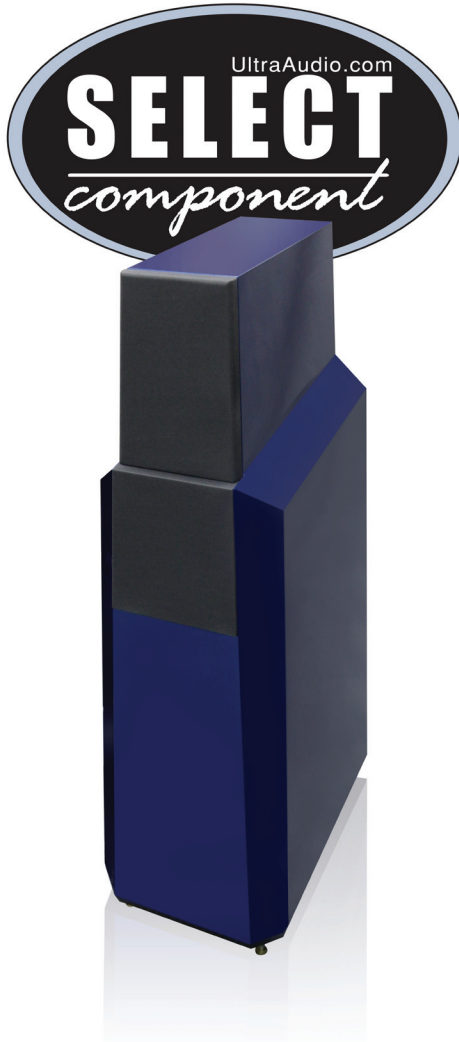


## Vandersteen Audio Model Seven Loudspeakers

May 1, 2010



**“I've never had  
so much fun  
auditioning or reviewing  
a speaker —  
or any other audio device.”**

### **“Nothing’s Shocking.”**

Walking the halls of the High Performance Audio section of a Consumer Electronics Show brings to mind that Jane’s Addiction classic. The panoply of six-figure systems, and a near ubiquity of \$20,000 components, make generating any genuine buzz next to impossible. At the January 2009 CES, however, the Vandersteen Audio suite was hopping with the debut (in prototype form) of its Model Seven loudspeaker. With a bright-red automotive finish and a price of \$45,000/pair — nearly three times that of the Model 5A, the firm’s flagship for the last decade — the Seven propels Vandersteen into new territory. Even the limitations presented by show conditions couldn’t quell the enthusiasm generated by the prototypes, and the glimpse they gave of the Seven’s ultimate capabilities. Subsequent “viewings” of the first production pair, at both the 2009 Rocky Mountain Audio Fest and the 2010 CES, confirmed the Model Seven’s status as a major achievement. Would it be shocking if this \$45,000 statement product from an industry icon not only vaulted the performance bar set by Richard Vandersteen’s earlier efforts, but also continued his +30-year tradition of class-leading value by challenging the competition at many multiples of its price?

### **“There’s no such thing as a free lunch.”**

Applicable to many engineering disciplines (especially those in high-performance audio), this maxim attributed to Milton Friedman thoroughly encapsulates the dilemma facing every speaker designer. Designing a loudspeaker entails myriad considerations, each fraught with consequences: What type of enclosure should be used, made of what materials, and what size? What kind of drivers — how many, and how configured? What about crossover points and slopes, frequency ranges, efficiency, aesthetics, retail price? And every one of these choices has a financial consequence.

Richard Vandersteen’s overriding vision is to create a perfectly accurate — and therefore, from his perspective, perfectly musical — re-creation of an input signal’s waveform. Accordingly, Vandersteen speakers incorporate first-order crossovers, time-aligned driver placement (just one driver per frequency range), and minimal baffles. Because his approach places an especially high demand on the drivers’ capabilities, as driver technology has evolved and advanced over the past 30 years, so have Vandersteen speakers.

### **Driven to extremes**

Rather than sidetracking this review with an extended description of the technical aspects of the Model Seven’s cones, drivers, and chassis construction, please see “Searching for the Extreme: Richard Vandersteen of Vandersteen Audio: Part One” and “Part Two,” for a technical Q&A session with Richard Vandersteen I conducted last fall.

But briefly: Conceived as the ultimate expression of the ideal of perfect waveform replication and realized through advances in materials science (as applied to driver and enclosure technologies), the Model Seven represents a quantum leap for Vandersteen Audio. The fulcrum of this advance is Vandersteen’s breakthrough in driver technology. Following a decade of research and development, Richard Vandersteen recently realized his goal of creating drivers that offer what he says is truly pistonic operation throughout the extended frequency envelope demanded by first-order filter networks. The technology — trademarked by Vandersteen as Perfect Piston — centers around a new cone structure (for which a patent is pending). The cone consists of a balsa-wood core machined to the optimum shape and size for its intended frequency range, then laminated on both sides with a layer of ultra-high-modulus carbon fiber for a strong, superlight, inherently antiresonant structure. The tweeter, midrange, and midbass cones are all made using this trilaminar construction, to provide what Vandersteen claims is ultralinear operation throughout the primary operating range *and passbands*, with vanishingly low levels of distortion at all realistic output levels. Additionally, due to such consistency of materials, an essential coherence among the drivers is attained at a level Vandersteen says is unavailable when

## Vandersteen Audio Model Seven Loudspeakers

*Continued...*

**“...seamless  
consistency  
of the speaker's sound.”**

drivers made of different types and/or materials are used together in the same speaker. There's only one downside to Vandersteen's new driver technology: cost. Vandersteen says that each pair of cones — exclusive of the other driver components — costs more to manufacture than the \$995 retail price of the Model 1C, Vandersteen's entry-level speaker model. Given all this, the obvious challenge was to reimagine the perfect Vandersteen loudspeaker from the ground up.

While the Seven follows the basic Vandersteen recipe that proved so effective in the Model 5A — a four-way speaker with a sealed enclosure with a separate chamber and transmission line for each driver — the materials used are vastly different. Rather than the traditional wood or fiberboard, the Seven's enclosure is made primarily of carbon fiber, the essential ingredient in Vandersteen's Carbon-Clad enclosure panels. He begins with a carbon-fiber frame and bracing structure, to which he applies body panels, each a nine-layer sandwich of three sheets of carbon fiber bonded to high-density fiberboard, followed by a central damping agent and mirror-imaged layers of HDF and carbon fiber, to create a strong, superstiff, inert package whose constrained-layer damping gives it great resonance-killing properties. The crossovers, too, have received a makeover. After investigating all ne plus ultra options, Vandersteen settled on Gertz foil inductors and Duelund capacitors. Only the powered, fully balanced, push-pull subwoofer system so effectively employed in the 5A has been carried over to the Seven, to imbue it with both excellent bass performance and extraordinary flexibility in speaker positioning. Speaker placement can be optimized for mid-frequency performance and domestic considerations, leaving it to the subwoofer's built-in, 11-band parametric equalizer to dial in the bass and correct most bass/room interaction problems — an elegant, all-analog solution.

All this in a room-friendly package — a tapered and beveled shape just 44"H x 14"W x 20"D that's visually much more compact than the 5A — that makes the Model Seven a “real-world” dream for audiophiles, their spouses, and interior designers alike. And the Seven can be finished in any PPG automotive finish now available — my review samples were clad in royal blue livery. Reflecting the luxury status of any recreational product costing \$45,000/pair, the Seven is shipped in a form-fitting, hand-sewn sleeve, to protect the luster of the finish — a fitting touch. To add icing to the cake, the Seven's thoroughly modular design enables drivers, crossovers, and amplifier modules to be replaced whenever enough advances in technology have been made to justify an upgrade.

### System

The Vandersteen Model Sevens energized my listening room for almost two months this winter. Starting from the speakers and working backward, the Sevens drank an elixir of electrons from the well of my 300Wpc Ayre Acoustics MX-R monoblock amplifiers (tethered by a 1m, internally biwired pair of Cardas Clear Beyond speaker cables). Source selection and volume control were provided by Ayre's transcendent KX-R preamplifier, the sources being either my VPI Scout turntable with Aesthetix Rhea Signature phono stage, or my Ayre D-1xe DVD/CD spinner. All interconnects were Clear by Cardas. The source components and preamplifier resided in my Harmonic Resolution Systems MXR rack with M3X shelves (along one sidewall), with the monoblocks on older, made-to-measure HRS M3 platforms placed immediately next to the speakers. Power was delivered via Cardas Golden Reference AC cords and Ayre's L-5xe passive power conditioners.

### Dynamite

I've never had so much fun auditioning or reviewing a speaker — or any other audio device. Whether listening to the duets of Ella Fitzgerald and Louis Armstrong, the piano concertos of Chopin, or the recent reissue on 180gm vinyl of René Leibowitz and the Royal Philharmonic Orchestra's *The Power of the Orchestra* (45rpm LPs, RCA Living Stereo/Analogue Productions VCS-2659), I was drawn into each. H.G. Wells would be impressed by the time-machine qualities the Model Seven brought to my listening.

## Vandersteen Audio Model Seven Loudspeakers

*Continued...*

“...beguiling  
perfection.”

The Model Seven presented a purity of timbre that I've only rarely experienced with hi-fi. Instrumental overtones and fine distinctions of voice were presented with beguiling perfection. My copy of *The Tony Bennett/Bill Evans Album* (45rpm LPs, Fantasy/Analogue Productions 9489) had never sounded more alive. Evans's meticulous production was sublimely presented through the Sevens, showcasing the frequency extremes, resolution, impact, and three-dimensional soundstage captured on these discs. The speaker's supreme coherence was enhanced by its sound remaining very open and uncolored. Such qualities are perhaps an offshoot of Richard Vandersteen's self-professed sensitivity to pitch. Because he's jarred by even slight discontinuities of pitch, his speakers prioritize the characteristics of timbre, coherence, and naturalness. The tight spacing of the Seven's three primary drivers, and their uniformity of cone material, must be at least partly responsible for much of the seamless consistency of the speaker's sound.

One trait sometimes attributed to Vandersteen speakers is “politeness,” a backhanded compliment perhaps meant to confront a perceived lack of dynamic energy. I've always felt my Model 5As to be very dynamic (*dynamic* being the contrast between the noise floor and the volume level that can be achieved without gross nonlinearities destroying the sound). Nonetheless, Vandersteen speakers are subject to the challenges and stresses that first-order designs place on their drivers. As a result, limitations in earlier driver technologies may have resulted in compromises that favored musicality over unrestrained dynamics.

Any such limitations have been eliminated in the Model Seven — it is simply the most dynamic speaker with which I have had long-term experience, with a remarkable ability to almost instantaneously bound from *ppp* to *fff*. It is interesting to note that this extreme dynamic facility is produced by a speaker with a fairly low claimed efficiency: only 83.5dB. It will take a fairly powerful amplifier to drive the Sevens to the very high SPLs some listeners prefer (single-ended-triode tube amps are out of the question), but regardless of overall volume level, the Seven was every bit as *dynamic* as any high-efficiency horn speaker I've heard.

Having now returned to my stalwart Model 5A references, I find it is the Model Seven's dynamic contrast that I long for. The Seven has exposed to my ears, for the first time, the limitations imposed by Vandersteen's approach in the Model 5A — I now recognize in my benchmark speakers that touch of “politeness” ascribed to earlier Vandersteen designs. Listening to Julie London intone “Cry Me a River” on her debut album, *Julie Is Her Name* (45rpm mono LPs, Liberty/BoxStar BSR 3006), through the Sevens was a revelation, as her sultry tones tease the spare arrangement. As much as I enjoy listening to Diana Krall, I now hear her as only a modern facsimile of London's originality. While listening to the same track via the 5As was still immensely enjoyable, gone was the bowl-you-over quality I'd experienced through the Sevens. London was instead a half step back, separated from me by an *almost* invisible pane of glass — or perhaps a sheer sheet of silk. The Model 5A may be more forgiving of some recordings, but it just couldn't match the glory of the Sevens with good, and especially great, records. At the end of the day, perfectionist audio is about teasing out from the source material every last strand of potential, and that was the Seven's forte.

Contributing to the liveliness of the Model Seven was its unprecedented lack of distortion, enabled by the piston capabilities of the drivers as symbiotically coupled to Vandersteen's remarkable Carbon-Clad enclosures. Without the smear and slurry that even microlevels of distortion can impose on the music, the Seven retrieved and resolved low-level details with ease. Its ability to communicate nuances of performance — instrumental decays, the space around instruments — put it in a class with few peers. They communicated subtleties even in “wall of sound” recordings, making the deconstruction of intertwining elements not only possible but easy (so long as one is inclined to reengage the right brain's analytic abilities at the expense of the left brain's enjoyment of the overall experience).

## Vandersteen Audio Model Seven Loudspeakers

*Continued...*

### Vandersteen Audio Model Seven Loudspeakers

Price: \$45,000 USD per pair.

Warranty: One year parts and labor (extended to five years parts and labor on timely submission of warranty card).

### Vandersteen Audio, Inc.

116 W. Fourth Street  
Hanford, CA 93230-5021  
Phone: (559) 582-0324

Website: [www.vandersteen.com](http://www.vandersteen.com)

A perfect example occurred during "Gigantic," from the Pixies' *Surfer Rosa* (LP, 4AD/Mobile Fidelity Sound Labs MFSL 1-296). Kim Deal's lead vocal sits front and just right of center, a cacophonous instrumental blizzard surrounding her on the soundstage. Half a dozen steps back, however, just left of center and lurking under the maelstrom, is Black Francis's falsetto accompaniment — perfectly discernible through the Sevens, and with its voyeuristic complexities intact. The Pixies' loud/quiet dynamic was raucously reproduced by the Sevens, with nothing "polite" or forgiving within earshot.

Many loudspeakers, especially when fed mediocre program material, fall apart if driven to ever higher output levels — like salt rubbed in a wound. Through the Sevens, deficiencies in recordings remained evident, but those problems in the sources were not compounded by transducer-induced nonlinearities that could otherwise exacerbate and highlight the trouble spots. Bad recordings of good performances remained incredibly enjoyable through the Sevens because of the speakers' composed accuracy, rather than because they hid or smoothed out problems.

A note of caution for those who like to play it loud: Based on my experience with the Model Seven, I've come to believe that when a listener's brain tells him or her to "turn it down," it is reacting to the nonlinearities (*i.e.*, distortions) that tend to proliferate when speakers or associated electronics are pushed to deliver high decibel levels. Because such nonlinearities were essentially absent from the Model Sevens' output — I heard none — potentially ear-damaging volumes didn't trigger in my own cranium the usual command to "Turn it down!" During several listening sessions, I realized how loudly I was playing the music only when I tried to talk to someone. Please practice discretion in setting decibel levels. You have been warned.

### Better is better

In an era when statement products seem to be designed on the principle that bigger is better, but too often turn out to be merely bigger boxes with more drivers, it's refreshing that, in developing the Model Seven, Richard Vandersteen has retained his philosophy of bringing out a new model only when it has been justified by advancements in technology and creativity. The Model Seven goes about its business in ways deceptively simple, and similar to the ways top athletes make the extraordinary look easy. Experiencing the Model Sevens in my living room today reminds me of my college days, watching basketball player Grant Hill from courtside — better is truly better.

Others may well prefer a larger-than-life sound or a more dominating physical structure, but it is the Model Seven's aspirations and accomplishments that I so admire. Unquestionably, \$45,000 is a lot of money to spend on a pair of speakers, but understanding the cost of its component parts, I know it to be a more than fair price. If produced by many manufacturers following industry-standard ratios of cost to MSRP, I'm told that the Model Seven would likely be priced above \$80,000.

In any event, I prefer the sound of this speaker over others I've heard that cost \$70,000, \$110,000, even \$180,000/pair. In short, it represents tremendous value. One dealer recently told me that the best \$6000/pair speaker you can now buy is the \$2200/pair Vandersteen 2Ce II. In keeping with the Vandersteen tradition, some might now say that the best six-figure speaker you can buy is the \$45,000/pair Vandersteen Model Seven.

It's lucky that I'm a goal-oriented person. Meeting my new goal will require 45 large.

...Peter Roth  
[peter@soundstagenetwork.com](mailto:peter@soundstagenetwork.com)