

SAVANT

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PRINCETON

NEW YORK

LOS ANGELES

# REGA

AT THE FRONTIER  
OF AFFORDABLE HI-FIDELITY

# SAVANT AUDIO

PRINCETON

NEW YORK

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## The Rega Ela Loudspeaker

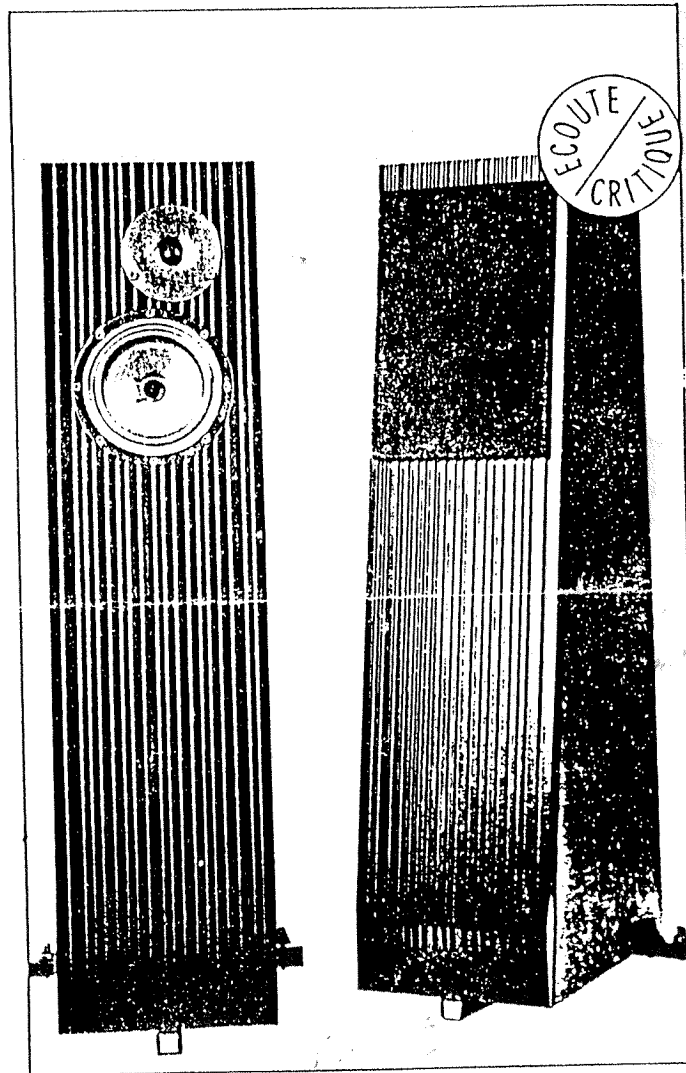
One can listen for hours without fatigue or boredom....

Homogeneity, details, and spaciousness....

A column loudspeaker which humbles itself before the music.

Designed in England by the firm Rega, whose turntables enjoy an ever-growing success, these new loudspeakers have the form of elegant black columns 800mm tall and 200mm wide. The face is striated by long vertical grooves the function of which is both aesthetic and acoustic.

Acoustically this striation, which one encounters also on other British loudspeakers (SL6 Celestion) avoids some of the baffle reflections and improves the flat frequency response in the upper frequency spectrum. On the back, at the height of the cabinet, one notices a rectangle of plastic foam. This aperture only radiates the lower frequencies. It corresponds to the end of the acoustical transmission line (a sort of tunnel folded and granted a signal path twice the height of the speaker) which loads the 15cm bass midrange driver of paper cone capable of important excursions without bottoming out. This driver is filtered only by an inductance. For the high frequencies a dome tweeter of



15mm picks up the response. The tweeter is filtered by a crossover slope of 12db/octave, its output corresponding exactly to that of the woofer, it is fed directly without recourse to a circuit of resistors.

Each column rests on three spikes which ensure an excellent stability and allow furthermore adjustment of the level according to the position of the listeners. In fact these speakers show themselves to be little enough directional, in either the vertical or horizontal plane, and it is not necessary, to benefit fully of their qualities, to be located precisely on axis with the loudspeakers. On the other hand, to obtain an adequate amount of bass it is highly advised to place them against a wall without sticking them completely against it in order to leave the rear port open. Provided with an adequate efficiency (89db) the Regas can give excellent results with small amps of only 20W/channel. As for the upper limit, it is not specified by the manufacturer but seems to surpass 100W.

JEAN-MARIE PIEL

The Audition: Let's begin with the faults. As it was predictable with small drivers the bass lacks a little weight and is not very dynamic. This result in an initial general listening impression lacking in body and strength. But in passing from one amplifier to the next one notes in this respect great subjective differences. One should choose an amplifier delivering powerful and dynamic bass. So much for the faults. The list of qualities is otherwise longer... If the bass is not always as full as one might wish, let's say that it extends cleanly down to the infra-bass, which constitutes a feat with such small drivers, and that the bass is not affected by any coloration of the box. No resonance, no dragging, no heaviness, no thickness - the reproduction is airy but not at all evanescent.

The frequency range is extended and the clarity exceptional - one of the best there is in any category. The sound is very detailed, without artificial definition. The timbres are elegant and correct. One is under a spell as the musical coherence and the sonic fluidity are without fault. Lastly one must applaud the spatial image - precise and deep, clearly distributed between the two speakers and maintaining its depth and stability even while one moves away from the listening axis. One can listen to these speakers for hours with neither fatigue nor boredom - isn't that one of the best compliments? These speakers already enjoy in England a lively success. We are persuaded that it will be the same in France. For our part, despite the slight lack of body and fullness in the bass range, we classify them among the two or three most authentically musical in their category.  
Price: \$1,250.00 the pair.

## Loudspeakers

Of all the designers in specialist audio, perhaps the one I admire most is Roy Gandy of Rega Research. Boasting little more than a soldering iron in his hand and a gleam in his eye, the typical specialist audio designer traces his roots to *hobbyist* origins. By contrast, Gandy is a trained *engineer*. This distinction explains a great deal about the products and philosophy of Rega Research.

For almost two decades, Rega have stubbornly insisted on manufacturing goods to meet their *own* standards of quality and value, with seemingly little regard for the public's whims and fancies. Gandy does not believe in engineering by consensus—the laws of physics were not arrived at by popular vote. Not surprisingly, then, Rega's Planar 2 and Planar 3 turntables, Bias and Elys phono cartridges, and RB300 tonearm all fly in the face of industry convention.

Accepted wisdom tells us suspended-subchassis turntables are superior, yet Rega offer the non-suspended Planars. Heavy aluminum turntable platters have prevailed for years, yet Rega pioneered the use of moderate weight glass platters. Incredibly massive turntable bases are *au courant*, yet Rega employ lightweight chipboard plinths. High End phono cartridges offer a dazzling array of exotic body materials, yet Rega equip the Bias and Elys with seemingly mundane plastic bodies. Tonearms with a plethora of set-up adjustments abound, yet Rega manufacture the straightforward RB300. And so on.

Of course, Rega have excellent engineering reasons for such design decisions. Rega place great emphasis on achieving maximum mechanical integrity in their products, and select materials and construction techniques with this goal in mind. Materials which offer both *stiffness* and *low mass* (the former property minimizing spurious movement, the latter minimizing energy storage) are favored—hence the Planars' glass platter and chipboard plinth.

Similarly, the Bias and Elys employ molded, one-piece bodies of high-strength resin (Pocan), thus eliminating glue joints and their compliances. Furthermore, this molded body reduces microphonics, meets exceptionally tight manufacturing tolerances which in turn permits more precise fitting of the generator assembly, and allows cartridge mounting screws to be firmly tightened without risk of damage.

Mechanical integrity also influenced

Rega  
ELA

Rega's decision to eschew a suspended subchassis in their Planar models. While theoretically attractive due to their excellent isolation properties, suspended-subchassis turntables are inherently unstable because they locate a substantial mass (the platter/tonearm/subchassis) on an undamped compliance (the suspension). While sophisticated (and expensive) design techniques can minimize this instability, Rega took a more cost-effective path in keeping with the Planars' affordable prices. The Planars offer isolation from motor noise by suspending the much lower mass of the motor from the chipboard plinth, and achieve environmental isolation through the use of surprisingly sophisticated rubber feet strategically located on the plinth's underside.

The RB300 tonearm's design bespeaks a relentless pursuit of rigidity. The arm tube (an engineering *tour de force*) is a one-piece aluminum casting, offering far greater mechanical integrity than the typical multi-joint arm assemblies favored by other manufacturers. Of course, such a casting makes headshell-azimuth adjustment impossible. Similarly, while other tonearm manufacturers favor traditional sliding pillar/set-screw height adjustment, Rega reject such a scheme due to its mediocre mechanical coupling. Instead, the RB300's pillar is *threaded*, with a large hex nut tightened from underneath to firmly clamp the arm directly to the plinth. Height adjustment is achieved by adding machined steel spacers between the arm and plinth. Not as convenient as a sliding pillar, but structurally (and musically) superior. "*Temporary* (installation) *convenience*, *permanent* (sonic) *impairment*" is not a credo Rega endorse.

These few examples of Rega's nonconformist engineering (and note the above

discussion doesn't begin to do justice to the innovative designs and construction techniques that define Rega products) should give you an idea of the extent to which Rega swim against the specialist audio tide. To be sure, Rega's refusal to compromise the engineering integrity of their products to placate the audiophile community does have its cost. Though few in specialist audio care to admit it, there are strong *marketing* considerations that influence the designs of many hi-fi components. Expensive styling, exotic parts sourcing (e.g. "designer" capacitors), trendy circuit topology, etc. all play a part in capturing the audiophile's fancy. Indeed, pandering to the neuroses of the world's audio squids can be *quite* profitable. Alas, Rega obstinately resist playing such games, instead embracing the philosophy of *cost-effective engineering*, often to the chagrin of hard-core audiophiles.

For example, squids love to experiment with exotic (and laughably overpriced) interconnect cables, but they're stymied by the Rega RB300, which features a hard-wired tonearm cable (because it sounds better, and is cheaper). Squids also enjoy playing with expensive turntable mats and clamps, but Rega fit a thin felt mat on the Planars (because it sounds better, and is cheaper). Said mat allows a very short spindle to be used on the Planars, and thus squidly platter mats and clamps won't fit properly. Squids delight in...well, you get the idea.

All of which brings us, in a roundabout way, to the Rega ELA loudspeaker. (By the way, it's pronounced "Ella"—despite the all-uppercase letters, "ELA" isn't an acronym. Go figure.) A typical Rega Research product, the ELA embodies engineering decisions that place it well outside the audio mainstream.

The ELA's first heresy lies in its transmission-line design. Marketing weasels disdain transmission lines because they offer little *perceived* value. While their complex (and expensive) internal construction increases manufacturing costs (and thus retail prices), the *external* appearance of T-line speakers is no different than that of bog-standard vented designs. As such, transmission line speakers are often simply perceived as overpriced bass-reflex models.

In the case of the ELA, this would be a grievously inaccurate perception. To be sure, measuring a petite 32" H x 8" W x 12"

D (the latter measurement taken at the speaker's base, tapering to 7.25" D at the top), the floor-standing ELA doesn't make a particularly strong first impression. Compared to such like-priced rivals as the Vandersteen 2Ci and the Spica Angelus, the ELA looks distinctly undernourished for the money. However, closer inspection reveals several interesting elements in the ELA's design.

Most immediately intriguing is the Rega's front baffle. Built of 18mm MDF, the baffle slopes rearward as it approaches the top of the cabinet, in order to place the acoustic centers of the ELA's two drivers equidistant from the listener's ears. (For further thoughts on this subject, see the sidebar in the Tannoy DC3000 review.) More provocative are the eighteen grooves that run the full length of the baffle. Machined into the MDF at irregular intervals, these grooves minimize diffraction by directing tweeter output away from the cabinet edges. The irregular spacing of the grooves avoids reinforcement of particular frequencies.

Of course, this only explains the usefulness of grooves in the vicinity of the tweeter. Why do the grooves continue down to the bottom of the baffle? Knowing Rega's dedication to high-stiffness/low-mass construction, the grooves may be intended to slightly reduce the mass of the baffle (and thus its energy storage properties), while still maintaining excellent rigidity. Though transmission line speakers boast minimal internal cabinet pressure (and thus pump far less energy into their cabinet walls than typical loudspeakers), their baffleboards still experience Newtonian action/reaction forces from the movement of the bass/mid driver — hence the desirability of an exceptionally stiff baffle. The grooves' most likely function, though, is not to reduce the baffle's mass, but to curtail resonant peaks. The irregularly spaced grooves spread resonances over a broad range of frequencies, and thus minimize standing waves in the baffle.

While intellectually recognizing the low internal pressures inherent in transmission-line designs, I nevertheless was a bit disappointed to find the Rega's cabinet is built of 18mm particleboard, and not stiffer MDF. When I expressed my dismay to Roy Gandy, he simply noted that MDF was not necessary in this application. And, damn it, he's right. Even when playing booming reggae tunes through the ELA, the degree of cabinet wall vibration is astonishingly low.

The ELA's internal construction is textbook transmission line, with all corner angles at 45 degrees to ensure the bass/mid driver's rear wave isn't reflected back towards the driver. Eighty grams of graded natural wool damp the line, which vents via a foam-damped rectangular port at the top of the cabinet's rear panel. This port augments low bass performance, and also relieves residual pressure in the line.

As noted earlier, the ELA is a two-way design, sporting a 1" soft dome tweeter and a 5" bass/midrange unit. The tweeter is a Scanspeak unit, internally modified by Rega in the interests of greater strength and rigidity (for example, Rega add a rigid ring to solidly clamp the magnet in place). A small amount of cotton fill is added to the tweeter's sealed rear chamber to damp the dome's back wave — in effect, Rega attempt to mimic a miniature transmission line in the tweeter. Most intriguing, though, is the ELA's bass/mid driver. Designed by Rega in cooperation with (and manufactured by) Royd Loudspeakers, this unit

features a paper cone terminated by a long-throw rubber surround.

Let us now pause while audiophiles recover from the shock of finding a *paper* cone in a high-quality loudspeaker. Despite what audio squids may think, polypropylene (and related plastics) cones don't necessarily represent the state-of-the-art in loudspeaker driver design. In terms of stiffness-to-mass ratio, for example, high-quality paper cones can often be

superior to polypropylenes. High internal damping is cited as one of polypropylene's attractive properties, yet there is considerable debate over whether such damping is in fact desirable in a driver diaphragm. A detailed discussion of this issue is beyond the scope of this review — suffice it to say the superiority of plastic cones over paper cones is far from proven. (Indeed, ProAc's Stewart Tyler deliberated long and hard before using polypropylene cones in his superb Response line of loudspeakers.)

The high-quality paper cone used in the ELA's bass/mid is imported from Germany, and was chosen for its exceptionally good stiffness-to-mass characteristics. The cone's light weight reduces the driver's moving mass, and thus enhances the ELA's quickness and clarity. In a further effort to improve transient response, Rega omit the traditional dust cap. This both lowers moving mass still further, and removes a potential source of distortion, as compliance at the dust cap's glue joint often results in decoupling and spurious output from the cap. To reduce moving mass yet again, Rega fit a small, 18mm voice coil to the bass/mid. The aluminum voice coil former extends forward of the cone's throat, which allows for a stronger, stiffer glue joint. In addition, exposing a portion of the coil former enhances cooling, and thus power handling. Built on a sturdy cast alloy chassis, the bass/mid uses a relatively small (but powerful) magnet to minimize reflection of the cone's back wave off the magnet structure.

Both the ELA's tweeter and bass/mid are flush-mounted on the baffle, with the tweeter located asymmetrically on the baffle to reduce diffraction (thus the ELA is sold as a mirror-imaged pair). Torx T20 wood screws fasten the drivers in place, with no less than *eight* screws securing the bass/mid driver. Silicone sealant ensures an air-tight bond to the baffle.

The ELA employs a simple three-element crossover, with an air-core inductor rolling off the bass/mid's upper range, and two components setting the tweeter's level and lower range roll-off. The high-quality components are hard-wired together, and glued to a small masonite board which is in turn fixed to the input terminal block. All internal wiring connections are soldered. Loudspeaker cable termination is via gold-plated, five-way binding posts. No provision is made for a second set of cables, as Rega believe the ELA's simple crossover would offer no benefit from biwiring.

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External fit and finish of the ELA are excellent, if a bit utilitarian in terms of the materials used. The baffle is painted with a high-quality black paint, offering an exceptionally smooth and elegant matte finish. The rest of the cabinet is finished in attractive black vinyl (walnut wood veneer is available at extra cost). The Rega's grille bespeaks an admirable attention to detail, minimizing diffraction by its thin wire frame. Covered in black stretch cloth, the frame fits snugly into four holes drilled in the baffle. As it has virtually no effect on sound quality, the grille was left in place for all auditioning. All told, the ELA's appearance is quite handsome, but lacks the luxurious finish of a competitor like the Thiel CS1.2.

Rega equip the ELA with a small T-shaped base built of square-section steel tubing. Three Torx screws fasten the base on the cabinet's underside, with the bottom of the "T" at the front of the cabinet. A threaded spike fits at each end of the "T", the two rearward spikes easily adjustable for height via knobs projecting above the stand top. Three, rather than the traditional four, feet are used for stability (remember, three points define a plane). This tripod arrangement is also easier to adjust and level.

Rated sensitivity of the ELA is a high 90dB/1 watt/1 meter. Rega have specifically designed the ELA to be an easy load to drive, its impedance never dropping below eight ohms.

No explicit placement instructions came with the ELA, as Rega believe the speaker's broad dispersion tweeter and non-resonant transmission line design allow it to perform well in a wide variety of room sitings. I first tried the ELA positioned near the rear wall, and this provided a useful, though hardly dramatic, increase in bass power. I noted little degradation of bass quickness and clarity when positioned thusly. I also experimented with placing the ELA a few feet out from the back wall, finding this produced exceptionally good depth reproduction, at the cost of a slight reduction in bass energy. I considered this a reasonable trade-off, and thus auditioned the ELA with it sited roughly three feet out from the back wall, and a similar distance from the side walls. Those who prefer a slightly more full-bodied sound would probably prefer near-wall placement. I angled the cabinets in towards my listening position, though the ELA's wide soundstage hardly makes this necessary.

One of my favorite bands is the British rock group Squeeze. They've never really achieved the commercial success they deserve, with only a handful of their songs receiving decent airplay on the radio. One of their more notable hits is the single "Tempted", from the *East Side Story* album. I play this LP quite often, though usually I only listen to Side One. Shortly after setting up the ELAs in my listening room, I plopped the record on my turntable, and lowered the stylus onto Side

attack and decay of individual notes were clearly audible, giving music marvelous character and texture. Acoustic guitars had stunning presence and immediacy, yet displayed no tendency towards thinness or stridency.

Similarly, lead singer Glenn Tillbrook's vocals sounded wonderful, with just the right combination of warmth and clarity. On this and other Squeeze LPs (such as *Cool for Cats*), the ELA afforded an enormous improvement in the intelligibility of lyrics. The ELA has the ability to snap into focus vocal and instrumental lines that were previously fuzzy and difficult to follow. Separation of instrumental lines on *East Side Story* was simply remarkable, allowing me to more easily appreciate the superb musicianship behind Squeeze's surprisingly complex song structures.

Bass quality was also extraordinary, with the ELA revealing melodic and rhythmic nuances of the bass guitar lost on lesser speakers. To be sure, the *quantity* of the Rega's bass was not overwhelming, the laws of physics dictating that a 5" driver can only move so much air, transmission line or no. That said, the sheer quickness and dynamics of the ELA's bass more than made up for any lack of extension (the ELA rather like the Linn Kan in this regard). Rhythmic coherence and progression on tunes like "Someone Else's Bell" and Side One's "Woman's World" were simply superb. The ELA had the marvelous ability to burn tunes into my brain. I'd find myself stuck in traffic, with the melody of "Woman's World" repeating over and over in my head.

*Two.* Shortly thereafter, my jaw hit the floor. Suddenly I was hearing music that was familiar, yet utterly fresh and captivating. Songs displayed an intensity and vitality that had heretofore gone unnoticed. Whereas the woozy "F-Hole" had previously struck me as rather boring and self-conscious, it now revealed itself to be a fascinating, off-tempo sonic collage.

Indeed, the entire album side now could be enjoyed as a sort of bizarre song suite, with Squeeze demonstrating their stunning mastery of a dizzying variety of musical styles. The ELA was simply breathtaking in its ability to resolve subtle timing cues and note shapings. As my earlier technical description indicated, Rega devoted a great deal of effort to achieving superb transient response in the ELA's bass/mid driver, and this certainly paid off. The ELA is simply one of the *fastest* loudspeakers I've ever heard. This speed benefited *all* types of music on this record, from raucous rockers to slow ballads, from chamber music to symphonic works. The

Tonio K.'s *Notes from the Lost Civilization* was equally pleasing, with the funk track "What Women Want" particularly fun. This tune has an amusing sing-song feel melded to a pulsing bass line, and the Rega made it impossible to resist the song's energy and spunk. The opening percussion and electric guitar came across with startling immediacy, the musicians seeming to be in the room with me. The ELA's excellent retrieval of low-level detail and recording acoustic also helped the "live" feel of this cut. Bass guitar and kick drum had exceptional snap and punch, greatly helping to communicate the tune's vitality and drive. The ELA's imaging was similarly impressive, the musicians spread evenly across the end of my listening room, with no tendency to clump together at the center of the soundstage or around the speaker cabinets. The Rega's excellent imaging can

be enjoyed well off axis, thus freeing the listener from being confined to a single "sweet spot" seating position.

On large orchestra works, such as Shostakovich's *Symphony No. 11*, the ELA was again impressive, though its limitations in terms of bass extension and ultimate SPLs were highlighted. Bass drum and tympani were, not surprisingly, rolled off in level, though the ELA's superb bass definition made what bass there *was* effective in communicating the power and drive of the orchestra. During climactic passages the little Rega did run out of steam, though orchestral dynamics were much better than one would expect from a 5" two-way loudspeaker. Strings and brass came across with amazing crispness and alacrity, the ELA's tremendous speed again coming in to play here. This gave the instruments far more impact and energy — "slow" speakers tend to homogenize and soften the strings' impact in the fourth movement's martial cadence section. Not so with the Rega, as this passage retained all of its tension and dramatic urge. Tonally, strings and brass did sound a bit lean, with the violins lacking a bit of warmth. Cellos and trombones were missing some of their gutsy impact, though I didn't find this to be a major problem. The soundstage set by the ELA was simply enormous, in all three dimensions, and this greatly aided in my appreciation of the performance's power and scope.

Whether or not you like Rickie Lee Jones, you must admit the musicianship on her eponymous debut LP is first-rate, and the ELA made this all the more apparent. Though I've heard this LP countless times, I was still taken aback by the acoustic guitar opening to "Weasel and the White Boys Cool". The sheer presence and dynamics of this instrument were astonishing. Indeed, this tune in general was conveyed with an immediacy and energy that gave it new life in my ears. Tonally, the ELA excelled in capturing both the warmth and crispness of the instruments. Jones' vocals had both body and clarity, the ELA striking an almost perfect balance here.

John Prine's *Bruised Orange* yielded similar results, with Prine's raspy vocals reproduced with a convincing blend of throat and chest tones. The ELA's excellent rendition of low-level detail and recording acoustic greatly enhanced the "live" nature of this performance. Note attack and dynamics were again superb, with the acoustic guitars coming across

with remarkable snap and definition. The sheer "you are there" feel imparted this recording by the ELA was quite amazing.

Pere Ubu's *Dub Housing* is one of the most fascinating, unusual, and *erie* rock albums made in the last twenty years. Vocalist David Thomas brings new meaning to the word "bizarre". I strongly recommend you get a copy of this LP, or any other Pere Ubu recording, for that matter (I haven't heard it yet, but I gather *Cloudland* is very good). There are some rather strange tempos on this album, but the Rega was never caught out or lagged behind. Many "audiophile" speakers just slaughter this music, rendering it an incoherent mess. Not so the ELA. I found myself gaining fresh insights into these performances, gaining a new-found appreciation for the creativity and intelligence of this band. It's a tired old cliché, but a truly superb audio component has the effect of giving you a new record collection — familiar music suddenly rivets your attention again. Such was the case with the ELA.

Obviously, I was tremendously impressed by the Rega ELA. It combines superb note attack and dynamics with exceptional imaging, all of these qualities combining to give the listener new insight into the musical performance. Instrumental lines are portrayed with almost contemptuous ease, allowing the listener to easily move his concentration from one musician to the next, focusing on the individual's performance, and then pulling back to appreciate the ensemble as a whole. In sports, sex, and music, timing is everything. The ELA allows you to hear the rhythmic interplay between the musicians to a far greater extent than is usual with High End speakers, and this makes music vastly more interesting and compelling.

The ELA is also one of the most chameleon-like speakers I've ever heard. It imposes precious little of its own character on the music, but instead lets the program material and ancillary components dictate the sound you hear. With some records, the ELA may seem rather warm and laid back, while with others it can come across as thin and bright. Of course, this is how it should be with a high-fidelity loudspeaker. Those speakers that consistently impart a characteristic "sound" to all of your records may be initially appealing because of their familiar, comforting nature, but they aren't true to the music.

That said, I can foresee instances where

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the Rega won't be to everyone's taste. For example, the ELA's moderate bass extension and ultimate sound-pressure capabilities may put off some listeners. Fair enough. The Rega can indeed sound a bit lean tonally when compared to models like the Vandersteen 2Ci and Rogers Studio 1a. For *me*, the ELA's stunning sense of speed and dynamics is addictive. I'd rather trade away a little bass weight in exchange for crispness and clarity that benefit *all* types of music, not just those with significant low-frequency information. Put plainly, the ELA communicates the emotion and meaning of music better than the vast majority of speakers at any price.

Despite this, I fear for the ELA's future in the audio salons of America. Rega focus their energies on engineering, not marketing, and in the wiggly world of audio that can be a dangerous course to take. The ELA's virtues are subtle compared to the "hi-fi" pyrotechnics offered by many High End speakers. In addition, the Rega's diminutive size, unconventional driver complement, and not-inconsiderable price will no doubt alienate the showroom squids. But if you take the time to hear the ELA in a proper demonstration, you may well come to the same conclusion I did: the Rega ELA is simply one of the most musically satisfying loudspeakers in the world today. ■