But then a rare piece of phono gear comes along that sends shivers all the way through my analog soul. Sometimes it’s a cartridge or a tonearm that puts me under its spell. This time it’s a phono preamp—the Parasound Halo JC 3. As I madly pulled record after record from dust jackets, I kept asking myself what could I possibly be thinking for even going a day without listening to my beloved vinyl?

Looking back, it was probably only a matter of time before Parasound would greenlight a phonostage to join its well-received, John Curl-designed Halo separates—the JC 1 amplifier and JC 2 preamp. Dubbed the JC 3, this full-size phono preamp is a dual-mono design built with a near-obsessive attention to isolation—each channel is housed in its own extruded aluminum enclosure within the chassis, and further isolated from the power supply with 3/8-inch-thick, low-carbon, mild-steel partitions. The internal layout is gorgeous if, like me, you’re into such things. It abounds with top-quality parts including Vishay-Dale resistors and REL capacitors in critical circuits. To further reduce AC line noise it includes a built-in AC line conditioner. Memories of John Curl’s legendary Vendetta SCP2B spring to mind whenever audiophiles discuss phonostages and as it turns out, much of the topology and the

passive EQ parts values and quality are the same as the Vendetta’s.

In an era where many medium-priced phonostages are no bigger than a dashboard radar-detector with wall-wart power supplies, the rack-mount size of the JC 3 is almost a throwback. It certainly makes sense to match the cabinet profile with the JC 3’s Halo stablemates, but more importantly it’s about isolating the dual-mono internals, housing the robust power supply, and making way for balanced XLR outputs as well as the customary RCA inputs and outputs.

For cartridge optimization, Parasound gives you what you need but doesn’t go overboard. A warehouse of internal cartridge-loading options, DIP switches, and alternative EQ curves? *Meh*. But, on the back panel there’s an easily accessible, custom-made, three-position, input-impedance/gain-toggle switch that provides

for 47k mm cartridges, 100 ohm mc cartridges, and 47k mc’s. Parasound concluded, and I think rightly, that owners are unlikely to saddle the JC 3 with the most finicky ultra-low-output cartridges so why charge for added circuitry that no one will use?

Before I launch into my sonic impressions I should mention that the JC 3 supplies loads of gain (68dB for mc) allowing medium-output moving coils to shine—in my system it was the classy 0.5mV Palo Santos Presentation and 0.55mV Air Tight PC-3. More significantly it’s as quiet as a mouse in hospital slippers. And this is key to its bat-sensitive, low-level resolving power, its ability to peer deeply into the smallest recesses of a musical moment—from the reverberant decay of a lively acoustic space to the squeak of a piano bench, the tiny rattles on a snare drum, or the jingles of a tambourine.

In tonality it’s not enough to say that the JC 3 is neutral. It’s neutral, yes, but beyond a lack of tonal affectation is an awareness of notes and images that are fully embroidered with air and harmonics. I’d have to say that in comparison to most phonostages there is a kiss of midrange romance to its personality. Dynamically there’s a riveting balance of extremes at play, from

profound ambient silence to rollicking kick-butt energy. Perhaps its greatest strength, however, is its light touch. Mind you, not to be confused with a flimsy tonal balance, but rather a sense of the music in all its delicacy and drama that materializes fully in space. And that space is vast. Call it channel separation, call it ultra-low distortion, the point is that I took a couple of familiar orchestral recordings, *Carmen* [DG] with Bernstein conducting and a full chorus wailing and *The Wasps Overture* [RCA], and noted a broad lateral spread of instrumental sections. From the edges of the stage to the back wall, it was as expansive as the Grand Canyon, and well focused between adjacent sections, right on down to specific players.

Turning to pop music, Lindi Ortega’s debut album *Little Red Boots* [Last Gang Records] has been in heavy rotation in my recent listening sessions. From track to track, the songs are Country-noir, spiked with dysfunction, booze, the sting of failing relationships, and, ironically, loads of good humor. Ortega’s vocals are a heady mix of Emmylou Harris and Dolly Parton with a gothic tang. Anachronistically, the tracks are mixed toward the centerstage and there’s an ever-changing reverberant mood with shifting



EQUIPMENT REVIEW - Parasound Halo JC 3 Phonostage

vocal balances. There's little in the way of hard-panning, which gives some tracks a near monophonic feel. And the perspective has an unsettling way of shifting from song to song, as if the vocal mic was constantly being swapped out. I could go on with a myriad of such details because this is the kind of resolving power and specificity that make the JC 3 so addictive.

Perhaps the most unexpected conclusion I arrived at was just how analog the JC 3 sounds. The sonic traits that define analog for me—the air density, the impression of warmth and bloom, authentic timbres, and three-dimensional continuity and space—are all present to a greater or lesser degree every time an LP begins to spin. That's what the love affair is all about. And truth is, most low-to-mid-priced phono preamps today get the basics right. They are competent at their jobs but not especially remarkable—more analog-lite in harmonic resolution and the retrieval of detail. But the JC 3 has abundantly more levels of sonic expression. And it's not just the JC 3's neutrality and refinement, but also how it seems to almost *eavesdrop* on the most intimate physical relationship in analog audio—the interaction between the record groove and the cartridge.

The JC 3 lets you hear everything flowing into it from upstream—cartridge and turntable—and that includes the upstream limitations of dynamics, attenuations of dimension, distortions, and other audio pollution. In fact, as a clinical tool to shed light on the vagaries of cartridge performance, the JC 3 has few if any equals anywhere in the vicinity of its price—a thought that occurred to me during my recent survey of budget-priced Audio Technica cartridges

A FEW WORDS WITH DESIGNER JOHN CURL

Did you ever think you'd still be designing phonostages in 2011?

Oh sure. I've always believed in phonostages. In fact I'm still messing around with phonostages. There is some very good stuff that might happen in the future with digital, but I like analog.

In the JC 3, gain and loading options are kept to a minimum. Why?

First of all I really considered the market for the product. Actually I think I underestimated the market. Most phono cartridges don't require a whole lot of big extremes, and I thought on this particular point people wouldn't be using the most exotic cartridges, so I kept them to a minimum with 100 ohms and 47k for the moving coil and 47k for the moving magnet. And it also had to be small. In this case we didn't have a whole lot of room. We might even consider adding more loading if people complain enough.

Many phonostages in this range opt for mini-chassis/wall-wart; yet the JC 3 is the standard rack-mount size.

I didn't really select it, but [Parasound] makes chassis like this already, and that's a big deal. Also the thing about it is that it gives you distance from the power supply and transformer which is important. Usually you have to get as far away as possible. The only thing that really works is distance.

What were the goals for the JC 3?

For Parasound we didn't want to get it so darned expensive that it was costlier than the [JC 2] preamp. It's a challenge. You have certain limitations. The integrated circuits that I selected are just the best ICs I could find. And many of the ideas are based on the original Vendetta phonostage and the CTC Blowtorch preamp. That was a \$15k unit and I wouldn't build

one for a dollar less. In fact, I'll probably never build another again, but with Parasound we were able to get [the JC 2] down to \$4000. It's not exactly the same but it's close enough. My business partner (Carl Thompson), the guy who does the layouts for both, uses the JC 2 whereas I use the CTC Blowtorch. It's a matter of choice and convenience.

How would the design differ with fewer budget constraints?

I'm making two designs right now for Constellation Audio. Those things are five, ten, twenty times more expensive. Seriously. They've got remote control, tons of loading options, a huge chassis. Even I look at it and say, "Gee whiz!" My best possible designs are all full-tilt JFET discrete Class A designs. It just so happens the parts that I have a tendency to use aren't made anymore, so you're stuck with existing stocks and there's a limit to what you can do. All you can do is build a certain number. **NG**

(in this issue). The finer points of each stood in sharp contrast with one another, from the more astringent, uneven qualities of the AT120 to the silkier and smoother-tracking AT440 and the elegant line and precision of the AT150.

Just *how* highly the JC 3 rates among the pantheon of phono preamps is difficult to pinpoint. Even John Curl notes in the accompanying interview that with fewer budget constraints he can do better. More liquidity, a bit more dimensionality, or a stab of extra dynamics? If Mr. Curl says they're out there I'm sure he'll find

them, for a price. However in terms of *real-world* performance, the place where most of us actually live, the Parasound Halo JC 3 is the best phono preamp I've heard in my system. My highest recommendation. **tas**



SPECS & PRICING

Phono input impedance:	Price: \$2350
Moving magnet, 47k ohms;	
moving coil, 47k ohms	PARASOUND
/100 ohms	PRODUCTS, INC
Gain: Mm, 47dB; mc, 68dB	2250 McKinnon Avenue
Dimensions: 17.25" x 4.12"	San Francisco, CA 94124
x 13.75"	(415) 397-7100
Weight: 18 lbs.	parasound.com

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Zesto Audio Andros PS1 Vacuum Tube Phonostage

An Instant Classic

Paul Seydor

Every now and then a component comes along that makes you reevaluate many of the values you bring to assessing audio equipment. Some personal examples include Quad ESL (of every vintage), Harbeth Monitor 40, and Spondor SP1/2 speakers; the Linn-Sondek (at a crucial moment in time, anyhow) and the SOTA turntables with vacuum hold-down; the Ortofon Windfeld pickup; the Basis Vector 4/2200 arm-turntable combination; the Super Audio Compact Disc; the late (very much lamented) Sigtech DSP device. These designs are not so much revolutionary as radical in the sense of returning you to origins or basics, reminding you of certain fundamental values that it's too easy to take for granted or forget about as review products come and go.

Zesto Audio's new Andros PS1 vacuum-tube phono preamplifier may be one such design, at least in the area of vinyl reproduction. It's one of the loveliest-sounding electronic components I've ever had the pleasure of reviewing. Almost miraculously, it seems to exhibit virtually no discernable electro-mechanical artifacts. Its sound is unbelievably smooth and velvety; harmonically rich, full, and vividly textured; marvelously rounded, tactile, and dimensional, with great body and solidity; and completely natural in its musicality and freedom from any of the usual sonic hype, audiophile style. There

is also an extraordinary homogeneity to the presentation, although a better word here might be "integrality," as I wouldn't want to suggest the Andros is in any way thick or undifferentiated. I mean, rather, to call attention to the way it reproduces musical events as organic, seamless wholes. There are, I believe, solid technical reasons why it sounds as it does, which I'll get to later.

With well-recorded orchestral sources—I am now listening to the classic Stokowski recording of Liszt's *Hungarian Rhapsody No. 2* [Classic Records reissue]—the orchestra is spread



across the front of the listening room, though by necessity restricted in size and volume. Regardless of what optimistic designers and starry-eyed copywriters tell you, the literal scale and dynamics of a full symphony orchestra cannot be replicated in any domestic setting that remotely falls within the range of normal or typical. That said, however, the ease with which disbelief is here suspended is quite uncanny: the strings are set slightly behind the plane of the speakers with the rest of the ensemble stretching back behind them, all appearing as a cohesive group deployed in a setting that seems to be a real (as opposed to virtual) space. Yes, there is spot-miking and the top end is a little bright (whether owing to the mikes or the engineers' equalization or both I cannot say), characteristics the Andros reveals, but not distractingly so, for this is a muscular recording of truly fabulous performances.

Perhaps more to the point is the sheer beauty of the sound, the richness of the orchestra, the texture of the instruments both individually and as an ensemble, the power of the brass, percussion, and low strings, the warmth of the cellos, the brilliance of the violins, the color of the winds. And despite his age, how rhythmically vital that old wizard Stokowski was! Interpretively, it's a wildly imaginative, even willful ride, but realized with such style, virtuosity, and panache as to be irresistible, adjectives that also apply to the companion rhapsody, Enesco's *First Roumanian*.

It being the season to be jolly, I hauled out a thirty-year favorite, the *Hodie* by Ralph Vaughan Williams in its first recording, conducted by David Willcocks. Vaughan Williams had long wanted to write a big Christmas piece, and this one has the feel of a dream realized. The forces, including full orchestra, two choirs, soloists, and organ, are huge, starting with a jubilant brass fanfare with

EQUIPMENT REVIEW - Zesto Audio Andros PS1 Vacuum Tube Phonostage

choral interjections of “Nowell, Nowell” and ending with a spectacularly triumphant setting of Milton’s *Ode on the Morning of Christ’s Nativity*. The Andros did not disappoint, bringing this vintage EMI recording magnificently to life. Yet for all the size of the forces, it may be the intimate numbers that are the most deeply felt, in particular the meltingly beautiful “Lullaby” for children’s chorus and mezzo-soprano, here the incomparable Janet Baker. Notice, to take one small but telling example, how, almost imperceptibly, Baker’s voice emerges from the texture of the children’s voices.

Turning to popular voices, I went through several of the new Mobile Fidelity reissues of classic Sinatra, starting with *Sinatra at the Sands*. Hardly a great recording *qua* recording, it nevertheless does capture Sinatra at the peak of the Reprise years in a nightclub setting, the focus on the voice razor-sharp but still very attractive in a flesh-and-blood way, even if far too close up to be “realistic” (as with most live recordings in clubs, the perspectives are weird, with the audience appearing behind the performer). But so beautifully does the Andros reproduce The Voice that it’s easy to forget about all that audiophile stuff and just enjoy Sinatra, who is in great form even if the instrument is obviously no longer in the shape it was ten years earlier at Capitol (compare this “Angel Eyes” to the one on *Only the Lonely*).

A different baritone in *Belafonte at Carnegie Hall* [Classic Records reissue], that legendary voice at once husky and honeyed, likewise beautifully clean, clear, present, and superbly projected. The same for Julie London in Boxstar’s superlative reissue of *Julie Is Her Name*, reproduced with all the purity of pitch

TRANSFORMERS

I asked George Counnas about the transformers and his decision to use them. He replied, “The transformers we use are designed by Deane Jensen (1942-1989). I chose them because Deane was a brilliant designer with a long history of outstanding products. Also, I wanted to do something to support the local community and that is made here in the USA.

“Why did I go the step-up transformer route? Because I could increase the gain without creating more noise. I wanted a unit that’s quiet, musical, and affordable, though the Jensen transformers we use are by no means cheap—for example, they are shielded with mu-metal. But it’s not like you can go out and buy these transformers and then just plug them into

any phonostage and get the same results. I’ve integrated them into the overall circuit in such a way as to optimize the performance of the whole combination, from the cartridge to the output of the active stage.

“The way I’ve designed the circuit, the loading is on the secondary of the transformer. This means that the cartridge ‘talks’ to the transformer directly without any other parts or components involved (except the signal cables and connectors). Technically, this is called an AC rather than a DC load and it allows the cartridge to work to its best performance. The loading options allow the customer to resolve dynamic range, frequency response, and distortion according to his own conditions or preferences. For example, you can sometimes eke out a bit more dynamic range by choosing

a loading value higher than the theoretically ideal match without seriously compromising frequency response and distortion or vice-versa. We encourage a little experimentation here for those who are so inclined.”

Because tonal neutrality is important to me, I prefer loading at the theoretically correct value of ten times the internal impedance of the cartridge (e.g., 5 ohms translates to 50 ohms), which typically results in the flattest frequency response and the best damping of the high-frequency resonance. But you can get some interesting and musically valid results with other options. And thanks to how cannily Counnas has designed Andros, not too much mischief results when departing from the so-called “correct” values. **PS**

for which she is renowned. Soon I found myself bringing out records I hadn’t heard in much too long a time and wondering why I hadn’t: *Growing Up in Hollywood Town*, for example, Amanda McBroom’s first outing for Sheffield. I had all but forgotten the fantastic presence and immediacy of these direct-to-discs, to say nothing of their wide dynamic envelope (try the opening of “Amanda”). I was lucky enough once to hear McBroom at or near her prime in a small club in Santa Monica, doing her heart-wrenching “The Portrait,” the first cut on this Sheffield. Rarely have I heard a singer lay herself out so openly, with such raw and unflinching emotion. I’ve replayed that performance—more intense than the one on this Sheffield—in the theatre of my

mind many times, but the recorded rendition is certainly intense enough so as not to suffer in the comparison.

Voices to instruments and Ben Webster’s glorious “How Long Has This Been Going On?” from the classic *Ben and Sweets* [Classic Records reissue], the same adjectives keep cropping up: smooth, velvety, yet Webster’s tenor sax still big, expansive, and voluptuous. Another sax, Sonny Rollins’ on *Way Out West* [Acoustic Sounds reissue], is vibrantly present. You could argue that the Andros is maybe a little too smooth here, because even when Rollins is relaxed and enjoying himself, as on this album, he’s still got a bit of bite to his tone,

SPECS & PRICING

Inputs: Moving magnet and moving coil	ZESTO AUDIO
Noise: -75dB	Thousand Oaks, California
MC stage: Transformer	(805) 807-1840
Tube complement: Four JJ ECC83S/12AX7	zestoaudio.com
Frequency response: +/- 0.5dB referenced to the RIAA curve	
Dimensions 17” x 5” x 12”	
Weight 20 lbs.	
Price: \$3900	

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EQUIPMENT REVIEW - Zesto Audio Andros PS1 Vacuum Tube Phonostage

and so it is through the PS1, if ever so slightly *ma non troppo*. But turn to the Juilliard's great sixties album of the Bartók quartets and you'll find the Third reproduced with all the severity and acidity of tone for which this thorny piece is either famous or notorious. And despite the closeness of the recording, it nevertheless opens out with a surprising bloom and, perhaps owing to its very closeness, puts the performers in the room rather startlingly (especially if you get the playback levels just right, which doesn't necessarily mean very loud). Regis Pasquier's violin in his Harmonia Mundi set of the Bach Unaccompanied Partitas and Sonatas has the requisite warmth of tone and, where called for, brilliance.

If it seems that I have been talking mostly about the music and relatively little about the component, then you are on to my strategy. I've rarely auditioned a piece of equipment that has from the get-go made it harder for me to stay in reviewer mode as opposed to just plain music lover mode, causing me to scribble fewer (illegible) notes than I have in I can't remember when. And I must confess that no one could be more surprised than myself by this, because, to put it frankly, I do not quite "get" the use of tubes for amplifying very low-level signals such as those from low-output moving coils. I make this admission not to my credit, only to put my bias out there as a context for my enthusiasm.

The Andros is the first product from Zesto Audio, a new firm, based in Southern California, owned by George and Carolyn Counnas. George grew up in Great Britain where as a young man he designed vacuum-tube circuits and worked for DECCA Navigator, one of Britain's largest

electronics companies, as part of a research and development team designing airborne navigational systems for the Royal Air Force. But music was an abiding passion and he long wanted to design his own products, electing to begin with a phonostage. Despite what he freely acknowledges as the many advantages of digital, vinyl long ago won and still holds his heart. The same is true for vacuum-tube technology. "I started doing research on past phonostage designs going back to the original RCA circuits of the 1930s," he says. "These guys got a lot of things right, even though their tools were slide rules and trial-and-error." He claims some 71 circuit revisions and hundreds of parts upgrades before he arrived at the production Andros. Paying as much attention to the outside as the in, Counnas enlisted the help of his wife Carolyn (an artist) and Musky Mistry (an industrial designer) to come up with a look both unusual and unusually pretty. The black chassis consists of a lower layer adorned with a grey graphic of undulating curves on the fascia. The upper layer is shaped like a grand piano (viewed from the top) with a mirrored finish on the front edge that reflects the four softly glowing tubes located within the hollow curve. The graceful, gently curvy style belies the ruggedness, the chassis made from 16-gauge steel and supported with IsoNode isolating feet. Parts quality and workmanship appear first-class.

The PS1 will accept both moving-magnet and moving-coil pickups (you can hook up two complete phono setups, provided one is high output, the other low), and there are even balanced inputs to parallel the RCA inputs (but RCA-only outputs). There are a two-position

level switch for MCs and a novel grounding switch that allows you to isolate the ground if need be. Of great importance to me, Counnas is most definitely not a subscriber to the one-size-fits-all approach to loading, the PS1 offering eight options from 20 to 1000 ohms. Technical specifications are impressive, the price is \$3900 (which includes 50 hours of factory burn-in), and each unit is "hand-built in the USA."

As the Zesto factory is not far from where I live in Los Angeles, the Counnases themselves delivered the unit and set it up, though there was hardly any need for this, so easy is the job, out-of-the-box to music taking scarcely fifteen minutes. There is literally nothing to do but plug it in, attach all the appropriate signal cables (not provided), select pickup type (and loading option if applicable), turn it on, and put on a record. Since the unit is burned in at the factory, you might want to give the tubes fifteen or twenty minutes of warm up if you want to hear the Andros in all its glory the first time you cue stylus to groove (about the same warm-up time is required after it's been off for awhile). Once you recover from the sheer beauty of that initial sound, what may strike you next is how quiet this thing is, noise being one reason for my bias against tube phonostages. No, you cannot crank the volume all the way up with your ear right against the speaker and hear silence (you can't do that with most solid-state phonostages, either). But unless playback levels cross over into the insane, the impression of background blackness is without precedence in my experience of tube-based phonostages.

At the outset I said I believed there are good technical reasons why this unit sounds as it does, reasons not unrelated to that impression of

low noise but not necessarily related to the use of tubes as such. Rather, I believe they have much to do with Counnas' decision to use transformers to step up the low-output moving-coil signals. It has always surprised me that so many phono preamp designers eschew transformers in favor of active stages. To begin with, transformers are passive and do not generate electronic noise, which makes them, all other things being equal, quieter than even solid-state circuits, including those that are battery-powered. They are also far more tolerant of the vagaries of loading than active stages and suppress the resonances endemic to all moving coils much more effectively. Although some transformers are very expensive, there's little evidence to suggest that they must be so to do their job effectively—design know-how definitely trumps exoticism of parts and materials.

Detractors of transformers will insist that they ring and that by comparison to active stages tend to be midrangy, with the frequency extremes suffering (highs rolled, bass soft or down in level), likewise dynamics, transparency, resolution, and "speed." Those of us who like transformers grant some of these shortcomings as regards units of less than competent design but counter that none of them is intrinsic to the technology. We would also argue that transformers yield a more natural, musical, and altogether pleasing sound than any active stage.

As with so many audio debates, this one is unlikely to yield any sort of consensus. Each side can cite evidence in support of its position, even if the "evidence" consists in nothing more than listening impressions. Here's my two dollars' worth: I have for over twenty years used as one of my reference step-up devices Mike Sanders'

EQUIPMENT REVIEW - Zesto Audio Andros PS1 Vacuum Tube Phonostage

Quicksilver Audio transformer. This excellent design, priced at a mere \$695, consistently makes for some of the most tonally neutral and musically natural reproduction of vinyl sources I know and is not deficient in any aspect or category of audio performance important to me. Its only potential drawback is that its fixed 470-ohm input impedance does not ideally load every MC, though it works very well for most I've used, including some I've regarded as reference caliber. Further, as noted, whatever their impedance specification, transformers do seem to damp or otherwise control MC resonances far better than inadequately loaded active stages do.

What I hear from the Andros PS1 are many of these same qualities—the ease, the relaxation, the unforced naturalness and musicality—only better, one large reason being that Counnas has designed the active stage to synergize optimally with the transformer (see Sidebar). And I surely find no sonic evidence here for any of the putative compromises at the frequency extremes: the organ pedal at the opening of the justly famous

Decca *Also Sprach Zarathustra* (conducted by Zubin Mehta), where the 32Hz note is actually *on* the recording, is shudderingly powerful and never lost hold of while the full orchestra blazes above it. Articulation and definition, not to mention so-called “speed” and “punch”? I've already cited Stokowski's Liszt. How about *Soular Energy* in the Pure Audiophile reissue? Ray Brown's peerless bass offers no challenges the Andros isn't up to, by which I mean that the foot-tapping brigade isn't going to have much to complain about. Up at the top, the same applies to cymbals, brushes, hi-hats, bells, triangles—all these are set forth with an entirely persuasive naturalness. The truth is I consistently find the reproduction of components celebrated for their ability to “carry the tune” overly etched and articulated in a way that can sometimes be appealing but is certainly not realistic or natural. This is especially true of components reputed to reproduce rock music especially well: I often hear a thinnish upper bass; an overly pronounced, even brash upper midrange; and a rising top end, all of which accentuate the very qualities of rock music that,

I suppose, its fans like and that can certainly convey an impression of considerable incisiveness even if it's patently artificial. Music through the Andros betrays no such artifice or artificiality.

Transparency? Well, let me put it this way, while reviewing the Andros, music was

always so involvingly *there* that “transparency” as a category of reproduction never occurred to me throughout the evaluations, which is to say that nothing made me think about it one way or another. There are many other components I've heard that excavate detail with rather more obviousness than the Andros, but none that has dug out anything the Andros has missed. On *Way Out West*, you clearly hear the players mutter to one another (or themselves) while they perform; on his recording of the Opus 131 with the full complement of the Vienna Philharmonic strings, Bernstein's hushed breathing is still there, as loud as it needs it to be but no louder; on that spooky Belafonte recording of “Dark as a Dungeon,” when the thunderstorm approaches and it starts raining, the differentiation of sounds emanating from outside the studio and those from inside is wholly unambiguous, the storm manifestly approaches from a distance. When the rains starts, it's light at first then obviously gets heavier as the song reaches its conclusion. I've rarely heard this last effect reproduced to more convincing effect than here, the rain sounding like real rain.

Every now and then (mostly then) I sometimes wondered if the Andros could be a tad bit more dynamic, detailed, or “fast.” But when I played the same sources on components that brought out these qualities, they sounded all to varying degrees wrong: too much, too hyped, too everything . . . and soon found myself returning to the Andros for music as it really is. More than once I recalled an observation my colleague Robert Greene made of a component that especially struck his fancy: “It sounds totally unscrewed around with,” he said, which for him is fulsome

praise indeed. And which brings me full circle to my opening theme and why the Andros made me wonder how many artifacts of reproduction we take for granted as being the only way things can be because they are so routinely the way things are, as opposed to the way they might be.

A hundred shy of four grand is nobody's idea of a bargain for a stand-alone phonostage. But having been privileged to hear—at extended length in systems and surroundings with which I am intimately familiar—phono preamps costing tens of thousands of dollars that I would not choose over the PS1, I have no hesitation judging it to be worth its asking price, particularly when you factor in economy of scale, its domestic origin, its quality of parts, and its hand-built craftsmanship. The last thing I played before wrapping up this review was an old Musical Heritage Society recording called *Christmas at Colorado State University*, featuring the university's (I assume) student choir and chamber orchestra and also its glorious Casavant Organ, widely recognized as one of the world's greatest. The program opens with a powerful rendition for organ alone of *Adeste Fidelis*, which gives way to the chamber choir singing *a cappella* the French children's carol “Il Est Né” (“He is Born”), and oh my, the way they sing it: with sweetness, innocence, and purity of tone, as befits the lovely melody and the lyrics, sounding out from medium distance, at once focused yet utterly open and radiantly clear. The music, the performance, the recording, and the reproduction were so beautiful that I played the cut three times before returning to the task of finishing my review. **tas**



Sutherland Engineering 20/20 Phonostage

The Essence of Simplicity

Wayne Garcia



Ron Sutherland has a thing for phonostages—or more specifically, as he recently told me, for records and all things associated with vinyl playback. His considerable talent lies in paring products down to their essence, creating units that are at once quite neutral as well as musically compelling, as his impressive track record shows.

Back in the day when he was building very pricey limited-production components that mostly found their way to the Asian market, Sutherland designed the PH 2000, a unit, as Sutherland himself put it, “that sounded quite good and got good reviews, even if it wasn’t the quietest thing out there.”

When the Asian bubble burst in the mid-90s, Sutherland hooked up with Acoustic Sounds’ Chad Kassem to produce the AcousTech PH-1, a fine-sounding model that was not only priced for the common man (\$1200), but filled what was then something of a void for stand-alone phono preamplifiers. But beyond being a good design that, unlike the PH 2000, was pretty darn quiet, the PH-1 was very musical (making its owners happy), sold very well (making its producers happy), and presented Ron Sutherland with one of his favorite design challenges.

“I found it an especially fun project precisely *because* of the budgetary restriction,” Sutherland told me. “I love having to make those kinds of thoughtful choices, rather than just throwing money at a project.”

Sutherland’s quest for extremely low noise circuits would then lead him to design a series of phonostages powered by banks of 16 D-cell batteries. First came the \$3000 Ph.D, a now discontinued unit that I enthusiastically reviewed in these pages many moons ago (Issue 144, phew!). Following his pattern of designing at opposing price points to see what he could achieve with a shorter monetary rope, Sutherland’s next model came in at a mere one-third that tag. The \$1000 Ph3D (reviewed by Chris Martens in our April/May 2007 issue) showcased another one of Sutherland’s design trends by taking what he’d learned from two previous design efforts—the Ph-1P and Ph.D—and mashing them together, if you will, in a new piece.

It must be said that, as pure, detailed, and quiet as these designs are, battery-power components can also lack large-scale dynamic peaks and the sheer wallop one can get from more conventional power supplies. They simply don’t have the juice to, say, deliver a full-throttle orchestral climax or kick-to-the-solar-plexus-like weight of John

Bonham’s atomic drum blasts. Like all things in audio (and life), one must decide which set of tradeoffs to live with (or without).

Last year Jonathan Valin reviewed Sutherland’s most ambitious and costly battery-powered design to date, the \$3800 Hubble. Aside from the few shortcomings mentioned above, Jon found the Hubble to one of the most musically natural phonostages he’d yet encountered—and reader, please note, the man has heard virtually every high-end component there is and has reviewed pretty much every one of consequence—with an extremely lifelike midrange, and phenomenal soundstaging (due to Sutherland’s innovative use of dual-mono circuitry).

Now, and give Ron Sutherland credit for his candor, he’s designed a new model largely to fill the considerable price void between the Ph3D and the Hubble. Dubbed the 20/20—symbolic of the dual-mono construction—this \$2200 model again builds on past Sutherland designs (indeed, the Hubble and Ph3D were its models), but with a non-battery-powered twist. As his Web site states, “This time the challenge was to offer an AC-line-powered phono preamp that would fit in comfortably with the Sutherland series of battery-powered phono preamps. An extremely low noise floor and precise resolution were musts. Not only

was this an opportunity to creatively address AC power-line isolation but to also take dual mono to a new level. And the other design challenge was to do this with extremely high performance, extremely high quality, and extremely high value.”

This less-is-more, Zen-like thinking defines Sutherland as an audio engineer. “My favorite thing is industrial design—laying out circuit boards. By making something simple I’m likely to spend more time on the small details than maybe I should, but that refinement benefits everybody, and it also makes my products effortless to build.”

To illustrate his point, Sutherland told me he usually builds the first few dozen of any new model himself. Speaking of the 20/20 he told me, “By being hands-on, I can make sure they [the production team] don’t fight problems that I should have solved in the first place.”

Further underlining Sutherland’s quest for elegant simplicity is that he tends to design in mono—not “standard” dual-mono, mind you, wherein left/right circuits typically mirror-image each other, but in identical mono circuit patterns that he calls “two mono.” Sutherland’s rather deadpan sense of humor leads him to admit that this may seem like a lazy approach, but in actuality by simply replicating the same layout for each channel he is able to focus on the kind of details he relishes. “I simply design it once,” he points out, “and then build it twice.”

Beware, however, that some early users (as well as those who don’t read users’ manuals—ahem!) have found themselves thinking that perhaps their 20/20 was defective. Because if you hook it up the way you would a conventional design, where inputs and outputs are mirrored on the rear of the chassis, one of the 20/20’s channels won’t produce sound. Picture this: Rather than, say, two inputs resting in the middle and two outputs

EQUIPMENT REVIEW - Sutherland Engineering 20/20 Phonostage

at the outer extremes you have, from left to right, when facing the unit: In/Out/ Grounding Post/In/Out, with the inputs and outputs leapfrogging each other.

The whole shebang becomes even clearer when you lift the chassis cover (via a quartet of easily removed knurl-knobbed nuts) to reveal a pair of identical and entirely separate inner chassis with about a four-inch gap separating them. Their only connection is by way of the shared back panel and faceplate. Here is where the user can adjust gain (40dB, 46dB, 52dB, 58dB, 64dB) and loading (100 ohms, 200 ohms, 475 ohms, 1k ohms, 47.5k ohms) via sets of high-quality jumpers.

You will also need to remove the cover in order to make your 20/20 operational, because before getting started one must plug the leads from a pair of “regulated desktop power supplies” into sockets located at the front of each circuit board, which are then channeled away from the circuitry and out the rear of the unit. “Wall-wart” power supply is another name for these devices, but Sutherland eschews the phrase as one that refers to lower-quality units than the type he employs.

Sutherland admitted that external power supplies of this type may seem inappropriate for a high-end design, but says that by using passive RC (resistor-capacitor) filters he is able to get very clean DC to his chips.

Chips? Uh-huh. And here is another

area wherein Sutherland takes a road less travelled by most high-end designers. And it has nothing to with cost, as the sophisticated op-amps he uses price out at \$25 a pop. Instead, Sutherland says he hates the idea of listening to handfuls of resistors and capacitors to select the ones to utilize. “Though I know it’s a polarizing notion, I like the simplicity of op-amps. And you still have the selection process. I listened to a dozen of these before choosing what I felt were the best-sounding units.”

And listening, of course, is the ultimate proof of any component’s worth. When people ask me whether I prefer tube or solid-state designs, I typically reply that I don’t care if a component is powered by jellybeans as long as it sounds good. And the 20/20 most certainly does.

Interestingly, after many weeks of listening to the 20/20 I found myself thinking of Mr. V’s review of the Hubble. Upon revisiting it I knew why. So many of the traits Jonathan described regarding the Hubble are also found in the 20/20.

Most importantly and immediately is midrange naturalness. From the brass, strings, winds, and full-range orchestral forces heard in the Ansermet recording of Stravinsky’s *Petrushka* [Athena], to Sinatra at his finest on *Only The Lonely* [Mobile Fidelity], and on and on the 20/20 is notably free of electronic imprint.

Indeed, if one were to describe any character beyond the word “natural” to the 20/20’s overall nature I would call it

beautiful. The 20/20 is consistently so.

In addition to its low noise and lack of electronic glare I would go so far as to say that the 20/20 lends a *slight* softness to instrumental edges. And while this makes, say, Sinatra’s voice and remarkable phrasing that much more seductive, and the solo trumpet in the Third Tableau of *Petrushka* sound very lifelike, at the same time it removes that bit of bite the instrument has in life. But then again as cymbals crash together in the same piece they shimmer in space without spitting or otherwise being harsh on the ears.

Exceptional channel separation and soundstaging are other qualities the 20/20 shares with JV’s description of the Hubble. Put on Santana’s *Abraxas* [MoFi], opening track, “Singing Winds, Crying Beasts.” First, the swirling bells, cymbals, electric piano, and other instruments emerge from a very quiet and deep space. Paired with the Maggie 1.7 speaker, this is an almost intoxicating thing. It’s the kind of hi-fi drug that becomes quickly addictive. The electric bass is supple, almost creamy, as it rolls the music forward. Would I prefer a bit more sting to Santana’s soaring electric guitar? Yes, I would. I don’t want the sting to hurt my ears, but the 20/20 does remove it. If you’re musical taste runs to lots of harder rock, the 20/20 may not necessarily be for you.

But with something like Wilco’s “Jesus Don’t Cry,” from *Yankee Hotel*

Foxtrot [Nonesuch], the sheer beauty of the 20/20, its amazing instrumental separation, and wide-open staging are wonderful things. Then go back to Stravinsky. I’ve played this LP over dozens of different systems, and rarely do I have the thrillingly eerie feeling of stepping into a recorded space the way 20/20 delivers it. It this regard it ranks among the finest at any price point.

Yet even with AC power this unit doesn’t quite have the ultimate weight and power punch to raise the flesh at the most climactic moments, either during *Petrushka* or other Stravinsky ballet scores such as *The Rite of Spring* or *The Firebird*. Again, it’s a tradeoff. Especially since the 20/20 is so good the other ninety-percent of the time.

So, yes, the 20/20 is a story of tradeoffs. And knowing Ron Sutherland, I believe it represents the tradeoffs he prefers. After all, musical naturalness and beauty at this level are pretty hard to argue with.

And most of the time I too prefer finesse over power. But your preferences may differ. Or put another way, on one hand it would be like criticizing Grace Kelly for being *too* beautiful, but then there’s Marilyn Monroe. **tas**

SPECS & PRICING

Gain: 40dB, 46dB, 52dB, 58dB, 64dB
Loading options: 100 ohms, 200 ohms, 475 ohms, 1k ohms, 47.5k ohms
Output: 2V
Inputs and outputs: RCA
Dimensions: 17" x 2.25" x 12"
Weight: 11 lbs.
Price: \$2200

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ASSOCIATED EQUIPMENT
TW-Acoustic Raven One turntable;
Tri-Planar Ultimate VII arm; Benz
Gullwing and Transfiguration Phoenix
moving-coil cartridges; Artemis
Labs PL-1 phonostage; Cary Audio
Classic CD 303T SACD Player, SLP
05 linestage preamplifier, and 211
FE monoblock amplifiers; Edge
NL10.2 power amplifier; Magnepan
1.7 loudspeakers, Tara Labs Zero
interconnects, Omega speaker cables,
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Pass Labs XP-25 Phonostage

Pushing the State of the Art to New Limits

Anthony H. Cordesman

There 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 Phonostage

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

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 Phonostage

top phonostages.

I should acknowledge, however, that the very 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 capacitive 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 that 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**

Soulution 750 Phonostage

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 Phonostage

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

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 Phonostage

this I mean the three-dimensional projection of 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.

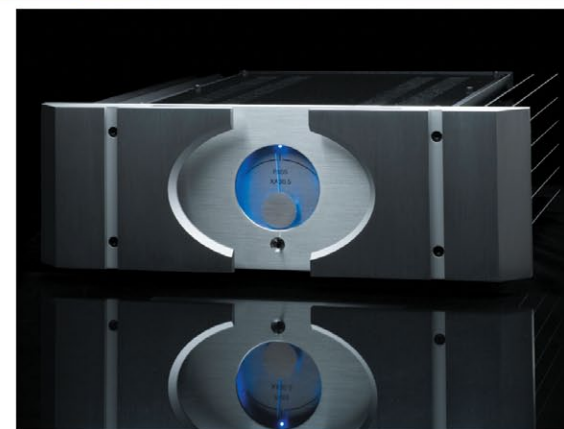
Nitpicks? Well, the Soulution 750 (and Soulution gear, in general) isn't as inherently beautiful sounding as BAAlabo gear, but it is more dead-center neutral and standard-settingly transparent to sources; it isn't quite as high in resolution as Technical Brain (nothing is), but it is fuller and what 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 linestage 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 linestage 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**

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EQUIPMENT REVIEWS

Vinyl Accessories



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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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**

Okki-Nokki RCM Record-Cleaning Machine

Okey-Dokey!

Paul Seydor

I am less fastidious about vacuuming my records than I probably should be, long hiatuses without a record-cleaning machine more the rule than the exception chez moi. I've used several from time to time over the years and found they all work more or less as claimed, but most of them are so large, ugly, and/or noisy they wind up languishing in a back room or the garage. Eventually I sell them and find life goes on perfectly well.

In the Sumiko room at this past Consumer Electronics Show, however, I noticed off to the side an unassuming matte-black box, not small, not large, no beauty but not plug-ugly either. A closer look revealed a record-cleaning machine. On the front in white letters—or black letters in the whitebox version—were the words “Okki-Nokki,” which I later discovered is a European expression for “thumbs up,” “everything is all right.” Its appearance struck me as so trim, even elegant, that for the first time in a long while my interest was piqued by one of these things. As appealing as its looks was a suggested retail of \$599. When Sumiko’s John Paul Lizars informed me it was even relatively quiet as such contraptions go, I inquired after a review.

Within about fifteen minutes of unpacking

it I was vacuuming records, but more of that anon. Officially called the Okki-Nokki RCM, it has a heavy-duty motor, turntable, and vacuum system housed in aluminum chassis. Unusual but not unique is a motor that spins the platter in forward or reverse direction, very helpful for extricating stubborn detritus. Suction is via a felt-tipped cylindrical aluminum arm, which sucks debris into a reservoir equipped with a sensor that shuts the machine down when it is full. Supplied with the RCM are a suction arm for 12-inch LPs, a goat-hair brush, a record clamp, detachable AC cord, and a small bottle of cleaning-fluid concentrate to be mixed with a liter of water. Optional accessories include an acrylic dustcover (recommended) and suction arms for 7- and 10-inch records.

There is no setup as such apart from dropping the suction arm into its well and fitting the stopper onto the drain hose. But as the manual is misleading about some things and less helpful than it could be about others, allow me to enumerate some tips and caveats. The manual suggests the cleaner-fluid concentrate be mixed with “purified” water, which I thought a mistake or a mistranslation for “distilled,” as purified water still has minerals and other residue and some brands also have additives to make it taste better, while distilled does not. A phone call to Sumiko’s John Paul Lizars confirmed I was right:



Use distilled.

The way the plug is attached to the drain hose makes it possible, as my four-and-a-half-year-old daughter Samantha demonstrated with ease, to remove the plug, then push the hose all the way inside the chassis, whence it is irretrievable without removing feet and bottom cover. Not difficult, but a nuisance when a tighter fit would have prevented misadventure altogether.

The manual is unhelpful as to how much fluid

to apply. The best way I know—from a tip I found on-line—is to place the LP on the platter, clamp it, flip the switch to start it moving, apply a thin bead of water beginning at the inner groove and moving outward as the platter turns—when finished you’ll have a neat spiral line across the surface—then use the brush to spread the liquid so that it coats the surface evenly.

For ease of turning records over and to keep the design compact, the platter does not rest

EQUIPMENT REVIEW - Okki-Nokki RCM Record-Cleaning Machine

in a well, which leads the manual to warn that excess water on the record might splash onto the surface where the machine is placed and thus to advise putting a towel under it. I can't imagine this being a problem once you get the hang of applying the fluid—two or three tries should suffice—so all but klutzes can safely ignore that warning.

When you first use the brush, you may notice that lots of little hairs fall out. John Paul assures me this happens only when it's brand new. I recommend rubbing the brush back and forth across, say, a table edge or some such until hairs stop falling out. Even after that, you may notice an occasional one gets on a record; not to worry, the vacuum'll remove it.

Once you've vacuumed the record, it's important you turn off the vacuum *while the platter is still spinning* and the suction arm (spring-loaded at its base) raises on its own: stopping the platter while the suction arm is still

fixed to the record leaves a line of debris deposited on the surface.

If you clean only a few records at a time, they will be dry almost as soon as you remove them from the platter. However, if you do a pile at once, the felt will become too wet to absorb all the moisture. No problem—let the LPs air dry in a dish rack.

Writing about all this makes it sound a lot more complicated than it is. The reality is that the Okki-Nokki is so easy and intuitive to use that with very little instruction Samantha was soon helping Daddy clean records like a champ. Initially she was startled by the noise of the vacuum, as was I but for an opposite reason: While I could never call this vacuum quiet, it's a lot less noisy—on the order of a not-insignificant 8–10dB—than any other record vacuum I've ever used or heard. (Clearaudio has announced a new vacuum, reviewed by JV in this issue, claimed to be so quiet it almost cannot be heard, but its \$4k suggested resale is almost seven times the Okki-Nokki's.)

How did cleaned records sound? Well, literally cleaner, as you might expect, with improved clarity, transparency, tracking, and imaging. The first one up was the soundtrack from *Love Me or Leave Me*, which I had picked up for the princely sum of two dollars at a Goodwill outlet. This was an album that someone had really

let deteriorate (I often use it to check out how well record-playing setups handle worst-case vinyl). I can't say the Okki-Nokki worked miracles, but the improvement in how the presentation opened out, allowing the color, timbre, and texture of voices and instruments to shine as if they had just emerged from shade to sunlight, was very impressive, while the music also stood out in greater relief from the remaining noise. In sum, a borderline LP became a thoroughly acceptable one.

Of course, no record vacuum is going to restore an LP like this to anything close to pristine condition, but the Okki-Nokki will bring an impression of fresh minting to any record that has been reasonably maintained. One example: I cleaned one of my Bernstein DG *Carmens*, a constant reference recording, and found, among other effects, the top-end triangles and cymbals ever so slightly but significantly more scintillating.

That first day Samantha and I went through about a dozen LPs—she found it such fun she'd have been happy to continue for the rest of the afternoon—none without some improvement, though most only to a small degree, which is about what I'd expect from well-cared-for records. Although most records will require only one cleaning, some may call for a second or, rarely, a third. Once you've gone that far, figure you've done all you can.

How often do you need to clean a record? In my opinion, just once, assuming you handle it properly thereafter: holding it by its edges, returning it to its jacket after playing it, keeping it stored upright in a clean environment. Common sense and minimal effort are all that's necessary to maintain a record collection in good condition. If you're not willing to expend this small effort, a record vacuum is just a waste of money.

How does the Okki-Nokki stack up against the competition? As good as or better than any of the three or four I've used in the last twenty years. Beyond that, I have little interest in trying to find out if one is "better" than another. How can anyone know? Cleaning identical records side by side won't necessarily tell you, as no two records are dirty in the same way. I've heard of people cleaning a record on Machine A, listening to it, then cleaning it again on Machine B. If it sounds cleaner still, B is pronounced better. The trouble with this "test" is that if you had cleaned it the second time on the first machine, it would likely have also sounded better, if it actually was going to sound better, and pretty much along the same lines.

Apart from the few caveats I mentioned earlier, which are unrelated to its cleaning abilities, I have no complaints about the Okki-Nokki, except a hundred dollar price increase since CES, a liability of the rising Euro *vis-à-vis* the dollar. In addition to doing its job superbly, it's the only reasonably priced platter-based record vacuum that is unobtrusive and good-looking enough to keep in the listening room. **tas**

SPECS

Dimensions: 14.25" x 9.1" x 14.25"

Weight: 15.5 lbs.

Warranty: One year parts and labor

Price: \$599

SUMIKO

(510) 843-4500

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Our Top Picks

We Choose the Best Turntables, Cartridges, and Phonostages

TAS Staff

TURNTABLES AND RECORD PLAYERS Under \$1000

Pro-Ject Debut III
\$399 in colors (with arm and Ortofon OM5e cartridge)

sumikoaudio.net

The Debut III offers music lovers a lot of analog virtues, like warmth and naturalness, at a bargain price. With the cartridge already installed, this 'table is very easy for even a novice to get going. Clarity, bass articulation, and pitch stability can be improved by substituting a better Ortofon OM stylus, using an isolation platform (or pucks), or adding the inexpensive Pro-Ject Speed Box MkII. JH, 172

Pro-Ject Xpression III
\$699

sumikoaudio.net

The Xpression III features an acrylic platter, machined cone feet, a carbon-fiber arm tube, and other refinements rare at this price. Supplied with Sumiko's excellent Oyster cartridge, the Xpression III has excellent clarity, smoothness, and a wide and deep soundstage. PS, 191

Rega P3-24
\$895

soundorg.com

The latest edition of Rega's P3 sports an improved plinth, motor, and tonearm. Known for its rhythmic incisiveness, the P3-24 also delivers greater dynamic range, a more convincing sense of air and space, a lower noise floor, richer tonality, and improved bass over earlier versions. For an extra \$375 add the TT PSU power supply, which takes the performance to a significantly higher level. WG, 180 and PS, 191

Pro-Ject RM-5 SE/Sumiko Blue Point No. 2
\$999

sumikoaudio.net

Easy to assemble, Pro-Ject's RM-5 SE features a teardrop-shaped, black-lacquered MDF plinth, a suspended motor assembly, a stainless-steel and Teflon bearing, and a 9" carbon-fiber arm. Supplied with Sumiko's Blue Point 2 cartridge, the RM-5 SE is musically involving, with a warm balance, stunning rhythmic incisiveness, fine dynamic shading, good detail, and natural depth. WG, 180

\$1000-\$2000

Rega RP3
\$1095 (with Elys 2 cartridge)

soundorg.com

Rega's latest iteration of its venerable 3 Series turntable features the new, hand-assembled RB303 arm (pre-mounted with the Elys 2 cartridge), a new low-vibration motor, and something called DB (Double Brace) technology, which adds rigidity to the low-mass plinth. Upgrade options include the TT PSU power supply and reference belt. Forthcoming.

Clearaudio Concept
\$1400 (\$1500 with Concept mm cartridge; \$2000 with Concept mc cartridge)

musicalsurrroundings.com

The Clearaudio Concept turntable package does everything but unbox itself. Preset at the factory, this spinner features a svelte belt-drive chassis, a stunning friction-free, magnetic-bearing Verify tonearm, and the Concept moving-magnet cartridge. The build and finish of this German-made 'table are superior. For sheer musical engagement and superb speed stability, it's the one to beat in this price range. WG, 205

SOTA Comet S301
\$1545 with Dynavector 10x5 cartridge (\$1150 without)

sotaturntables.com

SOTA uses internal damping to isolate the Comet from vibration; the bearing

cup is made from a Teflon-impregnated self-lubricating polymer; the platter assembly consists of a high-density polymer main platter sitting atop a polymer-based sub-platter driven by a 24-pole AC synchronous motor. The result is an easy authoritative presentation that's warm, rich, and solid, with wide nuanced dynamics and a large 3-D soundfield. WG, 180

VPI Aries Scout w/JMW-9
\$1850

vpiindustries.com

If you want to experience a huge taste of analog heaven without the hellish price tag, the VPI Aries Scout deserves your attention. This simple, affordable 'table uses an inverted bearing with a Teflon thrust plate and a scaled-down version of the JMW unipivot arm to create an exceptionally quiet background and high signal-to-noise ratio. Music leaps out of silence into the room. JHb, 172

\$2000-\$5000

Kuzma Stabi S
\$2075

eliteardist.com

The Stabi S is Kuzma's least expensive turntable, but you wouldn't know it to listen to the thing. Blessed with deep background silences, the Stabi S makes a great complement to the Stogi S tonearm. Not a good choice for rooms where footfalls will be a problem (because it is unsuspended), it is otherwise a fine mid-priced 'table. CM, 159

Pro-Ject RM-9.2
\$2449 (\$3199 with Blackbird cartridge)

sumikoaudio.net

The RM-9.2 (auditioned with Sumiko Pearwood Celebration II cartridge) is remarkable in ways that will appeal to both the music lover and the audiophile. Notably easy and relaxed, it is also rhythmically incisive and dynamically explosive. The 'table comes with Pro-Ject's 9" EVO carbon-fiber arm, and is also available as a stand-alone unit or—at a combined discounted price—with Sumiko cartridges. WG, 206

SOTA Sapphire Series V Turntable
\$2700

sotaturntables.com

The Series V upgrade of this 30-year-old classic boasts improvements in parts, engineering, machining, fit and finish, and performance—all retrofittable to earlier versions. Its time-proven, four-point hanging suspension is still the ultimate in isolating the arm/pickup. For PS, the Sapphire is the least expensive turntable that suggests what "super"-turntables are all about, sacrificing only a bit of resolution and control by comparison. Recommended without serious qualification. PS, 210

Clearaudio Performance SEP
\$2800 (with Verify tonearm)

musicalsurrroundings.com

The Performance's precision ceramic/magnetic bearing allows its platter

to float on a cushion of air, contributing to this turntable system's startling transparency, openness, and clarity, very good native speed stability, and low noise floor. Its improved Verify arm is equally at home with high-performance moving coils or modest moving magnets. As with most mass-loaded designs, a rigid stand is required. JH, 180

Well Tempered Amadeus
\$2800

welltemperedlab.net

This latest version of William Firebaugh's inventive turntable and arm design has ultra-quiet background, superbly non-resonant, neutral sound, complete speed stability, surprising bass extension, easy setup and operation, and compatibility with a wide range of cartridges. Add-on isolation devices may be needed. Overall, the high end at a budget price. REG, 191

Linn Sondek LP12
\$2810 (turntable only)

linn.co.uk

The original high-end turntable, Linn's LP12 conveys the rhythm and pace that are the very foundations of music, and it gets better with age—owners of any vintage LP12 can upgrade to the current model. SB, 136

Basis Audio 1400 Signature
\$3400

basisaudio.com

Clean, lively, and nimble, the Basis 1400 lacks the authority, deep black backgrounds, and projection of size and scale of the really great turntables. But this combination doesn't leave you hankering for something else. PS, 132 and 140

Pro-Ject RM-10.1
\$3499 with arm; \$4199 with arm and Sumiko Blackbird cartridge

sumikoaudio.net

The RM-10 improves upon the fine performance of the RM-9.1 by adding a longer arm, a more massive plinth and platter, an isolation base, and magnetic repulsion. These enhancements produce blacker backgrounds, more solidity in the bass, and a cleaner window on the soundstage. JH, 172

Nottingham Analogue Studio Space 294
\$3999 with Ace-Space 294 arm

nottinghamanalogstudio.com

Nottingham's beautiful Space 294 belt-drive turntable offers very good speed stability and nearly noise-free operation. Driven by an ultra-low-torque motor, the 294's massive platter must be push-started by hand (you'll get used to it). Completing the picture is the 12-inch, unipivot, Ace-Space 294 carbon-fiber tonearm. The system strikes a fine balance between resolution and musicality. CM, 172

\$5000-\$10,000

Clearaudio Ovation/Clarify
\$5500

musicalsurrroundings.com

Continuing the trend of bundling together ever more sophisticated turntables, arms, and cartridges into fine-sounding but relatively hassle-free combinations, Clearaudio recently released what may be the most ambitious such package yet. With a magnetic-bearing arm and Talisman v2 Gold cartridge, the Ovation is a terrific-sounding combo. It is very well balanced, with excellent detail that emerges from silent backgrounds, exceptional pitch stability, and sweet extended highs—if not the

powerhouse bottom-end found in the highest-end models. WG, 216

JR Transrotor Dark Star
\$5700

axissaudio.com

With its out-of-this-world good looks yet approachably down-to-Earth affordability Transrotor's Dark Star conveys little sense of compromise. Quintessentially stealthy in all-matte-black, Dark Star is a fully equipped approach to LP playback—a bundle that includes the Jelco SA-750D tonearm and a Shelter 201 moving-magnet cartridge. This belt-driven, open-air, suspensionless design picks up transient cues as if it were anticipating the record groove before the stylus begins tracking. Though a bit lighter and quicker in sonic balance, and slightly less succinct and dynamic in the bass, than some, the Dark Star is an elegant package and a sonic delight. NG, 210

Merrill-Williams R.E.A.L. 101
\$5999

realturntable.com

Having taken his Heirloom design as far as possible, George Merrill has produced a radically innovative, yet wonderful, non-suspended turntable that makes extensive use of elastomers to dampen resonances (without dampening the life out of the music). Coupled with a sophisticated microprocessor-controlled motor-drive system, and optional periphery ring and clamp, the R.E.A.L. has an astonishingly low noise floor and excellent speed stability and control. Music emerges from a jet-black background without any blurring and with lots of fine musical detail. Forthcoming

VPI Classic 3 turntable
\$6000

vpiindustries.com

The VPI Classic 3 is an exceptional effort by a company that knows the analog landscape like few others. Arriving complete with the Classic 3 unipivot tonearm, an HR-X center weight, and a PRC ring clamp to fully flatten stubborn LPs, the Classic 3 is fast, lucid, and responsive. Rhythmically it has an upbeat, forward-leaning personality with excellent timbre and pitch definition in the low frequencies. It tracks the deepest grooves like a train, and dynamics are thunderously well resolved. The tonearm is also brilliant, with-on-the-fly VTA adjustability and removable armwands for the slickest cartridge-swapping in town. NG, 216

TW Acoustic Raven One
\$6500

highwatersound.com

Recently improved, the Raven One is arguably the single finest value in quality record players. With its superb speed stability, detail, low-noise floor, and highly involving sound this beautifully made German design is so good you'd have to spend a lot more to do a lot better. WG, 193

SOTA Cosmos Series IV
\$6665 (\$5555 w/o vacuum)

sotaturntables.com

This classic turntable boasts superior tonal neutrality, soundstaging, background silence, and isolation. It can accommodate virtually any tonearm that weighs less than 2.5 pounds, while the massive suspended subassembly renders the Cosmos essentially immune to feedback. A vacuum hold-down system negates warps, while binding the record to the platter far more intimately than any clamp or ring. PS, 145

Oracle Delphi Mk VI

\$7700

oracle-audio.com

Quick, quiet, pacey, and extremely finely detailed in the midrange and treble, the Delphi Mk VI boasts several new features—including an ingenious viscous-damping system—that make it a world-beater from the midrange up. The Oracle's upper bass and lower mids are just a little lightweight compared to more massive 'tables, though its deep bass is good. Though a bear to set up, the Oracle is still a remarkable bargain considering its overall liveliness, lifelikeness, and very high resolution. JV, 206

SME Model 10A

\$9900

sumikoaudio.net

This magnificent integrated turntable is one of those rare products with that difficult-to-define sense of rightness. The arm is SME's excellent 309, the platter/mat/clamping system rivals some vacuum hold-downs, and the sound has extraordinary stability, control, definition, dynamics, and detail, sacrificing only the last degree of blackness of background and size and scale that larger, heavier turntables seem to command. PS, 129

\$10,000 and above

Clearaudio Innovation Wood

\$11,000

musicalsurrroundings.com

The dual-plinthed Innovation Wood combines some stunning innovations with Clearaudio's ceramic/magnetic bearing (CMB) technology and lightweight yet extremely dense Panzerholz to damp resonances. It uses a massive stainless-steel subplatter, which, when coupled with a new

DC motor with optical speed control, results in superb speed accuracy. JH has not heard any belt-driven 'table best the Innovation Wood in this critical area. Solo instruments and voices have such rock-solid pitch stability that you'll swear you are listening to a direct-drive 'table without the motor noise. JH, 204

Basis Audio 2200 Signature turntable and Vector Model 4 tonearm

\$13,300 (with Calibrator Base)

basisaudio.com

Designed by A.J. Conti, the 2200/Vector 4 setup redefines for PS what is possible in vinyl playback. In every area and aspect of performance, this Basis combination outperforms all other turntable/arm setups (this includes several costing multiples its price). Design, engineering, and precision in machining approach a standard of perfection surpassed by none and equaled by virtually none. PS, 180

Basis Audio 2800

\$17,000

basisaudio.com

Built to an amazing degree of mechanical precision, the Basis 2800 Signature is nothing short of revelatory in its ability to seemingly disappear from the playback chain. This 'table imposes no discernable colorations on the music, allowing a deeper and more immediate connection with your LPs. RH, 172

SME Model 20/3 turntable and Series IV.Vi arm

\$17,000

sumikoaudio.net

This improvement upon the middle model in SME's lineup now brings it so close to the flagship 30/3 that it's doubtful their performances

can be reliably distinguished on even the highest-resolution setups. Stability, control, and neutrality triangulate the virtues of this and every other SME setup, with an extraordinary impression of *foundation* plus a deep, deep background blackness that very few competitors can approach, let alone surpass. Built like all SMEs to the highest standards, this setup will easily last a lifetime. PS, 216

TW Acustic Raven AC-3

\$18,000

highwatersound.com

The three-motor Raven AC-3 is an unsuspended 'table of relatively low mass made from very high-quality materials, including spectacular bits of copper. Every part of this black beauty has been machined to the highest possible tolerances; every aspect of its design tested and retested by measurement and by ear. The result of all this labor and ingenuity is a 'table that reproduces the duration of notes—from starting transient through lingering decay—more completely than any other. JV, 180

Avid Acutus Reference

\$19,000

musicdirect.com

Avid's Acutus Reference is one of the most musical-sounding record players you can buy. It is also one of the most intelligently designed—compact in size, thoroughly engineered, beautifully made—and one of the easiest to set up and maintain. The Acutus Reference clearly ranks among the handful of top analog playback systems. WG, 170

Bergmann Sindre

\$21,000

bergmannaudio.com

This new Danish straight-line-tracking integrated turntable/tonearm mightily impressed PS with its rock-solid stability and reliability, with performance as good as anything he has used: superlative tracking, especially on inner grooves, spectacularly precise imaging, and extremely wide and deep soundstaging. Its tonal balance (with an Ortofon Windfeld) is neutral except for a slight frisson of brilliance that is never edgy or grainy. Biggest surprise: truly superb isolation despite the fixed-plinth design. PS, 206

SME 20/12

\$28,000 (includes tonearm)

sumikoaudio.net

Alastair Robertson-Aikman's last 'table was designed as an overall system to accommodate SME's lightweight, yet rigid, 12" magnesium tonearm. With its jet-black backgrounds, ultra-low tracing distortion, superb isolation, precise speed accuracy, and rock-solid speed stability, this reference turntable system has an effortlessness and sense of rightness that are mesmerizing. If you insist on using a shorter arm, try a different SME 'table. JH, 176

Kuzma Stabi XL Reference turntable and Air Line arm

\$31,800 (\$33,250 w/VTA adjustable tower)

eliteandist.com

This gorgeous, wonderfully well-engineered and easy-to-use-and-adjust, twin-motored, belt-driven 'table and outboard air-bearing arm challenged the original Walker Black Diamond in resolution, transparency, and transient response (although the Walker beat it in timbre, soundstaging, and overall realism). JV, 167

Acoustic Signature Ascona

\$34,000

as-distribution.de

This high-tech, high-mass turntable from German engineer Gunther Frohnhöfer took fifteen years to bring to fruition. It was worth the wait. Built like a Magico loudspeaker of damped, satin-finished, CNC-milled aircraft aluminum (with brass “silencers” seamlessly fitted into holes drilled and line-bored into its massive platter), the near-200-pound Ascona effortlessly reproduces the lowest-level timbres, textures, and spatial cues, as well as the most thunderous dynamics, uniting the toe-tapping “pace” of a lighter ’table with the authority of a heavyweight. Forthcoming

SME Model 30/2

\$36,000 (\$40,000 including Series V tonearm)

sumikoaudio.net

Mounted with the SME Series IV.VI arm, the 30/2 impressed PS with its tonal neutrality, pitch accuracy, resolution, transparency, rhythmic grip, ambience, low coloration, and soundstaging. He concluded that its specialness “lies in three related areas of sonic performance: background silence, dynamics, and that elusive impression of liveliness that persuades you the music has come alive in your living room.” PS, 154

Basis Audio Inspiration

\$54,000

basisaudio.com

The Inspiration is an attempt to bring much of the performance of Basis Audio’s \$165k Work of Art ’table to a more practical form factor and lower price. Although it looks similar to Basis’ 2800 Signature, it has more in common with the Work of Art than the 2800. Sonically, the Inspiration is revelatory, and plays in an entirely different league than the 2800.

It is astonishingly quiet, not just in an absence of background noise, but also in stripping a layer of grunge from instrumental timbres. It also seems to allow instrumental decays to hang in space longer, such is its low-level resolving power. RH, 220

AAS Gabriel/Da Vinci Mk II

\$76,190

da-vinci-audio.com

Like Da Vinci’s Grandezza tonearm, with which it is intended to be used, the Swiss-made AAS Gabriel/Da Vinci turntable is an object of beauty. The arm support and the motor controller are mounted on separate massive cylindrical pillars, the extremely heavy, acoustically inert, magnetically-suspended platter on its own gigantic cylinder. This is a record player capable of state-of-the-art resolution and transparency—as finely detailed, faithful to sources, and tonally neutral as any ’table/arm JV has heard. The considerably improved Mk II version adds tremendous large-scale dynamic impact to an already world-class package. JV, 191

Walker Proscenium Black Diamond Mk III

\$89,995 (installed with arm)

walkeraudio.com

The Walker Proscenium Black Diamond air-bearing turntable/tonearm transforms many of the smartest ideas from turntables past into a work of audio art that not only looks fantastic but sounds fantastic, too. And now, with Walker’s new and improved tonearm, air bearing, motor, and (in the new Mk III version) redesigned and separately-supplied-and-regulated air-bearing feet, the best source component JV has tested thus far has taken a significant leap forward in overall sonic quality. Gorgeous in tone color, extraordinary in resolution, superb on bass, and nonpareil at

soundstaging, JV’s long-standing reference takes second chair to no other record player JV has heard. Review with the latest updates forthcoming

Clearaudio Statement

\$150,000

musicalsurrroundings.com

This over-the-top, 4’-tall, 770-pound turntable/arm costs more than an S-Class Mercedes, but delivers a level of LP playback that is unmatched in reviewer Don Saltzman’s experience. The Statement is utterly quiet, stable, and capable of extracting the finest detail from record grooves. DS, 186 (see also HP’s Workshop in Issue 186 and this issue)

CARTRIDGES

Under \$500

Shure M97xE

\$89

shure.com

An entry-ticket to the world of analog sound, Shure’s M97xE moving-magnet cartridge offers generally neutral tonal balance with slight hints of roll-off at the frequency extremes, unflappable tracking, and an overall presentation that is unfailingly smooth. A great starter cartridge. CM, 172

Grado Prestige MC+ Mono

\$90

gradolabs.com

Interested in dipping your toes into mono waters, but not in taking a financial bath? This is the cartridge for you. The Grado mono is an excellent tracker that fully shows the virtues of mono LPs—sledgehammer bass and excellent imaging. More expensive cartridges will flesh out the sound more and offer greater detail, but the Grado is a joy to listen to. JHB, 180

Ortofon 2M Red and Black

\$99 and \$699

ortofon.com

The swansong design of Ortofon’s former chief engineer Per Windfeld, the entry-level 2M Red uses an elliptical, the 2M Black a Shibata stylus. Compared with the now-extinct Shure V15 series, the 2M Black has a lighter and certainly a faster touch with higher resolution irrespective of frequency. The Black’s greatest attribute, however, is a more transparent window into micro-energies, plumbing the complexities of orchestral depth and dimension. In comparison, the 2M Red clocks in with a little drier sound, as if it’s making more of an effort in the upper treble. Although it lacks some of the velvety finesse and smooth finish of the Black, this is still one sophisticated and musical cartridge—for the price of a nice dinner for two. NG, 182

Grado Prestige Gold 1

\$220

gradolabs.com

Grado’s Prestige Gold cartridge has its flaws—a lack of inner detail and audible grain chief among them—but its strengths are such that you can easily listen through them. These include a somewhat warm yet pleasant balance, a sweet if not hugely airy treble, and taut if not especially layered bass. WG, 141, CM, 172

Audio-Technica AT440MLa/AT150MLX

\$239/\$485

audio-technica.com

The high-gain moving-magnet AT440MLa and its deluxe sibling, the AT150MLX (with a nude-mounted MicroLine stylus), brim with opulent timbres and resounding tunefulness. Both have a relaxed sound, a darker midrange, great weight, and a lower center

of gravity in tonal terms. Compared to the finer moving coils they falter slightly trying to hold on to low-level detail and decay, while upper octaves are a little devoid of air. But while they can't match the delicacy and whip-snap speed of some mc's they bring their own degree of authenticity and rewards over the longer haul. NG, 216

Grado Reference Platinum 1

\$350

gradolabs.com

The Platinum 1 is the most affordable of Grado's mid-tier Reference models, offering reduced coloration plus superior resolution and tracking. Though it could use more openness, detail, and high-frequency "air," the Platinum can nearly equal the performance of \$1k+ moving coils, making it a bargain at its price. CM, 191

Sumiko Bluepoint No. 2

\$399

sumikoaudio.net

The second-generation version of the Bluepoint Oyster—long considered a go-to choice among affordable, high-output moving-coil cartridges—the No. 2 offers improved resolution, superior three-dimensionality, richer and more potent bass, and smoother, less aggressive highs. A huge step up from entry-level cartridges. CM, 172

Sumiko Blue Point Special EVOIII

\$499

sumikoaudio.net

The EVOIII offers substantial improvements over the original Blue Point Special—a fundamental heartiness, terrific top-to-bottom consistency, and the ability to gracefully handle tracking challenges. This is one moving coil that will not bite you with excess edge or glare. CM, 147

\$500–\$1000

Ortofon Rondo Red

\$599

ortofon.com

The Rondo Red moving coil has an 0.5mV output and an injection molded resin body. Its smooth, warm character is supported by excellent mids and a slightly softer top end. Easy going and natural on vocals of all stripes, it may not be as explosive as some pricier moving coils, but the Red will surely please those who find the current crop of moving coils overly bright. WG, 206

Ortofon Rondo Blue

\$799

ortofon.com

The Rondo Blue is an under-a-grand pickup that offers many of the advantages of higher-priced moving coils. It has a natural midrange, an extended but non-aggressive treble, and a bottom end that is a bit on the extravert side. Transparency is good enough not to worry about, and the dynamic presentation is powerful, although the cartridge can be delicate and nuanced too. It is particularly wonderful with voices. PS, 199

Benz Micro ACE S Class

\$900

musicalsurrroundings.com

The ACE offers a wide-open midrange, plenty of definition and air around instruments and voices, and tight, clean bass. With the right phonostage, it can do a great job of walking that fine line between resolution and smoothness. CM, 147

Dynavector Karat 17D3

\$950

dynavector.com

Dynavector's 17D3, the third generation of a twenty-year-old design, is ruler-flat top to bottom with all the life and liveliness of past Karats, the see-through transparency, the superb tracking, the crackling musicality, brilliance and clarity abounding. It also throws a sensationally wide and deep soundstage with extraordinary dynamics and resolution. PS, 172

\$1000–\$2000

Sumiko Blackbird

\$1099

sumikoaudio.net

This high-output moving coil is smooth yet detailed, with a wide soundstage and fine low-end authority. Massed strings lack the upper-midrange glare one hears with some moving coils; midrange instruments are particularly seductive; images are stable; and transparency, transient quickness, and inner detail are all good. JH, 164

Benz Micro Glider S Class

\$1200

musicalsurrroundings.com

It's all about the superlative tonal balance of the medium-output (0.8mV) Glider SM. There's a reassuring dash of warmth in the lower mids and bass, a lush midrange, and a presence range and treble that have air and harmonic delicacy but no etch or dryness. Not as warm as the Clearaudio Maestro Wood, the Glider has added inner detail and energy that make the choice between them a tough one. NG, 191

Clearaudio Maestro Wood

\$1200

musicalsurrroundings.com

Sharing the solid Boron cantilever and stylus of the esteemed Insider mc cartridge, the Maestro Wood, a moving-magnet design, gushes sweet sonics like squeezing a ripe, red plum. But it's not a softy in the dynamics department, nor does it smear inner details. Whether it rounds transient details and rhythms too much will be a question of taste. Rated at 3.6mV, it won't tax most phonostages, either. NG, 186

Lyra Delos

\$1650

audioquest.com

The Delos optimizes performance by properly orientating the magnetic circuits, signal coils, and core. With the cartridge at rest, asymmetrical dampers place the signal coils and core into a more upright angle vis-à-vis the magnetic circuit. With tracking force applied, the force of the stylus pushing on the LP causes the asymmetrical dampers to become symmetrical. An exceptionally quiet background is 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 fast. WG, 206

Ortofon Cadenza Bronze

\$1999

ortofon.com

Ortofon's new Cadenza Series replaces its highly regarded Kontrapunkt line. Falling between the Black and the Blue, the Bronze is said to be voiced to sound slightly more forgiving and romantic than the dead-neutral Windfeld. And so it is, but this is Ortofon-style romance, which is to

say that, by most manufacturers' standards, the Bronze's is still a pretty neutral, high-resolution presentation. And also an excellent one. PS, 216

\$2000 and above

Shelter 901 MkII

\$2595

axissaudio.com

Shelter's 901 MkII moving-coil cartridge combines a "Thousand Series" motor assembly with the smaller body of the earlier 901, and the result is sublime. It carries forward much of the vibrancy, lushness, and graciousness of the original 901, while also exhibiting the heightened transparency, transient speed, and dynamic snap so characteristic of the "Thousand Series" Shelters. CM, 205

Clearaudio Concerto v2

\$2750

musicalsurrroundings.com

This is the entry-level cartridge in Clearaudio's "super-class" of moving coils, and super it is! The Concerto uses wood to add a touch of warmth and richness, yet retains the superb focus, resolution, transient quickness, and top-end extension that have been hallmarks of Clearaudio's reference cartridges. JH, 167

Transfiguration Phoenix

\$2750

profundo.us

The Phoenix doesn't stand out for its detail, speed, rhythmic precision, dynamic range, top- or bottom-end extension, or its neutral tonal balance. It stands out because it manages to bring all these things into a highly coherent, beautifully balanced package that is hard to stop listening to. WG, 177

Benz SLR Gullwing

\$3000

musicalsurrroundings.com

Very quiet and transparent to sources, the SLR Gullwing is a stunning-sounding moving-coil cartridge that somehow manages not to place layers of electro-mechanical stuff between the music and us. It breaks through room boundaries and time frames by delivering highly convincing facsimiles of all that it touches—chamber groups, orchestras, voices, jazz, rock, you name it. The overall result is music that sounds more produced than reproduced. WG, 206

Shelter 7000

\$3395

axissaudio.com

Shelter cartridges enjoy a reputation for smoothness, vibrant tonal colors, holographic soundstaging, and an eminently listenable sound, but designer Yasuo Ozawa hoped to give his new models "more life"—meaning more detail, transient speed, and explosive dynamics. Those qualities are exactly what Shelter's 7000 delivers, though the latter justifies its higher price by providing more finely resolved and open-sounding highs, more potent, refined bass, and greater dynamic poise. CM, 180

Soundsmith Paua/Sussuro

\$3499/\$4499

sound-smith.com

Inspired by tonearm-designer Frank Schröder, Soundsmith's Peter Lederer designed both of these moving-iron cartridges with the following features: ultra-low effective moving mass, resulting in superlative transient and micro-detail performance; virtually hum-free operation due to six-sided HyMu80 magnetic shielding; and mc

preamp compatibility. All of Lederer's claims are borne out in the listening. Reviewer AHC found both cartridges to be reference-quality. AHC, 219

Clearaudio Stradivari v2

\$3750

musicalsurrroundings.com

In his recent survey of five moving-coil pickups, PS gave the Stradivari his personal "Golden Mean" award because it ideally mediates warmth and detail, control and relaxation, liveliness and listenability, at virtually no sacrifice in tonal neutrality. There is an organic rightness about this pickup that elevates it to reference-caliber. PS, 172

Ortofon MC Windfeld

\$3899

ortofon.com

If you value high neutrality and high resolution, low coloration and low distortion, and tracking ability to rival the best moving magnets, then this outstanding new moving coil is for you. It won't gild your vinyl lilies, but it will reproduce them with highest fidelity. PS's new reference. PS, 188

Sumiko Palo Santos Presentation

\$3999

sumikoaudio.net

The Palo Santos Presentation is Sumiko's elegant flagship moving coil (0.5mV). Its signature veers subtly to the full-blooded and warmer end of the spectrum, with just a hint of upper-treble shading. It flags ever so slightly in bottom-end resolving power and the final swirl of orchestral air and bloom, but this beauty conveys complexities of timbre and space that are nothing short of authentic. NG, 206

Air Tight PC-3

\$4000

axissaudio.com

The PC-3 maybe only a fraction of the price of the PC-1 Supreme, but you won't be slumming with this moving coil. Veering ever so slightly to the mellower side of neutral it reproduces symphonic timbres beautifully and creates the sensation that every individually struck note is fully backed by the weight, resonance, and dimensions of the instrument. It's quick but not jittery, seemingly gliding through the grooves with easy-going nonchalance. One of the most natural and consistently musical pickups around. NG, 214

Shelter 9000

\$4195

axissaudio.com

The 9000 is the top moving coil in Shelter's "Thousand Series" family and as such takes the sonic virtues of that range to their highest level. All Shelters provide a neutral sound blessed with natural clarity and warmth. To this foundation, the 9000 adds improved detail, textural and timbral refinement, transient speed, dynamics, and tracking capabilities. The result is a highly accomplished cartridge that delivers heightened purity and transparency, without losing Shelter's defining musicality. CM, 205

Benz LP S-MR

\$5000

musicalsurrroundings.com

Equipped with a dandy micro-ridge stylus (thus the "MR") and a sophisticated magnetic engine, the Benz LP S has less of an electromechanical signature than most other 'coils. As a result, transparency to sources is markedly increased. This is a very high-resolution, very low-noise mc

with a remarkably sweet and lifelike treble. In the right arm, it can consistently reveal details you’ve never heard before without ever sounding analytical. One of JV’s mc references. JV, 216

Shelter Harmony MC

\$5495

axissaudio.com

The Harmony MC moving-coil cartridge uses a solid carbon-fiber body that provides phenomenal rigidity and terrific internal damping, an aluminum rather than boron cantilever arm, because aluminum transfers energy from the stylus more efficiently, and a line contact rather than an elliptical stylus for superior tracking. Consequently, the Harmony MC is an incredibly quiet cartridge that sounds extraordinarily detailed and transparent, yet retains the inherent smoothness and innate musicality that are Shelter’s hallmarks. CM, 205

Soundsmith Strain-Gauge

\$7499-\$14,999

Using neither magnets nor coils, Soundsmith’s strain-gauge cartridge generates a signal via a crystal that modulates the flow of DC through it in response to pressure generated by stylus movement. This scheme requires a specialized preamplifier to deliver this DC, and to decode the audio signal. The sonic virtues of the Soundsmith system include extremely low noise, a highly resolved soundstage, and natural rendering of timbre. Price varies according to the preamplifier’s features, display, and number of inputs. AHC, 201

Air Tight PC-1

\$8500

axissaudio.com

Here is a genuine surprise—a world-beating mc from

SET-manufacturer Air Tight. The PC-1 sounds like a London moving magnet on steroids. Whip-fast, exceptionally high in resolution and low in coloration, and a great soundstager/imager, to boot. JV, 173

H&S Ice Blue

\$9000

bertrandaudio.com

Almost a sonic cross between the *gemütlich* Benz LP S-MR and the more austere and colorless Ortofon MC A90 (which is to say that it is slightly leaner and cooler in tone color than the Benz and slightly fuller and richer than the Ortofon), the Ice Blue low-output (0.2mV) moving coil is very transparent to sources, and very high in resolution and transient speed. A good compromise for those who want the best of the Benz and the best of the Ortofon in a single package. JV, 216

Air Tight PC-1 Supreme

\$11,000

axissaudio.com

As good as the AT PC-1 is, this considerably pricier moving-coil from Air Tight is substantially better in every way. Like the PC-1, the Supreme is a model of low internal impedance and high energy. Killer good on transients top to bottom, with phenomenal grip and definition in the low bass, it is also exceptionally lifelike in the midband, with even more of the gorgeous density of tone color, high resolution, and superior soundstaging that made the PC-1 such a breakthrough. RH’s reference. JV, 190

Clearaudio Goldfinger Statement

\$15,000

musicalsurrroundings.com

Simply the best—which is to say, the most sonically complete—cartridge JV has yet heard.

Peter Suchy has here managed to combine all of the virtues of past Goldfingers (their phenomenal low-level resolution, their tremendous energy, their vast soundstaging) with a previously unattained natural richness of tone color to produce a cartridge unlike any other. Like a cross between a Koetsu and a Clearaudio, the Statement will appeal to just about any kind of listener (provided he’s got enough do-re-mi). One of JV’s references. JV, 216

PHONOSTAGES

Under \$2000

Musical Fidelity V-LPS MkII

\$189

musicalfidelity.com

At \$189, the V-LPS is a phonostage for all of us. Equipped with dedicated inputs for mc and mm cartridges, it’s quiet, clean and ultimately irresistible—more so with the optional power supply (\$149). Even if the last word in resolution and extension proves elusive, no regrets here. NG, 206

Vincent Audio PHO-8

\$400

nsdistributing.com

Vincent’s phono preamp features moving-magnet/moving-coil flexibility, a massive outboard power supply, plus a level of build-quality unusual in this price range. Its sound is liquid, the soundstage vivid and dimensional with just a hint of warmth and transient softness compared to reference efforts. You’ll need a much bigger wallet to beat it. NG, 211

Musical Surroundings Phenomena II

\$600

musicalsurrroundings.com

The sequel to the original Michael Yee design, the

Phenomena II is based on the latest discrete circuitry of the top-flight Nova Phenomena, minus the battery pack. Like the original it’s easily adjustable and quite extended, with a kind of heavy gravity in the bass octaves. A bit cooler and brasher on brass fortissimos, the sound is alive and electrifying. For balance and value the Phenomena II is a stunner. NG, 191

Clearaudio Basic Plus

\$1000

musicalsurrroundings.com

The Basic Plus is everything a modestly priced phonostage should be. It’s compact yet elegantly finished. It’s switchable between mm and mc cartridges. A robust outboard power supply is included and yields superb isolation from hum and RFI. Most significantly, the unit delivers a spacious and delightfully resolved soundstage with heart-stopping bass resolution. If you want the last word in isolation, consider adding the Clearaudio Accu+, an outboard NiMH battery supply (\$900). NG, 206

Musical Surroundings Nova Phenomena

\$1000

musicalsurrroundings.com

Grace, poise, low noise, and neutrality characterize this excellent unit, which includes options for fine-tuning the loading and gain of both moving coils and moving magnets. Add the \$600 external power supply for lower noise and distortion, and greater transparency. Some listeners may want more dynamic “punch” and personality, but the Nova is hard to beat for low coloration. PS, 172

Simaudio Moon 310LP/320S

\$1799/\$1399

simaudio.com

Whether you purchase the stand-alone 310LP, or add the 320S power supply, Simaudio's latest Moon Series phonostage offers the analog hound both versatility and excellent performance in an elegant package. Forthcoming

JR Transrotor Phono II

\$1800

avciisaudio.com

Splendidly machined from a chunk of aluminum with enough heat-sinking for a reactor, the Phono II has yet to meet a cartridge it can't convincingly drive. Fully adjustable for mm and mc, it may well be the last phonostage you'll ever want. Sonically on the cooler and clinical side—but only slightly so. NG, 172

\$2000-\$3000

Sutherland 20/20

\$2199

sutherlandengineering.com

The 20/20 shares designer Ron Sutherland's "twin mono" (identical circuit) approach to circuit design, but unlike other recent Sutherland models, the 20/20 is not powered by rows of D-cell batteries but instead by an unusual (for high-end audio) pair of "regulated desktop power supplies." The sound is classic Sutherland: very low-noise, beautiful throughout the midrange, with a big, transparent stage, excellent detail and focus, and a bit of politeness in the deep bass. Some won't like the tradeoffs; musical purists will embrace them. WG, 215

Parasound Halo JC 3

\$2350

parasound.com

The collaboration between Parasound and John Curl has been a gift to audiophiles, producing components of remarkable sonic worthiness that

sport real-world price tags. Designed in a fully isolated dual-mono layout, each channel of the JC 3 is housed in its own extruded aluminum enclosure. Sonically there's a riveting balance of extremes at play here: a kiss of romance through the mids and an ability to extract and define low-level information in acoustic space. Through the JC 3 there's a warm breath of life to every musical image. NG, 215

Fosgate Signature

\$2500

musicalsurrroundings.com

Designed by the legendary Jim Fosgate, the all-tube Fosgate Signature is a versatile phonostage that offers high- and low-gain settings, six switch-selectable loading options, plus the option of tube rolling. The Signature is remarkably quiet and thus does a great job of retrieving low-level details. It also handles textural complexity and dynamics in music gracefully. Finally, the Fosgate offers terrific purity of timbre, effortless 3-D soundstaging, and neutral tonal balance. One of the best in its class. CM, 206

Nagra BPS

\$2550

nagraaudio.com

Nagra's miniscule BPS is a relatively affordable, battery-powered phonostage. Powered by a single 9-volt, the BPS is unusually quiet and refined, especially good at translating low-level dynamics and quick rhythmic shifts. What that 9V power source won't give you is the explosive dynamic peaks and deep-bass power of larger units. Recommended for those who listen to jazz, vocals, and moderately-scaled rock and classical. WG, 198

\$3000-\$6000

Musical Surroundings SuperNova 2

\$3200

musicalsurrroundings.com

The SuperNova 2 offers unprecedented cartridge-loading options that allow users to precisely dial in the optimum settings for a particular pickup. Not just a phonostage, it also has a line-level input, giving it the ability to replace a preamplifier in some simple systems. Sonically, the SuperNova 2 is also transparent, dynamic, and high in resolution. Can be run off AC or batteries. "An indispensable reviewing tool and my longstanding reference," said PS. PS, 200

Sutherland Hubble

\$3800

sutherlandengineering.com

This D-cell battery-powered phonostage from Ron Sutherland replaces the highly regarded PH-3D at the top of the Sutherland Engineering line. Like the PH-3D it is low in noise, neutral in balance, high in resolution, natural in imaging, and exceptionally wide, tall, and deep in soundstaging. It is also highly adaptable, offering users a plethora of easily implemented gain and loading options. JV, 203

Zesto Audio Andros PS1

\$3900

zestoaudio.com

Zesto Audio's new phonostage embodies all the virtues of latter-day tube design with none of the drawbacks. It has solidity, dimensionality, vitality, transparency, excellent transient response, well-defined and extended bass, a superbly rich midrange, and very low noise. A sensibly wide range of loading options is available for mc's, which are stepped up by transformers,

which must be in part responsible for deliciously smooth, unfatiguing highs. An outstanding new product. Forthcoming

Aesthetix Rhea

\$4500

musicalsurrroundings.com

With three inputs, variable cartridge loading—adjustable at the listening chair via remote control—and a front-panel display of gain and loading, the Rhea is the Swiss Army Knife of phonostages. Although it has lots of gain, the noise level is extremely low, making it compatible with a wide range of cartridges. The Rhea's family resemblance to the Calypso linestage is unmistakable: transient quickness and speed without etch, a feeling of effortlessness on crescendos, and a deep, layered soundstage. RH, 151

Octave Phono Module

\$5400-\$7200

octave.de

This exceptionally refined phonostage hails from Karlsbad, Germany, is a fine testament to the virtues of punctilious German engineering. It looks and sounds as though it's built for the ages. It offers a hint of tube bliss, but really gives you stern Teutonic performance. The Octave reproduces instruments such as congas and snare drums with preternatural accuracy. Anyone searching for a top-flight phonostage that offers real value would do well to consider it. JHb, 208

Naim SuperLine

\$5490w/Hicap (\$9840 with SuperCap 2)

soundorg.com

With no built-in power supply, the SuperLine is designed to mate with either another Naim component or one of three stand-alone Naim power

supplies: the FlatCap2x (\$1100), the HiCap2 (\$1900), or the SuperCap2 (\$5950). With any of the three it's a terrific phonostage, but when mated with the SuperCap it blossoms into one of the finest tools available for LP playback. WG, 194

\$6000 and above

Aesthetix Rhea Signature

\$7000

musicalsurrroundings.com

The Signature version of Aesthetix' Rhea vividly demonstrates the value of component quality. Although the circuit is identical to that of the Rhea, the Signature uses cost-no-object parts throughout. The sonic result is a much better defined bottom end, even smoother timbres, and (surprisingly) greater dimensionality. An expensive upgrade over the \$4.5k Rhea, but worth it. RH, 196

Lamm LP2 Deluxe

\$7590

lammindustries.com

With a superb built-in coupling transformer to handle lower-output moving coils, the all-tube Lamm LP2 phonostage has the inestimable advantage of being dead quiet, which makes it ideal for folks, like JV, who live in RF Valley. Though not as "alive" or bloomy as the Aesthetix Io or ARC Reference Phono 2 on large-scale dynamics, the Lamm is rich, beautiful, and extraordinarily delicate-sounding on all music, with superior detail and transient response. JV, 157

Pass Labs XP-25

\$10,600

passlabs.com

In reviewing this gem from Wayne Colburn of Pass Labs, AHC said: "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, some one goes out and proves me embarrassingly wrong. There always is another advance out there that brings you closer to the music, and that almost compels you to listen." The Pass XP-25 is just such a breakthrough. AHC, 208

Audio Research Reference Phono 2 SE

\$12,995

audioresearch.com

When it comes to phonostage preamplifiers, ARC has perhaps the most distinguished pedigree of all high-end companies. With the Ref Phono 2, it outdid itself, producing the single most natural-sounding phonostage in company history. The new SE version, with doubled power-supply capacitance, is even better, with higher resolution of inner detail (both musical and spatial), superior imaging, greater dynamic range, and denser tone color top to bottom. ARC has replaced a classic with another classic. JV, 197 (Reference Phono 2); SE forthcoming

Soulution 750

\$25,000 (\$32,500 with 750PSU power supply)

acissaudio.com

If JV were in the market for an ultra-high-end solid-state phonostage, this gem from Switzerland would be one of the first he'd consider. Like all of Soulution's gear, it is a paragon of resolution and transparency, boasting the same ultra-high-bandwidth, vanishingly low distortion, extremely neutral balance, and ultra-fast transient response as Soulution's 720/721 linestages and 700/710 amplifiers. If you already own a Soulution preamp, you can power the 750 via a supplied umbilical rather than the optional \$7250 outboard supply. JV, 204

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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 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

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**

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 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*, 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 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.

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 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**



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Grateful Dead
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The Beach Boys
Pet Sounds



Miles Davis
Milestones



Stevie Ray Vaughan
The Sky Is Crying



Little Feat
Waiting For Columbus



Santana
Love Devotion Surrender



Billy Joel
The Stranger



Bob Dylan
The Freewheelin' Bob Dylan



Frank Sinatra
The Concert Sinatra



Tony Bennett
I Left My Heart in San Francisco



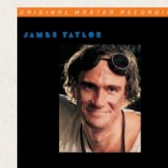
Bob Dylan & The Band
The Basement Tapes



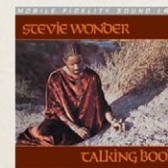
Elvis Costello
Almost Blue



Yazoo
Upstairs at Eric's



James Taylor
Dad Loves His Work



Stevie Wonder
Talking Book



The Band
Music From Big Pink



Santana
Abraxas



Rush
Permanent Waves



Beck
Sea Change



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).

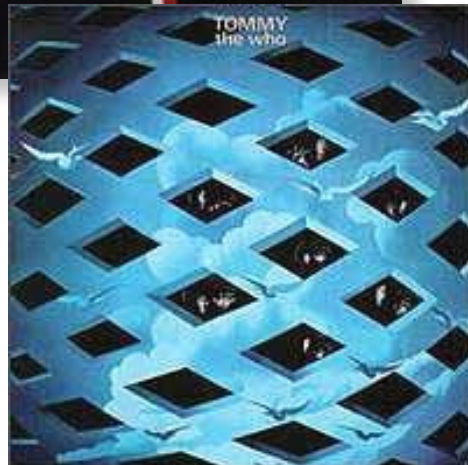
Mature Hendrix in one of his most original sets, live at the Fillmore; the music and sound will astonish.

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



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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).

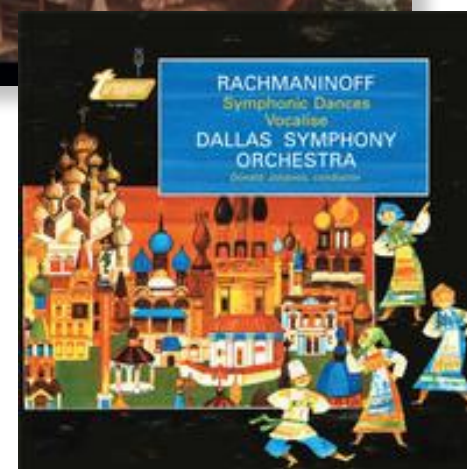
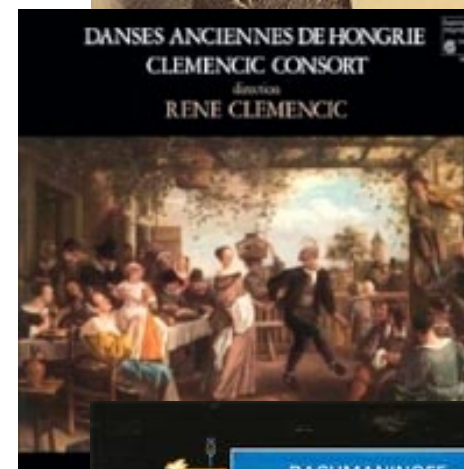
A big, tuneful concerto beautifully played, and captured in clear, spacious, detailed, dynamic sound.

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.

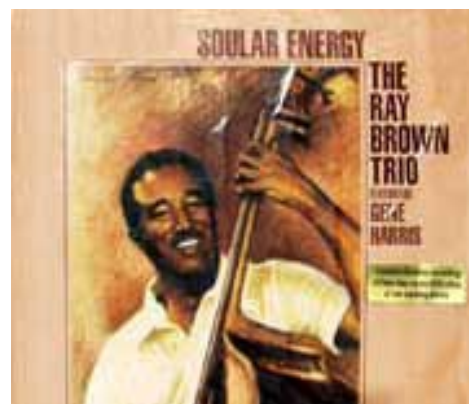
Sibelius, Symphony No. 2. Royal Philharmonic, Barbirolli. Chesky (LP). Perhaps the greatest performance on record of the glorious Finnish masterpiece, captured by sonic wizards Wilkinson and Gerhardt at fabled Walthamstow Hall.

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.

THE 100 BEST-AND BEST SOUNDING-LPS



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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Pink Floyd
Wish You Were Here



Led Zeppelin
Mothership Box Set



Bob Dylan
The Mono Recordings



Adele
21



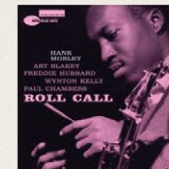
The Black Keys
El Camino



Nat King Cole
Love Is The Thing



Wilco
Yankee Hotel Foxtrot



Hank Mobley
Roll Call



Bach: Janos Starker
Solo Cello Suites



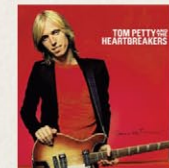
Fleet Foxes
Hearlessness Blues



Fleetwood Mac
Fleetwood Mac



Mendelssohn
Midsummer's Night's Dream



Tom Petty
Damn The Torpedos



Diana Krall
Live In Paris



Holst
The Planets (Previn)



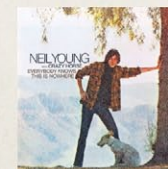
Miles Davis
At The Blackhawk



Rachmaninoff
Symphonic Dances Vocalise



Elvis Presley
24 Karat Hits



Neil Young
Everybody Knows This Is Nowhere



Bon Iver
Bon Iver

THE 100 BEST-AND BEST SOUNDING-LPS

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.**

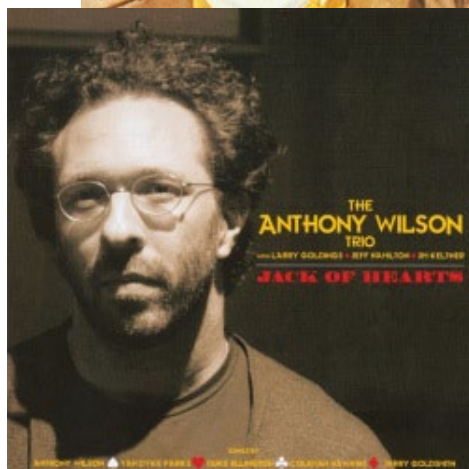
Gil Melle, *Patterns in Jazz*. Blue Note-Music Matters (two 180-gram 45rpm mono LPs). **The first 12-inch platter Rudy Van Gelder recorded for Blue Note is a musically delightful and little-known gem. The mono sound is focused, warm, and beautiful.**

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.**