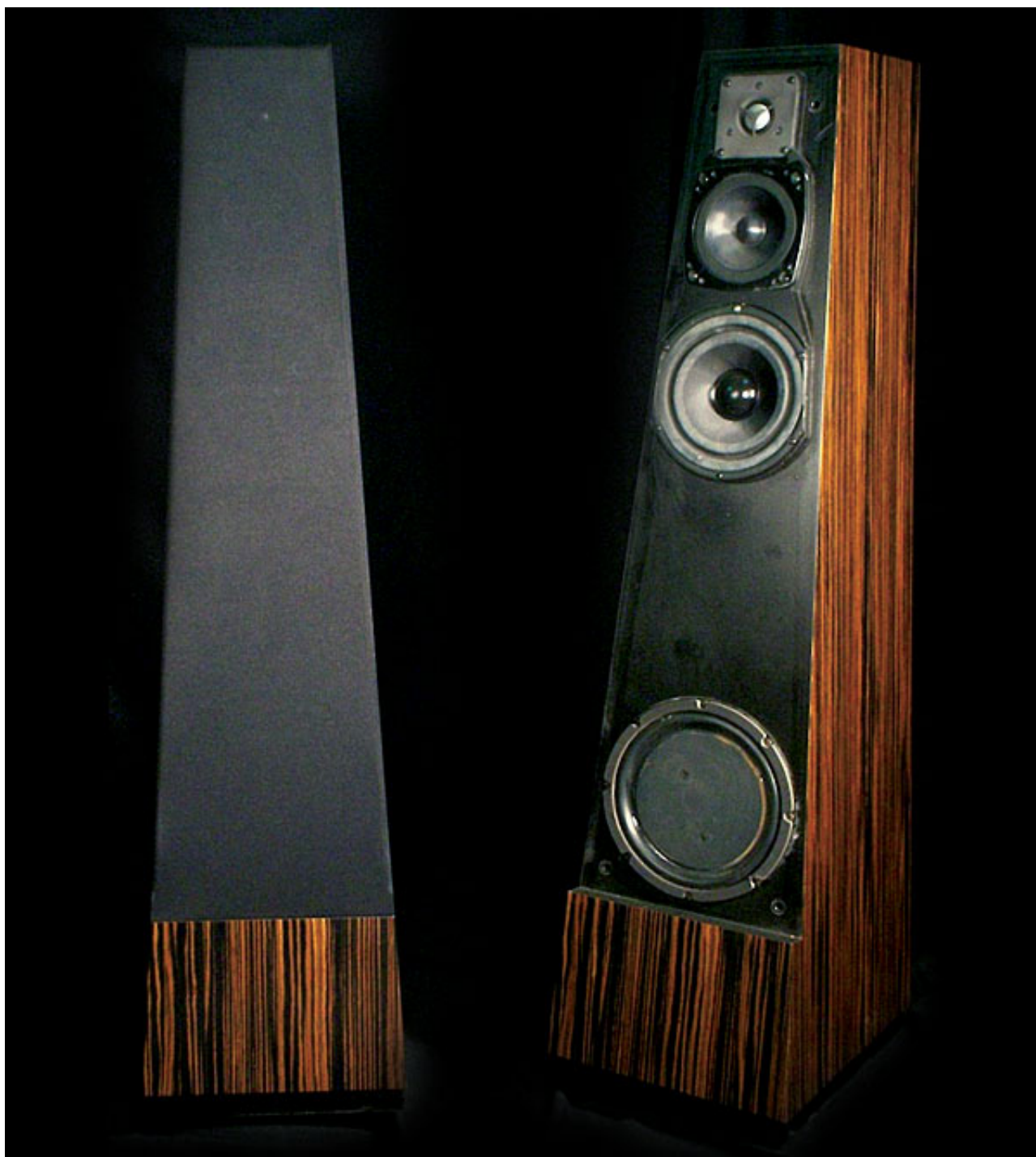


## Vandersteen Audio Treo loudspeaker



In one sense, [Richard Vandersteen](#) has been the victim of his own success. His Model 2 loudspeaker (footnote 1), introduced at the 1977 Consumer Electronics Show, put his company on the map but proved a hard product to improve on. Based on the idea that the HF and midrange drive-units should have the minimal baffle area in their acoustic vicinity, both to optimize lateral dispersion and to eliminate the effects of diffraction from the baffle edges, the Model 2 also used a combination of a sloped-back driver array and first-order crossover filters to give a time-coincident wavefront launch.

But of perhaps equal if not more importance to the commercial success of the Model 2 and its variants—more than 80,000 pairs had been sold by the turn of the century, and the speaker is still available as the [2Ce Signature II](#)—was the fact that Vandersteen had offered the speaker at

a price significantly lower than should have been possible for the sound quality on offer: \$1125/pair in 1986, and only slightly higher, \$1295/pair, in 2000. He managed this by dispensing with the usual wood-veneered enclosure, instead surrounding the speaker's carcass with a black rectangular sock.

And such was the Model 2's performance/price ratio that it wasn't until the introduction, in 1997, of the technically sophisticated Model 5, with its powered subwoofer section, that Vandersteen had a loudspeaker that wasn't undercut by the then-venerable Model 2. The Model 5 also broke with tradition by having a veneered enclosure for its low-frequency drivers, though it continued the minimal-baffle concept for its upper-frequency drivers. Vandersteen's Quatro and Quatro Wood, respectively reviewed by Michael Fremer in [July 2006](#) and Wes Phillips in [December 2007](#), combined a less-expensive development of the Model 5's powered subwoofer with a tweeter/midrange/upper-woofer array mounted on a conventional baffle at the top of a tall enclosure. The Wood had a veneered enclosure; the basic Quatro saved its purchaser money by enclosing an unfinished box in a black cloth sock. However, the Quatros continued the minimal-baffle concept by tapering the enclosure toward its top.

The next Vandersteen designs were both more and less expensive than the Quatro. The Model 7, reviewed by Michael Fremer in [March 2010](#), took Vandersteen's design ideas to a new level of performance, though at a price: \$48,000/pair upward, for which you could purchase 20 pairs of Model 2Ce Signature IIs (which now costs \$2395/pair). The Treo, which I listened to in prototype form at the [2011 CES](#), goes in the other direction. It's conceptually similar to the Quatro Wood, but replaces that speaker's active, equalized bass unit with a conventional 6.5" woofer and an 8" flat-cone subwoofer, both loaded with a 2" port. Whereas the Quatro Wood costs \$10,900/pair, the Treo is priced at \$5990/pair. Once the Treo was in production, I asked for samples; Richard Vandersteen sent me a pair in fall 2012.

### **The Treo . . .**

. . . has the same dimensions as the Quatro Wood—43" high by 10" wide by 15" deep—but weighs 80 lbs, compared to the more expensive speaker's 122 lbs. The enclosure is finished in wooden veneer, but all but the bottom 7" of the front baffle is covered by the substantial black cloth grille. Each of the three upper drive-units stands proud of the baffle on a small subchassis; the grille's frame surrounds each of the diaphragms with a smooth surface to optimize diffraction and minimize reflections of the high frequencies from the baffle edges. Use of the grille is mandatory, therefore.

The tweeter is the same ferrofluid-cooled, hard-anodized, aluminum-alloy dome used in the Quatros and the Model 5. Mounted immediately below it on the gently sloped-back front baffle and crossing over at 5kHz is what appears to be the same 4.5" midrange unit as used in the Quatros: a woven-composite cone and dustcap terminated with a flat surround, and a die-cast chassis with minimal aerodynamic obstruction behind the cone. Mounted immediately below the midrange is the 6.5" upper woofer, which handles frequencies below 900Hz and has a woven-fiber cone and a substantial half-roll rubber surround.

At the base of the baffle section is an 8" subwoofer, covering the range from 36 to 80Hz. This features a shallow carbon-loaded pulp diaphragm to which, over the dustcap, a ring has been glued to add mass. The two woofers are reflex-loaded with a 2"-diameter, downfiring port mounted under the Treo's integral plinth. Two cones screw into the front of the plinth to pro-



vide the necessary floor clearance for the port. A third cone screws into the center rear of the plinth, while two outrigger spikes prevent the Treo from tipping over.

The crossover is first-order, with 6dB/octave slopes. Electrical connection is via Vandersteen's traditional terminal strip mounted to a metal plate on the speaker's rear, with one pair of screw-down terminals supplied for the midrange and tweeter, another pair for the two woofers. Richard Vandersteen holds that a terminal strip provides a more secure, more reliable connection. However, the Treo's terminals are too narrow for the chunky spades of my AudioQuest Wild cables. I used Cardas Clear connected to the low-frequency terminals, with Kimber Kable jumpers connecting the upper-frequency drivers.

Overall, the Treo is a good-looking piece of audio furniture, elegantly proportioned.

### Listening

The Treos proved relatively straightforward to set up in my room. The primary adjustments I made were to bring the upper- and lower-midrange regions into balance by experimenting with the distance of each speaker from the nearest sidewall. However, the upper midrange remained a little emphasized in absolute terms. This didn't lead to any noticeable coloration, but it undoubtedly aided the Treo's superb clarity.

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Footnote 1: *Stereophile* has reviewed several variants of the Model 2 over the years. Click [here](#), [here](#), [here](#), and [here](#).



The Vandersteen Treo was noticeably insensitive compared with the 85dB-sensitive KEF LS50 that [preceded it in my room](#); I recommend at least a 100Wpc amplifier to drive it. The benefit of a truly time-coincident speaker is that a pair can give superb stereo imaging. That benefit is sometimes offset by compromises in dispersion, but the close-as-practicable vertical spacing of the Treo's drive-units means that it's not as fussy about the exact listening axis as might be expected. However, you still need to sit with your ears close to the optimal listening axis. Pink noise revealed a hollow quality that developed when my ears were higher than the midrange unit's dustcap. The front and rear cones, which provide ground clearance for the downward-firing port, can be adjusted to tilt the Treo back a little, to ensure that the speaker's owner gets the combination of clarity and neutrality paid for.

And that clarity was impressive. These days, I listen to NPR mostly via the Internet, using my [Logitech Transporter](#). The Treos laid bare the data-reduction artifacts in live feeds from reporters, the various gurgling and "underwater" sounds that presumably stem from stacked lossy codecs. Similarly, the differences between the "Red Book" and 24-bit/96kHz versions of Paul Simon's "Getting Ready for Christmas Day" (Apple Lossless files ripped from CD, and

transcoded from HDtracks FLAC downloads, respectively), which had proved fairly subtle with this overcompressed production through the [Sony SS-AR2](#) and [KEF LS50](#) speakers, were readily audible with the Treos. The hi-rez version offered a little more space between instruments, a little better decoding of soundstaging cues. The improvement made to my system's overall sound by the [BSG Qøl Signal Completion Stage](#), which I reviewed in February, was unambiguous with Treos in the system.

The 1/3-octave warble tones on *Editor's Choice* (CD, Stereophile STPH016-2) were a little suppressed in the 100 and 80Hz bands. Jerome Harris's acoustic bass guitar on *Rendezvous* (CD, Stereophile STPH013-2) therefore sounded a little reticent. However, the tones were strongly reproduced, with negligible distortion, from 63Hz down to the 32Hz band, the latter aided by the lowest-frequency mode in my room. The higher-frequency warble tones on *Editor's Choice* uncovered some liveliness just below middle C and between 500 and 600Hz on the cabinet sidewalls, which added a very slight boxiness to the sound of Richard Lehnert's speaking voice in the "Channel Identification" and "Channel Phasing" tracks on this CD, but the Treo was otherwise lacking in noticeable coloration. Both the sound of John Barrow's solo baritone and that of the Choir of Guildford Cathedral, in Vaughan Williams's *Fantasia on Christmas Carols* conducted by Barry Rose (CD, EMI Classics CDM 5 67427-2), were produced with natural tonal colors and no trace of hardness, despite the recording's 1966 pedigree.

The half-step-spaced low-frequency tonebursts on *Editor's Choice* were reproduced with good articulation, but with greater weight to the region below 80Hz than I was expecting. The combination of the integral subwoofer and the downward-firing port endows the Treo with almost full-range bass extension, which is commendable at its price. Steven Stills's bass guitar in "Suite: Judy Blue Eyes," from *Crosby, Stills & Nash* (Apple Lossless file transcoded from 24/96 FLAC download, HDtracks), was reproduced with a superb purr to its lowest registers—particularly the note A (55Hz), which coincides with the peak of the region covered by the Treo's subwoofer—with relatively good definition for a reflex design. The Treo's rather exaggerated lowest register still allowed Leonard Cohen's grumpy, mike-swallowing baritone in "Going Home"—"I love to speak with Leonard, / he's a sportsman and a shepherd, / he's a lazy bastard in a suit"—from *Old Ideas* (CD, Columbia 8697-98671-2), to emerge unscathed from the woofers, though the lowest notes of Roscoe Beck's tuba-toned bass guitar in "Amen" sounded rather lumpy.

My longtime test for bass articulation is the repeated 16th-note bass line in "Last Train Home," from Pat Metheny's *Still Life (Talking)* (CD, Geffen GEFD 24145-2). This is a difficult track for reflex-loaded speakers to correctly reproduce. The higher the Q (Quality factor) of the low-frequency alignment, the more the bass notes run into one another. The Treos did relatively well with this track, preserving the onset of each bass note with only a slight smearing of the following tone. The doubling of Carol Kaye's bass guitar played with a pick with a double bass in "Sloop John B," from the Beach Boys' *Pet Sounds* (Apple Lossless file transcoded from

24/192 FLAC download, HDtracks) had superb clarity, as did the bass guitar and kick drum in lock step in "Hey Nineteen," from Steely Dan's *Gaucha* (24/96 Apple Lossless file ripped from DVD-A, Warner Bros. 7102151014-2-2).

One of the Christmas presents I gave myself last year was the 24/48 download of Led Zepelin's *Celebration Day*, from the band's 2007 tribute concert for Ahmet Ertegun (HDtracks). I listened to this album a lot through the Treos over the Christmas weekend, and unfortunately the Vandersteens laid bare the fact that the sound quality is not what I was hoping for. Yes, Jason Bonham's drumming channels his father's very effectively, and John Paul Jones's use of a 16' stop on the Hammond bass lines and an equally phat tone on his bass guitar does add magnificence. But overall, the sound isn't close to the 1972 board mixes of *How the West Was Won* (24/48 Apple Lossless files ripped from DVD-A, Atlantic 83587-9), lacking openness and natural tonal colors, even with electric and electronic instruments. When I compared the drum and guitar sounds and the space around the snare drum in "Since I've Been Loving You" on both *Celebration Day* and *How the West Was Won*, the Vandersteen speakers revealed the 40-year-old recording to preserve the sounds of real instruments rather than presenting them as shaped, textured, and processed noises. An interview with the new album's mix engineer, Alan Moulder, in the January 2013 issue of *Sound On Sound*, provided an object lesson in how modern technology can be misused to screw things up. Had Moulder monitored his efforts with speakers as revealing and uncolored as the Vandersteen Treos, he might not have used such a heavy hand on the Pro Tools plug-ins and processors!

The Treos threw a stable and accurately defined soundstage, though the top octave was presented a little more forward in that stage than the lower frequencies. For example, the inevitable ticks of the needle drops I am regularly making now that I've bought the sample of Ayre Acoustics' QA-9 A/D converter, which I [reviewed last November](#), stand clear of the body on the instrumental tone. I have loved David Abel's performance of Beethoven's Violin Sonata in G, Op.96, since it was released on David Wilson's label in 1987 (LP, Wilson Audiophile W-8722). I thought I had eliminated all the major ticks when I did the transfer to 24/192 digital back when I was reviewing the KEF LS50 speakers [last December](#). But the Treos uncovered more ticks that had been lurking in hiding. Still, the tones of both Abel's Guarneri violin and accompanist Julie Steinberg's 9' Hamburg Steinway were uncolored and lifelike.

With its lack of midrange coloration, its transparency, and its extended lows, the Vandersteen Treo proved adept at faithfully reproducing solo-piano recordings. Following Michael Lavorgna's turn-of-the-year [recommendation on AudioStream.com](#), I downloaded from HDtracks the 24/192 FLAC files of David Chesky's new album, *The New York Rags*, one of Chesky Records' new Binaural+ Series. Played back via the USB2.0 input of the excellent [Arcam D33](#) processor, the transcoded AIFF files of this suite of 18 energetic compositions for solo piano sounded almost real. (The quote from "Tiger Rag" in Chesky's Rag No.14, "Kids You're Late for School Rag," is a delicious contrast with the frenetic modernism of much of the rest of the

writing.) The illusion of reality was helped by the fact that the piano, a Yamaha DCFX Mark IV Disklavier Pro concert grand, had been recorded with the B&K 4100 Head and Torso simulator using Crystal cables to feed the MSB A/D converter that had so impressed Michael Fremer (see "Analog Corner" in this issue), then processed using the [BACCH technology](#) developed by Professor Edgar Choueiri, of Princeton University's 3D Audio and Applied Acoustics Lab, to render the binaural recording compatible with playback through loudspeakers.

The perspective of Chesky's recording is from fairly close to the piano, and the Yamaha's tone is fairly homogenous compared both with Julie Steinberg's Steinway and the 9' Steinway on which Robert Silverman performed Schumann's *études Symphoniques* and Brahms's *Variations and Fugue on a Theme of Händel*, which I mastered for release this spring as a Stereophile CD while writing this review. The decay of notes on the Steinway is more complex than in the Yamaha, a difference effortlessly revealed by the Vandersteen speakers. The Treos also did a great job of presenting Silverman's Steinway within the supportive acoustic of Sauder Concert Hall, at Goshen College in Indiana, to give a wetter sound, but one just as realistic as on the Chesky and Wilson recordings.

### **Summing Up**

Looking back at my listening impressions, I see that I've pulled the usual reviewer trick of describing the individual aspects of the Treo's sound, the assumption being that when added together, they will fully characterize the speaker's quality. Not that that's untrue, but what I didn't mention at all is that the whole of the Treo's performance is more than the sum of those parts. There was never a recording that I didn't enjoy through these speakers, though with some overcooked modern recordings, that required some care in setting the playback level so that the sonic crap revealed by the Vandersteens didn't get in the way of the music.

For not much more than twice the price of the current version of his Model 2, Richard Vandersteen has, in the Treo, designed a speaker that fully justifies the dollar differential. Highly recommended.