

Vienna Acoustics Mahler loudspeaker

How can you tell an audiophile from a normal person? Well, given a list of names like "Haydn, Mozart, Bach, Beethoven, and Mahler," the normal person might respond, "Composers." The audiophile's response is likely to be "Loudspeakers from Vienna Acoustics." Anyway, that's my association when I see these names, which may tell you something about my state of normalcy.

I have a good excuse, though. Three years ago, I reviewed the Vienna Acoustics Mozart (*Stereophile*, January 1997), and have some familiarity with their small two-way, the Haydn; the larger, floorstanding Bach; and the Beethoven, until recently the top of Vienna's line. All of these models are still being manufactured, but the Beethoven now has a speaker above it: the Mahler. Musicologists (and, if he were still around to be polled, Ludwig van himself) may question putting Mahler above Beethoven, but it does make a kind of sense if one considers the relative sizes of the orchestras required by the music of these composers. I find Gustav Mahler's music to be on the ponderous side, but when I heard the Vienna Acoustics Mahlers at HI-FI '99, I was sufficiently impressed that I began the process of getting a pair for review.

Description and design

This is a *juggous* loudspeaker. As audiophiles, devoted to the pursuit of high accuracy and musicality in sound reproduction, we may protest that sound quality is the only thing that's important. But the fact is that speakers are objects in the listening/living room that you have to look at even when they're silent—appearance can be an important determinant of overall satisfaction. The Mahler's slim, backward-leaning cabinet and impeccable glossy finish on all sides (rosewood in the review samples) are elegant without being overly fussy. For a full-range speaker, the Mahler is of modest size, with a relatively small footprint and a narrow front panel, so it's more likely to blend into a room's décor than to dominate it.

According to John Hunter of Sum-

iko, Vienna Acoustics' US importer, the design of the Mahler began with the selection of the Scan-Speak 7" midrange driver, felt by many speaker people to be the best unit of its type. This driver can cover a wide range, and I know of some designs in which it's used to cover the bass as well as the midrange. (Scan-Speak calls it a "mid/woofer.") However, Vienna Acoustics designer Peter Gansterer feels that using the Scan-Speak midrange to extend all the way down would result in impaired dynamics and transparency, so, after much experimentation (John Hunter says he participated in listening sessions that involved 73 iterative changes!), 70Hz was selected as the lower limit for the midrange drivers. The lower of the two drivers has a crossover that rolls off its response above 200Hz, using a simple 6dB slope, with additional crossover points at 400Hz (12dB/octave) and 800Hz (18dB/octave)—an approach intended to produce a smooth transition to the treble. The other midrange driver is crossed over to the tweeter at 3.6kHz, so that it covers about a 5½-octave range. Each midrange driver is in its own sealed subcabinet.

The lower bass is handled by two side-firing 10" Eton woofers, a carbon-fiber honeycomb-cone driver preferred by Peter Gansterer for its high stiffness and speed. Each woofer has its subcabinet, with nonparallel walls, and is vented out the back. The woofers begin crossing over at 50Hz, and are filtered more at 100Hz, and again at 200Hz.

The tweeter is a variant of Scan-



Vienna Acoustics Mahler loudspeaker

Description: Three-way, floorstanding, reflex-loaded dynamic loudspeaker. Drive-units: 1.2" silk-dome tweeter, two 7" pulp-cone midranges, two 10" side-mounted honeycomb-cone woofers. Frequency range: 22Hz–25kHz (limits not specified). Sensitivity: 90dB/W/m. Impedance: 6 ohms average.

Dimensions: 51.2" H by 8.6" W by 18.3" D. Weight: 150 lbs.

Finishes: rosewood, beech flame.

Serial numbers of units reviewed: 92801 A/B.

Price: \$9800/pair. Approximate number of dealers: 60. Warranty: 5 years, parts & labor.

Manufacturer: Vienna Acoustics, A-1935 Wien-Lehnergasse 15, Vienna, Austria. US distributor: Sumiko, 2431 Fifth Street, Berkeley, CA 94710. Tel: (510) 843-4500. Fax: (510) 843-7120.

Speak's D-29 1.2" silk dome, well-known for its smoothness and "silkeness." To ensure that the tweeter is not disturbed by vibrations from the cabinet, it's mounted with silicone gel injected into the cabinet recess. This effectively floats the tweeter, with no rigid mechanical connection to the cabinet—a clever bit of engineering.

The crossover uses parts of the highest quality, including a \$70 German MKP Select capacitor, chosen because it sounded best in listening tests. The Mahler uses only a single set of five-way binding posts, Peter Gansterer not being a fan of bi- or tri-wiring. A toggle switch allows the tweeter's response to be attenuated by 0.6dB above 6kHz; another switch selects a bass emphasis of 2dB below 50Hz.

The Mahler rests on a plinth that doesn't extend all the way to the front, giving the speaker a "floating" appearance while maintaining structural stability. Three screw-in metal cones are provided to improve coupling to the floor. These are beautifully made but only $\frac{5}{8}$ " high, and would not penetrate the heavy carpet and underpadding in my listening room. I ended up using German Acous-

tic cones, which have longer, pointed spikes. The cabinet itself is heavily braced, with 2.5"-thick front and rear panels. The veneers (in addition to rosewood, the Mahler is also available in "beech flame," so-called because of a flame-patterned burl within the wood) are matched and hand-selected by Peter Gansterer himself, who assigns precise locations for each panel of veneer.

Setup

It's fairly common for representatives of speaker manufacturers to visit *Stereophile* reviewers to assist in setting up the speakers being reviewed. Some readers question the appropriateness of this practice ("Jim Thiel doesn't drop by to help set up my speakers!"), but I think of this practice as equivalent to the normal post-sale service that any customer should receive from an authorized dealer of high-end audio equipment. Furthermore, it's only fair that manufacturers/designers should have a chance to ensure that their products are performing as intended. Of course, reviewers must be careful during these visits to provide no clues about what they think

of a product's performance, but the mandatory training *Stereophile* reviewers receive at the International Academy of Poker is helpful here.

In the Mahler's case, the visitor was John Hunter, well-known for his setup expertise and familiar with my listening room from his visit at the beginning of the Mozart's review period. He was quite confident that he'd have speaker setup optimized in about half an hour—an estimate that turned out to be off by several hours. Shaking his head and, from time to time, muttering "Difficult room..." Hunter listened, moved the speakers, listened again, tweaked the toe-in, adjusted the vertical angle, removed the array of RoomLens 1 normally have in the room, then replaced and repositioned them. Finally, the sound was to his satisfaction.

I normally set up speakers so that they form an angle of at least 60° to the listening seat, toed-in to point almost directly at the listener. John's setup subtended an even wider angle, with the speakers closer to the back and side walls than usual, and the woofers facing the side walls. The result was a huge

Measurements

I estimated the Mahler's B-weighted sensitivity as 87dB(B)/2.83V/m, which is lower than specified. However, I was measuring on the tweeter axis, and a mid-treble suckout on this axis (see later) will reduce the measured figure.

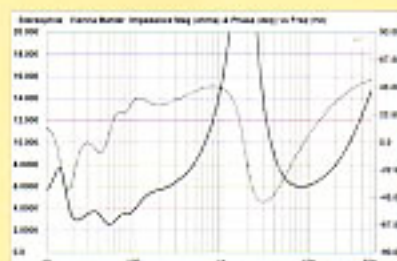


Fig. 1 Vienna Acoustics Mahler, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

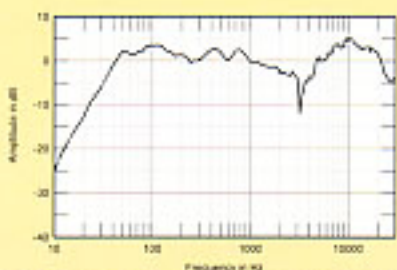


Fig. 3 Vienna Acoustics Mahler, anechoic response on tweeter axis at 50°, averaged across 50° horizontal window and corrected for microphone response, with the complex sum of the nearfield woofer, port, and midrange responses plotted below 300Hz.

The speaker featured a wide variation in impedance magnitude (fig.1), which will make its perceived balance more dependent than usual on the partnering amplifier's source impedance. More important, the impedance drops below 3 ohms throughout the bass, which will mandate using an amplifier with good current delivery.

A small wrinkle just above 300Hz is apparent in this graph, which usually indicates the presence of some kind of resonant problem. Fig.2 shows a cumulative spectral-decay plot calculated from the output of a simple accelerometer fas-

tened to the speaker's side wall opposite the woofers and adjacent to the lower midrange unit. A reasonably strong vibrational mode can be seen at 305Hz, which correlates with the anomaly in the impedance measurement. Predicting the subjective effect of this resonance is difficult—I would have expected some slight overhang on male voice, but RD didn't make any comment on this. As is sometimes the case, the measurement looks worse than the reality sounds.

Fig.3 shows the Mahler's frequency response, averaged across a 30° angle on the tweeter axis. What would otherwise

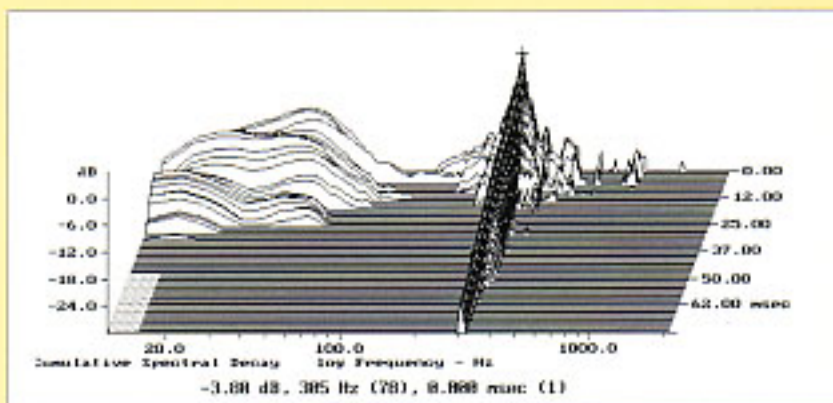


Fig. 2 Vienna Acoustics Mahler, cumulative spectral-decay plot calculated from the output of an accelerometer fastened to the cabinet side wall. (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz.)

soundstage with tremendous depth and very powerful bass. The sound was most impressive, but after Hunter had left, I came to feel that the bass was too powerful, tilting the tonal balance. I started to do some setup tweaking of my own, aimed at preserving the soundstage while getting better control over the bass. A bit of informal testing at the listening seat with *Stereophile's Test CD 3* and the RadioShack SPL meter revealed a peak of about 9dB in the 50Hz region.¹ I had observed similar peaks with some other speakers in this room, but not to this extent. (The smoothest bass response in my room has been with the Dunlavy SC-IV/As, which is probably a function of their over-and-under woofer configuration.)

To tame the bass, I tried all sorts of tricks: stuffing one or both of the rear-facing ports with rolled-up socks (which reduced the bass extension without reducing the peak); placing ASC Tube Traps in the corners (which only reduced the midbass, in the 200Hz range); trying different spikes/cones (no effect); switching left and right speakers so that the woofers faced inward (impairment of

bass extension, little effect on the peak); adding three more RoomLenses, two of them behind the listening chair (less "room sound" from the midrange up, to the point of dulling, but no effect on the bass peak); and, in time-honored fashion, moving the speakers around.

My final setup had the speakers farther away from the walls and corners than in Hunter's initial setup, with both treble and bass switches in the flat position, two RoomLenses forming a "wing" outside each speaker, and one near the wall between the speakers. (The Mahler is provided with a removable grille; it stayed removed.) The midrange driver of each speaker was 39" from the back wall and 34" from the side wall (all measurements from the center of the midrange cone), the speakers set up along the 16' side of my 16' by 14' by 7.5' listening room. The included angle was about 70°; the speakers were toed-in so that they were pointing almost (but not quite) at the listening chair. The bass peak was still there, but its amplitude at

¹ There was no hint of the 100Hz vacuum Fd observed with the Hales Transcendence Fives.

the listening position was reduced by 2-3dB. Moving the listening chair forward from its usual nearly-against-the-wall position led to a further 2dB reduction of the bass peak, but impaired center focus. I moved it back.

I had several amplifiers on hand to drive the Mahlers, including a Rotel RB-1090, Bryston 9B-ST, Thule PA250B, and a pair of Krell FPB 350Mc (senior sibling of the FPB 250Mc, reviewed by Larry Greenhill in June 1998). The speakers were quite revealing of sonic differences between amplifiers, with the Krells sounding substantially better than any of the others.

Sound

The Mahler was at its very best when reproducing large-scale symphonic music, big-band jazz, opera, and musicals. The challenges in reproducing this type of material are formidable: the speaker has to be able to maintain the individual instrumental and vocal threads while allowing the blending that is characteristic of the real sound, and to retain its composure at the high levels that stress the individual speaker components. As

be quite a flat balance is spoiled by a significant lack of energy in the crossover

region between the upper midrange unit and the tweeter. I always take my

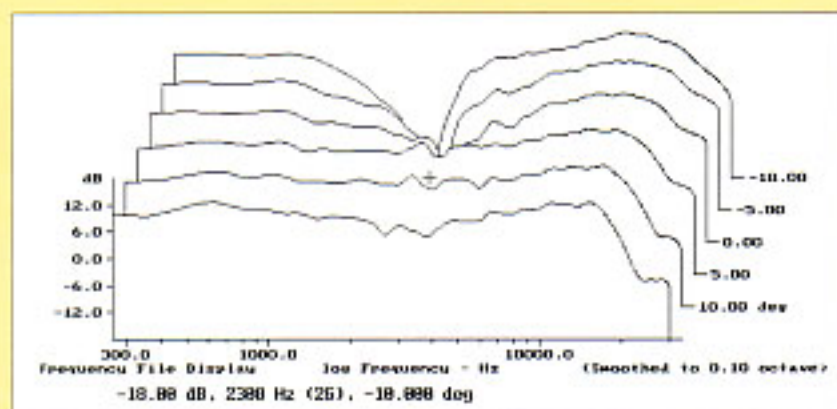


Fig. 4 Vienna Acoustics Mahler, vertical response family at 50°, from back to front: response 10°-5° above tweeter axis; response on tweeter axis; response 5°-15° below tweeter axis.

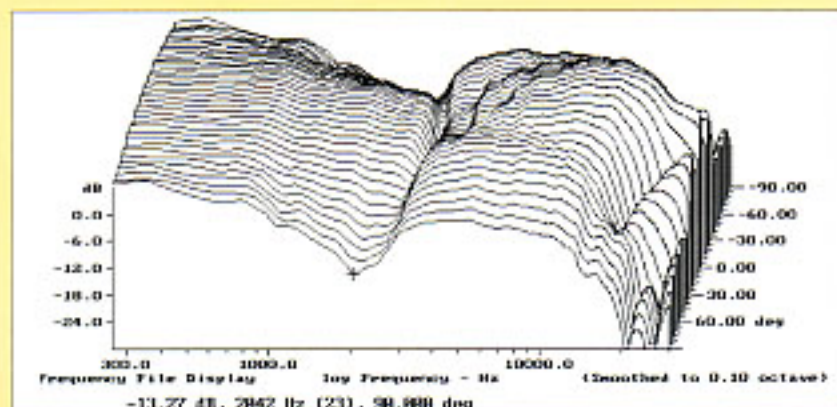


Fig. 6 Vienna Acoustics Mahler, lateral response family at 50°, from back to front: responses 90°-5° off-axis; reference response on tweeter axis; responses 5°-90° off-axis.

Measurements

primary measurement on a speaker's tweeter axis for consistency. However, the Mahler's tweeter is high, some 47" from the floor, and I suspected that the speaker's designer had aimed the primary axis below the tweeter. This is confirmed by fig.4, which shows the Mahler's family of responses in the vertical plane. As long as the listener sits with his or her head level with the midrange units, he or she will perceive a basically flat response (fig.5).

RD consistently noted problems with optimizing the Vienna Acoustics' low frequencies in his room. Try as I might, I couldn't find any particular measured problems in the bass. The midrange units hand over to the woofers below 80Hz or so, with the ports covering the range below 40Hz. I suspect that the limited bandpass covered by the woofers, as well as having six radiating areas all contributing to the speaker's output in the upper

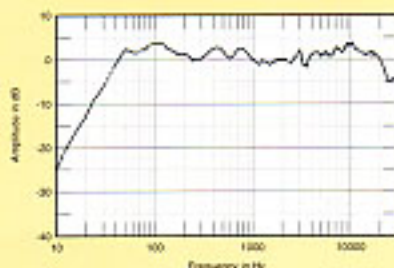


Fig. 5 Vienna Acoustics Mahler, anechoic response on upper-midrange axis at 50°, corrected for microphone response, with the complex sum of the nearfield woofer, port, and midrange responses plotted below 300Hz.

the overall level rises, there's a tendency for a speaker to lose sonic details and for the sound to acquire a "pushed," strained quality, like a singer who's trying to produce a big sound that is beyond his or her comfortable range.

The Mahler was able to play at high levels with ease and smoothness, maintaining the level of detail that was characteristic of lower playback levels. In its ability to play at very high levels without sounding strained, the Mahler surpassed every other speaker I've had for review. The Dunlavy SC-IV/A, my longtime reference loudspeaker, starts to lose focus and to acquire a bit of an edge at levels at which the Mahler was still sailing along comfortably. The SC-IV/A is an exceedingly fine speaker, and if you do your listening at more moderate levels, the Mahler's higher dynamic ceiling may not be of much importance. Most of my listening is at fairly low levels, but once in a while I like to let 'er rip.² At these times, I was able to listen with the certainty that my ears were going to give up before the speakers would.

At more normal levels, the Mahler's exceptional dynamic capability was evi-

dent in its communication of music's subtle ebb and flow, and in its ability to track transient peaks. The new *La Bohème* (London/Decca 466 070-2) seems to have been recorded expressly to test a system's dynamic capabilities: Roberto Alagna and Angela Gheorghiu at full tilt at the end of "O Soave Fanciulla" make an exciting, powerful sound, and maestro Riccardo Chailly keeps up a crackling pace in the Cafe Momus scene. The Mahlers took it all in stride, keeping up the pace and rising to the dynamic peaks. Opera fans who like to listen loud will love these speakers.

Allied to this sense of dynamic freedom was a great sense of openness, a kind of see-through quality, with the speakers somehow getting out of the way as apparent sources of sound, leaving only the music behind. The speakers were able to create a soundstage of exceptional width and depth, with a specificity of vocal and instrumental images that rivaled the Dunlavy SC-IV/As. To check the Mahlers' accuracy of depth information, I dug out *Best of Chesky Jazz and More Audiophile Tests, Volume 2* (Chesky JD68), which has a click-

er recorded in a large studio at various distances from the microphone. With most speakers, the audible differentiation of distances holds up to perhaps 50', the clicker sounding much the same at 60', 70', and 80'. However, with the Mahlers, the sound of the clicker continued to recede into the distance, to the limit of the recording. In the "General Image and Resolution Test" (track 47) people are marching around the room, with a plausible illusion of them passing behind the listener. The height of the soundstage was projected to be somewhat above the speakers, which is just how I like it.

The term "tonal balance" is an apt one, in that a speaker's tonal quality represents a kind of balancing act, with plenty of opportunities for slipping. It goes without saying that a speaker should not emphasize any part of the frequency range, but consideration of on-axis frequency response is only the first step in designing a speaker that

² To give you an idea of the kind of levels I'm talking about: At the listening seat, the RadioShack SPL meter ("C" weighting, fast) indicated peaks of just below 100dB. The meter's ballistics are known to underestimate momentary peaks by 5-7dB, so I'd call that pretty loud.

bass and below, makes its interaction with the room complex.

Fig.6 shows the Mahler's horizontal

response family 90° to either side of the tweeter axis. There is a general lack of off-axis energy in the presence region,

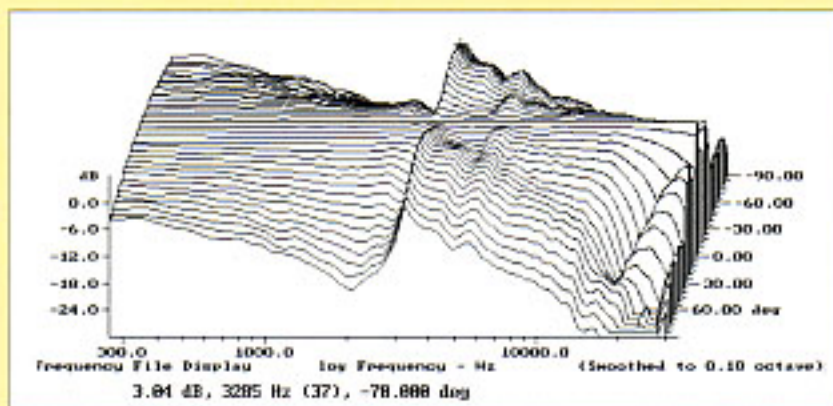


Fig.7 Vienna Acoustics Mahler, lateral response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 90°-5° off-axis; reference response on tweeter axis; differences in response 5°-90° off-axis.

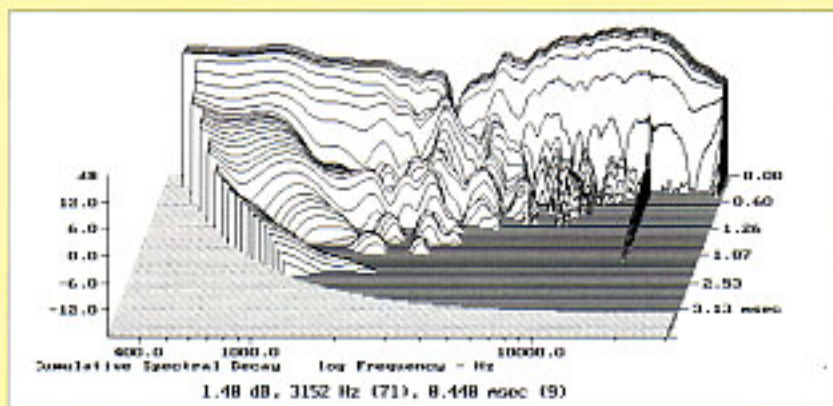


Fig.9 Vienna Acoustics Mahler, cumulative spectral-decay plot on tweeter axis at 50° (0.15ms risetime).

Measurements

which I initially associated with the crossover suckout on this axis. However, if you look at fig.7, which shows the same information but now normalized to the tweeter-axis response, you can see that the crossover suckout tends to fill in to the speaker's sides. I conjecture that the lack of off-axis energy between 800Hz and 2.4kHz is actually due to the relatively large diameter of the upper midrange unit restricting its radiation pattern at the top of its passband.

In the time domain, the Mahler's step response (fig.8) indicates a non-time-coherent output, despite the slanted-back front baffle. The tweeter is wired in the opposite acoustic polarity to the midrange units in order to steer the response down below the tweeter axis, as mentioned earlier. The waterfall plot on the tweeter axis (fig.9) is disturbed by the crossover suckout, which is associated with some delayed energy, but is otherwise very clean, particularly in the treble. This is basically good measured performance.

—John Atkinson

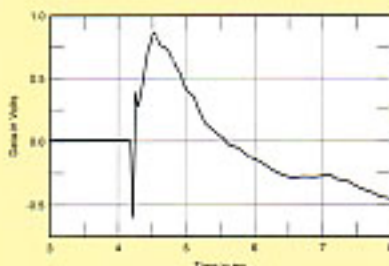


Fig.8 Vienna Acoustics Mahler, step response at 50° (5ms time window, 30kHz bandwidth).

sounds lifelike. There are certainly speakers out there that have a flat on-axis frequency response, but other aspects of their performance (eg, polar-response irregularities, delayed resonances, nonlinear distortions) make them sound artificial, more like mechanical contrivances and less like live music. The skillful designer balances all aspects of speaker performance that have an influence on its sound; arguments about objective "accuracy"

notwithstanding, there is always a degree of subjectivity in making these design choices, as indeed there is in the listener's evaluation of the results.

To describe the Mahler as having a "musical" tonal balance—which is how I would describe it—is not to imply that it deliberately deviates from absolute tonal neutrality, but that the choices the designer made serve the music while adhering to the ideal of "high fidelity." Instruments and voices reproduced

through the Mahlers sounded much as they do in life, with a minimum of mechanical/electronic artifacts to remind me that I was listening to a reproduction. The midrange balance was just about ideal: neither unduly laid-back nor consistently in my face. The top end was smooth and extended, perhaps departing slightly from absolute neutrality in the direction of sweetness, making it easier to listen to what are otherwise harsh-sounding CDs. The Mahlers also man-

CD Demagnetization Revisited: The Furutech RD-1

The notion that demagnetizing CDs can result in a sonic improvement was first suggested, I believe, by Clark Johnsen, audio dealer and author of *The Wood Effect*, and has seen commercial application in the Bedini Ultra-Clarifier. The Ultra-Clarifier has been well-received by some—including Myles Astor, editor of *Ultimate Audio*, who has described it as "the king of accessories," and our own Jonathan Scull (Vol.19 No.2). It has also been called a placebo and an example of "weird science." Skeptics point out that CDs are made of polycarbonate and aluminum, neither of which is a magnetizable substance, and, in any case, CD replay is an optical, not a magnetic process.

Still, enough people with good ears have reported positive results that I wouldn't dismiss the effectiveness of CD demagnetizing out of hand, even if it seems implausible. The reason I haven't bothered checking out the Bedini Ultra-Clarifier is because using it is simply too much trouble: you place the CD on a spindle, the machine spins it for some 30 seconds, then you flip the disc and repeat the process for the other side—and you're supposed to go through this ritual every time you play a CD.

What induced me to try the Furutech RD-1 (no, they did not get my permission to use my initials) was that the treatment takes only eight seconds per side, does not involve spinning the CD, and the effect of a single demagnetizing is supposed to last for up to a year. I was also intrigued by the supporting literature, which included FFT spectral-analysis data on the effect of the RD-1, showing a reduction in noise and distortion components of signals from a test CD. As for why demagnetization is important with CDs, Furutech suggests that: a) paints used on the label side contain magnetizable substances, including iron oxide; b) the aluminum used in CDs is only 99% pure, and thus may contain up to 1% magnetizable material; c) aluminum itself is not entirely non-magnetic; d) magnetic flux generated by the motors in the CD player cause the

CD to pick up magnetism; and e) the disc then becomes, in effect, a spinning magnet that can interfere with the accuracy of the laser pickup.

The Furutech RD-1 (\$349 from The Cable Company, www.fatwyr.com) looks much like the Bedini Ultra-Clarifier, the CD being placed in a shallow well on a spindle. You press a button, which energizes the demagnetizing coil in the housing under the CD, and in eight seconds (signaled by an indicator light going out) the demagnetizing process for that side is completed. You then flip the disc, press the button again, and in another eight seconds the CD is ready for playing. The demagnetizing signal is "ramped down" gradually before it's turned off, a procedure also used by cartridge demagnetizers. Furutech claims that this gradual reduction of magnetic flux, plus the fact that the RD-1 produces uniform demagnetization of the CD's entire surface, makes it superior to the disc-spinning-above-a-magnet design of the Bedini.

I used two methods to investigate the effect of the Furutech RD-1: 1) comparison of two new, unplayed copies of the same CD: one that had just been treated by the RD-1 and one that hadn't; and 2) playing and listening 10 times to a 20-second excerpt from a CD, then demagnetizing the CD and listening to the same excerpt again. I had previously found the latter procedure very revealing of sonic differences—listening to a bit of music so many times allows you to notice anything that changes.

Indeed, this method, which I repeated with several discs, resulted in more clearly audible differences. In every case, after the demagnetization treatment the CD sounded fresher, with cleaner highs and a better sense of space. With the method that involved comparing two copies of the same CD, the differences were more elusive, to the point that I wasn't sure that there was a difference. While it could be that the more positive findings in the repeated listening method reflect the greater sensitivity of this method, it's also possible that playing the CD

repeatedly causes it to become more and more magnetized, so that the demagnetization effect is actually greater than in the case of new CDs.

In an attempt to resolve the issue, I made yet another comparison, again taking two fresh copies of a CD, playing the same track on both of them 10 times *without listening to it*, then demagnetizing one of the CDs and comparing it to the other, non-demagnetized copy. This time, I *did* hear an improvement, of the same sort as I had observed previously in the single-disc comparison: the demagnetized CD sounded cleaner and more open.

Less controlled observations of the "listen/demagnetize/listen again" sort yielded similar results, the improvement due to demagnetization being more evident with frequently played CDs. (The manual contains dire warnings about not using the RD-1 near magnetic tapes or floppy diskettes, and cautions the user to not stand too close, but the limited testing I've done suggests that the amount of magnetism generated is not enough to worry about. Data on a floppy disk that I put through the demagnetization cycle was read by my computer's disk drive without any problem, and the picture from a VHS tape similarly treated showed no visible effects. At any rate, the physical layout of the RD-1 is such that a diskette or tape cannot be placed flat on the surface used to demagnetize CDs.)

I also tried the RD-1 with DVDs, using the Sony DVP-7000S in my home-theater system, and the results were comparable to those found with CDs: cleaner highs, better-defined soundstage (this time in surround sound), less hash. I noticed no improvement in picture quality.

The bottom line is that the Furutech RD-1 definitely *works*, and has a particularly beneficial effect with frequently played discs. The price seems a little steep, but if your favorite CDs are starting to sound a bit stale, investing in an RD-1 might be just what's needed to make them sound like new again.

—Robert Deutsch

aged the difficult trick of providing high resolution of musical detail without sounding clinical or overly analytical.

Natural-sounding reproduction of voices has high priority for me, and this happened to be one of the Mahler's strong suits. A recording I've been playing a lot lately is *A Christmas Survival Guide*

Associated Equipment

Analog source: Linn LP12 turntable (fully updated), Itrok tonearm, AudioQuest AQ-7000sx cartridge.

Digital source: PS Audio Lambda II transport, Muse Two Ninety-Six digital processor, Illuminati Orchid digital link.

Preamplifier: Convergent Audio Technology SL-1 Ultimate.

Power amplifiers: Krell FPB 350 Mc (2), Bryston 9B-ST, Rotel RB-1090, Thule PA250B.

Cables: Interconnects: Nordost Quattro Fil, TARA Labs The Two. Speaker cables: Nordost S.P.M. Reference, TARA Labs The Two. AC cords: TARA Labs Decade.

Accessories: Argent RoomLenses (5), PS Audio P300 AC synthesizer (used with preamplifier and sources), Bright Star Little Rock (atop CD transport), Nordost PP4 Ti and PP4 Al Pulsar Point component supports, Arcici Suspense Rack, PolyCrystal amplifier stand, Furutech RD-1 CD demagnetizer (see sidebar, "CD Demagnetization Revisited: The Furutech RD-1").

—Robert Deutsch

(Car-Jam 2die4 99032, available from www.Car-Jam.com), a collection of Christmas songs—some traditional, some sharply satirical—tied together with a mock self-help narrative. The performers include some of Broadway's best, including Christiane Noll, Marin Mazzie, Alice Ripley, and Emily Skinner. Listening to the CD through the Mahlers, I had a strong sense that I was hearing a good facsimile of what these singers sound like live, the distinctive quality of each voice preserved with a minimum of added mechanical resonances.

As chronicled in "Setup," optimization of the Mahler's bass response in my listening room was a difficult task, and I was able to only reduce, not eliminate, a peak in the 50Hz region. I suspect that the problem was mostly—perhaps entirely—a function of the speaker exciting standing waves that are a room characteristic. Subjectively, the bass peak was generally not intrusive, and sometimes lent a welcome sense of richness to the sound. But occasionally—with string bass or bass guitar recorded in a spotlit manner—the bass could get thumpy and not ideally tight. My listening room is on the small side; the Mahler would be a better match with a larger room in which the speakers could be placed farther from the side and back walls and still retain a wide soundstage. But even in my non-optimal room, the extension and power of the Mahler's bass was most impressive, reaching the low 20s with the sort of authority that is normally the domain of subwoofers and giant full-range speakers.

Conclusion

Vienna Acoustics' stated goals in design-

ing the Mahler were to produce, in a reasonably compact enclosure, a no-compromise loudspeaker capable of reproducing music on a completely convincing scale, and able to transform the listening room and transport the listener. In my view, they have succeeded admirably in meeting these goals.

I have some remaining doubt about the smoothness of the Mahler's bass—a problem that may represent mostly, if not entirely, interaction with my listening room's acoustics—but in every other respect the performance of the Mahler is state of the art. In addition to having all the characteristics that audiophiles want in a loudspeaker—neutral tonal balance, transparency, expansive soundstage, precise imaging, high dynamic capability—the Mahler has the propensity that's perhaps the most important for long-term satisfaction: the ability to sound "musical," and provide a rewarding listening experience with sources that vary widely in quality. The fact that the speaker is sufficiently compact to not dominate the visual environment is a welcome bonus.

The Mahler uses components of the highest quality, and its appearance is enhanced by a level of cabinet finish found only on very expensive furniture. I've been told that the costs of materials and labor are such that the Mahler's retail price represents a smaller-than-usual margin for the manufacturer and distributor, and I don't doubt it. Still, in my book, \$10,000 is a lot of money for a pair of speakers—but for those who can afford it, the Mahler represents outstanding performance and value. 